

December 10, 2004, Revised Draft – Navajo Nation Water Rights Settlement

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RESPONSES TO PUBLIC COMMENTS
RECEIVED ON DRAFTS OF THE
SAN JUAN RIVER BASIN IN NEW MEXICO
NAVAJO NATION WATER RIGHTS SETTLEMENT

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December 10, 2004

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65 **WATER RIGHTS ADJUDICATION AND ADMINISTRATION**

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70 Comment 29: There are two opposite extremes expressed as to who should have jurisdiction over the use of water under the Navajo Nation's water rights: (1) the State Engineer should have jurisdiction over all Navajo Nation uses of water in the San Juan River Basin; or (2) the Navajo Nation should be able to do whatever it wishes with its water rights without state oversight.

71 Comment 30: Clarity is needed with respect to the water rights of the Navajo Nation and the rights or claims of individual members of the Navajo Nation.

72 Comment 31: The Settlement Agreement should include a waiver that the Navajo Nation would not challenge in the San Juan River Adjudication rights adjudicated by the Echo Ditch Decree or other previous decrees unless upon a claim of forfeiture or abandonment subsequent to the decrees.

77 Comment 32: The alternate water source provisions for the Fruitland-Cambridge and Hogback-Cudei irrigation projects should not be conditioned upon how the Court determines irrigation rights or administers direct flow, and the conditions should not bind the Court to the annual diversion requirement quantities described by the hydrographic survey report approved by the Echo Ditch Decree or to the administration of flow suggested by the Act of June 13, 1962.

79 Comment 33: The Secretary of the Interior filings for federal water development projects in New Mexico need clarification, and water users, not the United States, own water rights.

81 Comment 34: The Settlement Agreement would not leave sufficient water available for dealing with the Ute Mountain Ute Tribe's water rights claims in the San Juan River Basin in New Mexico, and the Tribe should receive consideration because the Navajo Nation received an allocation of Animas-La Plata Project water under the Colorado Ute Settlement Act Amendments of 2000.

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APPENDICES

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| B-1 | Appendix B: Changes to the Depletion Schedule since December 2003 and Comparison of Depletions from the San Juan River Stream System in New Mexico between the Interstate Stream Commission's Depletion Schedule and the Bureau of Reclamation's Baseline Depletions Used in the Draft Environmental Impact Statement on Navajo Dam Operations. |
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BACKGROUND

Representatives of the Navajo Nation and the State of New Mexico on December 5, 2003, released for public review and comment a draft Settlement Agreement and appendix documents that would resolve the rights of the Navajo Nation to the use of waters of the San Juan River Basin in New Mexico and provide water development projects for the benefit of the Nation. The Navajo Nation Department of Water Resources and the New Mexico Interstate Stream Commission received substantive public comments on the December 5 draft Settlement Agreement. A revised draft Settlement Agreement and appendix documents were released for public inspection on July 9, 2004. Additional comments from the public were received on the July 9 draft Settlement Agreement, and the final draft Settlement Agreement was made available to the public on December 10, 2004. A list of entities and persons that submitted written comments that were received by the Interstate Stream Commission is provided in Appendix A.

This document responds to substantive issues raised by the public comments on drafts of the Settlement Agreement using the following format: comments received are stated or summarized in bold typeface, and each comment is followed by the Interstate Stream Commission staff's response to the comment. Other issues and technical comments also were considered, and revisions were made to drafts of the Settlement Agreement, including its appendices, to reflect or address many of them, though each is not explicitly addressed herein. The responses presented herein do not necessarily reflect the views of the Navajo Nation or the United States, nor should any of the representations regarding the import of federal laws, regulations or any other matter be attributed to the Navajo Nation or the United States.

SETTLEMENT PROCESS

Comment 1: The public review and comment period was inadequate, non-Navajo interests did not have meaningful participation in the development of the Settlement Agreement, and further comments need to be considered.

Response:

Unlike offers of judgment or consent orders on sub-files negotiated between the New Mexico State Engineer and non-Indian water users in the San Juan River Adjudication, drafts of the San Juan River Basin in New Mexico Navajo Nation Water Rights Settlement Agreement were distributed for public review on December 5, 2003, and for public inspection on July 9, 2003, because contracts for water supply from Navajo Reservoir and federal funding for water projects require Congressional approval, and consequently, need political support. The December 5, 2003, draft Settlement Agreement, including appendix documents, was released for public review and comment when the Navajo Nation and the State Engineer felt that a settlement package had been negotiated to a point that water users and citizens in the San Juan River Basin could see the scope and details of what a settlement might entail. Nevertheless, the main components of the draft Settlement Agreement were the same as those presented by the State Engineer in public presentations to water users and citizens in the Basin in previous years, and the same as those that Interstate Stream Commission staff and Navajo Nation Department of Water Resources staff discussed in general concept with various parties in the Basin from time to time in the past.

The initial comment deadline of January 15, 2004, was to ensure fair consideration of comments and concerns received prior to finalizing settlement negotiations so as to make a settlement agreement as acceptable to the public as possible before approving a settlement and going to Congress. Representatives of the Navajo Nation and the Interstate Stream Commission continued to receive written and oral

comments on the settlement after that date from numerous parties in the San Juan River Basin, and met to discuss the settlement with representatives of the cities in the Basin, the power plants, the agricultural water users, the San Juan-Chama Project, other Indian tribes and the public. A revised draft Settlement Agreement was prepared after consideration by the State of New Mexico and the Navajo Nation of the public comments received on the December 5, 2003, draft Settlement Agreement, and the revised draft was released for public inspection on July 9, 2004. Additional public comments were received on the revised draft, including at a meeting of the Interstate Stream Commission in Farmington on August 18, 2004, and at various other meetings with users of water from the San Juan River Basin.

Consideration of the additional public comments and input from New Mexico's Congressional delegation resulted in the final draft Settlement Agreement, dated December 10, 2004. The Settlement Agreement, including the appendices, substantially addresses the concerns raised by the public comments regarding the settlement of the water rights of the Navajo Nation and also regarding the administration of water rights in the Basin.

The Navajo Nation and the State of New Mexico must approve the Settlement Agreement, and the Settlement Agreement then would become effective only upon passage of the Settlement Act into law and the subsequent execution of the Settlement Agreement by the United States. Once the Settlement Agreement is effective, motions would be submitted to the Court requesting entry of the Partial Final Decree and, after completion of a hydrographic survey, the Supplemental Partial Final Decree to establish rights of the Navajo Nation to divert and use water in and from the San Juan River Basin in New Mexico. All water users that are party to the San Juan River Adjudication may file with the Adjudication Court objections to the provisions of the Partial Final Decree

and Supplemental Partial Final Decree. The Court through an expedited *inter se* process would consider the decrees and any objections to them, and may approve, modify or reject the decrees.

Separating the determination of the rights of the Navajo Nation into a Partial Final Decree, which would be submitted to the Court upon Congressional approval of the Settlement Agreement, and a Supplemental Partial Final Decree, which would be submitted to the Court after completion of a hydrographic survey to quantify certain tributary and state-based rights, would allow the Court to consider any objections to the substantial portion of the Navajo Nation's rights to divert and use water from the San Juan and Animas rivers, including under federal water projects, prior to the expenditure of a substantial portion of the federal funds authorized for construction and rehabilitation of water projects by the Settlement Act. If the decrees are not approved in substantially the same form provided in Appendices 1 and 2 to the Settlement Agreement, respectively, the Settlement Agreement and the water project authorizations provided by the Settlement Act will be revoked. In addition, further public review and comment on the proposed Navajo-Gallup Water Supply Project will occur during the formulation of the environmental impact statement for the project.

RESERVED RIGHTS

Comment 2: The Navajo Nation waived its reserved rights claims to the use of the waters of the San Juan River Basin in New Mexico, except for the San Juan River irrigation projects.

Response:

The State of New Mexico and the Navajo Nation differ in their positions as to whether the Navajo Nation waived its reserved rights claims to the waters originating above Navajo Dam, except in relation to the Fruitland-Cambridge and Hogback-Cudei irrigation projects, in support of the Act of June 13, 1962. In any case, the Navajo Nation did agree to accept an amount of diversion needed to irrigate 110,630 acres under the Navajo Indian Irrigation Project and to share shortages between the Project, other Navajo Reservoir water supply contracts, and the San Juan-Chama Project, as opposed to asserting a senior priority for the water for the Navajo Indian Irrigation Project as against the San Juan-Chama Project and other uses of the Navajo Reservoir water supply. The Settlement Agreement recognizes a reserved priority date of 1868 for Navajo Nation uses supplied from the Navajo Reservoir water supply, but provides for a June 17, 1955, administrative priority date for such uses consistent with New Mexico State Engineer File No. 2849, under which the Secretary of the Interior supplies the uses out of the Navajo Reservoir water supply.

Comment 3: The Navajo Indian Irrigation Project is not practicably irrigable acreage and should not have a reserved priority date, the federal municipal and domestic water supply projects also should not have a reserved priority date, and the priority date for uses of Navajo Reservoir water supply should be later than 1955.

Response:

Congress by passing the Act of June 13, 1962, made the determination that the Navajo Indian Irrigation Project was practicable for the diversion of up to 508,000 acre-

feet per year for the irrigation of up to 110,630 acres of land. No other determination has been submitted. The Settlement Agreement recognizes that the water rights for the Project are Navajo Nation reserved rights and provides for administration of the Project rights with a June 17, 1955, priority date consistent with supplying the rights under New Mexico State Engineer File No. 2849. The priority date under File No. 2849 is the date of application to appropriate water consistent with state law.

The Navajo Nation in pursuing the authorization for the Navajo Indian Irrigation Project did not waive its reserved rights claims for waters of the San Juan River for municipal, domestic and other uses as needed to fulfill the purposes of a permanent homeland. As part of resolving such claims, the Settlement Agreement provides that the Navajo Nation's water rights for diversions and uses in New Mexico under the Navajo-Gallup Water Supply Project would have an 1868 reserved right priority for the municipal, domestic and other needs of its homeland, but that the Project uses would be served under New Mexico State Engineer File No. 2849 with a priority date of June 17, 1955, for water originating in the drainage of the San Juan River above Navajo Dam, and File No. 3215 with a priority of December 16, 1968, for inflow to the San Juan River arising below Navajo Dam. The Navajo Nation's water rights for diversions and uses under the Animas-La Plata Project would have an 1868 reserved right priority, but the Project uses would be served under New Mexico State Engineer File No. 2883 with a priority date of May 1, 1956, for water from the Animas River.

The subordination of the reserved right priority in all cases is in exchange for the benefits of federal wet water development to put the rights to use. The Navajo Nation could assert an 1868 reserved right priority for water for the Navajo Indian Irrigation Project and the Navajo-Gallup Water Supply Project if the ability to receive water for the projects under the Settlement Contract is irretrievably lost, such as due to removal of

Navajo Dam, in which case the Navajo Nation would have a senior right on paper with little physical capability to access significant amounts of wet water. It is not the intent of the Settlement Agreement that the subordination of the reserved right priority be nullified on an acre-foot per annum basis on account of shortages to the Navajo Reservoir water supply. The Navajo Nation agrees to take water for the two projects and share shortages under the priority dates of State Engineer File No. 2849 for the Navajo Reservoir water supply and File No. 3215 for inflows to the San Juan River below Navajo Dam. The Navajo Nation uses under the Animas-La Plata Project are further subject to the Animas-La Plata Project Compact.

NAVAJO INDIAN IRRIGATION PROJECT

Comment 4: The Navajo Indian Irrigation Project is not economically sound or profitable, and the United States should not complete construction of the Project or pay the operation and maintenance costs of the Project.

Response:

Congress by passing the Colorado River Storage Project Act and the Act of June 13, 1962, made the determination that through construction and operation of Navajo Dam and the Navajo Indian Irrigation Project, it is practical and viable to provide for the irrigation of up to 110,630 acres of land. Congress also made the bargain that the Project would be built in exchange for the Navajo Nation agreeing to waive reserved rights claims to the waters arising above Navajo Dam, except in relation to the Fruitland-Cambridge and Hogback-Cudei irrigation projects. Construction of the Navajo Indian Irrigation Project remains uncompleted over 40 years later, while the San Juan-Chama Project also authorized by the Act of June 13, 1962, was completed within ten years from the date of the Act. The United States, acting through the Bureau of Indian Affairs, has prepared various planning and environmental impact studies for the Navajo Indian Irrigation Project since the mid 1950s, including the October 1976 Final Environmental Statement for the Project and the June 1999 Biological Assessment for the Project, and has completed consultation on the Project with the Fish and Wildlife Service under section 7 of the Endangered Species Act. In addition, negotiations have begun on a memorandum of understanding between the United States and the Navajo Nation that would include provisions for transferring ownership of the Project facilities to the Nation.

The United States has an ongoing commitment to complete the Project, although the funding ceiling for the Project will need to be increased and further appropriations will need to be made to complete it. However, the authorization of funding needed to complete construction of the Project that was included in the drafts of the Settlement

Agreement is not included in the Settlement Act, and completion of the Project would have to be accomplished in accordance with the authorizing legislation for the Project and separate funding authorizations and appropriations. The Settlement Agreement would not establish any timeframe or deadline for completing the funding and construction of the Project. Under the current pace of construction, approximately 2,000 acres of land are added to the Project's service area each year and the Project may be anticipated to be completed sometime after 2020. Alternatively, the Navajo Nation in the future may desire to reduce irrigated acreage on the Project and transfer rights to other water uses in the San Juan River Basin for economic or political reasons.

The Project has struggled economically for various reasons; however, the Bureau of Indian Affairs continues to help implement improved farm management and water conservation measures on the Project. Also, the current water delivery contract for the Navajo Indian Irrigation Project between the Secretary of the Interior and the Navajo Nation does not require the Navajo Nation to pay for the water delivered to the Project or the operation and maintenance costs of the Project. The Settlement Agreement provides for the Navajo Nation to take ownership of the Navajo Indian Irrigation Project upon its completion to the full authorized acreage, or to a lesser acreage if the Navajo Nation agrees. The Settlement Agreement also has been revised to require the Navajo Nation to assume full responsibility for operation and maintenance of the Project, including funding the annual operation and maintenance costs of the Project, once it receives ownership.

Comment 5: The acres of water right for the Navajo Indian Irrigation Project should be reduced even without consideration of economics.

Response:

The March 1957 Bureau of Indian Affairs' Supplemental Report to the Feasibility Report for the Navajo Indian Irrigation Project indicated that 5 percent of a total Project

area of over 110,000 acres would be in roads, buildings, farmsteads, and other non-productive areas, leaving some 105,000 acres of land with irrigation service. The Navajo Nation argues that the Act of June 13, 1962, may be read to allow for construction of Project facilities to an irrigation service area exceeding 110,630 acres, so long as the acreage irrigated in any year does not exceed 110,630 acres. The Settlement Agreement would allow construction of facilities to a total irrigation service area of 110,630 acres of land.

Comment 6: The diversion right for the Navajo Indian Irrigation Project exceeds the diversion required to irrigate Project lands, and should be reduced to reflect the sprinkler redesign for the Project.

Response:

The Act of June 13, 1962, authorized the irrigation of 110,630 acres on the Navajo Indian Irrigation Project, and the Settlement Agreement would provide the Navajo Nation with the right to irrigate that amount of acreage on the Project. With the Project now built for sprinkler irrigation instead of flood irrigation and consolidation of the acreage further east than was originally planned, the Bureau of Indian Affairs in its 1999 Biological Assessment for the Navajo Indian Irrigation Project estimated that the diversion requirement to irrigate the total Project acreage will average about 337,500 acre-feet per year assuming that each acre is irrigated each year and that further water conservation measures are implemented as currently planned. A 1974 opinion of the Deputy Secretary of the Office of the Solicitor concluded that the Navajo Nation is entitled to divert for irrigation on the Project no more water than is necessary to irrigate 110,630 acres of land, whatever that amount is, regardless of the authorization in the Act to divert up to 508,000 acre-feet per year as necessary for the principal purpose of irrigation of the Project lands. For example, with the redesigned Project and water conservation measures, the Project would be entitled under the opinion to divert up to

about 337,500 acre-feet per year of the 508,000 acre-feet per year authorized. The amount of diversion required could change depending upon Project conditions. For example, if planned water management changes and water conservation measures are not implemented or fail to result in as much savings of water as is anticipated, then the diversion requirement to irrigate all project lands each year could be as high as about 372,000 acre-feet per year, according to the 1999 Biological Assessment for the Project. The 1974 opinion of the Deputy Secretary of the Office of the Solicitor referred to a diversion requirement of 370,000 acre-feet per year for the Project under the sprinkler design.

The Settlement Agreement recognizes that beneficial use is the limit to the right to use water in New Mexico, including under the Navajo Nation's rights that would be adjudicated under the Partial Final Decree. Based on the 1999 Biological Assessment for the Navajo Indian Irrigation Project, the amount of diversion required for beneficial consumptive uses by the Project currently is anticipated to average between 337,500 acre-feet per year and 372,000 acre-feet per year if all 110,630 acres were to be irrigated each year, depending on the implementation and effectiveness of planned water management changes and water conservation measures. The difference between the 508,000 acre-feet per year diversion authorized by the Act of June 13, 1962, for the flood irrigation project that was originally planned and the estimated average diversion required for the sprinkler irrigation project that is actually constructed is not separable from the consumptive use right for the Project, and therefore, is not transferable by itself to other uses. Under the Settlement Agreement, the Navajo Nation would be able to change the purpose or place of use of its rights for the Project on Navajo trust lands without State Engineer approval so long as the total average diversion for all uses under said rights in the aggregate does not exceed 353,000 acre-feet per year, and any such

changes to other uses must not impair other water rights. This amount of diversion assumes that either: (1) planned water conservation measures on the Project are about half as effective as anticipated; or (2) water conservation measures either do not occur or realize any benefits, and about 5 percent of the Project acreage, on average, is fallow. If the rights under the Project are not used solely for irrigation, the Navajo Nation would have to file application with the State Engineer to increase the total average diversion by all uses under the water rights associated with the Project above 353,000 acre-feet per year.

Also, the Bureau of Indian Affairs in 1999 pursuant to section 7 of the Endangered Species Act consulted with the Fish and Wildlife Service on completion of the Navajo Indian Irrigation Project. The consultation was for an average annual diversion of 337,500 acre-feet per year for the Project, with a near-term average annual depletion of the San Juan River of 280,600 acre-feet per year until return flows from deep percolation reach equilibrium conditions, after which the long-term average annual depletion would be 270,000 acre-feet per year. The Bureau of Indian Affairs or Bureau of Reclamation would have to consult with the Fish and Wildlife Service under section 7 of the Endangered Species Act prior to making an increase in diversions under the rights for the Project. Under the Settlement Agreement, the Navajo Nation would have to schedule bringing lands into production and cropping patterns on the Project in a manner so as to not exceed a maximum depletion of the San Juan River of 310,500 acre-feet in any one year or 270,000 acre-feet per year, on average, in any period of ten consecutive years. Any transfer of rights for the Project to other uses would be subject to not causing depletions to exceed these annual maximum and ten-year average amounts.

The maximum diversion rate for the Project pursuant to the Partial Final Decree would be 1,800 cfs, which is the existing physical diversion capacity of the Navajo Indian

Irrigation Project main canal. Historically, the diversion rate of the Project has been as much as about 900 cfs, and the acreage irrigated by the Project has been as much as about 55,000 acres. The maximum diversion rate per acre would amount to about one cfs per 61.5 acres of irrigation rights, which is significantly less than the one cfs per 40 acres maximum diversion rate adjudicated by the Echo Ditch Decree for ditches on the San Juan River. The annual diversion amount for the Project as redesigned for sprinkler irrigation would average in the range of 3.1 to 3.4 acre-feet per acre per year, depending upon the effectiveness of water conservation measures, which is substantially less than the annual diversion requirements of between 5.0 and 5.3 acre-feet per acre per year identified for ditches on the San Juan River near Bloomfield and Kirtland in the report of hydrographic survey that was approved by the Echo Ditch Decree.

Comment 7: Navajo Indian Irrigation Project water rights should be leasable and transferable for municipal, industrial and other purposes on and off Navajo lands within New Mexico.

Response:

The intent of the Settlement Agreement is not to prohibit transfers of use of water under the Navajo Nation's contract rights with the Secretary of the Interior for water from the Navajo Reservoir water supply or transfers of other of the Nation's reserved and state-based rights. The Settlement Agreement allows for the lease, through subcontracts, and transfer of the Navajo Nation's contract rights for the Navajo Indian Irrigation Project for other uses within New Mexico on or off Navajo lands, subject to non-impairment of other water rights in New Mexico. Language in drafts of the Settlement Agreement was modified in response to public comments to clarify this intent and to clarify the administrative requirements for effectuating transfers within Navajo Nation trust lands or off Navajo trust lands. Also, under the Settlement Agreement, interstate marketing or leasing of the Navajo Nation's water rights would require the consent of the

State of New Mexico and compliance with applicable law. The State of New Mexico at this time does not support interstate marketing or leasing of water.

Comment 8: The settlement agreement should include water rights for the Navajo Nation in the amount of 24,000 acre-feet for savings in depletions of water due to conversion of the Navajo Indian Irrigation Project from flood irrigation to sprinkler irrigation and consolidating the Project acreage.

Response:

The Deputy Secretary of the Office of the Solicitor in a 1974 opinion concluded that the Navajo Nation is entitled to the use of water for purposes other than irrigation on the Navajo Indian Irrigation Project in an amount corresponding to a net savings of 24,000 acre-feet per year of depletion which was anticipated to result from redesigning the Project for sprinkler irrigation. Based on the opinion, it has been suggested that the settlement should include 24,000 acre-feet of depletion right for the Navajo Nation to be served from Navajo Reservoir storage, of which about 20,000 acre-feet might be for use at a thermal electric power plant to be constructed near the BHP-Billiton coal lease area. However, the anticipated savings of depletion described in the 1974 opinion is not consistent with the depletions described in the 1999 Biological Assessment for the Navajo Indian Irrigation Project prepared for the Bureau of Indian Affairs.

Also, under the Settlement Agreement, the Navajo Nation's rights to water from the Navajo Reservoir water supply would include rights for the Navajo Indian Irrigation Project and rights for the depletion of up to 20,780 acre-feet per year from the San Juan River for uses in New Mexico under the Navajo-Gallup Water Supply Project. If rights are obtained within the State of Arizona for the use of 6,410 acre-feet per year of water as would be authorized under the proposed Settlement Act, then the total depletion from the San Juan River for Navajo Nation uses under the Navajo-Gallup Water Supply Project would be 27,190 acre-feet per year. Planning documents for the Project indicate that of

the 27,190 acre-feet of Navajo Nation uses, about 3,800 acre-feet would be diverted directly from Navajo Reservoir and the remainder would be diverted at the Project's San Juan River diversion near Kirtland and supplied by a combination of inflow arising below Navajo Dam and releases from Navajo Reservoir. Because inflows below Navajo Dam in most years will be available much of the year to meet the diversion needs of the Project at the San Juan River diversion near Kirtland, the demand for water from Navajo Reservoir for Navajo Nation uses under the Project may average approximately one-half the total demand for water for such uses.

The Navajo Nation may consider using its ground water rights or transferring a portion of its Navajo Indian Irrigation Project rights or other surface water rights for consumptive use at a new power plant consistent with the provisions of the Settlement Agreement.

Comment 9: The Navajo Nation should not be allowed to reuse return flows from the Navajo Indian Irrigation Project.

Response:

The Navajo Nation under the Settlement Agreement would be able to reuse irrigation tail water or other waste water to the extent that: (1) it recaptures the water before it escapes control and returns to the ground-water aquifer underlying the Navajo Indian Irrigation Project or natural surface water channels in the San Juan River Basin; or (2) it pumps ground water underlying the Project for the express purpose of maintaining the water table at a level below the root zone to prevent waterlogging damage to Project fields, as an alternative to the installation of tile drains and collection of tail water. Otherwise, once control of the water after use is lost and the water returns to a natural stream channel or aquifer via surface water discharge or seepage, the return flow is direct flow available for appropriation and diversion within priority. Under New Mexico State

Engineer File No. 3215, the Secretary of the Interior appropriated 500 cfs of direct flow with a priority date of 1968 to supplement storage from Navajo Reservoir to meet water deliveries under Navajo Reservoir water supply contracts, the source of the direct flow being natural flow of the San Juan River and its tributaries downstream from Navajo Dam plus seepage and return flows. To the extent that the Navajo Nation may reuse irrigation tail water or waste water on the Navajo Indian Irrigation Project, the entitlement of the Navajo Nation to divert water from Navajo Reservoir to supply the current beneficial use needs of the Project would be reduced accordingly, and any depletion of water resulting from reuse on the Project would be chargeable against the depletion right of the Project. Any diversion by the Navajo Nation from the groundwater aquifer underlying the Project that cannot be classified as reuse would be chargeable against the Nation's rights to divert ground water. Revisions were made to drafts of the Partial Final Decree to clarify this matter.

NAVAJO-GALLUP WATER SUPPLY PROJECT

Comment 10: The amount of water delivered outside the San Juan River Basin under the Navajo-Gallup Water Supply Project may be too large or increase later, and there is no return flow of exported water.

Response:

The Settlement Act would authorize deliveries of San Juan River Basin water to users in the Little Colorado River and the Rio Grande basins under the Navajo-Gallup Water Supply Project. The deliveries authorized are the water use demands of the Project participants projected to occur by 2040 based on the Project planning studies prepared by the Navajo Nation and the Bureau of Reclamation. Under the Settlement Agreement, the Navajo Nation would not be able to transfer its New Mexico consumptive use rights for the Project into Arizona, or vice-versa, but would be able to distribute and redistribute its New Mexico consumptive use rights for the Project within and between the San Juan River Basin and the other basins in New Mexico, and within and between the Navajo Reservoir and San Juan River diversion points for the Project. This provides flexibility in water management that the Navajo Nation may need in the future if the actual future population growth and community development patterns differ from the growth and development patterns assumed in the planning studies for the Project.

For example, actual population and economic growth on Navajo lands may concentrate in the Gallup and Shiprock regions, as opposed to being more uniformly distributed throughout the rural and urban areas of the Navajo reservation. For planning purposes, diversions for the uses under the Navajo-Gallup Water Supply Project that are not made within the local area of the San Juan River valley are considered to be full depletions of flow of the San Juan River whether the uses occur in the San Juan River Basin or other basins. This is why the diversion amount for Navajo Nation uses under the Project is not much greater than the Navajo Nation depletion right for the Project that

would be provided by the Settlement Agreement. If more use is made of the Navajo Nation's rights for the Project in the vicinity of Shiprock and the San Juan River valley, then more return flows will accrue to the river, likely below Shiprock, than is anticipated in the planning studies. Flexibility to divert more water from the San Juan River Basin than is planned would be limited, however, because the pipelines to be installed for the Project are to be sized for the amounts of water to be distributed to various locations in accordance with the Project planning studies.

Under the Project planning studies, the Navajo Nation's year 2040 water demands in the San Juan River Basin in New Mexico to be served by the Navajo-Gallup Water Supply Project are estimated to total about 13,230 acre-feet, and the Nation's water demands in the Little Colorado and Rio Grande basins in New Mexico to be served by the Project are estimated to total about 7,550 acre-feet. The Settlement Agreement does not attempt to quantify or adjudicate reserved or other rights that the Navajo Nation may have for the diversion and use of water in the latter two basins for its uses in those basins. Rather, the Settlement Agreement and Settlement Act provide for servicing from the San Juan River water demands that may be associated with such rights, as opposed to serving them from sources in the Little Colorado or Rio Grande basins. To the extent that the Navajo Nation uses its water rights under the Navajo-Gallup Water Supply Project to supply uses in other basins in New Mexico, some measure of protection may be afforded water uses in those basins, including uses made by the City of Gallup, against curtailment that might otherwise result from Navajo Nation reserved rights in those basins.

Questions arise as to the basis for claiming a reserved right from the San Juan River to service water rights that the Navajo Nation may have in the other basins. However, the Navajo Nation could claim reserved rights for municipal, domestic and other purposes for estimated water demands in the San Juan River Basin beyond the year

2040 as may be needed to provide for a permanent homeland, and the Settlement Agreement provides for the Navajo Nation to transfer the purposes and places of use of its water rights in New Mexico. Adjudicating a reserved right to the Navajo Nation for all its uses in New Mexico under the Navajo-Gallup Water Supply Project, however the Nation decides to distribute its Project water supply between the San Juan River Basin and other basins, is part of the negotiated settlement of the Nation's claims.

The uses of water under the Navajo-Gallup Water Supply Project by the Jicarilla Apache Nation and the City of Gallup would be made pursuant to the rights of the Jicarilla Apache Nation under the settlement contract approved by Congress as part of its water rights settlement. The City of Gallup would be required to obtain State Engineer and Interstate Stream Commission approval to supply its uses under the Project using any source other than a subcontract with the Jicarilla Apache Nation. The Settlement Act would limit the authorizations for participation in the Project by the Jicarilla Apache Nation and Gallup such that Project deliveries of water to uses by these two entities cannot exceed 1,200 acre-feet per year and 7,500 acre-feet per year, respectively. Any transfers of use of the Navajo Nation's contract rights must be consistent with the authorizations of the Settlement Act and the Settlement Agreement.

Comment 11: Sufficient analysis has not been made to indicate whether sufficient water is available for the proposed settlement, and primarily for the Navajo-Gallup Water Supply Project.

Response:

The New Mexico Interstate Stream Commission prepared a schedule of anticipated depletions of water from the San Juan River Basin in New Mexico through 2060. The depletion schedule is for planning purposes only and indicates average annual depletions anticipated to occur over time at future levels of development. The depletion schedule includes future municipal water development under the Animas-La Plata Project

and the Navajo-Gallup Water Supply Project, but does not speculate on the rates of transfer of irrigation uses to municipal uses over time in the Basin. Speculation on how much irrigation water rights will be converted and used for municipal purposes over time will not affect the total depletion in New Mexico, and hence, the conclusion that sufficient water is reasonably likely to be available to service the Navajo-Gallup Water Supply Project within New Mexico's Upper Colorado River Basin Compact apportionment. Nor does the depletion schedule anticipate how much water rights previously adjudicated under the Echo Ditch Decree will be found by the San Juan River Adjudication to be forfeited, abandoned or transferred to municipal uses. The depletions in the schedule in several instances represent less than full water rights depletions because irrigation practices and physical supplies may limit full use. For example, the Commission reasonably anticipates that lands with irrigation water rights within a geographic area or project will not be fully irrigated each and every year for various reasons, including crop rotations, failures in distribution systems and, in some instances, shortages.

The depletion schedule indicates that under a conservatively low estimate of New Mexico's Upper Colorado River Basin Compact apportionment, sufficient water is reasonably likely to be available to supply the Navajo-Gallup Water Supply Project uses in New Mexico. The Upper Basin apportionment is made of flow available at Lee Ferry, and the amounts of depletion shown in the depletion schedule are estimates at the places of use in New Mexico, which estimates exceed the depletions of flow at Lee Ferry caused by the uses. The depletions and New Mexico's apportionment shown in the depletion schedule do not factor in or apply salvage by use, which is the salvage or savings of river loss between the places of use and Lee Ferry. The apportionment shown in the schedule reflects the critical drought period of the 1950s and a conservatively high estimate of the

amount of water to be delivered by the Upper Basin to assist in meeting the Mexican Treaty delivery requirement on the Colorado River.

Also, the total diversion demand from the Navajo Reservoir water supply under existing long-term contracts is expected to amount to about 394,550 acre-feet per year, which is substantially less than the total diversion demand from the Navajo Reservoir supply originally contemplated by the Interstate Stream Commission and the Secretary of the Interior. The breakdown of the diversion demand is as follows: (1) up to about 337,500 acre-feet per year average for the Navajo Indian Irrigation Project as redesigned since passage of the Act for sprinkler irrigation, assuming each project acre is irrigated each year and the anticipated water conservation measures are implemented and effective; (2) 23,000 acre-feet for the Hammond Irrigation Project pursuant to contract; (3) 33,500 acre-feet for the Jicarilla Apache Nation under its settlement contract approved by Congress, which amount may be diverted above, at or below Navajo Reservoir; and (4) 50 acre-feet for Williams Gas Processing. The Navajo-Gallup Water Supply Project diversion demand of 29,060 acre-feet per year, including 6,410 acre-feet for use in Arizona but excluding 8,700 acre-feet per year for uses to be supplied under the Jicarilla Apache Nation settlement contract (including for the City of Gallup), would bring the total anticipated demand from the Navajo Reservoir water supply to about 423,610 acre-feet per year maximum; except, that this amount may be more nearly 405,000 acre-feet per year because roughly half the Navajo-Gallup Water Supply Project demand will likely be met from inflows arising below Navajo Dam. The total amount could increase by as much as 34,500 acre-feet per year if no water management improvements and no water conservation measures were implemented or realized on the Navajo Indian Irrigation Project, though this would require re-consultation with the Fish and Wildlife Service under section 7 of the Endangered Species Act regarding the

potential impacts of the Project on endangered fish populations and their critical habitat in the San Juan River.

The Public Service Company of New Mexico has a contract for water from the Navajo Reservoir Supply that expires at the end of 2005, after which the Company will receive water through 2027 under subcontract with the Jicarilla Apache Nation under its settlement contract. The City of Gallup also would subcontract for its share of Navajo-Gallup Water Supply Project water from the Jicarilla Apache Nation. The long-term average annual inflow to Navajo Reservoir, after San Juan-Chama Project diversions, is approximately 900,000 acre-feet per year, and Navajo Reservoir evaporation is expected to average about 27,700 acre-feet per year based on the September 2004 Biological Assessment for the Navajo-Gallup Water Supply Project that factors in both the Project demand and the operation of Navajo Reservoir in accordance with the preferred alternative described in the September 2002 draft Navajo Dam Operations Environmental Impact Statement (the Navajo Reservoir evaporation amount of 26,500 acre-feet indicated in the draft depletion schedules was revised upward to reflect the Biological Assessment). A small portion of the diversion demand for the Hammond Irrigation Project and large portions of the uses to be served by subcontracts with the Jicarilla Apache Nation and the Navajo-Gallup Water Supply Project will be met from inflows to the San Juan River arising below Navajo Dam.

The Settlement Agreement actually reduces risk of shortage to the San Juan-Chama Project and its contractors to a level lower than originally authorized because the total delivery demand on Navajo Reservoir storage would not be expected to exceed approximately 410,000 to 440,000 acre-feet per year under the settlement, as compared to 630,000 acre-feet per year permitted under New Mexico State Engineer File No. 2849 and to 508,000 acre-feet per year authorized by the Act of June 13, 1962, for diversion by

the Navajo Indian Irrigation Project. Transfers of rights from irrigation on the Navajo Indian Irrigation Project to other purposes, including transfers that would result in an increased diversion demand under the Project, would be subject to not impairing other water rights in New Mexico, including the San Juan-Chama Project. Further, in years when physical conditions are such that shortages are anticipated and allocated to the San Juan-Chama Project and the Navajo Reservoir water supply contractors pursuant to section 11 of the Act of June 13, 1962, and the Settlement Act, it is likely that in most, if not all, such years the flows physically available at the San Juan-Chama Project points of diversion will be less than the water allocated to the Project under the legislation anyway.

Comment 12: The schedule of anticipated depletions in the Upper Colorado River Basin in New Mexico is flawed because it does not include or consider full water rights, and because only diversions, not depletions, can be determined.

Response:

The New Mexico Interstate Stream Commission developed the depletion schedule for planning purposes based on realistic assumptions of anticipated use within the water rights in the San Juan River Basin, and the schedule indicates that sufficient water is reasonably likely to be available to supply the Navajo-Gallup Water Supply Project uses in New Mexico under New Mexico's Upper Colorado River Basin Compact apportionment through at least 2060. The depletion schedule provides information for the Secretary of the Interior's consideration, and is not a part of the settlement documents. Neither the Commission nor the State Engineer propose use of the depletion schedule for water rights administration, and the schedule is not binding on any party. The depletion schedule does not define, adjudicate or otherwise limit the water rights in the Basin.

Water users may fully exercise their water rights as conditions warrant. For example, while reasonable planning would consider that irrigation ditches and projects

typically do not irrigate each water right acre each and every year, this does not suggest that fields fallow one year do not retain their water rights or that the water users on a ditch do not have the right to irrigate every water right acre in a given year if they choose to do so consistent with their rights and water is physically available. But, it is common for some amount of acreage to be not irrigated for all or portions of an irrigation season due to failures in water delivery systems, planned crop rotations or fallowing, conservation reserve programs, hail damage, shortages or other reasons. Also, stock pond evaporation depletions in the schedule are estimated assuming that existing ponds are not 100 percent full all the time, but pond owners may refill their ponds as often as water is available in accordance with their rights.

In addition, while over 70 years of hydrology data through the year 2000 at the points of diversions for the San Juan-Chama Project and operational limitations indicate that the Project over the long-term will be able to divert approximately 105,200 acre-feet of water per year, on average, the Project may divert less or more than this amount in any one year or over any specific ten-year period, up to an average of 135,000 acre-feet per year over ten years. The San Juan-Chama Project depletion amount of 107,500 acre-feet per year indicated in drafts of the depletion schedule was revised downward to 105,200 acre-feet per year to reflect the Bureau of Reclamation's updated analysis for the Project that was recently prepared using an extended period of hydrologic record that now includes data from 1994 through 2000. The long-term average depletion for the Project would be reduced further to about 103,100 acre-feet per year if the period of record was extended through 2004 because of poor water supply availability after 2001; however, the long-term average depletion also could increase somewhat after 2004 if future hydrology is favorable.

The compact apportionment to New Mexico is of beneficial consumptive use computed or measured at Lee Ferry, not diversions or paper water rights. Consumptive uses, or depletions, can be determined reliably from diversion and return flow data or empirical techniques, such as may be used to compute consumptive irrigation requirements for hydrographic surveys and water rights adjudications. Because water rights are often not fully utilized, water rights may exceed actual uses. For example, although it may be anticipated that the Navajo Nation pursuant to a hydrographic survey may be adjudicated approximately 10,000 acre-feet of depletion rights at various sites of use for historic and existing uses on Navajo lands in areas of New Mexico that are tributary to the San Juan River and outside the San Juan River valley, consideration of locations of use, physical lack of available water supplies and other factors suggest that the actual depletions will be significantly less than the full amount of depletion right. The depletion schedule includes at-site depletions for current Navajo irrigation uses (shorted for lack of water availability), livestock uses, and recreational lake and stockpond evaporation within the Chaco River drainage, and the impacts of these uses on the flow of the San Juan River would be less than the at-site depletions due to salvage by use on ephemeral tributaries. If the full water rights were used to project average annual depletions, it would guarantee that some of New Mexico's Upper Basin apportionment would remain unused and that the unused water will continue to flow downstream for use in the Lower Basin.

If the direct flow available at any time is insufficient to supply current beneficial use demands of all rights on the San Juan River stream system, the water that is available will be distributed in accordance with priority dates. Under the Settlement Agreement, the Navajo Indian Irrigation Project and the Navajo-Gallup Water Supply Project would be allowed to divert direct flow supplied under New Mexico State Engineer File No.

2849 with a priority date of June 17, 1955, for water originating in the drainage of the San Juan River above Navajo Dam and File No. 3215 with a priority date of December 16, 1968, for inflow to the San Juan River arising below Navajo Dam, as available, and will be allowed to receive supplemental water from Navajo Reservoir storage as available. A determination that sufficient water is reasonably likely to be available to service the Navajo-Gallup Water Supply Project is not a guarantee that water will be physically available each and every year to meet all the Project demands without any shortages. The subordination of Navajo Nation reserved rights claims to the indicated junior priority dates would protect water users with more senior priority dates.

For more information on the depletion schedule, including a list of changes made to drafts of the schedule, see both the December 10, 2004, memorandum from John Whipple to Philip Mutz on the Revised Upper Colorado River Basin Depletion Schedule for New Mexico and the evaluation of depletions provided in Appendix B.

Comment 13: The depletion schedule should itemize the 8,900 acre-feet identified for current municipal and industrial uses, include the City of Farmington's trust rights, and provide consideration to a water supply to meet non-Navajo future municipal uses.

Response:

It is not necessary for purposes of the depletion schedule to identify the components of the average annual municipal and industrial depletions in the San Juan River Basin as of 1990 conditions. Nevertheless, based on records of the Office of the State Engineer, including meter readings submitted by municipalities in the Basin, component amounts of depletion for the year 1990 are estimated as: (1) 7,200 acre-feet by the City of Farmington; (2) 750 acre-feet by the City of Aztec; (3) 500 acre-feet by Lower Valley Water Users Association; (4) 300 acre-feet by the City of Bloomfield; (5) 300 acre-feet by the Shiprock Navajo Tribal Utility Authority; (6) 150 acre-feet by

Dulce; and (7) 500 acre-feet in the aggregate by other water user associations. The total of the municipal and industrial depletions in the Basin based on the above 1990 data tabulation is about 9,700 acre-feet, which includes some amount of transfer of irrigation uses to municipal uses after 1965 that was not intended to be reflected in the depletion schedule. Also, the 1990 data suggest that some incorporation of scattered rural domestic uses into public water supply systems has occurred since 1965 with urbanization.

The December 5, 2003, draft depletion schedule was revised to increase the 1990 municipal and industrial depletion amount from 8,900 acre-feet in the December 5, 2003, draft depletion schedule to 9,700 acre-feet, and to reduce the rural domestic uses from 1,400 acre-feet in the December 5 draft to 1,000 acre-feet. The net effect of the revisions is to increase the total depletion by 400 acre-feet per year. The depletion estimate in the December 5, 2003, draft schedule was based on 1965 uses in the San Juan River Basin in New Mexico and a projected increase in average municipal water demand of 5,000 acre-feet per year of depletion for the Farmington area after 1965, and was generally confirmed by the Office of the State Engineer data for 1990. The draft depletion schedules also were revised to include 300 acre-feet of depletion pursuant to existing industrial diversions at Shiprock that were not included within the municipal and industrial uses described above.

Of the amount of municipal and industrial depletions described above, the City of Farmington municipal water supply system in 1990 supplied an estimated 7,200 acre-feet for uses by the City (excluding bulk water sales), 300 acre-feet for domestic uses by Shiprock Navajo Tribal Utility Authority served by Farmington bulk water sales, and about 400 acre-feet for uses by the Lower Valley and Upper La Plata water user associations served by Farmington bulk water sales. The total depletion in the schedule associated with the City's municipal use rights, without consideration of irrigation rights

transfers, is thus estimated at about 7,900 acre-feet. The maximum amount of diversion into the City's water supply system allowed under the City's current municipal use rights is 10,820 acre-feet, which includes 3,620 acre-feet pursuant to rights adjudicated to the City of Farmington for municipal and domestic water supply by the Echo Ditch Decree and 7,200 acre-feet pursuant to New Mexico State Engineer File No. 2995. Assuming a 30 percent return flow, which is conservatively low under current conditions but would reflect future conditions after completion of Farmington's Bluff View power plant with wastewater reuse at the plant for cooling purposes, it is anticipated that future depletions pursuant to the City's current municipal use rights would be less than 7,600 acre-feet per year. The average annual evaporation from Farmington Lake would add 300 to 400 acre-feet of depletion per year, resulting in an average annual depletion of about 7,900 to 8,000 acre-feet per year under the City's current municipal use and storage rights.

Therefore, for planning purposes, the amount of depletion in the depletion schedule for City of Farmington municipal and domestic uses in 1990 and 2060 is consistent with the use of water under the municipal use rights currently owned by the City without consideration of transfers of irrigation rights to municipal use. Similarly, the depletion amounts included in the depletion schedule for the cities of Aztec and Bloomfield exceed municipal use rights owned by the two cities that do not derive from the transfer of previously decreed, permitted or licensed irrigation rights. Additional municipal and domestic uses in the San Juan River Basin will be supplied under the Animas-La Plata Project, the Navajo-Gallup Water Supply Project, and transfers of water rights from irrigation uses.

Irrigation rights owned by the cities that may be transferred to municipal water supply include about 1,755 acres of water rights decreed to the City of Farmington in trust for irrigation uses by owners of specific lots and parcels of land situated within the

corporate limits of the City, about 144 acres of water rights decreed to the City of Aztec for irrigation and domestic uses on 604 parcels of land within the City limits, and other irrigation rights acquired by Farmington, Aztec and Bloomfield, some of which have already been transferred to municipal use. Farmington has expressed particular concern as to whether its “trust” rights are included in the depletion schedule. The Echo Ditch Decree in 1948 adjudicated water rights for a total of 17,438 acres for all irrigation uses served by diversions from the Animas River, including uses under the City of Farmington’s “trust” rights and excluding uses under the Farmers Mutual Ditch. After entry of the Decree, the State Engineer issued permits for irrigation of an additional 332 acres from the Animas River, excluding acreage under the Farmers Mutual Ditch, bringing the total water rights acreage within the Animas River geographic area to about 17,770 acres. Tabulations of acreage in New Mexico irrigated from the Animas River, excluding acreage under the Farmers Mutual Ditch, by 1965 amounted to a total of 16,400 acres, including 800 acres of fallow and idle lands (5 percent fallow acreage). Mathematically, it can be concluded that some portion, if not all, of the Farmington “trust” right lands must be included within the 16,400 acres, though backup data is not available to perform a tract-by-tract analysis.

The depletion schedule includes depletions for the 15,600 acres irrigated as of 1965 per the Comprehensive Framework Study, which assumes that 5 percent of the total acreage of 16,400 acres is fallow in any year consistent with fallowing assumptions in the depletion schedule for other projects. Assumptions of fallowing within a large geographic area do not imply that fallowing rotations or other farm management practices result in forfeiture or abandonment of water rights. Neither the Comprehensive Framework Study nor the depletion schedule determine the disposition of irrigation water rights, including any transfers of rights to municipal uses or changes in ownership of

rights, between entry of the Echo Ditch Decree in 1948 and 1965 or between 1965 and 2060. However, field surveys of irrigated cropland within the Animas River geographic area conducted by the Interstate Stream Commission indicate that the total cropland acreage declined to about 7,300 acres by 1994 and 6,200 acres by 2003, and that the cropland acreage irrigated was about 6,000 acres in 1994, 5,000 acres in 2000 and 5,600 acres in 2003. The field surveys did not include residential yard and garden acreages within city limits or subdivisions that are irrigated from ditches rather than municipal or domestic water supply systems.

The depletion schedule does not speculate as to whether any irrigation rights, including the City of Farmington's "trust" rights, may be determined in the San Juan River Adjudication to be forfeited for non-use since 1948 or other lawful cause. The State Engineer is in the process of performing a hydrographic survey that will form the basis for evaluating the use of water under rights in the San Juan River Basin since entry of the Echo Ditch Decree or since the acquisition of permits or licenses to use water. Factors that may be considered in the Adjudication to quantify Farmington's "trust" rights include the identification of the lots and parcels of land for which the rights were adjudicated by the Echo Ditch Decree, the lots and parcels that could not be or have not been irrigated since 1948, and the lots and parcels for which individuals were also decreed irrigation water rights for the same land. The Office of the State Engineer and the City of Farmington are discussing a resolution of the quantification of the City's "trust" rights for the San Juan River Adjudication. Nevertheless, the Animas River drainage irrigation depletion amount included in the depletion schedule and based on a total acreage of 16,400 acres, with 5 percent fallow acreage in any year, appears sufficient to cover uses under Farmington's "trust" rights as well as other irrigation rights

owned by the cities, including those rights that already have been transferred to municipal uses.

SHARING OF NAVAJO RESERVOIR WATER SUPPLY

Comment 14: The shortage sharing provisions of the Act of June 13, 1962, provide only for sharing of the available supply with the San Juan-Chama Project and the Navajo Indian Irrigation Project.

Response:

Section 11 of the Act of June 13, 1962, provides a formula for allocating the supply available above Navajo Dam to the San Juan-Chama Project and contractors of the Navajo Reservoir water supply. The formula allocates to the San Juan-Chama Project and all Navajo Reservoir water supply contracts in New Mexico the direct flow available at Navajo Dam based on pro-rata shares. In addition, the formula allocates to the Navajo Reservoir water supply contracts that take delivery at or below the dam for uses in New Mexico the water previously stored in the reservoir and then available for use. Similarly, the contractors of the San Juan-Chama Project supply have exclusive use of water stored in Heron Reservoir.

Section 11 of the Act of June 13, 1962, also explicitly authorizes the Secretary of the Interior to enter into long-term contracts for the delivery of water from the Navajo Reservoir water supply in addition to providing water for the San Juan-Chama Project and the Navajo Indian Irrigation Project; provided, that the Secretary has determined by hydrologic investigation that sufficient water is reasonably likely to be available for use within the Upper Colorado River Basin Compact apportionments to fulfill the contract and that Congress approves the contract. The Act requires that the Secretary not enter into contracts for a total amount of water beyond that which, in his judgment, in the event of shortage, will result in a reasonable amount being available for the diversion requirements of the two projects as specified in the Act. Section 11 of the Act of June 13, 1962, thus provides for sharing of the available supply at Navajo Dam with the San Juan-Chama Project, the Navajo Indian Irrigation Project and other contract uses from the

Navajo Reservoir water supply. In addition, a shortage to the diversion of water from the San Juan River Basin by the San Juan-Chama Project does not necessarily result in a shortage to deliveries to Project contractors below the Project's regulating storage at Heron Reservoir.

The December 5, 2003, draft Settlement Act was amended by adding section 403 to the July 9, 2004, draft to clarify how the Navajo-Gallup Water Supply Project uses would be treated under shortage conditions. Section 11 of the Act of June 13, 1962, provides for allocations of the Navajo Reservoir water supply when the supply is anticipated to be insufficient to meet the demands on the supply. Some of Navajo-Gallup Water Supply Project demands in both New Mexico and Arizona can be met from inflows to the San Juan River arising below Navajo Dam under New Mexico File No. 3215; and to that extent, such demands do not constitute demands on the Navajo Reservoir water supply, would not be included in the normal diversion requirements under section 11 of the Act, would not be allocated portions of the shortages, and would not be allocated water from the Navajo Reservoir water supply. If the Secretary determines an amount of shortage in the reservoir water supply in any year, the uses in the State of Arizona to be supplied from the reservoir supply would be shorted either in part or in full up to the amount of shortage, and the remaining shortage, if any, would be allocated to the San Juan-Chama Project and other Navajo Reservoir water supply uses in accordance with section 11.

In addition, the December 5, 2003, draft Settlement Act was amended by adding section 404 to the July 9, 2004, draft to provide approval for the Navajo Nation, during times of physical shortage in the Navajo Reservoir water supply, to temporarily forbear the delivery of water from the reservoir under the Navajo Indian Irrigation Project to allow the delivery of an equivalent amount of water for the Navajo-Gallup Water Supply

Project uses in Arizona. The purpose of the forbearance is to protect the Nation's municipal and domestic water supply authorized by the Settlement Act for use in and near its capital city against substantial curtailment during times of severe drought in the San Juan River Basin. Water delivered into Arizona for Navajo-Gallup Project uses pursuant to section 404 of the Settlement Act could not be leased to third parties or used for other purposes. All uses in Arizona under the Navajo-Gallup Water Supply Project, including pursuant to section 404, must be accounted against the State of Arizona's compact apportionment. The provisions of section 404 of the Settlement Act allow the Navajo Nation to protect Project uses in Arizona without affecting rights of other water users in New Mexico to receive and use water, and therefore, maintain consistency with Article IX of the Upper Colorado River Basin Compact.

Appendix C provides an example situation to illustrate how the Secretary of the Interior under a shortage condition might apportion the runoff above Navajo Dam to the Navajo Reservoir water supply contractors and the San Juan-Chama Project in accordance with the formula for allocating anticipated shortages in water supply under the provisions of section 11 of the Act of June 13, 1962, and sections 403 and 404 of the Settlement Act.

Comment 15: The San Juan-Chama Project is sufficiently shorted by the bypass requirements at the points of diversion under section 8 of the Act of June 13, 1962, and should be excluded from the shortage sharing requirements of section 11 of the Act.

Response:

The formula for allocating anticipated shortages in water supply under section 11 of the Act of June 13, 1962, reflects the fact that New Mexico State Engineer File No. 2847 for the diversion of water by the San Juan-Chama Project and State Engineer File No. 2849 to provide for storage at Navajo Reservoir to make water available for the

diversion of up to 630,000 acre-feet of water per year for irrigation, power and domestic purposes have an equal priority date of June 17, 1955. Because the uses in New Mexico share the same priority date, they share in the direct flow available to that priority date. Also, the Hammond Irrigation Project (File No. 2848) has an equal June 17, 1955, priority date. The Jicarilla Apache Nation's settlement contract is serviced under File No. 2849. Section 11 of the Act provides for a sharing in the water supply available above Navajo Dam based on the anticipated annual supply, as opposed to a sharing of the available direct flow on a daily basis as would need otherwise occur under state water rights administration. The December 5, 2003, draft Settlement Act was modified to reiterate that any shortages determined pursuant to section 11 of the Act would not be imposed on the San Juan-Chama Project on a daily basis, and provides that the authorized average annual diversion demand of 135,000 acre-feet per year for the Project would be used as the normal diversion demand in the formula for allocating anticipated shortages under section 11 of the Act.

The San Juan-Chama Project is required by section 8 of the Act of June 13, 1962, to maintain minimum bypass flows at the points of diversion to protect downstream rights and fish habitats in Colorado. Because the direct flow physically available for diversion at the Project's headworks fluctuates each year, it is not meaningful to argue that there is a shortage or a surplus in any year in which the actual diversion by the Project is less than or greater than, respectively, the average annual diversion that may be expected for the Project based on long-term hydrology. Rather, the Project is designed to divert direct flow when available into storage at Heron Reservoir in the Rio Grande Basin, where the stored water, less reservoir losses, then becomes available for release from Heron Dam to meet an annual firm yield of 96,200 acre-feet below the dam for delivery to Project uses.

The San Juan-Chama Project contractors in the Rio Grande Basin have not experienced a delivery shortage under their contracts to date because Heron Reservoir has filled during periods of excess diversions by the Project into reservoir storage, and has been drawn down to meet contract deliveries during the recent drought. Similarly, the Navajo Reservoir water supply contractors in the San Juan River Basin have not experienced a delivery shortage under their contracts to date because Navajo Reservoir has filled during periods of excess direct flow available for diversion into storage, and has been drawn down to meet contract deliveries during the recent drought. The capture of water for storage during times of plenty and the operation of reservoirs to meet contracts in both instances are as designed.

SAN JUAN RIVER IRRIGATION PROJECTS

Comment 16: Both Navajo and non-Navajo irrigation ditches on the San Juan River, and non-Navajo communities and water users in the Basin, should be allowed to store water in Navajo Reservoir and receive delivery of stored water.

Response:

Pursuant to section 11 of the Act of June 13, 1962, a water user must have a contract for the delivery of water from the Navajo Reservoir water supply to have access to storage in the reservoir, and such a contract must be approved by Congress and comply with federal environmental laws. With the Settlement Agreement, there is no identified yield available within New Mexico's Upper Colorado River Basin Compact apportionment for additional long-term water supply contracts. Also, it is not clear as to what capability there might be for irrigators to pay for water from the Navajo Reservoir supply. In any event, the Navajo Nation and the Jicarilla Apache Nation both would have the right to enter long-term or short-term subcontracts for the transfer and delivery of their Navajo Reservoir supply water to irrigators on San Juan River ditches or other users, pending approval of any water rights transfer by the State Engineer. In addition to the two Indian nations, the Hammond Conservancy District and Williams Gas Processing have long-term contracts.

The only new contractual allocation of Navajo Reservoir water supply that is made by the Settlement Agreement is for Navajo Nation uses under the Navajo-Gallup Water Supply Project. Other uses under the Project are provided through the Jicarilla Apache Nation's settlement contract already approved by Congress. The new contractual allocation for Navajo Nation uses under the Project does not impact or impair the rights of the San Juan River irrigation ditches or other water users to divert the direct flow in priority.

A suggestion has been made that ditches or other water users might store water in Navajo Reservoir during the winter months in leased storage capacity space that might temporarily be made available so as to create storage reserves for the upcoming irrigation season. Rights to divert the direct flow of the San Juan River for irrigation during the irrigation season would need to be transferred to storage for irrigation or other uses with a different seasonal pattern of direct flow depletions that would result from diverting water into reservoir storage for later use, subject to not impairing the storage right of the United States for Navajo Reservoir or other water rights in New Mexico. The recent drought makes clear that the United States needs to divert into storage as much water as possible using the entire existing active storage capacity to be able to meet water delivery demands during extended periods of drought before direct flow could be allocated to a storage space of a non-contractor.

Nevertheless, the December 5, 2003, draft Settlement Act was revised to provide for the establishment of a top water bank within vacant storage space in Navajo Reservoir, subject to the Bureau of Reclamation and the New Mexico Interstate Stream Commission developing conditions, parameters and procedures governing the storage, accounting and release of water in the top water bank in a manner that does not impair the Secretary of the Interior's ability to deliver water under Navajo Reservoir water supply contracts. The opportunities for placing water in the water bank may be limited, however, because water rights with priority dates senior to the Navajo Dam priority under New Mexico State Engineer File No. 2849 must be transferred to the bank in sufficient quantities to effectuate a reduction in releases from the reservoir, thus providing actual reductions in the downstream demand for direct flow at the dam which then can be stored in priority.

The desires of San Juan River direct flow users for access to storage in Navajo Reservoir stem from their desires to have an alternate water supply in the event of curtailment of their direct flow water rights under a priority administration on the river. The December 5, 2003, draft Settlement Agreement was revised to address this matter. Under the Settlement Agreement, the Navajo Nation would agree to not request priority calls to satisfy the reserved rights for the Fruitland-Cambridge and Hogback-Cudei irrigation projects at times when the direct flow is insufficient to meet all water demands on the river from the direct flow. Rather, the Navajo Nation at such times alternatively would provide up to 12,000 acre-feet of water in any year to meet the Fruitland and Hogback project demands from its contract rights for water from the Navajo Reservoir supply for the Navajo Indian Irrigation Project (the annual limit of 12,000 acre-feet in the Settlement Agreement is a decrease from the 15,000 acre-feet indicated in the July 9, 2004, draft Settlement Agreement). The Settlement Agreement thus would provide for storage water to be delivered directly to the Navajo ditches on the San Juan River when needed, and for non-Navajo uses on the river to receive indirectly and without cost the benefits of continued use of the direct flow with a substantial reduction in the risk of shortage. Based on past hydrology and assuming that the Fruitland-Cambridge and Hogback-Cudei irrigation project rights are being fully utilized, the alternate water source provisions of subparagraph 9.2 of the Settlement Agreement would reduce the occurrences of shortages to direct-flow users pursuant to priority calls from approximately one year in two, on average, to about one year in twenty, on average. A study of the effects of the alternate water source provisions of subparagraph 9.2 on water released from Navajo Dam for this purpose and on residual shortages remaining to be addressed via priority administration or cooperative agreements is provided in Appendix D. Also, the potential top water bank could be used to provide storage in the event of

shortage for those users willing and able to pay for the costs of water rights acquisition and storage.

Comment 17: Priorities of reserved rights for the Navajo irrigation projects should not all be 1868; rather, the priority dates for irrigation uses should reflect the actual dates that lands were reserved for the Navajo people or that irrigation uses were historically made.

Response:

The Navajo Nation argues that it may be able to make aboriginal claims to the use of water in the San Juan River Basin based on pre-historic and historic irrigation predating any Navajo treaties or reservations of land. Also, it could be argued that the date used to establish priorities for reserved rights would be when the United States first promised the Navajos a permanent homeland, with all rights relating back to the Treaty of 1849 between the United States and the Navajos. The 1868 Treaty established the Navajo Indian Reservation as a permanent homeland.

Some of the agricultural lands within the Fruitland-Cambridge Irrigation Project were set aside in 1868 as part of the original reservation, and some were set aside in 1884 or later. Construction of the Fruitland project canal to replace and consolidate smaller irrigation ditches on Navajo lands began in 1937. Construction of the Hogback project canal began in 1903, and New Mexico State Engineer File No. 758, filed in 1913, provides for a diversion of 110 cfs for irrigation on the project. Some of the acreage under the Hogback project canal may not have been irrigated prior to construction of the canal beginning 1903 or prior to extension of the canal in the early 1960s, but all lands under the Hogback project were part of the original reservation. The Cudei project, which is entirely on lands on the original reservation, was constructed in 1900, and was connected to the Hogback project canal in 2002. The amounts of acreage in the proposed settlement for the Fruitland-Cambridge and Hogback-Cudei irrigation projects, 3,335

acres and 8,830 acres, respectively, are the amounts of acreage under each project that currently are allotted by the Navajo Nation to its members for farming purposes.

The existing acreage under both irrigation projects may be considered to be practicably irrigable. The US Supreme Court in *Arizona v. California* established practicably irrigable acreage as a standard for determining reserved water rights for lands set aside as permanent homelands for Indian tribes. Both projects are gravity flow systems within the San Juan River valley, and all or most acres specified in the Partial Final Decree are believed to have been irrigated historically at one time or another. Under the Settlement Agreement, the Navajo Nation would waive practicably irrigable acreage reserved right claims from the San Juan River outside the current service areas of the projects. Subsection 11(c) of the Act of June 13, 1962, could otherwise allow direct flow of the San Juan River at Navajo Dam to be made available to the Navajo Nation for irrigation of an additional 11,000 acres on the Fruitland-Cambridge and Hogback-Cudei irrigation projects over and above the project acreage then existing, and the Congressional record on the Act makes reference to a total combined acreage for the projects of 26,000 acres after possible expansion (see Senate Report No. 2198). The Navajo Nation staff reports that a consultant to the Nation identified up to about 37,000 acres of land, in addition to the 12,165 acres existing under the Fruitland-Cambridge and Hogback-Cudei irrigation projects included in the Settlement Agreement, which might be irrigable in the vicinity of the San Juan River and in the area of New Mexico near and between Shiprock and Four Corners; but, a copy of the consultant report for legal reasons has not been released to Interstate Stream Commission staff for review.

The Settlement Agreement considers the water rights for the Fruitland-Cambridge and Hogback-Cudei irrigation projects as federal reserved rights, and settles the rights for the projects based on current project lands without practicably irrigable acreage claims.

As reserved rights, the amounts and priorities of the water rights for the projects are not subject to the same historic beneficial use standards that apply to the adjudication of non-reserved rights under state law. Nevertheless, a compromise was negotiated for the reserved rights of each project wherein the maximum rates of diversion for each project would be less than the reported historic diversion rates. The rights of the Navajo Nation to divert water for the two projects at any time would be further limited to the amounts of water needed for current beneficial use. Additional water could be diverted for carriage water for the projects, if needed because of maintenance or efficiency problems, at such times as the State Engineer determines that direct flow is available for diversion without impairment to non-Navajo Nation water rights in New Mexico.

Comment 18: The Fruitland and Hogback irrigation projects should be hydrosurveyed and have the same per acre consumptive irrigation requirements and farm duties as non-Navajo irrigation ditches.

Response:

The Settlement Agreement would resolve the reserved water rights claims of the Navajo Nation for practicably irrigable acreage from the San Juan River. Reserved rights are not subject to abandonment or forfeiture for non-use, so a hydrographic survey of historic and existing irrigated acreage on the Fruitland-Cambridge and Hogback-Cudei irrigation projects is not needed or appropriate for defining the water right acreages for the projects. Still, lands included in the Settlement Agreement for the two projects are believed to have been irrigated historically and currently are allotted by the Navajo Nation to members for farming purposes.

The annual diversion and depletion rights for the Fruitland-Cambridge and Hogback-Cudei irrigation projects proposed in the December 5, 2003, draft Settlement Agreement were revised to reflect consistency with the annual irrigation demands determined in the 1938 Hydrographic Survey conducted by the State Engineer

preparatory to the 1948 Echo Ditch Decree. The 1938 Survey computed for the Farmers Mutual and Jewett Valley ditches a consumptive irrigation requirement of about 2.0 acre-feet per acre per year based on the Lowry-Johnson method (which yields results similar to the original Blaney-Criddle method), a farm duty of about 3.2 acre-feet per acre per year (which was adjudicated by the Echo Ditch Decree), and a diversion requirement of about 5.3 acre-feet per acre per year. The consumptive irrigation requirement was found by the 1938 Hydrographic Survey to be about 1.8 acre-feet per acre per year near Archuleta, 1.9 acre-feet per acre per year near Bloomfield, and 2.0 acre-feet per acre per year near Kirtland. Extrapolating the three requirements based on a downstream progression of distance to Shiprock suggests a consumptive irrigation requirement of about 2.0 acre-feet per acre per year for the Fruitland-Cambridge Irrigation Project and about 2.1 acre-feet per acre per year for the Hogback-Cudei Irrigation Project. These amounts are similar to, but more uniform between projects than, the irrigation requirements of 1.94 acre-feet per acre per year and 2.16 acre-feet per acre per year at the locations of the Fruitland and Shiprock weather stations, respectively, shown in the interpolations and extrapolations of lines of equal irrigation requirement at page 19 of the report of hydrographic survey approved by the Echo Ditch Decree. It is not clear what cropping pattern was used to derive the irrigation requirement at the Shiprock weather station because Navajo lands were not included in the 1938 Hydrographic Survey. Applying an irrigation efficiency of 63 percent and a canal efficiency of 60 percent, as used for the Farmers Mutual and Jewett Valley ditches in the 1938 Hydrographic Survey, to the extrapolated consumptive irrigation requirements for the projects yields diversion requirements of 5.3 and 5.6 acre-feet per acre per year for the Fruitland-Cambridge and Hogback-Cudei irrigation projects, respectively. The per annum reserved 1868 priority

diversion rights for the two projects were increased to reflect these per acre diversion requirements.

Under the Settlement Agreement, the Navajo Nation would be adjudicated rights computed based on the total depletions under the Fruitland-Cambridge and Hogback-Cudei irrigation projects. Total depletion includes both the consumptive irrigation requirement and incidental depletions. Unlike non-Navajo ditches where individual irrigators have water rights for application of water on their fields and the ditches have carriage water to cover canal losses, including incidental depletions in the delivery of water to the irrigators, the Navajo Nation, not individual Navajos doing the farming, is the water right owner on behalf of its members. Therefore, the Settlement Agreement provides that the Navajo Nation would be entitled to the full amounts of depletion by the two projects as part of its water budget. This is consistent with the Jicarilla Apache Nation's rights in its water rights settlement in the San Juan River Basin, and with rights of BHP-Billiton and other parties that have rights for all the consumptive use or depletion under one diversion. However, the draft Settlement Agreements were revised to include also a farm delivery requirement, or farm duty, for the Fruitland-Cambridge and Hogback-Cudei irrigation projects consistent with the rights adjudicated by the Echo Ditch Decree.

Using consumptive irrigation requirements of 2.0 and 2.1 acre-feet per acre per year for the Fruitland-Cambridge and Hogback-Cudei irrigation projects, respectively, and assuming an incidental depletion factor of 16 percent, the computed total depletions for the projects are about 2.32 and 2.44 acre-feet per acre per year, respectively. If the per annum depletion rights for the two projects strictly reflected these per acre depletion rates, the Fruitland-Cambridge project depletion would decrease by about 230 acre-feet per year (3% decrease) and the Hogback-Cudei project depletion would increase by about

410 acre-feet per year (2% increase) compared to the December 5, 2003, draft settlement. Instead, the Fruitland-Cambridge project depletion was not revised and the net increase of 180 acre-feet per year in the aggregate depletion for the two projects combined was applied to the Hogback-Cudei project, resulting in average annual depletions of 2.39 and 2.41 acre-feet per acre per year for the two projects, respectively. Under the Settlement Agreement, diversions for irrigation uses within the two projects also would be subject to a computed farm delivery requirement, or farm duty, of 3.3 acre-feet per acre per year (computed assuming a 2.07 acre-feet per acre weighted consumptive irrigation requirement for the two projects and a 63 percent irrigation efficiency).

The Settlement Agreement would permit the Navajo Nation to transfer depletions from the Fruitland-Cambridge and Hogback-Cudei irrigation projects to other uses. While not explicit in the Settlement Agreement, if the Navajo Nation fallows land under the projects to effectuate a transfer, the Nation would be limited to transferring the consumptive irrigation requirement and possibly some amount of on or below farm incidental depletion because transferring rights to a limited amount of acreage on a ditch does not effectively reduce the incidental depletions on the ditch associated with the distribution of water through the canal system and the discharge of water through wasteways. Also, the Navajo Nation would be responsible for monitoring and managing its crop patterns and its irrigation systems and deliveries, in addition to its non-irrigation uses, to stay within the depletions and water budget adjudicated to the Nation. On the other hand, irrigators on a non-Indian community ditch, irrigation district or irrigation project may apply their farm duty regardless of actual depletion, and are limited in the transfer of fallowed water rights acreage to the transfer of the consumptive irrigation requirement.

The Settlement Agreement also provides that the depletion and diversion rights of the Navajo Nation for the Fruitland-Cambridge and Hogback-Cudei irrigation projects, including the farm delivery requirement, would be increased if in the San Juan River Adjudication the Court determines annual per acre consumptive irrigation requirements, farm delivery requirements and diversion requirements for irrigation uses on non-Navajo ditches that exceed those determined for those uses by the 1938 Hydrographic Survey and adjudicated by the Echo Ditch Decree. The Court might do so if it adopts a different methodology for determining non-Navajo irrigation rights (for example, based on application of the modified Blaney-Criddle method or more recent cropping patterns). However, a decision by the Court to not revise the annual per acre amounts for non-Navajo ditches adjudicated in the Echo Ditch Decree would expedite the San Juan River Adjudication and may result in increased protection of Echo Ditch Decree rights via both avoidance of possible increases in Navajo ditch rights and preservation of the Navajo Reservoir water supply to maintain the ability of the Navajo Nation to provide alternate water supply to the Navajo ditches, both of which would limit the occurrences of priority calls and provide more certainty to Echo Ditch Decree rights. Nevertheless, the Settlement Agreement would not bind the Court as to how to proceed in the Adjudication.

Comment 19: The Fruitland and Hogback irrigation projects should have a maximum instantaneous diversion rate of one cfs per 40 acres of water right consistent with the maximum instantaneous diversion rates adjudicated in the Echo Ditch Decree for non-Navajo irrigation ditches.

Response:

The Navajo Nation was not a party to the Echo Ditch Decree. The Bureau of Indian Affairs estimates that current canal conditions require a diversion of 100 cfs for the Fruitland-Cambridge Irrigation Project for the currently irrigated acreage, and that a

diversion of up to 225 cfs for the full Hogback-Cudei Irrigation Project acreage would be needed to meet peak irrigation demands after rehabilitation of the Project. Historic diversion rates for each project are reported or estimated to have exceeded the Bureau of Indian Affairs' estimates. The Settlement Agreement provides for reserved 1868 priority rights for the diversions by both projects. Alternatives proposed by non-Navajo irrigators include a diversion rate for the Fruitland-Cambridge Irrigation Project of 83 cfs with an 1868 priority and diversion rates for the Hogback-Cudei Irrigation Project of 115 cfs with an 1868 priority plus 110 cfs with a 1909 priority.

Using a standard of one cfs per 40 acres of water right, the diversion rate to irrigate 3,335 acres on the Fruitland-Cambridge Irrigation Project would be 83.4 cfs and the diversion rate to irrigate 8,830 acres on the Hogback-Cudei Irrigation Project would be 220.8 cfs. While the Echo Ditch Decree adjudicated one cfs per 40 acres to most non-Indian ditches in the Basin, principally on the Animas and San Juan rivers, many of the ditches for operational reasons have historically diverted at rates greater than those adjudicated even though the amount of acreage actually irrigated typically has been less than the full acreage decreed under the ditch. Some non-Navajo ditches have cited current canal conditions and hydraulics as a reason for needing to maintain their historic diversions. It is not clear that the San Juan River Adjudication Court will adjudicate maximum diversion rates on the same basis as the Echo Ditch Decree. Nevertheless, both the Navajo Nation and other irrigation ditch owners or operators in the San Juan River Basin have a responsibility to maintain diversion and canal facilities in good and efficient operating condition.

The December 5, 2003, draft Settlement Agreement was revised to include in the July 9, 2004, draft Partial Final Decree a maximum ditch diversion rate of 100 cfs for the Fruitland-Cambridge Irrigation Project with a reserved 1868 priority, and to provide that

the Navajo Nation would forgo use of a portion of that amount, down to a diversion rate of 83.4 cfs, if it can be shown that the rehabilitation of the Project has resulted in less diversion demand. The Settlement Act provides for federal appropriations in the amount of \$17.7 million to rehabilitate main canal facilities for the two projects, and another \$5.4 million to implement additional water conservation improvements on laterals. The July 9, 2004, draft Settlement Agreement also included a revised maximum diversion rate of 221 cfs for the Hogback-Cudei Irrigation Project with a reserved 1868 priority. These diversion rates would be increased if in the San Juan River Adjudication the Court determines maximum per acre diversion rates for irrigation uses on non-Navajo ditches that exceed the rates adjudicated for those ditches by the Echo Ditch Decree. Again, a decision by the Court to not revise the maximum per acre diversion rates for non-Navajo ditches adjudicated in the Echo Ditch Decree would expedite the Adjudication and may result in increased protection of Echo Ditch Decree rights via both avoidance of possible increases in Navajo ditch rights and preservation of the Navajo Reservoir water supply to maintain the ability of the Navajo Nation to provide alternate water supply to the Navajo ditches, both of which would limit the occurrences of priority calls and provide more certainty to Echo Ditch Decree rights. Additional water could be diverted for the projects, if needed because of maintenance or efficiency problems, at such times as the State Engineer determines that direct flow is available for diversion without impairment to non-Navajo Nation water rights in New Mexico.

Comment 20: There should be a depletion limit associated with the Navajo Nation's supplemental carriage water diversions.

Response:

The December 5, 2003, draft Partial Final Decree was revised in the Settlement Agreement to not quantify any amount of diversion or depletion for the Navajo Nation's

supplemental carriage water diversions. Rather, the Navajo Nation simply would be able to divert additional carriage water, but only if needed for the Nation to make full use of its depletion rights and only at such times and in such amounts as the State Engineer may determine that water is available for such diversion without impairing water rights in New Mexico. Dewatering of a section of stream that causes Endangered Species Act compliance requirements for a project or use in New Mexico to not be met may result in impairment. Such additional carriage water may be helpful to the Fruitland-Cambridge and Hogback-Cudei irrigation projects until they are rehabilitated pursuant to the Settlement Act. The Navajo Nation's supplemental carriage water diversions pursuant to the Partial Final Decree would not constitute a water right and would not prevent the State Engineer from approving water rights transfers or approving increased use allocations from the Navajo Reservoir or Animas-La Plata Project water supplies pursuant to subparagraph 8.2 of the Settlement Agreement.

Comment 21: Dates should be added to define the beginning and end of the irrigation season in the San Juan River Basin.

Response:

The Navajo Indian Irrigation Project typically diverts water as early as mid-February and as late as mid-November. The Hogback-Cudei Irrigation Project may begin diversions in mid to late March and run water into the first of November. Most ditches in the San Juan River Basin, however, divert water for irrigation beginning on or after April 1 and continuing until about November 1 each year. Several ditches also carry water both during and outside the irrigation season for non-irrigation purposes such as municipal, domestic, industrial and stock uses.

Specifying an irrigation season limitation for the Navajo Nation's irrigation uses is not a part of the Settlement Agreement. If the Court in the San Juan River

Adjudication desires to define irrigation seasons for all Navajo and non-Navajo irrigation uses in the San Juan River Basin, the Court would have to consider the differences in season between projects and geographic areas in the Basin. For the Navajo Indian Irrigation Project, consideration also must be given to the need to fill and refill re-regulation storage facilities on the Project distribution system. Nonetheless, under the Settlement Agreement and the Partial Final Decree, the Navajo Nation is limited to diverting the amount of water necessary to meet its current beneficial uses. When crops are not growing during the winter, the Nation has no entitlement to exercise its diversion rights for applying irrigation water. This limitation applies to all irrigation water rights in the San Juan River Basin, including Navajo and non-Navajo rights.

FUTURE ALLOCATIONS

Comment 22: The Navajo Nation should not receive additional water rights if the yield available to the Upper Basin exceeds 6.0 million acre-feet because the Settlement Agreement would already provide sufficient amounts of water for a permanent homeland and because a settlement should be final.

Response:

The Navajo Nation was not a party to the Upper Colorado River Basin Compact and maintains its position that the apportionments made to the Upper Basin States by the compact do not bind the Navajo Nation or its water rights claims. As part of the negotiated Settlement Agreement, the Navajo Nation would agree to subject its claims to compact restrictions that the State of New Mexico must observe and waive claims to waters of the San Juan River Basin in New Mexico that otherwise, when combined with existing uses, would exceed New Mexico's compact apportionment. Also as part of the Settlement Agreement, the water rights of the Navajo Nation would be increased if the apportionment to New Mexico is increased due to a determination that the yield available to the Upper Basin is greater than 6.0 million acre-feet and if the Interstate Stream Commission determines after consideration of relevant factors, including uses under rights adjudicated in the San Juan River Adjudication, that water is available to service additional rights within the increased apportionment. Under such a circumstance, half of the additional amount of water that could be made available would be allocated to the Navajo Nation, and half would be reserved for the Interstate Stream Commission to allocate for non-Navajo uses. The use of water under the additional allocations would be subject to not impairing existing water rights. The finality of the bargain was increased relative to the December 5, 2003, draft Settlement Agreement, and a potential for future controversy was removed, by deleting the provision that would have allowed any party in

the future to argue to the San Juan River Adjudication Court that such an allocation is inequitable.

The December 5, 2003, draft Settlement Agreement also was revised to include provisions that the Navajo Nation would not exercise a portion of its water rights to be adjudicated by the Partial Final Decree in an amount equal to the amount of over-allocation, if any, that might occur in the future relative to New Mexico's Upper Basin apportionment. An over-allocation could occur, for example, if a critical drought causes a reduction in the yield available to the Upper Basin, and consequently, a reduction in the apportionment to New Mexico. The determination of any occurrence of over-allocation under such circumstances would take into account also uses of water under rights adjudicated in the San Juan River Adjudication, salvage of river losses by use, and other relevant factors. The amount of forbearance under these provisions would be limited to the amount of depletion sufficient to protect against curtailment for compact administration purposes the current beneficial use needs under the Animas-La Plata Project depletions in New Mexico authorized or allocated by the Colorado Ute Settlement Act Amendments of 2000, which depletions total to 13,520 acre-feet of depletion for Project contractors in New Mexico plus the New Mexico share of Ridges Basin Reservoir evaporation. Project contractors include the Navajo Nation. Also, the Navajo Nation would not forbear use to provide for a greater percentage supply for the Animas-La Plata Project uses than the percentage supply available to Navajo-Gallup Water Supply Project uses in New Mexico in a given year. One-third of the protection that the Navajo Nation agrees to provide to Animas-La Plata Project uses against an over-allocation under the compacts is conditioned upon an equivalent amount of non-Navajo consumptive use rights being abandoned, forfeited or otherwise retired. The retirement through cancellation of the permits and licenses associated with New Mexico State Engineer File

No. 758 for the Hogback Irrigation Project, File No. 2472 for the Shiprock Helium Plant, and File Nos. 2807 and 2875 for mineral related uses near Shiprock would not be counted as a contribution towards meeting the condition.

Comment 23: The Navajo Nation has agreed to withdraw its protest of the San Juan Water Commission's pending application for water associated with State Engineer File No. 2883 in exchange for the Commission's support for the Settlement Agreement.

Response:

The San Juan Water Commission has filed application to appropriate water supply associated with New Mexico State Engineer File No. 2883 that is over and above the amount allocated by the Colorado Ute Settlement Act Amendments of 2000 for New Mexico uses under the Animas-La Plata Project. However, the application may be premature because the remainder of the Animas-La Plata Project, over and above the version of the Project authorized for construction by the Colorado Ute Settlement Act Amendments of 2000, has not been de-authorized by Congress; and because issues surrounding the size and extent of the Animas-La Plata Project, including future water allocations under the Project, may not be fully and finally resolved until the conditions to effectuate and conclude the Colorado Ute settlement and the Navajo Nation water rights settlement are met. The Navajo Nation has not agreed to withdraw or withhold protests to the San Juan Water Commission's application, and the Nation reasons that approval of the application at this time might result in impairment of the Navajo Nation's water rights or interests.

Pursuant to the Colorado Ute Settlement Act Amendments of 2000, the Navajo Nation is allocated water from the Animas-La Plata Project under New Mexico State Engineer File No. 2883 in the amount of 4,680 acre-feet per year of diversion, or 2,340 acre-feet per year of depletion. If additional allocations can be made for water supply

under File No. 2883 that are over and above the allocations made by the Colorado Ute Settlement Act Amendments of 2000, the Navajo Nation under the Settlement Agreement would receive 50 percent of the additional allocations. The remainder of the water supply under File No. 2883 would be reserved for uses by member entities of the San Juan Water Commission. These provisions were added since the December 5, 2003, draft Settlement Agreement.

The December 5, 2003, draft Settlement Agreement also was revised to include in the Settlement Agreement provisions that, if a call is made in a given year pursuant to Article IV of the Upper Colorado River Basin Compact to reduce uses for the purpose of meeting the Upper Basin delivery obligation at Lee Ferry, the Navajo Nation would not exercise a portion of its water rights to be adjudicated by the proposed Partial Final Decree so as to allow the continuance of Animas-La Plata Project uses in New Mexico authorized or allocated by the Colorado Ute Settlement Act Amendments of 2000 that otherwise would be curtailed that year as a result of the call. The amount of forbearance to be provided by the Navajo Nation under this agreement is limited to the current beneficial use needs under the Project uses in New Mexico allocated by the Colorado Ute Settlement Act Amendments of 2000, which uses total 13,520 acre-feet of depletion for Project contractors in New Mexico plus the New Mexico share of Ridges Basin Reservoir evaporation. Also, the Navajo Nation would not forbear use to provide for a greater percentage supply for the Animas-La Plata Project uses than the percentage supply available to Navajo-Gallup Water Supply Project uses in New Mexico in any year. One-third of the protection that the Navajo Nation agrees to provide to Animas-La Plata Project uses against an Article IV call under the Compact is conditioned upon an equivalent amount of non-Navajo consumptive use rights being abandoned, forfeited or otherwise retired. The retirement through cancellation of the permits and licenses

associated with New Mexico State Engineer File Nos. 758, 2472, 2807 and 2875 would not be counted as a contribution towards meeting the condition.

Comment 24: The Settlement Agreement should not include waivers by the Navajo Nation of further claims of rights to water in New Mexico.

Response:

A settlement should provide for the final settlement of the Navajo Nation's claims to waters in and from the San Juan River Basin in New Mexico, and also should remove possibilities that Navajo claims in other states could result in claims or demands for delivery of water from New Mexico to downstream states to supply Navajo water rights elsewhere. The Settlement Agreement provides for such full and final settlement.

GROUND WATER RIGHTS

Comment 25: Settlement of the Navajo Nation's ground water rights is not clear.

Response:

The Settlement Agreement would provide reserved 1868 priority rights for the Navajo Nation to divert and consume up to 2,000 acre-feet of ground water in any year within the physical drainage of the San Juan River Basin in New Mexico, which amount is to include historic and existing ground water withdrawals for domestic use purposes served by public water systems or supplies and is in addition to *de minimus* uses and to the historic and existing uses for other purposes that are to be determined by hydrographic survey. The December 5, 2003, draft Settlement Agreement was later revised to also provide the Navajo Nation with the right to divert additional amounts of ground water for use in New Mexico subject to non-impairment of non-Navajo Nation water rights and subject to the Navajo Nation forbearing the use of a portion of its surface water rights as necessary to offset any amount of reduction in flow of the San Juan River that exceeds 2,000 acre-feet in any year as a result of the aggregate or cumulative effect of its ground water diversions that are made in excess of *de minimus* uses and the historic and existing uses that are to be determined by hydrographic survey. The additional diversions of ground water could not commence until a model of ground water flow for the Basin is available to account river flow impacts. The State of New Mexico and the United States, in consultation with the Navajo Nation, would cooperate in the development of a ground water model for this purpose and also for use in evaluating possible impairment.

The Settlement Agreement provides the Navajo Nation with flexibility in managing the available water resources while protecting the flow of the San Juan River and non-Navajo uses. Prior to making additional diversions of ground water on lands

held in trust by the United States for the Navajo Nation, the Nation would provide to the State Engineer and to the public notice of intent for development of ground water, provide a process for receiving and hearing any protests, and consult with the State Engineer. For additional diversions of ground water on lands held in fee by the Navajo Nation or other lands not held in trust for the Navajo Nation, the Nation would file application with the State Engineer to appropriate ground water under state law. The San Juan River Adjudication Court would retain jurisdiction to resolve disputes over the implementation of the Settlement Agreement and Partial Final Decree, including disputes as to whether a proposed development of ground water may be permitted under the decree; except, that another court may have competent jurisdiction over issues of impairment to water rights in other basins that might result from pumping wells from ground water formations near the physical boundaries of the San Juan River Basin in New Mexico. The additional diversions of ground water would have priority dates as of the dates of notice or application, respectively. The amounts of additional ground water uses that the Navajo Nation might practicably develop is expected to be limited by the physical availability and quality of ground water, well yields, and costs of development.

The Navajo Nation currently uses ground water developed by the Navajo Tribal Utility Authority or the Indian Health Service to supply domestic and sanitary needs of communities scattered throughout the Basin in New Mexico, and these existing ground water uses would be included within the reserved 1868 priority rights of the Navajo Nation to divert ground water. Also, some existing domestic water supply distribution systems in the San Juan River Basin straddle the New Mexico-Arizona state line, and the Settlement Agreement now would allow for up to 400 acre-feet of ground water diversions in one state for Navajo Nation domestic and sanitary uses in the other state so long as the depletions of the flow of the Colorado River at Lee Ferry resulting from such

uses are accounted against the Upper Basin apportionment of the state in which the use is made and the water is used by the Navajo Nation and not marketed to another party. This would allow the Navajo Nation to continue current uses and meet future growth needs in the Basin along the state line, subject to the Nation's rights to divert and use water in Arizona. Any diversion of ground water in New Mexico for Navajo Nation domestic and sanitary uses in Arizona, and any use in New Mexico by the Navajo Nation of ground water diverted in Arizona, also would be charged against the Nation's ground water rights under the Partial Final Decree. The Navajo Nation would not otherwise be restricted as to locations of ground water wells in the Basin in New Mexico, although wells that would be funded as part of the proposed settlement generally would be situated in accordance with a conjunctive use water development plan developed by the Navajo Nation pursuant to its planning for the Navajo-Gallup Water Supply Project. Any ground water diversions by the Navajo Nation of return flows that cannot be classified as re-use within the provisions of the Partial Final Decree would be accounted against the Nation's ground water rights. The Settlement Agreement does not settle any claims to ground water that the Navajo Nation may have in the Rio Grande or Little Colorado River basins or in the State of Arizona.

NAVAJO RIGHTS WITHOUT SETTLEMENT

Comment 26: It has not been established what the Navajo Nation's water rights and uses would be without the Settlement Agreement, and therefore, the impact of settlement cannot be evaluated.

Response:

Without a settlement, it is reasonable to anticipate that: (1) the Navajo Indian Irrigation Project would be completed to a service area of 110,630 acres as already authorized by Congress within the next approximately 20 years; (2) the Navajo Nation Municipal Pipeline already authorized by Congress along with the Animas-La Plata Project would be completed within the next several years; (3) the Bureau of Indian Affairs would continue to maintain and rehabilitate the Fruitland-Cambridge and Hogback-Cudei irrigation projects for the current service area acreages; (4) the Navajo Nation might assert reserved rights claims for the Fruitland-Cambridge and Hogback-Cudei irrigation projects for practicably irrigable acreage in an aggregate amount of as much as 26,000 acres or more if the Congressional record on the Act of June 13, 1962, is any indication (see Senate Report No. 2198), which amount would exceed the 12,165 acres of water rights for both projects combined that is in the Settlement Agreement based on the current service area acreages of the projects; (5) existing Navajo Nation tributary irrigation uses would continue, and the Navajo Nation would have reserved rights claims for historic and existing tributary irrigation uses and possibly additional practicably irrigable acreage; (6) existing municipal, industrial, commercial and domestic water needs would continue to be met from surface water and ground water through the City of Farmington, the Indian Health Service and the Navajo Tribal Utility Authority; (7) the Navajo Nation would claim rights associated with licenses for uses once made at the Shiprock Helium Plant under New Mexico State Engineer File No. 2472 and for uranium ore processing and site reclamation uses at and near Shiprock under State

Engineer File Nos. 2807 and 2875; and (8) the Navajo Nation would make reserved rights claims for indefinite future municipal, industrial, commercial and domestic water uses in the San Juan River Basin for purposes of a permanent homeland.

The Navajo Nation also might claim reserved rights to use water from the San Juan River for municipal and domestic uses in other basins or other states. Under the planning studies for the Navajo-Gallup Water Supply Project, the Navajo Nation's year 2040 water demands in the San Juan River Basin in New Mexico to be served by the Project are estimated to total about 13,230 acre-feet, and the Nation's water demands in the Little Colorado and Rio Grande basins in New Mexico to be served by the Project are estimated to total about 7,550 acre-feet. Nevertheless, without settlement, the Navajo Nation's claims for reserved rights from the San Juan River for municipal, domestic and other water uses in the San Juan River Basin in New Mexico to provide for a homeland to the year 2040 and beyond might exceed the total amount of use in New Mexico to be served by the Project, and the purpose and place of use of the Nation's reserved rights might be transferred to other basins within New Mexico to accomplish the same purpose as the Project if facilities to do so could be constructed. The Navajo-Gallup Water Supply Project participants likely would seek Congressional authorization of the Project even without a settlement, though the possibility of success in obtaining Project authorization may be slim absent a settlement.

The amounts of water that would be adjudicated to the Navajo Nation without settlement cannot be known at this time. However, the proposed settlement provides some assurance and protection against possible reductions in non-Navajo water uses that otherwise could result if Navajo Nation claims cause priority administration on the San Juan River stream system in New Mexico or an over-allocation with respect to current conservative estimates of New Mexico's Upper Colorado River Basin Compact

apportionment. The Settlement Agreement recognizes administration consistent with the Colorado River and Upper Colorado River Basin compacts, federal project authorizations and applicable law.

With the Settlement Agreement: (1) the Navajo-Gallup Water Supply Project would be authorized and constructed to provide for municipal and domestic water needs of the Navajo Nation that are projected to occur by the year 2040 based on project planning studies prepared by the Navajo Nation and the Bureau of Reclamation; (2) additional future needs in the San Juan River Basin in New Mexico that arise after 2040 would be met by transfers of water rights from irrigation uses to municipal and domestic uses; (3) no practicably irrigable acreage claims would be asserted by the Navajo Nation; (4) the Navajo Nation and the United States would agree to the cancellation of the licenses under New Mexico State Engineer File Nos. 2472, 2807 and 2875, which in the aggregate amounts to cancellation of about 2,700 acre-feet of appropriations with priority dates ranging from 1944 to 1957; and (5) risks of reserved rights claims being adjudicated to the Navajo Nation that would cause a reduction in non-Navajo uses in the San Juan River Basin in New Mexico would be removed. The Navajo Nation would agree to subordinate its rights for existing and future municipal, industrial, commercial and domestic uses associated with the Navajo-Gallup Water Supply Project to the priority dates of the New Mexico State Engineer filings held by the Secretary of the Interior for the Navajo Reservoir water supply, which is June 17, 1955, and for inflows arising below Navajo Dam, which is December 16, 1968.

Under the Settlement Agreement, the Navajo Nation's rights to divert water from the San Juan River, including diversions from the Animas River but not from drainages of intermittent tributaries such as the Chaco River or from ground water, would be administered in accordance with the following priorities: (1) 66,730 acre-feet per year at

a maximum rate of 321 cfs for irrigation on the Fruitland-Cambridge and Hogback-Cudei irrigation projects with an 1868 priority; (2) 2,600 acre-feet per year at a maximum rate of 5 cfs for municipal, domestic and industrial uses with an 1868 priority; (3) up to 508,000 acre-feet per year at a maximum rate of 1,800 cfs for the Navajo Indian Irrigation Project with a June 1955 priority, though the actual diversion required is anticipated to be less than 337,500 acre-feet per year based on the Biological Assessment for the Project unless transfers of use occur without impairment to other water rights in New Mexico; (4) 22,650 acre-feet per year at a maximum rate of 48 cfs for municipal and domestic uses under the Navajo-Gallup Water Supply Project with priority dates ranging from 1955 to 1968; and (5) 4,680 acre-feet per year at a maximum rate of 13 cfs for municipal and domestic uses under the Animas-La Plata Project with a priority date of 1956. Also, the Navajo Nation would be allowed to divert additional carriage water if needed and at such times as the State Engineer determines that direct flow is available for diversion without impairment to non-Navajo Nation water rights in New Mexico. In addition, if the Navajo Nation's ground water uses result in an aggregate depletion of the flow of the San Juan River in excess of 2,000 acre-feet per year, the Navajo Nation would reduce surface water uses as necessary to offset impacts of the excess depletion.

The Settlement Agreement would resolve by negotiation the senior rights claims for the Fruitland-Cambridge and Hogback-Cudei irrigation projects and provide subordinated junior priorities for the Navajo Indian Irrigation Project and almost all of the future municipal, industrial and domestic uses of the Navajo Nation from the San Juan River Basin. Moreover, revisions to the December 5, 2003, draft Settlement Agreement include an agreement of the Navajo Nation to: (1) provide under the Settlement Contract an alternate water source for the Fruitland-Cambridge and Hogback-Cudei irrigation projects so as to avoid or substantially reduce the occurrences of priority

calls to satisfy the rights under the two projects; and (2) forgo uses as necessary to protect the Animas-La Plata Project in the event of over-allocation of New Mexico's Upper Basin apportionment or curtailment during drought to meet the Colorado River Compact Article III delivery requirement at Lee Ferry. The significant amount of subordination to junior priorities, the alternate water source provisions for the Fruitland-Cambridge and Hogback-Cudei irrigation projects described in subparagraph 9.2 of the Settlement Agreement, the protection afforded the Animas-La Plata Project, the protection afforded San Juan River flows from increased ground water uses, and a release of further reserved water rights claims of the Navajo Nation would substantially protect existing water uses in and from the San Juan River Basin in New Mexico against curtailment from priority call during times when the direct flow is otherwise insufficient to meet demands, against shortages in stored water supplies, and against curtailment for compact purposes. In return, the Navajo Nation would have its water rights adjudicated, get the Navajo-Gallup Water Supply Project authorized and developed, get an associated contract for water from the Navajo Reservoir water supply to source the Project, secure funding to ensure rehabilitation of San Juan River irrigation projects, and gain authority to transfer, lease or subcontract its water, including its Navajo Indian Irrigation Project water, for other beneficial purposes. Language in drafts of the Settlement Agreement was modified in response to public comments to clarify the Navajo Nation's ability to lease or subcontract, and to transfer, its rights for other uses within New Mexico on or off Navajo lands so as to provide benefits to the Nation and others in the Basin, subject to non-impairment of other water rights in New Mexico.

Comment 27: The Navajo Nation should not be allowed to revoke the Partial Final Decree in twenty years if significant or substantial compliance with the terms and conditions of the Settlement Agreement has been made prior to then.

Response:

Under the Settlement Agreement, the Partial Final Decree could be revoked if the Navajo Nation shows to the Court that the water development and trust funding terms of section 309 of the Settlement Agreement have not been substantially satisfied. The latest date for revocation was revised from 2020 in the December 5, 2003, draft Settlement Agreement to 2025 to reflect the additional amount of time it will take to obtain the increased amount of appropriations now estimated to be needed to fund construction of the Navajo-Gallup Water Supply Project and implement the Settlement Act. If substantial progress has been made but completion dates are missed for completing the milestones identified in section 309 of the Settlement Act, then the Navajo Nation, the United States and the State of New Mexico may agree to extend the milestone dates.

The Navajo Nation is settling its claims to waters of the San Juan River Basin in New Mexico in exchange for considerations received in the form of wet water development. Should the wet water development not occur, the Nation would request the Court to proceed with a determination of its rights in the San Juan River Adjudication. However, if the decrees are revoked, the State of New Mexico, the Navajo Nation and the United States would not be bound by the Settlement Agreement, the Settlement Act or the Settlement Contract, all of which would be nullified, and the authorizations provided by the Act to construct and operate the water projects also would be revoked. The Navajo Nation has an interest in making the Settlement Agreement work, not in revoking the Partial Final Decree.

WATER RIGHTS ADJUDICATION AND ADMINISTRATION

Comment 28: Diversion rights for Navajo Nation irrigation uses should be annual limits, not ten-year running averages, because there is no basis for averaging diversions over ten years and the Nation could lease huge amounts of senior or contract water rights in the tenth year to the detriment of other water users.

Response:

The Act of June 13, 1962, authorizes the diversion of an average of 508,000 acre-feet per year for the Navajo Indian Irrigation Project, but does not specify the averaging period. The averaging period proposed for the Project as part of the settlement is ten years, which is the same period of time used to account deliveries from the Upper Basin to the Lower Basin under the Colorado River Compact, to account consumptive uses in the Gila River Basin in New Mexico under the 1964 US Supreme Court decree in *Arizona v. California*, and to account diversions for the San Juan-Chama Project under section 8 of the Act. Regardless of averaging, storage of water in Navajo Reservoir must occur in priority and cannot impair senior direct flow rights.

Irrigation depletion rights proposed for the Navajo Indian Irrigation Project are based on the average consumptive irrigation requirement for the Project area, considering an average cropping pattern and average meteorologic conditions. Annual fluctuations in conditions may result in an irrigation requirement somewhat lower or higher than the average due to persistence of wet or dry conditions that may occur from year to year. If the irrigation diversion rights in any year are limited in volumetric amount to the average consumptive irrigation requirement adjusted for irrigation and canal efficiencies, the amount of diversion that may be made, in theory, would fall short of the actual amount of water needed to fully irrigate a crop in roughly half the years. In the case of the Navajo Indian Irrigation Project, storage is relied on to supply a fluctuating amount of diversion demand. Alternatively, the irrigation diversion right could be limited in volumetric

amount each year to supply a maximum farm delivery requirement anticipated to occur in any year, with no multi-year averaging of diversions, as is the description given in New Mexico State Engineer File No. 2848 for the Hammond Irrigation Project.

A concern has been raised that if there is no annual quantity limit to the diversion by the Navajo Indian Irrigation Project, the Navajo Nation might be able to forbear use of much of the Project water rights during a period of nine years and place a huge demand on the river system for water in the tenth year to recoup all the use forgone. If a diversion limit is imposed as a running ten-year average limitation, the previous nine years of diversion and the amount of acreage that can be fallowed in the tenth year as part of a transfer of the beneficial use right for that year effectively limit the amount of use that can be made or transferred under the rights for the Project in the tenth year. Further, the diversion in one year effectively constrains the amount of diversion that can be made by the Project in the following nine years. In addition, the Settlement Agreement does not permit changes in use under the rights for the Project if the changes would impair other water rights in New Mexico. Reasonable and realistic management of the Navajo Nation's water resources effectively prevent the scenario of concern from occurring. Nevertheless, the December 5, 2003, draft Settlement Agreement was revised to include in the Partial Final Decree annual depletion and diversion amounts for the Navajo Indian Irrigation Project in addition to the ten-year average depletion and diversion amounts, with the annual amounts being 15 percent greater than the ten-year average amounts. Use of one-year diversion and depletion limits in addition to ten-year limits is consistent with the rights of the State of New Mexico to use waters of the Gila River Basin and the administration of those rights under the 1964 decree in *Arizona v. California*, and with the authorizations for San Juan-Chama Project diversions provided in the Act of June 13, 1962.

The ten-year averaging of the depletion and diversion rights for the Navajo Indian Irrigation Project makes it possible for the Navajo Nation to provide under the Settlement Contract an alternate water source for the Fruitland-Cambridge and Hogback-Cudei irrigation projects so as to reduce the occurrences of priority calls to satisfy the rights under the latter projects. Without the alternate water source provisions of paragraph 9.2 of the Settlement Agreement, a priority call would be in effect for the two projects for some period of time during approximately one year in two based on historic hydrology and assuming full utilization of the rights for the projects. The amount of water needed to implement the alternate water source provisions of the Settlement Agreement in any year cannot be known in advance because it is a function of when and by how much the direct flow during the summer and fall is insufficient to meet demands on the San Juan River stream system, and, based on historic hydrology, the amount will vary significantly from year to year. If the Navajo Nation is unable to smooth the annual amounts of water moved from the Navajo Indian Irrigation Project to service the demands under the Fruitland-Cambridge and Hogback-Cudei irrigation project rights under the alternate water source provisions of the Settlement Agreement, the Navajo Nation would be less able to manage the impact of implementing the provisions without detrimental effect to crop production and farm economics on the Navajo Indian Irrigation Project. With ten-year averaging, the Navajo Nation knows about what to expect for planning and accounting its uses under the rights for the Navajo Indian Irrigation Project based on the previous nine years and would be able to make minor mid-season adjustments to its operations, if necessary. A summary of the effects of the alternate water source provisions of subparagraph 9.2 on water released from Navajo Dam on an annual basis and a ten-year running average basis is provided in Appendix D. The maximum amount of contract water the Navajo Nation would make available in any year for providing

alternate water to the Fruitland and Hogback irrigation projects pursuant to subparagraph 9.2 of the Settlement Agreement is 12,000 acre-feet, which was reduced from the 15,000 acre-feet annual limit specified in the July 9, 2004, draft Settlement Agreement.

The administration of direct flow irrigation diversions, as opposed to irrigation uses that rely on Navajo Reservoir storage, would be more difficult to achieve using multi-year averaging. The December 5, 2003, draft Settlement Agreement was revised to not include ten-year averaging for the annual depletions and diversions under the rights for the Fruitland-Cambridge and Hogback-Cudei irrigation projects. However, if the Court in the San Juan River Adjudication should provide multi-year averaging of direct flow irrigation diversions in the Basin, then equity for the direct flow, non-contract irrigation uses would require that the annual diversion rights of the Fruitland-Cambridge and Hogback-Cudei irrigation projects be averaged over the same duration.

Further, if the Court should adjudicate annual farm delivery requirements and diversion rights for non-Navajo ditches that are based on the maximum consumptive irrigation use in any year, as opposed to the average annual consumptive irrigation requirement, the annual farm delivery and diversion rights of the Fruitland-Cambridge and Hogback-Cudei irrigation projects would need to be revised accordingly. However, the annual consumptive irrigation requirements and farm delivery requirements identified in the report of hydrographic survey approved by and incorporated into the Echo Ditch Decree were based on averages of monthly temperature and precipitation for the period of meteorological record available prior to 1938. Meteorological data available at the Shiprock weather station for the period 1931-1960 were used by New Mexico State University Agricultural Experiment Station Bulletin 531 to determine an average annual consumptive irrigation requirement of 1.857 acre-feet per acre in the vicinity of Shiprock, as compared to the irrigation requirement of 2.16 acre-feet per acre at the Shiprock

weather station derived by the report of hydrographic survey using data for the period 1926-1938. The average annual consumptive irrigation requirement for the Hogback-Cudei Irrigation Project of 2.1 acre-feet per acre per year that was used to negotiate the Settlement Agreement, while consistent with the Echo Ditch Decree, exceeds the long-term average consumptive irrigation requirement estimate at Shiprock from Bulletin 531 by 13 percent. Similarly, the farm delivery requirement for the Hammond Irrigation Project in years that are warmer and drier than average may exceed the average annual farm delivery requirement for the Project by 12.5 percent, according to the information provided in the Application for Permit under New Mexico State Engineer File No. 2848. Based on the above, it appears that there may be some cushion in farm delivery requirements adjudicated by the Echo Ditch Decree for above-average farm delivery requirement in years that are warmer and drier than the long-term average.

Also, while annual depletion and diversion limits for the Fruitland-Cambridge and Hogback-Cudei irrigation projects are included in the revised proposed settlement, annual diversion amount limitations on non-Indian ditches in the San Juan River Basin have not been imposed or administered pursuant to the Echo Ditch Decree. Therefore, the annual diversion limits for the two projects for irrigation uses would not be enforced unless and until volumetric diversion limits are adjudicated in the San Juan River Adjudication and enforced for non-Navajo irrigation ditches. If depletion and associated diversion rights for the two projects are transferred to non-irrigation uses, then the portion of the annual diversion right that is transferred would be enforced regardless of the status of enforcement of annual diversion limits on other irrigation ditches in the Basin.

Comment 29: There are two opposite extremes expressed as to who should have jurisdiction over the use of water under the Navajo Nation's water rights: (1) the State Engineer should have jurisdiction over all Navajo Nation uses of water in the San Juan River Basin; or (2) the Navajo Nation should be able to do whatever it wishes with its water rights without state oversight.

Response:

A compromise on matters of jurisdiction was negotiated. Under the Settlement Agreement, the Navajo Nation would have authority to administer the distribution and use of water beyond its points of diversion in accordance with its water rights and subject to non-impairment of non-Navajo Nation water rights in New Mexico. Any changes in use would require advance notice to the New Mexico State Engineer and the public in the San Juan River Basin. Transfers of water uses by the Navajo Nation to locations off Navajo lands, or to locations outside New Mexico if found to be permissible under applicable law, and changes in points of diversion on the San Juan River or the Animas River would require approval of the New Mexico State Engineer. Under the Settlement Agreement, the Navajo Nation may change the place or purpose of use of its rights for the Navajo Indian Irrigation Project on lands in New Mexico that the United States holds in trust for the Navajo Nation or its members so long as the total average diversion for all uses under said rights in the aggregate does not exceed 353,000 acre-feet per year, and any such changes to other uses must not impair other water rights. This amount of diversion assumes that either: (1) planned water conservation measures on the Project are about half as effective as anticipated; or (2) water conservation measures either do not occur or realize any benefits, and about 5 percent of the Project acreage, on average, is fallow. If the rights under the Project are not used solely for irrigation, the Navajo Nation would have to file application with the State Engineer to increase the total average diversion by all uses under the water rights associated with the Project above 353,000 acre-feet per year.

The Navajo Nation would be responsible for measuring and reporting its diversions and consumptive uses each year to the San Juan River Adjudication Court and the State Engineer, and for adjusting its diversions as necessary to comply with the rights adjudicated to it by the Partial Final Decree. The Navajo Nation also would be responsible for reducing its total use of water to offset any future use water rights that may be awarded individual members of the Navajo Nation that have been allotted lands within the San Juan River Basin in New Mexico by the United States.

The State Engineer would have authority to monitor the Navajo Nation's diversions and uses of water for compliance with the Nation's rights adjudicated by the Partial Final Decree, and to direct the Navajo Nation to adjust its diversions as necessary to comply with such rights. The State Engineer would be permitted to make inspections on Navajo lands, in cooperation with the Navajo Nation, as necessary to determine the adequacy of diversion measurements, compliance with the decree and the Settlement Agreement, and the current beneficial use needs of the Nation. In any priority administration on the San Juan River stream system, the State Engineer may direct the Navajo Nation to adjust its diversions in accordance with priorities and current beneficial use requirements. The San Juan River Adjudication Court would retain ultimate jurisdiction over all Navajo Nation water uses in and from the San Juan River Basin in New Mexico and over any water rights or decree administration or compliance disputes between the State Engineer, the Navajo Nation and other parties to the Adjudication.

Comment 30: Clarity is needed with respect to the water rights of the Navajo Nation and the rights or claims of individual members of the Navajo Nation.

Response:

The Navajo Nation has responsibility and control over the use of lands, and rights associated with lands, held by the United States in trust for the benefit of the Navajo

Nation or held in fee status by the Navajo Nation. In addition to reserving lands for the Navajo Nation, the United States has set aside land allotments for use by individual members of the Navajo Nation that are separate from lands held in trust for the Navajo Nation. The United States has separate trust responsibilities to the allottees. The Settlement Agreement is with the Navajo Nation to settle the claims of the Nation to the use of waters of the San Juan River Basin in New Mexico. The claims of allottees for uses on allotted lands that are held by the United States in trust for individual members of the Navajo Nation will be settled or litigated through the San Juan River Adjudication as is the case with other individual water users in the Basin. Under the Settlement Agreement, however, the Navajo Nation would be responsible for reducing its total use of water to offset any future use water rights that may be awarded individual members of the Navajo Nation for uses on allotted lands. Also, the Navajo Nation consistent with its water code would have the authority to administer the use of water on lands held by the United States in trust for individual Navajo allottees.

Comment 31: The Settlement Agreement should include a waiver that the Navajo Nation would not challenge in the San Juan River Adjudication rights adjudicated by the Echo Ditch Decree or other previous decrees unless upon a claim of forfeiture subsequent to the decrees.

Response:

The Settlement Agreement is not between the Navajo Nation and the thousands of other parties to the San Juan River Adjudication, and the other parties are not being required to execute a settlement with the Navajo Nation. It would be difficult to arrange for the Navajo Nation to waive certain objections it may have to rights adjudicated in previous suits in the Basin, and for the owners of previously decreed water rights to similarly waive any objections they may have to the Partial Final Decree. The Partial Final Decree would be submitted to the Adjudication Court for its consideration, and all

parties to the adjudication would be allowed to file objections to the water rights described in the proposed decree through expedited *inter se* proceedings. If the Court does not adopt a partial final decree that is substantially the same as the proposed Partial Final Decree, then the Settlement Agreement and water project authorizations would be nullified.

But while practical considerations realistically prevent a comprehensive settlement between all parties, the State Engineer's approach in the San Juan River Adjudication has been that the State of New Mexico would not go back in time prior to the Echo Ditch Decree to re-adjudicate uses prior to 1948, and that a water right previously adjudicated will not be lost due to forfeiture or abandonment if the water user has been using the right since the time it was adjudicated in accordance with the conditions of the decreed right and the conditions of any subsequent transfer of the decreed right approved by the State Engineer. Revisions were made to the December 5, 2003, draft Settlement Agreement that provide for the Navajo Nation to largely agree to the State Engineer's approach in the adjudication. The Navajo Nation would agree to the priority dates of rights adjudicated under and incorporated into the Echo Ditch Decree, the per acre farm delivery requirements or duties adjudicated by the decree, and the per acre maximum diversion rates adjudicated for non-Indian ditches by the decree; but, the Nation may object to quantifications of water rights for irrigation or non-irrigation uses in the San Juan River Adjudication on the basis of forfeiture, abandonment or unauthorized use since entry of the Echo Ditch Decree. This approach provides continuity with water rights previously decreed, provides for expediting the Adjudication, and helps to protect existing and authorized water uses in the San Juan River Basin in New Mexico.

Additional modifications were made to the language of the waivers included in the July 9, 2004, draft Settlement Agreement at subparagraph 9.6 to clarify that the

Navajo Nation is agreeing to not challenge the Echo Ditch Decree irrigation rights so long as the owners of such rights do not seek to have the Court in the San Juan River Adjudication adjudicate more water right per acre than is decreed under the Echo Ditch case. In response to comments from the agricultural community in the San Juan River Basin, the elements of the water rights for the Fruitland-Cambridge and Hogback-Cudei irrigation projects were made more consistent with the elements of irrigation rights adjudicated by the Echo Ditch Decree. If the rights adjudicated by the Echo Ditch Decree for some reason are now adjudicated using a different methodology that results in greater quantities of water right per acre relative to the decree, the senior reserved rights of the Navajo Nation for irrigation uses on the Fruitland and Hogback projects would be increased consistent with such methodology. However, increasing the amount of senior Navajo and non-Navajo irrigation rights could cause risk of shortage to junior direct flow rights due to insufficient direct flow to meet all the water right demands on the San Juan River during drier years and could cause increased risk of shortages to both the Navajo and non-Navajo uses of the Navajo Reservoir water supply. Nevertheless, if a significant amount of acreage under a ditch is determined to be forfeited or abandoned, some amount of flow in addition to the maximum ditch diversion rate of one cfs per 40 acres of water right remaining may be needed by some ditches for carriage to allow the ditch operator to make deliveries to water users during the peak of the irrigation season. The Navajo Nation may challenge the quantification, if any, of the amount of such additional flow that might be needed by a ditch.

The following example illustrates Echo Ditch Decree rights that the Navajo Nation would be agreeing to not challenge under the Settlement Agreement. The example involves a user on the Halford Ditch on the Animas River who has decreed water rights with the following elements: an acreage irrigated of 74.0 acres, a total water

allotted of 226.4 acre-feet (based on a farm delivery requirement or duty of 3.06 acre-feet per acre per year as provided by the tabulation of farm delivery requirements for ditches at pages 22-23 of the report of hydrographic survey approved by the Echo Ditch Decree), and a priority date of 1891. The Navajo Nation may challenge the water rights acreage on grounds that some of it may have been forfeited or abandoned since 1948, but would not otherwise challenge the water allotted per acre or duty of 3.06 acre-feet per acre per year being applied to the water right acreage found by the Court in the San Juan River Adjudication to quantify the total farm delivery requirement. Similarly, the Nation would not challenge applying the consumptive irrigation requirement of 1.93 acre-feet per acre per year to the amount of water right acreage found by the Court in order to compute the consumptive use rights for the user (the consumptive irrigation requirement derives from the tabulation of irrigation requirements for ditches at pages 22-23 of the report of hydrographic survey approved by the Echo Ditch Decree). For the Halford Ditch as a whole, the Echo Ditch Decree adjudicated 891.25 acres of irrigation rights and a maximum ditch diversion rate to serve said rights of 22.28 cfs, or one cfs per 40 acres of water rights. Again, the Navajo Nation may challenge the water right acreage on grounds that some of it may have been forfeited or abandoned since 1948, but would not otherwise challenge the maximum ditch diversion rate of one cfs per 40 acres being applied to the water right acreage found by the Court in the Adjudication.

A second example involves a user on the Cunningham Ditch on the La Plata River who has water rights from decrees preceding and incorporated into the Echo Ditch Decree with the following elements: an acreage irrigated of 62.2 acres, a flow of 1.1 cfs (which amounts to one cfs per 56.5 acres), and a priority of 1889. The Navajo Nation may challenge the water right acreage on grounds that some of it may have been forfeited or abandoned since 1948, but would not otherwise challenge the flow allotted in cfs per

acre. If the Court chooses to adjudicate to the user annual consumptive irrigation and farm delivery requirements, the Navajo Nation would not challenge applying a consumptive irrigation requirement of 1.89 acre-feet per acre per year in order to compute the consumptive use rights for the user and a farm delivery requirement of 3.00 acre-feet per acre per year to quantify the farm delivery amount, both requirements as provided for the Cunningham Ditch in the tabulations at pages 22-23 of the report of hydrographic survey approved by the Echo Ditch Decree. The amounts per acre may be applied to the water right acreage found by the Court in the San Juan River Adjudication. Again, the Navajo Nation may challenge the water right acreage on grounds that some of it may have been forfeited or abandoned since 1948, but would not otherwise challenge the per acre amounts.

Additional modifications also were made to the language of the waivers included in the July 9, 2004, draft Settlement Agreement for clarification regarding permits and licenses. Where an element of a water right (for example, diversion amount or farm delivery requirement) is stated on a permit or license and is not consistent with the amount of water right per acre otherwise indicated by the report of hydrographic survey approved by the Echo Ditch Decree, the Navajo Nation would not challenge the quantification of that element based on the amount per acre indicated in the permit or license. The Navajo Nation may challenge, however, the quantification of water right acreage and total diversion, farm delivery, and consumptive use amounts on the basis of forfeiture, abandonment or unauthorized use since approval of the permit or license. The Navajo Nation would not challenge the Hammond Irrigation Project water right acreage up to a total of 3,900 acres for the Project consistent with New Mexico State Engineer File No. 2848.

Also, if the Court in the San Juan River Adjudication adjudicates annual diversion amounts for irrigation uses on non-Navajo ditches, the Navajo Nation would agree to not challenge the quantification of annual diversion requirements based on the annual diversion requirements per acre provided for the ditches in the report of hydrographic survey approved by the Echo Ditch Decree or in any permit or license if stated or otherwise indicated therein. The waiver or agreement of the Navajo Nation does not bind the Court as to whether or not to adjudicate annual diversion requirements for irrigation uses or as to how to quantify any annual diversion amounts. Some amount of diversion in addition to the annual diversion requirements per acre given at pages 22-23 of the report of hydrographic survey approved by the Echo Ditch Decree may be needed for carriage water to allow ditch operators to make deliveries to water users during the shoulders of the irrigation season, or during the peak of the irrigation season if a significant amount of water rights acreage is forfeited or abandoned. The Navajo Nation may challenge the quantification, if any, of the amount of such additional carriage water that might be needed by a ditch.

Comment 32: The alternate water source provisions for the Fruitland-Cambridge and Hogback-Cudei irrigation projects should not be conditioned upon how the Court determines irrigation rights, and the condition should not bind the Court to the annual diversion requirement quantities described by the hydrographic survey report approved by the Echo Ditch Decree.

Response:

Under the July 9, 2004, draft Settlement Agreement, the Navajo Nation's agreement to provide an alternate water source for the Fruitland-Cambridge and Hogback-Cudei irrigation projects was conditioned on the Court determining non-Navajo irrigation rights on the basis of the per-acre quantifications in the Echo Ditch Decree and the hydrographic survey report approved by the decree. The condition also referenced annual diversion requirements for ditches, in addition to maximum diversion flow rates

for ditches. The condition reflected public comments that the irrigators wanted the Navajo Nation to waive objections to their Echo Ditch Decree rights except on the basis of forfeiture or abandonment for non-use since entry of the decree, and was meant to provide some protection to the Navajo Reservoir water supply to be used for the source of alternate water in exchange for protection of non-Navajo rights that otherwise would be subject to curtailment pursuant to priority call. Nonetheless, the condition was removed from the Settlement Agreement because subsequent public comment indicated that junior non-irrigation users felt they otherwise might possibly lose the benefits of the alternate water source provisions due to actions of a small number of irrigators, and because of concerns of irrigators that the diversion requirements in the hydrographic survey report approved by the Echo Ditch Decree are insufficient and that the Settlement Agreement should not appear to be dictating to the Court in the San Juan River Adjudication how the Court needs to adjudicate irrigation water rights in the Basin.

Removal of the condition provides certainty in the alternate water source provisions of the Settlement Agreement. In exchange for certainty, the maximum amount of alternate water to be supplied to the Fruitland-Cambridge and Hogback-Cudei irrigation projects in any year was reduced from 15,000 acre-feet in the July 9, 2004, draft Settlement Agreement to 12,000 acre-feet in the Settlement Agreement. The reduction in coverage does not affect the frequency of occurrence of priority calls on the San Juan River under the alternate water source provisions of subparagraph 9.2 of the Settlement Agreement, though it would reduce the amount of protection against priority call in the drier years.

Also included in the July 9, 2004, draft Settlement Agreement was a second condition that flow of the San Juan River must be administered consistent with the provisions of section 11 of the Act of June 13, 1962, that no person or entity is entitled to

water from Navajo Reservoir storage without a contract. This condition remains in the Settlement Agreement, but is not binding on the Court as to how adjudicated rights would be administered. The alternate water source agreement is based on the amount of water necessary to forgo a priority call on the direct flow, and no alternate water delivery to the San Juan River irrigation projects would be required to accomplish this purpose if the water users on the river, including the Fruitland-Cambridge and Hogback-Cudei irrigation projects, were entitled without a contract to divert and use water released from reservoir storage contrary to section 11 of the Act of June 13, 1962. Under that circumstance, there would be little reason for the Navajo Nation to commit water from the Navajo Indian Irrigation Project to supply uses by the San Juan River projects.

Comment 33: The Secretary of the Interior filings for federal water development projects in New Mexico need clarification, and water users, not the United States, own water rights.

Response:

Language modifications to the December 5, 2003, draft Settlement Agreement reflect that New Mexico State Engineer File No. 2848 for the Hammond Irrigation Project was not included as part of the combined permit nos. 2847, 2849, 2873 and 2917 combined for water originating in the drainage of the San Juan River above Navajo Dam. The priority date for 23,000 acre-feet of diversion by the Project is June 17, 1955, the same as the priority date under State Engineer File No. 2847 for the San Juan-Chama Project and File No. 2849 for storage in Navajo Reservoir sufficient to supply an average annual diversion of 630,000 acre-feet per year. The Hammond Irrigation Project receives water from the direct flow of the San Juan River and Navajo Reservoir storage, and is subject to sharing of shortages with the San Juan-Chama Project, the Navajo Indian Irrigation Project and other contract uses from the Navajo Reservoir water supply pursuant to section 11 of the Act of June 13, 1962. In addition, the Hammond Irrigation

Project has additional adjudicated or permitted direct-flow water rights. The Settlement Contract would not cause the aggregate delivery demand for water from the Navajo Reservoir water supply to exceed an average of 630,000 acre-feet per year.

New Mexico State Engineer File No. 2883 for Animas-La Plata Project uses in New Mexico has a priority date of May 1, 1956. State Engineer File No. 3215 for inflow to the San Juan River arising below Navajo Dam has a priority date of December 16, 1968, and can be used to supply significant portions of the diversion demands of the Navajo-Gallup Water Supply Project and the Public Service Company of New Mexico's uses under subcontract with the Jicarilla Apache Nation.

Language modifications to the December 5, 2003, draft Settlement Agreement also make it clear that the United States has storage rights for Navajo Dam and Reservoir, but that the Navajo Nation as a water user would have the water rights associated with their uses under the Navajo Indian Irrigation Project, the Navajo-Gallup Water Supply Project and the Animas-La Plata Project. The Navajo Nation under its laws retains property rights, and it issues permits to individual members of the Navajo Nation to farm particular allotments of land or to use water on its lands.

Concerns also were raised as to the impacts on the depletion schedule of water uses under permits and licenses approved by the State Engineer for industrial uses near Shiprock. The United States has rights to the use of water for a Helium plant near Shiprock under New Mexico State Engineer File No. 2472, which plant was dismantled. Also, the Navajo Nation owns rights pursuant to File Nos. 2807 and 2875 for uranium ore processing purposes. The pattern of historic use under these licenses is not known, though it is believed that water has not been used under the United States' filing for the Helium plant since the 1950s or 1960s, and little water is reported by the Navajo Nation to have been used under File Nos. 2807 and 2875 since the early 1980s although about

300 acre-feet of water per year reportedly is now being pumped from alluvial wells in the San Juan River floodplain near Shiprock for reclamation purposes at or near the former ore processing site. In addition, the reserved rights for the Hogback Irrigation Project described in the Partial Final Decree would supersede any rights of the United States or the Navajo Nation pursuant to New Mexico State Engineer File No. 758. With the Settlement Agreement, the permits and licenses associated with File Nos. 758, 2472, 2807 and 2875 all would be cancelled.

Comment 34: The Settlement Agreement would not leave sufficient water available for dealing with the Ute Mountain Ute Tribe's water rights claims in the San Juan River Basin in New Mexico, and the Tribe should receive consideration because the Navajo Nation received an allocation of Animas-La Plata Project water under the Colorado Ute Settlement Act Amendments of 2000.

Response:

The Colorado Ute Settlement Act Amendments of 2000 settled the water rights claims of the Ute Mountain Ute Tribe to waters of the San Juan River Basin in Colorado, and provided sufficient water to the Ute Mountain Ute Tribe for a permanent homeland. As a part of the Ute Mountain Ute Tribe's settlement in Colorado, the Tribe received an allocation of 16,525 acre-feet of water from the Animas-La Plata Project in Colorado. The Final Supplemental Environmental Impact Statement for the Animas-La Plata Project identified as uses of the Tribe's Project water a gas-fired thermal electric power plant, a visitor center and housing development.

The Ute Mountain Ute Tribe had initial discussions with the State of New Mexico regarding a claim for between 7,300 acre-feet and 9,300 acre-feet of water annually from the San Juan River in New Mexico based on hypothetical future water use at a coal-fired thermal electric power plant. The Tribe has no resident population, little existing stock use, no geographic connection to the San Juan River, and little, if any, practicably irrigable acreage on its lands that are located within the State of New Mexico. The

Interstate Stream Commission and the Office of the State Engineer reviewed the Ute Mountain Ute Tribe's claim and do not anticipate negotiating a settlement of the claim with the Tribe.

The State of New Mexico already has provided significant consideration to the Ute Mountain Ute Tribe, as well as the Southern Ute Tribe, by agreeing to the San Juan River Basin Recovery Implementation Program and to the operation of Navajo Dam to benefit the endangered fish species in the San Juan River. These measures arose out of a need to provide Endangered Species Act compliance for the Animas-La Plata Project, and the Colorado Ute tribes have an aggregate allocation under the Project for hypothetical future uses that amounts to over 60 percent of the total allocations under the Project made by the Colorado Ute Settlement Act Amendments of 2000, split equally between them. The Navajo Nation received an allocation under the Project for existing and future domestic uses in New Mexico that amounts to 4 percent of the total allocations under the Project authorized in 2000.

The operation of Navajo Dam to benefit endangered fish species: (1) reduces the reservoir storage water supply available for water uses in New Mexico; (2) threatens the ability of the Secretary of the Interior during periods of drought to fully meet contract deliveries from the San Juan-Chama Project and from Navajo Reservoir for uses by the Navajo Nation, the Jicarilla Apache Nation and others, all of which are for uses within the State of New Mexico's Upper Basin apportionment; (3) may restrict the flexibility of the Navajo Nation to transfer its Navajo Indian Irrigation Project rights to other uses; and (4) hinders the Secretary's flexibility to manage the reservoir for incidental recreation and fishery benefits that have been important locally for socio-economic reasons. No other commitment has been made to store and release water from other reservoirs or to reduce actual uses in Colorado to make water physically available to help meet the flow and

habitat needs of endangered fish populations in the San Juan River; rather, New Mexico storage is used to meet these needs even if using such storage threatens or causes shortages to New Mexico water uses, including uses by the Navajo Nation under its reserved or contract rights. The Colorado Ute Settlement Act Amendments of 2000 allocated a total depletion of 40,880 acre-feet per year for Animas-La Plata Project uses within the State of Colorado, not including the associated evaporation from Ridges Basin Reservoir for the uses in Colorado, and the effect of such uses by the Ute Mountain Ute Tribe and others on endangered fish habitat in the San Juan River is offset by Navajo Dam operations.

FLOW DEMANDS FOR ENDANGERED FISH

Comment 35: The demands on Navajo Reservoir for endangered fish habitat purposes are not quantified and may impair existing rights.

Response:

The San Juan River Basin Recovery Implementation Program adopted flow recommendations for the San Juan River between Farmington and Lake Powell that are intended to provide for the habitat needs of Colorado pikeminnow and razorback sucker, both listed as endangered under the Endangered Species Act and with critical habitat in the San Juan River. An environmental impact statement is expected to be issued in 2005 analyzing the impact of operating Navajo Dam to meet the flow recommendations, or a reasonable alternative, while also not impairing senior water rights and providing water pursuant to Navajo Reservoir water supply contracts. Such operation of the dam, in concert with the Recovery Implementation Program, provides reasonable and prudent alternatives and reasonable and prudent measures for Endangered Species Act compliance for federal water development and management activities in the San Juan River Basin, including for Navajo Reservoir water supply contracts, operation of the San Juan-Chama Project and operation of the Animas-La Plata Project. The amount of water needed in any year to be released from Navajo Reservoir to meet the flow recommendations, or a reasonable alternative, depends on the availability of water and flow statistics. Also, the flow recommendations are subject to change through adaptive management. Included in the benefits of the Recovery Implementation Program and operating Navajo Dam to meet the flow recommendations is coverage for both federal and non-federal water uses in or from the San Juan River Basin against incidental take under section 9 of the Endangered Species Act.

The Bureau of Reclamation developed a San Juan River Basin hydrology model that the Bureau of Indian Affairs used in its recent Endangered Species Act section 7 consultation on completion of the Navajo Indian Irrigation Project and that Reclamation used in its section 7 consultation on Navajo Dam operations. The baseline modeling analyses for each consultation included the historic long-term hydrology of the Basin and diversion demands for existing uses, future uses that could reasonably occur without further federal action, and proposed uses that already have been consulted on (including the Animas-La Plata Project). The modeling analyses indicated that, based on historic hydrology, the flow recommendations could be met through re-operation of Navajo Dam without causing shortages to Navajo Reservoir water supply contractors or other water users, including the San Juan-Chama Project. A similar analysis was completed in the September 2004 Biological Assessment for the Navajo-Gallup Water Supply Project as part of the ongoing work on the environmental impact statement for the Project and the section 7 consultation for the Project. The analysis suggests that with the full demand of the Navajo-Gallup Project, the flow recommendations could not be met completely through re-operation of Navajo Dam unless other water uses in the San Juan River Basin in Colorado and New Mexico actually amount to less total depletion than the aggregate of the baseline depletions assumed in the hydrologic modeling (see Appendix B for a description and evaluation of baseline depletions in New Mexico). Implementation of the Navajo-Gallup Water Supply Project under the Settlement Agreement remains subject to National Environmental Policy Act and Endangered Species Act compliance. The Navajo Nation is considering options by which it may forbear use of a portion of its rights under the Navajo Indian Irrigation Project if necessary to allow its uses under the proposed Navajo-Gallup Water Supply Project to proceed without impinging upon the flow recommendations or a reasonable alternative.

Comment 36: The Settlement Act should be amended so that it will not be in conflict with or inadvertently repeal section 208 of Public Law 108-137 (117 Stat. 1827).

Response:

The provisions of section 208 of Public Law 108-137 are specific to the annual delivery of water in the Rio Grande Basin out of Heron Reservoir for satisfaction of water delivery and repayment contracts entered into under the San Juan-Chama Project. Section 208 provides that the Secretary of the Interior and the Bureau of Reclamation cannot use discretion to reallocate water stored in Heron Reservoir to meet requirements of the Endangered Species Act, as such requirements may relate to populations of endangered species in the middle Rio Grande valley in New Mexico, unless such water is acquired from a Project contractor that is willing to sell or lease its contract delivery from Heron Dam for such purpose. The Settlement Agreement and proposed Settlement Act deal with the diversion and storage of water on the San Juan River stream system, not contract releases from Heron Dam. Nevertheless, provision has been added to the disclaimers in the revised proposed Settlement Act that nothing in the Act is to be construed to interpret, modify, repeal or be in conflict with section 208 of Public Law 108-137 (117 Stat. 1827).

APPENDIX A

**LIST OF ENTITIES AND PERSONS
THAT SUBMITTED WRITTEN COMMENTS
ON DRAFTS OF THE
SAN JUAN RIVER BASIN IN NEW MEXICO
NAVAJO NATION WATER RIGHTS SETTLEMENT AGREEMENT**

LIST OF ENTITIES AND PERSONS
 THAT SUBMITTED WRITTEN COMMENTS
 ON DRAFTS OF THE
 SAN JUAN RIVER BASIN IN NEW MEXICO
 NAVAJO NATION WATER RIGHTS SETTLEMENT AGREEMENT

| <u>Entities and Persons</u> | <u>Comments (identified by comment number)</u> |
|--|---|
| Municipal and Domestic Water Users: | |
| Albuquerque | 1, 2, 11, 12, 14, 15, 35, 36 |
| Aztec | 1, 12, 13 |
| Aztec, Bloomfield and Farmington | 1, 2, 3, 6, 7, 8, 9, 10, 11, 12, 13, 26, 29, 31, 33, 35 |
| Espanola | 1, 2, 11, 12, 14, 15, 35, 36 |
| Farmington | 1, 6, 10, 12, 13, 26 |
| Gallup (1) | |
| Santa Fe | 1, 2, 11, 12, 14, 15, 35, 36 |
| San Juan Water Commission | 1, 3, 9, 10, 11, 12, 13, 17, 20, 22, 25, 26, 27, 28, 29, 30, 33 |
| Taos | 1, 11, 15, 35, 36 |
| West Hammond Domestic Water Assoc. | 1, 17, 19, 28, 29, 33 |
| Agricultural Water Users: | |
| Bloomfield Irrigation District | 3, 6, 9, 13, 17, 18, 19, 28, 29, 31, 32, 33, 34 |
| Hammond Conservancy District | 28, 29, 32, 33 |
| San Juan Agricultural Water Users | 1, 3, 12, 17, 18, 19, 28, 29, 31, 32, 33 |
| Industrial Water Users: | |
| BHP Navajo Coal Company (2) | 7, 17, 25, 27, 28, 29, 30, 32 |
| Dine Power Authority | 7, 8 |
| Government Entities: | |
| Colorado Water Conservation Board | 7, 11, 12, 29, 34 |
| Jicarilla Apache Nation (3) | |
| Navajo Nation (4) | |
| Navajo Nation EPA (5) | |
| Northwest NM Council of Gov. (1) | |
| United States Department of Justice | 33 |
| New Mexico State Legislators: | |
| Senator Raymond Kysar | 28, 33 |
| Representative Irvin Harrison (1) | |
| Navajo Nation Council Delegates: | |
| Delegate Ervin Keeswood | 7, 20, 26, 29 |

LIST OF ENTITIES AND PERSONS
 THAT SUBMITTED WRITTEN COMMENTS
 (continued)

| <u>Entities and Persons</u> | <u>Comments (identified by comment number)</u> |
|---------------------------------------|--|
| Citizens Groups: | |
| Citizens Progressive Alliance | 1, 4, 7, 11, 26, 34 |
| Electors Concerned about Animas Water | 1, 2, 4, 6, 9, 12, 18, 23, 26, 28, 34 |
| Citizens: | |
| Ahkeah, Laverne | 24 |
| Bennett, Alfred | 16 |
| Gleason, Irving (5) | |
| Oxford, Robert | 6, 19, 21, 28, 29, 32, 33 |
| Scott, Jack | 29 |
| Smith, Douglas | 11, 17 |
| Velasquez, Chris | 12 |
| Wood, Zang | 6 |
| Yazzie, Duane (6) | 1 |
| Young, Jim | 11, 26, 29 |
| Miscellaneous oral comments | 1-36 |

Notes:

- (1) Statement supporting settlement and Navajo-Gallup Water Supply Project.
- (2) Comments supported by Arizona Public Service Company and Public Service Company of New Mexico.
- (3) Submitted technical comments on the proposed Settlement Act relating to the Navajo-Gallup Water Supply Project.
- (4) Letter from President Joe Shirley to the Secretary of the Interior regarding completion and transfer of Navajo Indian Irrigation Project facilities.
- (5) Statement expressing a need to develop and hook up local water supply systems to Navajo-Gallup Water Supply Project facilities.
- (6) Statement questioning settlement generally.

APPENDIX B

CHANGES TO THE DEPLETION SCHEDULE SINCE DECEMBER 2003

AND

COMPARISON OF DEPLETIONS FROM THE
SAN JUAN RIVER STREAM SYSTEM IN NEW MEXICO BETWEEN THE
INTERSTATE STREAM COMMISSION'S DEPLETION SCHEDULE AND THE
BUREAU OF RECLAMATION'S BASELINE DEPLETIONS USED IN THE DRAFT
ENVIRONMENTAL IMPACT STATEMENT ON NAVAJO DAM OPERATIONS

CHANGES TO THE DEPLETION SCHEDULE SINCE DECEMBER 2003
AND
COMPARISON OF DEPLETIONS FROM THE
SAN JUAN RIVER STREAM SYSTEM IN NEW MEXICO BETWEEN THE
INTERSTATE STREAM COMMISSION'S DEPLETION SCHEDULE AND THE
BUREAU OF RECLAMATION'S BASELINE DEPLETIONS USED IN THE DRAFT
ENVIRONMENTAL IMPACT STATEMENT ON NAVAJO DAM OPERATIONS

This appendix describes the changes made to the Interstate Stream Commission's draft schedules of anticipated depletions from the Upper Colorado River Basin in New Mexico prepared in connection with the proposed San Juan River Basin in New Mexico Navajo Nation Water Rights Settlement Agreement, and compares the depletions in the Interstate Stream Commission's depletion schedule with the Bureau of Reclamation's baseline depletions for the San Juan River Basin in New Mexico used for federal water project planning and environmental compliance activities under the Endangered Species Act and the National Environmental Policy Act. The table attached to this appendix is a tabulation for comparison purposes of both the State of New Mexico's anticipated average annual depletions under 2060 conditions and Reclamation's environmental baseline depletions used in its San Juan River Basin hydrology model for evaluating the Preferred Alternative in the September 2002 Draft Environmental Impact Statement for Navajo Dam Operations.

Depletion Schedule

The Upper Colorado River Commission from time to time has approved for planning purposes schedules of anticipated depletions in the Upper Basin for each of the States of the Upper Division. Thomas Turney, past State Engineer, via letter dated February 19, 2002, transmitted to the Bureau of Reclamation a revised schedule of anticipated depletions for New Mexico that indicates that sufficient water is reasonably likely to be available under the apportionments made by the Upper Colorado River Basin Compact for the Navajo Nation's uses in New Mexico under the Navajo-Gallup Water Supply Project. The Interstate Stream Commission staff has prepared an updated schedule of anticipated Upper Basin depletions in New Mexico that incorporates minor adjustments to reflect the proposed San Juan River Basin in New Mexico Navajo Nation Water Rights Settlement Agreement (see Memorandum from John Whipple to Philip Mutz on Revised Upper Colorado River Basin Depletion Schedule for New Mexico, dated December 10, 2004). The updated depletion schedule includes the full amount of depletion planned for the Navajo-Gallup Water Supply Project and 2,000 acre-feet of potential depletions for other reserved municipal and industrial rights proposed for the Navajo Nation in the Settlement Agreement.

The December 10, 2004, Revised Draft depletion schedule also incorporates the following adjustments to reflect responses to public comments on the proposed Settlement Agreement, information recently made available, and changes in the draft Settlement Agreement made after December 5, 2003:

1. The Fruitland-Cambridge Irrigation Project depletion in 2060 was reduced by 300 acre-feet per year to fully reflect 5 percent fallowing of the water right acreage proposed by the Settlement Agreement.
2. The municipal and domestic depletions in 1990 were increased by 800 acre-feet per year to reflect Office of the State Engineer depletion estimates for 1990. Both the irrigation depletions and the municipal and domestic depletions for 2060 were kept the same as those for 1990 because it was not necessary for purposes of the depletion schedule to speculate as to the rate of conversion over time of irrigation rights and associated depletions, including under the City of Farmington's "trust" rights, to municipal uses. The total depletion amount for the San Juan River Basin in New Mexico is the same regardless of transfers of irrigation rights to municipal uses.
3. The scattered rural domestic depletions in 1990 were decreased by 400 acre-feet per year to reflect Office of the State Engineer depletion estimates for 1990. The net change in combined municipal and domestic depletions was an increase of 400 acre-feet per year and to some extent reflects current servicing of once-rural areas with municipal water supplies.
4. The depletion associated with the completion of the Navajo Indian Irrigation Project was increased by 2,500 acre-feet per year to reflect an increase in the proposed depletion right for the Project from 267,000 acre-feet per year to 270,000 acre-feet per year. The 1999 Biological Assessment for the Project includes a long-term average depletion of 270,000 acre-feet per year. The assumption that 5 percent of the Project acreage, on average, would be fallow in any year was not changed.
5. The Fruitland/Hogback rehabilitation depletion in 2060 was increased by 200 acre-feet per year to reflect 5 percent fallowing of the Hogback-Cudei Irrigation Project water right acreage proposed by the Settlement Agreement. The net change in combined Fruitland and Hogback project depletions after rehabilitation was a decrease of 100 acre-feet per year.
6. The Navajo Nation exportation to outside the San Juan River Basin under the Navajo-Gallup Water Supply Project in 2060 was increased to include 1,200 acre-feet per year of export to the Rio Grande Basin that had erroneously been omitted from the December 5, 2003, draft depletion schedule.
7. A depletion of 300 acre-feet per year was added to the depletion schedule to reflect existing diversions by the Navajo Nation for reclamation of mineral processing sites near Shiprock.
8. Navajo Reservoir evaporation was increased by 1,200 acre-feet per year to 27,700 acre-feet per year based on the September 2004 Biological Assessment for the

Navajo-Gallup Water Supply Project that factors in both the Project demand and operation of Navajo Dam in accordance with the Preferred Alternative described in the September 2002 Draft Environmental Impact Statement on Navajo Dam Operations. The average annual reservoir evaporation may be further refined when the period of record for the hydrologic modeling is extended to include 1994-2004, and also if the flow recommendations for endangered fish habitat in the San Juan River are modified.

9. The depletion by the San Juan-Chama Project was decreased by 2,300 acre-feet per year to 105,200 acre-feet per year based on the average annual diversion by the Project with the period of hydrologic record extended to include 1994-2000. The Bureau of Reclamation recently extended the period of record through 2000 in an updated version of the San Juan River Basin hydrology model that is anticipated to be available for use in 2005. The long-term average annual depletion by the Project would be reduced further by about another 2,100 acre-feet per year to 103,100 acre-feet per year if the period of record is extended to include 2001-2004 due to the extremely poor water supply available at the points of diversion in 2002 and below average water supply availability in 2003 and 2004; however, more favorable hydrologic conditions in the future could result in a subsequent increase in the long-term average depletion for the Project.

Baseline Depletions

The Bureau of Reclamation has developed a hydrologic model of the San Juan River Basin for use in environmental compliance activities associated with the planning and operation of federal water development projects, including Navajo Dam and Reservoir and the Navajo-Gallup Water Supply Project. The modeling forms the basis for Reclamation to consult with the US Fish and Wildlife Service under Section 7 of the Endangered Species Act regarding the potential for a proposed federal action to affect San Juan River populations of Colorado pikeminnow and razorback sucker or their critical habitat. The hydrology model used by Reclamation has been used to complete Section 7 consultation under the Act for the Navajo Indian Irrigation Project, the Animas-La Plata Project and other projects in the San Juan River Basin.

Section 7 consultations are between the federal action agency and the Fish and Wildlife Service. The Service as part of a Section 7 consultation also may consult with Indian tribes in recognition of the Secretary of the Interior's trust responsibilities to the tribes, and the federal action agency may consult with a project sponsor. Neither the Service nor Reclamation is required to consult with the States as part of the Section 7 consultation process. Although Reclamation now receives input on aspects of the hydrology model from the Hydrology Committee of the San Juan River Basin Recovery Implementation Program in which New Mexico participates, the federal action agencies do not consult with the Hydrology Committee regarding depletion amounts being consulted on for proposed federal projects.

The State of New Mexico for several years has raised concerns regarding the hydrology model used for evaluating flow recommendations to provide for endangered fish habitat in the San Juan River and evaluating impacts of federal water development and water management activities in the San Juan River Basin on the flow recommendations. Included in the concerns raised by New Mexico are the depletion amounts that comprise the environmental baseline. The Bureau of Reclamation includes in the baseline depletions the depletion amounts that the Fish and Wildlife Service has accepted in previously completed Section 7 consultations. Because of New Mexico's concerns, the Coordination Committee of the Recovery Implementation Program adopted the following disclaimer relating to the model used by Reclamation (see the San Juan River Basin Recovery Implementation Program Recommendation for Hydrology Committee, Final Document dated June 20, 2001, fourth page):

“While every effort will be made to incorporate the best data and modeling available into the San Juan Basin Model, use of the hydrologic model in the work of this Committee and this Implementation Program does not necessarily constitute agreement or approval by individual program participants with the Model data, methodologies or assumptions. The model data, methodologies and assumptions do not under any circumstances constitute evidence of actual water use, water rights or water availability under compact apportionments and should not be construed as binding on any party. Furthermore, use of the model, model data, methodologies and assumptions does not change the responsibilities of the respective states to maintain records of water rights and water use. Official records of water rights and water use are maintained by the State agencies statutorily charged with that responsibility.”

In response to the model disclaimer adopted by the Coordination Committee of the Recovery Implementation Program, and in response to the State of New Mexico's repeated statements of concerns regarding inconsistencies in depletion calculations and other issues relating to the baseline depletions, Reclamation included explanatory disclaimers to these effects in the September 2002 Draft Environmental Impact Statement on Navajo Dam Operations (Volume II, Appendix C, Hydrologic Modeling Analysis, Table 1, footnotes 1-3). The following is a list of substantive issues regarding the baseline depletions for the Preferred Alternative in the Draft Environmental Impact Statement (the baseline depletions in the table attached to this appendix are from Volume II, Appendix C, Table 1, second column under the heading 250/5000 Alternative):

1. The Navajo Indian Irrigation Project (NIIP) baseline depletion used in the San Juan River Basin hydrology model totals 280,600 acre-feet per year, and includes depletions of San Juan River flows caused by buildup of groundwater storage underneath Project lands. This amount of depletion was derived by consultants to the Bureau of Indian Affairs and used in its Section 7 consultation with the Fish and Wildlife Service on completion of the NIIP. The Draft Environmental Impact Statement (EIS) at Volume II, Appendix C, Table 1, footnote 4, provides an explanation that once buildup of the groundwater storage underneath Project lands occurs and equilibrium conditions are established for return flows to the river, the

average annual NIIP depletion would be 270,000 acre-feet per year. The June 1999 Navajo Indian Irrigation Project Biological Assessment prepared for the Bureau of Indian Affairs at page 40, Figure 9, suggests that equilibrium conditions would be nearly reached by about 2060. Nevertheless, the Draft EIS includes in the baseline a Project depletion of 280,600 acre-feet per year in consideration of the completed Section 7 consultation on the NIIP. The environmental baseline as per Fish and Wildlife Service regulations includes the past and present impacts of all federal, state and private actions and other human activities in the action area, the anticipated impacts of all proposed federal projects in the action area that have already undergone formal Section 7 consultation, and the impact of state or private actions contemporaneous with the consultation process.

Under the proposed San Juan River Basin in New Mexico Navajo Nation Water Rights Settlement Agreement, the Navajo Nation would have a right to deplete up to 270,000 acre-feet per year on the NIIP, including any and all depletions of San Juan River flows caused by buildup of groundwater storage underneath Project lands. Consequently, the Navajo Nation would have to schedule bringing lands into irrigation so as not to exceed a total depletion of 270,000 acre-feet per year. Use of full water right or project amounts in the environmental baseline for specific projects or uses that have completed Section 7 consultation, or consulting with the Service on the use of full water right or project amounts for specific projects, is conservative for evaluating potential impacts of proposed federal water development or water management activities on endangered species or their critical habitat. It is overly conservative, however, for evaluating anticipated future uses in consideration of actual farm management and water use practices. The depletion schedule assumes that 5 percent of the NIIP acreage, on average, would be fallow in any year, which is a reasonable assumption for planning purposes consistent with past fallowing and conservation acreage practices within already completed areas of the Project. New Mexico would not be able to fully utilize its Upper Colorado River Basin Compact apportionment if it based its irrigation depletions on the full amounts of water rights and did not consider actual acreage irrigated and fallow acreage in its water development and use planning.

2. The NIIP baseline depletion of 280,600 acre-feet per year in the Draft EIS includes a "transfer" of 16,400 acre-feet per year of depletions from the environmental baseline depletions for the Hogback and Fruitland irrigation projects that were used by the Bureau of Reclamation and the Fish and Wildlife Service in the Section 7 consultation for the Animas-La Plata Project in 1991 (see the 1991 Biological Opinion for the Animas-La Plata Project). The 1991 Biological Opinion used depletion amounts of 30,700 acre-feet per year for the Hogback Irrigation Project, 7,000 acre-feet per year for the Fruitland Irrigation Project, and 10,000 acre-feet per year for the Hogback Extension. However, Philip Mutz, Upper Colorado River Commissioner for New Mexico, via memoranda dated January 21, 1993, and February 11, 1993, on the subject of

Section 7 consultation for Blocks 7 and 8 of the NIIP reviewed the 1991 Biological Opinion data and found that the 10,000 acre-feet per year depletion amount for the Hogback Extension was already included within the 30,700 acre-feet per year depletion amount for the Hogback Irrigation Project. The memoranda also found that the total depletion for the Hogback and Fruitland irrigation projects, including the Hogback Extension, would amount to about 37,000 to 37,200 acre-feet per year at most.

The “transfer” of 16,400 acre-feet per year of baseline depletions from the Hogback and Fruitland projects to the NIIP occurred as part of the Section 7 consultation process on the NIIP and is not a water rights transfer. Pursuant to the Biological Opinion on the NIIP, the Navajo Nation simply agreed to not deplete more than 20,900 acre-feet per year on the Hogback, Fruitland and Cudei projects so as to offset the depletion impacts on endangered fish habitat in the San Juan River that otherwise might result from completion of the NIIP. The “transfer” constitutes an agreement between the Navajo Nation and the Fish and Wildlife Service for such period of time until the Navajo Nation consults with the Service on the biological impacts of increasing the depletions on the Hogback-Cudei and Fruitland-Cambridge irrigation projects above 20,900 acre-feet per year in the aggregate. The baseline depletions used in the Draft EIS on Navajo Dam Operations and in the hydrologic modeling therefore did not include any depletion amount for Fruitland and Hogback projects rehabilitation. Under the proposed Settlement Agreement, the depletion rights for the Fruitland-Cambridge and Hogback-Cudei irrigation projects would amount to 29,250 acre-feet per year in the aggregate (see Appendix 1 to the proposed Settlement Agreement, subparagraphs 3(e) and 3(f)). The depletion schedule assumes that 5 percent of the Fruitland and Hogback project acreage, on average, would be fallow in any year.

3. The non-Navajo irrigation baseline depletions used in the Draft EIS and in the hydrologic modeling total 81,510 acre-feet per year. The Bureau of Reclamation in computing the non-Navajo irrigation baseline depletions used the SCS modified Blaney-Criddle methodology, which depending on the crop patterns tends to yield annual crop consumptive use estimates that are greater than annual crop consumptive use estimates obtained using the original Blaney-Criddle methodology. The use of monthly crop coefficients in the modified Blaney-Criddle method allows Reclamation to obtain monthly distributions of crop consumptive use for modeling purposes, as compared to the use of seasonal crop coefficients in the original Blaney-Criddle method. However, empirical crop coefficients for the original Blaney-Criddle method were calibrated in New Mexico to irrigation practices existing in New Mexico, including in the San Juan River Basin; whereas, empirical crop coefficients for the modified Blaney-Criddle method were not calibrated to New Mexico conditions. The State of New Mexico believes that annual irrigation consumptive uses in the Colorado River Basin in New Mexico must be computed using the original Blaney-Criddle methodology for this and other reasons, and the irrigation depletions included in the Interstate

Stream Commission's depletion schedule are based on the original Blaney-Criddle method.

Representatives of the Bureau of Reclamation and the Bureau of Indian Affairs who are performing the modeling work on and with the San Juan River Basin hydrology model committed to use in the third generation of the hydrology model the original Blaney-Criddle methodology to compute irrigation depletions in New Mexico for all irrigation uses other than the NIIP (see the March 26, 2002, Meeting Summary of the San Juan River Basin Recovery Implementation Program Hydrology Committee, page 2, second paragraph). The development of the third generation of the San Juan River Basin hydrology model is expected to be completed in 2005, and the Hydrology Committee of the Recovery Implementation Program at its September 15, 2004, meeting requested the modelers for the Bureau of Reclamation to incorporate the original Blaney-Criddle method into the third generation model as previously committed. Dave King of Reclamation via email dated September 22, 2004, referred to the Hydrology Committee direction on this matter and confirmed Reclamation's plan to incorporate use of the original Blaney-Criddle method in the hydrology model. Nevertheless, the hydrologic modeling analysis in the Draft EIS on Navajo Dam Operations relied on the use of the second generation hydrology model for the San Juan River Basin, which does not incorporate the original Blaney-Criddle method.

4. The La Plata River drainage irrigation baseline depletion in the Draft EIS and used in the hydrologic modeling of 9,740 acre-feet per year does not take into account the chronic water shortages that plague the La Plata River irrigators every summer and fall. The La Plata River drainage faces south, and the snowmelt runoff season on the La Plata River consequently is of short duration. An overall shortage of 30-60 percent for irrigation uses in the drainage over the course of an irrigation season is common. Shortages must be accounted for irrigation uses from the La Plata River, and the depletion schedule accounts for the shortages.
5. Pursuant to request of the Coordination Committee of the San Juan River Basin Recovery Implementation Program, the Fish and Wildlife Service issued two biological opinions to permit expedited Endangered Species Act consultations on minor depletions in the Basin. Minor depletions are those less than about 100 acre-feet per year whose impacts on endangered fish habitat cannot be measured individually but may be significant collectively. For this reason, two minor depletion allowances totaling 4,500 acre-feet per year in the aggregate have been incorporated into the baseline depletions for purposes of evaluating endangered fish flow recommendations and impacts of water development on the flow recommendations. Minor depletions that are included within the minor depletions allowances are those for which Section 7 consultations have been completed.

The Draft EIS on Navajo Dam Operations and the hydrology model assume that the full amount of minor depletions occurs within the State of New Mexico

because the depletions that make up the minor depletions account are not fully specified as of yet and may change over time, and because placement of the impact of the minor depletions within or near the reach of critical habitat is conservative for the purpose of evaluating impacts to populations of endangered fish species in the San Juan River. The fact of the matter, however, is that only 136 acre-feet of depletion currently included in the minor depletions allowances is associated with uses in New Mexico that are not already included also in the other specified depletions in New Mexico, and these uses are made pursuant to short-term water supply contracts (see John Whipple's November 19, 2004, letter to Pat Page). The other New Mexico depletions in the minor depletions allowances are continuations of pre-1991 uses that were already included in the environmental baseline of the 1991 Biological Opinion for the Animas-La Plata Project or are included also in the current Navajo-Gallup Water Supply Project consultation, and thus double-count uses in New Mexico that are included in other specified depletion amounts. The remainder of the minor depletions that have been included within the minor depletions allowances to date occurs almost exclusively within the State of Colorado. In accordance with the Upper Colorado River Basin Compact, the consumptive use of water is charged against the Compact apportionment of the state in which the use is made.

6. The baseline depletion for the San Juan-Chama Project in the Draft EIS and the San Juan River Basin hydrology model is 107,500 acre-feet per year based on the hydrologic record through 1993. The Bureau of Reclamation staff working on the upgrade of the hydrology model recently estimated that the long-term average annual depletion by the San Juan-Chama Project is 105,200 acre-feet per year based on adding more recent hydrology for the period 1994-2000 to the hydrologic record.
7. The Draft EIS and the hydrology model do not include in the baseline any potential depletions for the Navajo-Gallup Water Supply Project or other Navajo Nation municipal and domestic uses. The environmental baseline does not include potential federal water development projects for which Section 7 consultation has not been completed. The Bureau of Reclamation in September 2004 requested the Fish and Wildlife Service to begin formal Section 7 consultation on the Navajo-Gallup Water Supply Project.
8. The Draft EIS, Volume I, at table III-3 reports that the environmental baseline of depletions considered in Endangered Species Act Section 7 consultations includes existing Navajo Nation uses in the amount of 1,400 acre-feet of depletion for the Shiprock helium plant and 1,200 acre-feet of depletion under two licenses originally acquired by Kerr-McGee for uranium ore processing purposes. The US Department of the Interior under State Engineer File No. 2472 appropriated about 1,448 acre-feet per year with a 1944 priority for use at the Navajo Helium Plant at Shiprock, and uses at the helium plant peaked during World War II. The plant has been dismantled. Kerr-McGee Oil Industries under State Engineer File No. 2807 appropriated 500 acre-feet per year with a 1954 priority and under State

Engineer File No. 2875 appropriated 700 acre-feet per year with a 1957 priority for use in uranium ore processing near Shiprock. Changes of ownership for the licenses originally issued to Kerr-McGee were filed in the name of the Navajo Nation in 1976. The Kerr-McGee operations reportedly were ongoing until the mid 1980s, and small amounts of diversion from alluvial wells in the San Juan River floodplain are now used for site reclamation purposes. The Office of the State Engineer has no records of water use under the three licenses.

However, note 1 to table III-3 also states that the depletions in the table are not the same as the baseline depletions derived for the Draft EIS. It is not clear how the uses under New Mexico State Engineer File Nos. 2472, 2807 and 2875 were considered in the environmental baseline, but the baseline depletions used in the San Juan River Basin hydrology model and the modeling of the Draft EIS do not include any depletions under File Nos. 2472, 2807 or 2875. The licenses pursuant to File Nos. 2472, 2807 and 2875 would be cancelled under the proposed Settlement Agreement.

Compact Apportionment

The Upper Colorado River Basin Compact apportions to the Upper Basin States the yield available to them under the apportionment of water to the Upper Basin by Article III of the Colorado River Compact. The Upper Colorado River Commission does not object for planning purposes to the Bureau of Reclamation's Hydrologic Determination approved in 1989 by the Secretary of the Interior that the yield available to the Upper Basin States is at least 6.0 million acre-feet annually as measured at Lee Ferry. However, the Upper Colorado River Commission does not agree with the assumption used in the Hydrologic Determination that the deficiency in deliveries of water to Mexico would require a release from Lake Powell of one-half of the total Mexican Treaty obligation. Assuming less or no deficiency, the yield available to the Upper Basin States would exceed 6.0 million acre-feet annually. The amount of deficiency has not been determined.

Based on the conservatively low estimate of yield available to the Upper Basin States of at least 6.0 million acre-feet annually, the State of New Mexico's Upper Colorado River Basin Compact Article III(a) apportionment is at least 669,375 acre-feet of consumptive use annually. After accounting for New Mexico's share of Colorado River Storage Project evaporation losses pursuant to Article V of the Upper Colorado River Basin Compact, which share is estimated at about 58,000 acre-feet per year, the amount of apportionment remaining for consumptive uses from the Upper Colorado River Basin to be made within New Mexico is at least about 611,400 acre-feet per year. The schedule of anticipated depletions prepared by the Interstate Stream Commission staff also is conservative in that it includes depletions at the sites of use in New Mexico and does not account for: (a) the water available at sites of use in New Mexico for water salvaged from river losses on the San Juan and Colorado rivers above Lee Ferry that would have occurred without the use in New Mexico; or (b) any reduction in the amounts of depletions for those uses from ephemeral tributaries or ground water that do not fully

impact the flow of the San Juan River. Previous studies prepared for the Upper Colorado River Commission have indicated that salvage by use averages about 4 percent of the at-site depletions by projects in the Upper Basin, and the Bureau of Reclamation in developing long-range operating criteria for the Colorado River also considered salvage by use in the Upper Basin averaging about 4 percent of at-site depletions. Neither the Hydrologic Determination approved by the Secretary nor the Upper Colorado River Commission has yet applied salvage by use. Adjustments for salvage by use and partial flow impacts must be made to account depletions against the apportionment of water made at Lee Ferry.

The schedule of anticipated depletions uses several conservative assumptions because the deficiency in the Mexican Water Treaty deliveries has not been determined and because the Upper Colorado River Commission has yet to make specific findings regarding methodologies to compute irrigation depletions, river flow impacts or salvage by use. Another conservative assumption is that no rights adjudicated by the Echo Ditch Decree would be lost due to forfeiture or abandonment for non-use since 1948, though some rights undoubtedly will be found forfeited or abandoned in the San Juan River Adjudication. For example, the following information from surveys of cropland acreage irrigated in New Mexico from the Animas River, excluding acreage under the Farmers Mutual Ditch, indicate that the acreage irrigated in the Animas River valley has declined since 1965:

| <u>Year</u> | <u>Total Acres</u> | <u>Acres Irrigated</u> | <u>Fallow Acres</u> | <u>Source</u> |
|-------------|--------------------|------------------------|---------------------|-------------------------------|
| 1965 | 16,400 | 15,600 | 800 | SCS - Comprehensive Framework |
| 1994 | 7,290 | 6,000 | 1,290 | ISC - field survey |
| 2000 | 6,620 | 4,980 | 1,640 | ISC - field survey |
| 2003 | 6,200 | 5,610 | 590 | ISC - field survey |

The Interstate Stream Commission field surveys of agricultural cropland in 1994, 2000 and 2003 did not include residential yard and garden acreages within city limits or subdivisions that are irrigated from ditches rather than municipal or domestic water supply systems. The State Engineer Hydrographic Survey currently being prepared for the San Juan River Adjudication, not the Interstate Stream Commission's cropland field surveys, will form the basis for water rights determinations in the Adjudication. Nevertheless, the field survey data is indicative of the subdivision and development of cropland for other land uses that has occurred since the early 1960s. The depletion schedule does not speculate on the ultimate disposition of water rights for irrigated croplands that no longer receive irrigation water due to development, that is, whether such rights are abandoned or transferred to different ownership and purpose. The Adjudication will determine the amounts of irrigation water rights owned by the cities or San Juan County and either transferred or reserved for municipal and domestic water uses.

The baseline depletions and the San Juan River Basin hydrology model do not consider compact apportionments of consumptive use to each Upper Basin state or water rights administration in New Mexico. The hydrologic modeling only evaluates whether the

flow recommendations for endangered fish habitat in the San Juan River can be met if certain depletions are placed on the river system and if Navajo Reservoir is operated in a certain manner. Using the baseline depletions provided in the Draft EIS on Navajo Dam Operations for this purpose is conservative towards evaluating potential impacts on endangered fish habitat of proposed water development projects and proposed reservoir management, but does not necessarily reflect actual or anticipated uses of water or actual administration of water rights or compact apportionments.

Anticipated Depletions and Baseline Depletions for the San Juan River Basin in New Mexico
(Depletions in 1,000 acre-feet per year)

| Depletion category | Anticipated Annual Depletion for 2060 from Depletion Schedule | Baseline Depletion from Draft EIS on Navajo Dam Operations | Notes |
|--|---|--|--|
| Navajo lands irrigation depletions: | | | |
| Navajo Indian Irrigation Project | 256.5 | 280.6 | Anticipated depletion assumes 270.0 right, full completion of project, and 5% fallow acreage. |
| Hogback-Cudei Irrigation Project (includes Cudei) | 20.2 | 13.0 | Anticipated depletion assumes 21.3 right, full rehabilitation of project, and 5% fallow acreage. |
| Fruitland-Cambridge Irrigation Project | 7.6 | 7.9 | Anticipated depletion assumes 8.0 right, full rehabilitation of project, and 5% fallow acreage. |
| Chaco River drainage | 3.1 | 2.8 | Irrigation uses in Chaco River drainage not explicitly modeled in San Juan Basin hydrology model. |
| Crystal-Whiskey Creek area | 0.3 | 0.5 | Irrigation uses in Crystal area not explicitly modeled in San Juan Basin hydrology model. |
| Subtotal | 287.7 | 304.8 | |
| Non-Navajo lands irrigation depletions: | | | |
| Above Navajo Dam (including private and Jicarilla) | 1.7 | 2.9 | Anticipated depletions based on original B-C method. Baseline based on modified B-C method. |
| Animas River drainage | 31.7 | 36.7 | Baseline includes 2.2 for Jicarilla irrigation, but 1.7 is decreed Jicarilla irrigation right. |
| La Plata River drainage | 5.1 | 9.7 | Anticipated depletion accounts typical water supply shortages on La Plata River. |
| Upper San Juan River area (excluding Hammond) | 8.2 | 9.1 | |
| Hammond Project area | 9.2 | 10.3 | |
| Farmers Mutual Ditch (including Westwater area) | 8.8 | 9.6 | |
| Jewett Valley Ditch | 2.8 | 3.1 | |
| Chaco River drainage | 0.7 | 0.0 | Irrigation uses in Chaco River drainage not explicitly modeled in San Juan Basin hydrology model. |
| Subtotal | 68.2 | 81.4 | Baseline total without rounding is 81.5. |
| Total irrigation depletions in Basin | 355.9 | 386.2 | Baseline total without rounding is 386.4. |
| Non-irrigation depletions: | | | |
| Navajo Reservoir evaporation | 27.7 | 27.4 | Baseline assumes Preferred Alternative in Draft EIS on Navajo Dam Operations without NGWSP. |
| BHP-Billiton | 39.0 | 39.0 | |
| PNM - Navajo Reservoir water supply contract | 16.2 | 16.2 | Supplied under subcontract with Jicarilla Apache Nation beginning 2006. |
| Industrial diversions near Bloomfield | 2.6 | 2.5 | Anticipated depletion includes 0.1 for Williams Gas contract. |
| Municipal & industrial uses (excluding ALP,NGWSP) | 9.7 | 8.5 | Does not account transfers from irrigation to municipal uses after 1965. |
| Animas-La Plata Project | 13.6 | 13.6 | Includes NM share of Ridges Basin Reservoir evaporation. |
| Navajo-Gallup Water Supply Project | 29.5 | 0.0 | NGWSP uses in New Mexico: 20.8 for Navajo uses, plus 8.7 supplied through Jicarilla contract. |
| Scattered domestic uses (including Jicarilla, Navajo) | 3.8 | 1.4 | Anticipated depletion includes 2.0 of potential Navajo municipal and industrial uses per settlement. |
| Scattered stock pond evap. and livestock uses | 4.3 | 2.2 | Baseline assumes the impact on San Juan River flow is 50% of 4.3 total pond evap. and stock use. |
| Fish & wildlife (includes small reservoir evaporation) | 1.2 | 1.4 | Baseline includes 0.2 at Jackson Refuge, which is included in anticipated La Plata irrig. depletion. |
| Industrial diversions near Shiprock | 0.3 | 0.0 | |
| Unspecified minor depletions | 0.0 | 4.5 | Anticipated depletions in NM included in specified uses. San Juan model includes 4.5 allowance for minor depletions in CO and NM, but only 0.1 short-term use in NM chargeable to allowance. |
| Total non-irrigation depletions in Basin | 147.9 | 116.7 | |
| San Juan-Chama Project | 105.2 | 107.5 | Anticipated depletion updated for extension of hydrologic record to include 1994-2000. |
| Total New Mexico depletions | 609.0 | 610.4 | Baseline total without rounding is 610.6. |

Note: The baseline in the September 2004 Biological Assessment for the Navajo-Gallup Water Supply Project includes also 6,570 acre-feet for the Jicarilla Apache Nation's Navajo River Water Supply Project pursuant to the Biological Opinion previously completed on the latter project. However, the Jicarilla depletions associated with the latter project and some of the other Jicarilla depletions above Navajo Dam would be "transferred" to uses under the Navajo-Gallup Project, including Jicarilla uses and a lease to supply the City of Gallup. The Biological Assessment for the Navajo-Gallup Project includes about 29,500 acre-feet of depletion for the Project in New Mexico in addition to the baseline depletions shown above.

APPENDIX C

EXAMPLE COMPUTATION AND APPORTIONMENT
OF SHORTAGES AND SUPPLIES FOR
WATER ORIGINATING ABOVE NAVAJO DAM
AS PER SECTION 11 OF THE ACT OF JUNE 13, 1962, AND
SECTIONS 403 AND 404 OF THE SETTLEMENT ACT

Example Computation and Apportionment of Shortages and Supplies for Water Originating above Navajo Dam as per Section 11 of the Act of June 13, 1962, and Sections 403 and 404 of the Settlement Act

| | Total Diversion Demand (af) | Demand Supplied From Inflows below Navajo Dam or from re-use (af) | Normal Diversion Requirement (1) (af) | Percentage of Total NM Normal Diversion Requirement (%) | Prospective Runoff (2) (af) | Apportionment of Prospective Runoff (%) | Apportionment of Available Navajo Reservoir Storage (3) (af) | Total Apportionment of Flow Available at Navajo Dam (af) | Shortage to Normal Diversion Requirement (af) | Shortage to Normal Diversion Requirement (%) | Shortage to Total Demand for Forbearance (%) | Adjusted Apportionment of Flow Available at Navajo Dam for Forbearance (af) | Adjusted Total Supply for Forbearance (af) |
|--|-----------------------------|---|---------------------------------------|---|-----------------------------|---|--|--|---|--|--|---|--|
| | | | | | | | | | | | | | |
| Contract uses above Navajo Reservoir: | | | | | | | | | | | | | |
| San Juan-Chama Project (4) | 135,000 | | 135,000 | 26.5% | 105,878 | 99.9% | 105,799 | 105,799 | 29,201 | 21.6% | 21.6% | 105,799 | 105,799 |
| Jicantilla Apache Nation | 100 | | 100 | | | 0.1% | 78 | 78 | 22 | 21.6% | 21.6% | 78 | 78 |
| Subtotal | 135,100 | | 135,100 | 26.5% | 105,878 | 100.0% | 105,878 | 105,878 | 29,222 | | | 105,878 | 105,878 |
| Contract uses below Navajo Reservoir in New Mexico: | | | | | | | | | | | | | |
| Navajo Indian Irrigation Project (5) | 325,500 | | 325,500 | 86.7% | 255,084 | 86.7% | 43,365 | 298,459 | 27,041 | 8.3% | 8.3% | 295,189 | 295,189 |
| Hammond Irrigation Project (6) | 23,000 | | 23,000 | 6.1% | 18,025 | 6.1% | 3,064 | 21,089 | 1,911 | 8.3% | 8.3% | 21,089 | 21,089 |
| San Juan Generating Station (7) | 16,200 | 8,100 | 8,300 | 2.2% | 6,505 | 2.2% | 1,106 | 7,610 | 690 | 8.3% | 4.3% | 7,610 | 15,710 |
| Navajo-Gallup Water Supply Project: (8) | | | | | | | | | | | | | |
| Navajo Nation in New Mexico | 22,650 | 9,425 | 13,420 | 3.6% | 10,517 | 3.6% | 1,788 | 12,305 | 1,115 | 8.3% | 4.9% | 12,305 | 21,730 |
| City of Gallup | 7,500 | 3,750 | 3,830 | 1.0% | 3,002 | 1.0% | 510 | 3,512 | 318 | 8.3% | 4.9% | 3,512 | 7,262 |
| Jicantilla Apache Nation | 1,200 | | 1,200 | 0.3% | 940 | 0.3% | 160 | 1,100 | 100 | 8.3% | 8.3% | 1,100 | 1,100 |
| Williams Gas | 50 | | 50 | 0.0% | 39 | 0.0% | 7 | 46 | 4 | 8.3% | 8.3% | 46 | 46 |
| Subtotal | 396,100 | 21,275 | 375,300 | 73.5% | 294,122 | 100.0% | 294,122 | 344,122 | 31,178 | | | 340,852 | 362,127 |
| Total uses in New Mexico | 531,200 | 21,275 | 510,400 | | 400,000 | | 400,000 | 450,000 | 60,400 | | | 446,730 | 468,005 |
| Contract uses in Arizona: | | | | | | | | | | | | | |
| Navajo Nation in Arizona (9) | 6,410 | 3,205 | 3,270 | 0.0% | 0 | 0.0% | 0 | 0 | 3,270 | 100.0% | 51.0% | 3,270 | 6,475 |
| Totals | 537,610 | 24,480 | 513,670 | | 400,000 | | 50,000 | 450,000 | 63,670 | | | 450,000 | 474,480 |

Notes:

- That portion of the total diversion demand that is placed on water originating above Navajo Dam.
- Prospective runoff at Navajo Dam available after bypasses needed to satisfy downstream senior direct flow rights below the dam, endangered fish habitat demands, and minimum dam release rate requirements. Amounts needed to be bypassed for endangered fish habitat demands may be adjusted to reflect shortage sharing between water users and endangered fish, and an iterative process may be used to determine apportionments of prospective runoff. This example and explanation is not to be construed to limit any liability on the part of the United States for shortages to contract deliveries caused by bypassing or releasing water from Navajo Dam for purposes of maintaining endangered fish habitat.
- Storage in Navajo Reservoir above the minimum operating level, which currently is at elevation 5990 feet to prevent wave erosion below the riprap on the upstream face of the dam and to maintain physical delivery capability for the Navajo Indian Irrigation Project, that is available for delivery and use after releases from storage needed to satisfy endangered fish habitat demands and minimum dam release rate requirements. Amounts needed to be released from storage for endangered fish habitat demands may be adjusted to reflect shortage sharing between water users and endangered fish, and an iterative process may be used to determine apportionments of available Navajo Reservoir storage. This example and explanation is not to be construed to limit any liability on the part of the United States for shortages to contract deliveries caused by releasing water from Navajo Reservoir for purposes of maintaining endangered fish habitat.
- The normal diversion demand for the purpose of allocating any shortage is the authorized ten-year average diversion. Water stored in Heron Reservoir is for the exclusive use of San Juan-Chama Project contractors; and is not considered in the apportionment of water available in the San Juan River Basin. The supply physically available for diversion by the Project at the points of diversion may be less than the amount of flow available at Navajo Dam that is apportioned to the Project pursuant to section 11 of the Act of June 13, 1962, and the Settlement Act. This is anticipated to be the case during periods of drought and shortage.
- Assumes 3.2 acre-feet withdrawal from Navajo Reservoir needed to irrigate 100,000 acres in current year, plus 2,500 af demand for commercial uses and 3,000 af demand for municipal use leases. The assumed demands are for illustrative purposes only and are not to be construed as a projection of, or limitation to, demands under the Navajo Nation's rights for the Navajo Indian Irrigation Project in any year. Assumes no diversions under File No. 3215 or by re-use.
- Assumes no contract delivery supplied from File No. 3215.
- Supplies direct withdrawal from Navajo Reservoir of 3,800 af for Navajo uses and 1,200 af for Jicantilla uses, plus diversions at the San Juan Generating Station diversion weir of 18,850 af for Navajo Nation uses in New Mexico and 7,500 af for City of Gallup uses under subcontract with the Jicantilla Apache Nation. Assumes half of contract deliveries at the San Juan Generating Station diversion weir anticipated to be supplied from File No. 3215, and a 2% carriage loss from Navajo Dam to the diversion weir. Actual demands in any year may be less than the authorized demands used here for illustrative purposes.
- Navajo-Gallup Water Supply Project uses in Arizona. Assumes half of contract deliveries at the San Juan Generating Station diversion weir anticipated to be supplied from File No. 3215, and a 2% carriage loss from Navajo Dam to the diversion weir. Actual demands in any year may be less than the authorized demands used here for illustrative purposes.

Remarks:

- Shortage and apportionment computations to be updated semi-monthly as runoff forecasts change and actual runoff conditions materialize. Updates may shift shortages or allocations from contract uses above Navajo Dam to contract uses below the dam depending on the physical availability of flows to divert at the points of diversion for the San Juan-Chama Project and Jicantilla Apache Nation uses above the reservoir.
- The percentage shortages to the total diversion demands for uses other than the San Juan-Chama Project reflect shortages to deliveries under water supply contracts in the San Juan River Basin. The computed shortages to the normal diversion requirement of the San Juan-Chama Project may or may not result in shortages to deliveries under Project water supply contracts in the Rio Grande Basin depending upon whether the Project diversions from the San Juan River Basin are more limited by the physical water supply available for diversion by the Project at the points of diversion or the amount of flow apportioned for diversion by the Project pursuant to section 11 of the Act of June 13, 1962, and the Settlement Act. The supply physically available at the Project's points of diversion is expected to control during periods of drought when the above apportionment formula would be applied. Also, the occurrences of any shortages to the contract deliveries under the Project depends on the amount of water stored in Heron Reservoir, which is apportioned exclusively for delivery and use under the San Juan-Chama Project contracts. The total firm yield of the Project below Heron Dam is 96,200 acre-feet per year, of which 91,200 acre-feet is reserved for contract and 5,000 acre-feet is reserved to maintain the recreation pool at Cochiti Lake pursuant to Public Law 88-293.

APPENDIX D

STUDY OF THE EFFECTS OF THE PROVISIONS OF SUBPARAGRAPHS 9.1 AND 9.2 OF THE SETTLEMENT AGREEMENT ASSUMING HISTORIC HYDROLOGY FOR THE AVAILABLE PERIOD OF RECORD 1956-2003

Annual Summary of Amounts of Water Released from Navajo Reservoir Storage to Provide a Minimum Direct Flow of 225 cfs as per Subparagraph 9.1 of the Agreement and to Meet the Alternate Water Source Provisions for Navajo Nation San Juan River Diversions, including the Fruitland and Hogback Irrigation Projects, as per Subparagraph 9.2 of the Agreement

Study of the Effects of the Provisions of Subparagraphs 9.1 and 9.2 of the Settlement Agreement Assuming Historic Hydrology for the Available Period of Record 1956-2003
 Annual Summary of Amounts of Water Released from Navajo Reservoir Storage to Provide a Minimum Direct Flow of 225 cfs as per Subparagraph 9.1 of the Agreement and to Meet the Alternate Water Source Provisions for Navajo Nation San Juan River Diversions, including the Fruitland and Hogback Irrigation Projects, as per Subparagraph 9.2 of the Agreement

| Year | Modeled Navajo Reservoir Storage (1) (af) | Release from Storage to Maintain Minimum Direct Flow (af) | Release from Storage for Alternate Water Demands for Fruitland and Hogback (2) (af) | Ten-year Running Average of Releases per Alternate Water Source Provisions (af) | Depletion of Release from Storage for Alternate Water Source Demands for Fruitland and Hogback Projects (3) (af) | Ten-year Running Average of Depletions per Alternate Water Source Provisions (af) | Shortage to Direct-Flow Uses Not Met by Alternate Water Source Provisions (4) (af) | Period of Shortage to Direct-Flow Uses (dates) |
|---------|---|---|---|---|--|---|--|--|
| 1956 | 944,200 | 0 | 12,000 | | 5,184 | | 19,864 | 9/11-10/31 |
| 1957 | 891,700 | 0 | 0 | | 0 | | 0 | |
| 1958 | 1,685,700 | 0 | 222 | | 96 | | 0 | |
| 1959 | 1,368,300 | 690 | 12,000 | | 5,184 | | 7,109 | 9/12-9/30 |
| 1960 | 1,377,700 | 0 | 4,979 | | 2,151 | | 0 | |
| 1961 | 1,269,600 | 0 | 212 | | 92 | | 0 | |
| 1962 | 1,440,500 | 0 | 3,855 | | 1,665 | | 0 | |
| 1963 | 1,424,400 | 0 | 2,383 | | 1,029 | | 0 | |
| 1964 | 1,173,100 | 0 | 726 | | 314 | | 0 | |
| 1965 | 1,145,600 | 0 | 0 | 3,638 | 0 | 1,571 | 0 | |
| 1966 | 1,670,900 | 0 | 683 | 2,506 | 295 | 1,083 | 0 | |
| 1967 | 1,360,200 | 0 | 0 | 2,506 | 0 | 1,083 | 0 | |
| 1968 | 1,281,300 | 0 | 10 | 2,485 | 4 | 1,073 | 0 | |
| 1969 | 1,393,300 | 0 | 0 | 1,285 | 0 | 555 | 0 | |
| 1970 | 1,481,900 | 0 | 113 | 798 | 49 | 345 | 0 | |
| 1971 | 1,506,000 | 0 | 1,210 | 898 | 523 | 388 | 0 | |
| 1972 | 1,372,200 | 0 | 9,025 | 1,415 | 3,999 | 611 | 0 | |
| 1973 | 1,374,000 | 0 | 0 | 1,177 | 0 | 508 | 0 | |
| 1974 | 1,591,500 | 0 | 10,179 | 2,122 | 4,397 | 917 | 0 | |
| 1975 | 1,325,300 | 0 | 0 | 2,122 | 0 | 917 | 0 | |
| 1976 | 1,530,600 | 0 | 0 | 2,054 | 0 | 887 | 0 | |
| 1977 | 1,188,900 | 216 | 10,203 | 3,074 | 4,408 | 1,328 | 0 | |
| 1978 | 1,085,000 | 0 | 7,560 | 3,829 | 3,266 | 1,654 | 0 | |
| 1979 | 1,204,500 | 0 | 0 | 3,829 | 0 | 1,654 | 0 | |
| 1980 | 1,451,900 | 0 | 0 | 3,818 | 0 | 1,649 | 0 | |
| 1981 | 1,432,300 | 0 | 651 | 3,762 | 281 | 1,625 | 0 | |
| 1982 | 1,502,800 | 0 | 0 | 2,859 | 0 | 1,235 | 0 | |
| 1983 | 1,468,100 | 0 | 0 | 2,859 | 0 | 1,235 | 0 | |
| 1984 | 1,654,300 | 0 | 0 | 1,841 | 0 | 795 | 0 | |
| 1985 | 1,567,400 | 0 | 0 | 1,841 | 0 | 795 | 0 | |
| 1986 | 1,429,500 | 0 | 0 | 1,841 | 0 | 795 | 0 | |
| 1987 | 1,571,400 | 0 | 0 | 821 | 0 | 355 | 0 | |
| 1988 | 1,543,400 | 0 | 0 | 65 | 0 | 28 | 0 | |
| 1989 | 1,511,800 | 0 | 1,229 | 188 | 531 | 81 | 0 | |
| 1990 | 1,278,400 | 0 | 0 | 188 | 0 | 81 | 0 | |
| 1991 | 1,523,100 | 0 | 0 | 123 | 0 | 53 | 0 | |
| 1992 | 1,542,500 | 0 | 0 | 123 | 0 | 53 | 0 | |
| 1993 | 1,616,900 | 0 | 0 | 123 | 0 | 53 | 0 | |
| 1994 | | 0 | 9 | 124 | 4 | 53 | 0 | |
| 1995 | | 0 | 0 | 124 | 0 | 53 | 0 | |
| 1996 | | 0 | 4,622 | 586 | 1,997 | 253 | 0 | |
| 1997 | | 0 | 0 | 586 | 0 | 253 | 0 | |
| 1998 | | 0 | 0 | 586 | 0 | 253 | 0 | |
| 1999 | | 0 | 0 | 463 | 0 | 200 | 0 | |
| 2000 | | 0 | 11,059 | 1,569 | 4,777 | 678 | 0 | |
| 2001 | | 0 | 121 | 1,581 | 52 | 683 | 0 | |
| 2002 | | 0 | 6,000 | 2,181 | 2,592 | 942 | 63,758 | 6/25-10/25 |
| 2003 | | 0 | 6,000 | 2,781 | 2,592 | 1,201 | 8,542 | multiple (5) |
| Average | | 19 | 2,189 | | 945 | | 2,068 | |

Notes:

- (1) Modeled storage is from the draft Navajo Reservoir operations EIS. Navajo Reservoir gaged inflow records are available daily beginning 1956, and the modeling period used in the EIS ended 1993. The total depletion in New Mexico used in the model was 610,600 acre-feet, as compared to 609,800 acre-feet projected in New Mexico's Upper Basin depletion schedule. The total depletion served from the Navajo Reservoir water supply is also similar between documents. It is assumed that May 31 storage in 2002 and 2003 would be modeled under full development conditions to be less than 1 million acre-feet due to the severity of the recent drought, and in particular, the 10% of average runoff that occurred in 2002.
- (2) Model results showed no shortages to the amount of depletions modeled while operating Navajo Dam to make contract deliveries and to meet flows for endangered fish habitat in the San Juan River recommended by the San Juan River Basin Recovery Implementation Program. Under full development, shortages may have occurred during 2002 and 2003, and a 10% shortage to the Navajo Indian Irrigation Project diversion demand is assumed for both years.
- (3) The depletion of the releases from storage for delivery to the Fruitland and Hogback projects is compiled assuming an incremental river channel loss of 2%, a project efficiency of 38% (38% of the diversion satisfies the consumptive irrigation use after accounting for canal and irrigation efficiencies), and incidental depletions equal to 16% of the consumptive use. Possible re-division and re-use at Hogback of incremental return flows from the Fruitland project resulting from diversion of alternate source water at Fruitland is not included in this calculation.
- (4) Return flows from diversions by the Fruitland and Hogback projects under the alternate water source provisions might be credited towards meeting the habitat flow needs of endangered fish in the San Juan River and might be released from Navajo Dam to maintain such habitat flows without the alternate water source provisions. The amount of habitat flow chargeable to the NIP contract right might vary depending on the recommended flows for endangered fish habitat, Navajo Dam operations to meet such flows, whether any portions of the return flows bypass gages used to measure performance under the flow recommendations, and the extent to which dam releases for endangered fish habitat might be considered as carriage water. To the extent that Navajo Dam releases made to meet the flow recommendations can be considered as carriage water and not as a delivery chargeable against the NIP contract diversion right, the periods of shortage could be shortened and the depletions associated with alternate water sourcing for 1956, 1959, 2002 and 2003 chargeable to the NIP contract right would exceed those shown, and the releases from storage specifically for use at Fruitland and Hogback for other years would be less than those shown. The flow recommendations for endangered fish habitat are subject to change through adaptive management.
- (5) Periods of shortage to direct-flow users include July 26-28, August 4-14, August 20-23, and September 27-October 31. Based on provisional flow data for 2003.

Summary of findings:

- (1) The provisions of subparagraph 9.1 of the Settlement Agreement do not affect contract deliveries from runoff above Navajo Dam.
- (2) Under the alternate water source provisions of subparagraph 9.2 of the Settlement Agreement, the years of shortage experienced by the direct-flow users below Navajo Dam are reduced from 46% of the years (22 years out of 48, excluding total shortages of 10 acre-feet or less in 1968 and 1994) to 8% of the years (4 years out of 48) for the period of record. If historic hydrology patterns repeated, about two years of shortage would occur every 45 years or so, or in about 4% of years, pursuant to subparagraph 9.2. If releases made from Navajo Dam to benefit endangered fish species in the San Juan River can be used as carriage water to and through the Fruitland and Hogback projects, the releases from Navajo Dam made pursuant to subparagraph 9.2 can provide greater coverage against the occurrence or extent of priority calls. Actual accounting of alternate water source deliveries would be determined based on conditions at the times of delivery.

Assumptions generally used in study:

- (1) Analysis considers only water rights in New Mexico.
- (2) Hogback and Fruitland projects combined divert about 325 cfs every day during April through October (includes municipal and domestic use diversions at Shiprock pursuant to subparagraph 3(d) of the proposed Partial Final Decree).
- (3) Rate of daily average direct flow needed to satisfy all demands of direct flow users during April-September:
 - (a) combined direct flow of the Animas River near Cedar Hill and the San Juan River at Archuleta of 700 cfs, with direct flow of the San Juan River at Archuleta of 250 cfs; or
 - (b) direct flow of the San Juan River at Archuleta of 450 cfs, with direct flow of the Animas River near Cedar Hill of 250 cfs or less.
- (4) Rate of daily average direct flow needed to satisfy all demands of direct flow users during October:
 - (a) combined direct flow of the Animas River near Cedar Hill and the San Juan River at Archuleta of 500 cfs, with direct flow of the San Juan River at Archuleta of 250 cfs; or
 - (b) direct flow of the San Juan River at Archuleta of 250 cfs, with direct flow of the Animas River near Cedar Hill of 250 cfs or less.
- (5) Direct flow of the San Juan River at Archuleta equals the maximum of:
 - (a) the inflow to Navajo Reservoir computed using a water budget computation for the reservoir, averaged over three consecutive days; and
 - (b) the sum of the gaged inflows to Navajo Reservoir at four gaging stations (San Juan River at Carracas, Piedra River near Arboles, Los Pinos River at La Boca, and Spring Creek at La Boca), plus 20 cfs for intervening inflow between the gages and Navajo Dam under pre-dam conditions, averaged over three consecutive days.Provided, that the direct flow, if computed pursuant to (a) and (b) to be less than 225 cfs, will be determined for the purpose of water rights administration as a minimum of 225 cfs if Navajo Reservoir storage exceeds 1 million acre-feet at the end of May.

Sensitivity of results to study factors:

Factor:

- (a) Peak irrigation consumptive use and river loss conditions apply during April-September
- (b) Irrigation, including at Fruitland and Hogback, is at maximum cfs rates with no annual volume limits
- (c) No inflows occur below Cedar Hill and Navajo Dam, including from the La Plata River, except return flows
- (d) Historic flows repeat on the Animas River near Cedar Hill and in the drainage above Navajo Dam

Impact on estimated shortages and the amounts of release pursuant to the alternate water source provisions:

- tends to over-estimate
- tends to over-estimate
- impact depends on future hydrology and uses in Colorado

Other remarks:

State Engineer administration of the rights to divert from the direct flow and from stored water is expected to follow approval of statewide rules and regulations for active water resource management. It is anticipated that a draft water resources administration manual for the San Juan River Basin may be released for public review and comment in 2006. The assumptions made in this study regarding the determination of the direct flow at Navajo Dam and administration of the direct flow should not be viewed to pre-determine the outcome of the public review process on basin-specific administrative criteria. Regardless of differences that may occur between study assumptions and actual administration conditions, it can be concluded from the study that the alternate water source provisions provide significant protection to direct-flow users in the San Juan River Basin in New Mexico against the occurrence of curtailment by priority call when the direct flow is insufficient to meet all the demands under the rights to divert and use direct flow in New Mexico. The Navajo Nation and non-Navajo water users in the Basin will still need to cooperatively address severe drought conditions from time to time in the future.