

**Response to Comments Document**  
**APS Four Corners Power Plant**  
**NPDES Permit No. NN000019**

EPA received comments dated February 18, 2015, from the Law Office of John M. Barth on behalf of San Juan Citizens Alliance, Center for Biological Diversity, Dine Citizens Against Ruining our Environment, Amigos Bravos, Sierra Club, Earthjustice, and Western Environmental Law Center (collectively referred to as the “Conservation Organizations”) on EPA’s Draft renewal NPDES Permit for the Four Corners Power Plant, NPDES Permit No. NN000019. EPA has summarized the comments, primarily through the use of excerpts, and responded below.

**COMMENT 1:** The Four Corners Power Plant (“FCPP”), a coal burning power plant, is located on the Navajo Nation. The FCPP has operated as a 5-unit coal plant, but units 1, 2, and 3 were retired from service on December 31, 2013. Units 4 and 5 continue to operate and are required to install selective catalytic reduction (“SCR”) on or before July 31, 2018 to reduce nitrogen oxide emissions pursuant to EPA’s Clean Air Act regional haze Best Available Retrofit Technology (“BART”) determination for the plant.

The FCPP currently disposes of its coal combustion residuals (“CCR’s”) in on-site ponds. FCPP historically disposed of CCRs in mine pits at the adjacent and related Navajo coal mine. The federal government is currently preparing a comprehensive environmental impact statement (“EIS”) pursuant to the National Environmental Policy Act (“NEPA”) that focuses largely on the proposed expansion of CCR disposal facilities to allow FCPP to continue operating for up to 30 more years. EPA is a cooperating agency in this EIS process. A coalition of environmental organizations submitted written comments on the draft EIS for the FCPP/Navajo Mine, a copy of which is attached hereto and incorporated herein by reference.

An NPDES permit was originally issued to the FCPP on July 1, 1977. The term of an NPDES permit cannot exceed 5 years in length. The last NPDES renewal permit for FCPP was issued by EPA in 2001, or nearly 14 years ago. On May 16, 2014, San Juan Citizens Alliance and Center for Biological Diversity issued a 60-day notice of intention to sue letter to EPA alleging that EPA has unreasonably delayed reissuing the renewal NPDES permit.

On November 13, 2014 EPA issued a Notice of Proposed Action proposing to issue a renewal NPDES Permit, which is the subject of this comment letter. Under the terms of EPA’s public notice, the comment period was scheduled to expire on January 12, 2015. However, at the time it issued its public notice, EPA had failed to make publicly available a number of documents in EPA’s administrative record for its proposed decision. As such, the Conservation Organizations requested that EPA make these documents available to the public to allow a thorough review of EPA’s proposed action. As of December 29, 2014, EPA had posted some, but not all, additional administrative record material to its website. Thus, on December 29, 2014 SJCA requested an extension of time to submit comments on EPA’s draft renewal NPDES permit. EPA formally granted an extension of the comment period until February 18, 2015. As such, this comment letter is timely submitted.

**RESPONSE 1:** EPA had administratively extended the current permit and any delay in issuing a new permit was due to uncertainty surrounding both the physical operations of the facility and the corresponding requirements applicable to any renewed NPDES permit. EPA prepared and proposed a

renewal permit on November 13, 2014. At the time the public notice was published EPA provided a copy of the proposed permit and factsheet on its website as a courtesy to potentially interested persons. However, EPA did not have a legal obligation to make the entire Administrative Record available online. As EPA indicated in its public notice, all documents from the administrative record were available for inspection at EPA's office during business hours during the entire public comment notice period. *See* 40 CFR Section 124.10(d)(1)(vi). In this case, the commenter could not inspect the documents in person at EPA's offices and instead requested that a copy of the entire record be provided. EPA provided the commenter with all the documents in the administrative record in electronic format at no charge to the commenter. The exercise of converting many documents that were in hardcopy format to electronic files required significant time and resources, and EPA therefore extended the public comment period, thereby granting the commenter's request for additional time to provide comments. *See* Letter from Gary Sheth (EPA) to John Barth, January 15, 2015.

**COMMENT 2:** According to EPA, coal-fired power plants are the second largest discharger of toxic pollutants in the United States. The toxicity of these discharges is primarily due to metals associated with coal combustion waste handling. Toxic metal discharges from steam electric power can pose a serious threat to public health and the environment. EPA has acknowledged that even relatively small amounts of coal ash pollutants can pose a threat to aquatic organisms, wildlife and human health due to the persistent and bio-accumulative nature of these pollutants. Under the Clean Water Act, an NPDES permit must contain effluent limits that "restore" and "maintain" the quality of the receiving water body. At a minimum, EPA must set technology based effluent limits ("TBELs") that reflect the ability of available technologies to reduce or eliminate pollution discharges. If a discharge could cause or contribute to a violation of water quality standards in the receiving water, EPA must include water quality-based effluent limitation ("WQBELs") in the NPDES permit to prevent the exceedance.

EPA is in the process of revising its effluent limitations and guidelines ("ELGs") to control discharges of pollutants into the waters of the U.S. from coal-fired power plants. These revised ELGs will update the TBEL requirement. These ELGs have not been updated since 1982. The 1982 ELGs were based on settling ponds as the technology for removing only Total Suspended Solids ("TSS"). EPA has found that such ponds are ineffective for removing toxic pollutants such as dissolved metals and nutrients. A coalition of environmental organizations submitted written comments on EPA's June 2013 proposed revision to the ELGs. We request that EPA review the environmental coalition comment letter and incorporate our suggestions into the FCPP renewal NPDES permit.

Where EPA has not promulgated ELGs for a particular category of discharger, or where the existing ELGs do not address all waste streams or pollutants discharged by a facility, EPA must use Best Professional Judgment ("BPJ") and set TBELs based on Best Available Technology ("BAT") for each pollutant. Some of these best available technologies are described in the attached comment letter on EPA's proposed revision to the ELGs. The existing ELGs for the Steam Electric Category do not address pollutants in scrubber discharges or discharges from coal combustion waste landfills and impoundments. EPA has made clear that "state(s) must include technology-based effluent limitations in its permits for pollutants not addressed by the effluent guidelines" for the Stream Electric category, noting that the "CWA requires permitting authorities to conduct the 'BPJ' analysis...on a case-by-case basis for those pollutants in each permit."

This Clean Water Act requirement does not only apply to discharges of FGD wastewater; rather, EPA must conduct a BPJ analysis for any pollutant not addressed by the ELGs, including discharges from coal combustion waste landfills and impoundments. In fact, EPA stressed the importance of BPJ limitations for these types of discharges over ten years ago when it promulgated ELGs for the landfills point source category. EPA declined to promulgate effluent guidelines for leachate generated at captive landfills, which are landfills “associated with an industrial or commercial operation” such as power plant ash landfills “because NPDES writers must impose limitations on discharges of these wastewater sources that are developed on a case-by-case, best professional judgment (BPJ) basis.” EPA emphasized that the decision would “not allow these wastewater sources to escape treatment. Landfill wastewater at captive facilities is and will remain subject to treatment and controls on its discharge. The CWA requires wastewater discharges to meet technology-based effluent limitations on the discharge whether the mechanism for imposing these limitations is EPA-established national effluent limitation guidelines or a permit writer’s imposition on a case-by-case basis of BPJ limitations.”

The longstanding legal obligation to set TBELs in NPDES permits for all pollutants not addressed by the Steam Electric ELGs was recently confirmed by EPA commenting on NPDES permits for Steam Electric Plants. Because toxic pollutants in scrubber and other coal combustion wastewater are not addressed in ELGs, EPA must set TBELs on a case-by-case basis for the pollutants in these wastewater discharges. The Conservation Organizations submit these comments on EPA’s Draft renewal NPDES Permit for the FCPP and request that EPA amend the Draft permit to incorporate these comments.

**RESPONSE 2:** EPA is issuing this NPDES permit under the authority of the Clean Water Act, which regulates the discharge of a pollutant through a point source to a water of the U.S. EPA does not have the authority under the Clean Water Act to regulate groundwater generally or to regulate the disposal practices or other conditions at the facility which do not result in the discharge of a pollutant through a point source to a surface water. EPA’s effort in this permit is to identify discharge points where there is a potential for discharge of a pollutant into waters of the U.S., and to impose appropriate limits on that discharge.

In 2015, EPA adopted a final rule entitled “Effluent Limitation Guidelines and Standards for the Steam Electric Power Generating Point Source Category” (80 Fed. Reg. 67838 (November 3, 2015)). The effective dates of the provisions of that rule have recently been extended to November 1, 2018 and November 1, 2020, depending on the particular provision. *See* 82 Fed. Reg. 43494 (September 18, 2017). The guidelines in the 2015 rule are therefore not effective as to this permit.

In the absence of revised guidelines, the limitations in this permit will continue to rely on the 1982 Effluent Limitation Guidelines (ELGs) described in 40 CFR Part 423, Steam Electric Power Generating Point Source Category. ELGs represent the greatest pollutant reductions that are economically achievable for an industry, and are based on Best Practicable Control Technology (BPT), Best Conventional Pollutant Control Technology (BCT), and Best Available Technology Economically Achievable (BAT). (Sections 304(b)(1), 304(b)(4), and 304(b)(2) of the CWA respectively). In cases where a particular discharge is not covered by the ELGs in 40 CFR Part 423, this permit relies on the Best Professional Judgment (BPJ) of the permit writer. *See* CWA Section 402(a)(1)(B) and 40 CFR 125.3(a)(1) and (c)(2). These requirements are described below. Commenter, in this comment and elsewhere below, is asserting that pollution is being discharged from the power plant operation from locations in addition to the discharge points named in the application. Particular concerns raised are discussed below at Comment 6 (potential of seeps from fly ash ponds), Comment 7 (spills from the

garage fueling area), Comment 8 (the spillway from Morgan Lake into No Name Wash), and Comment 9 (total dissolved solids).

*See also* Response to Comment 3, below (discussing the applicable water quality standards).

Finally, Commenter references comments made by a number of organizations on EPA's proposed revisions to the ELGs. Those comments, and EPA's responses, are included in the administrative record for that rulemaking process, and are also included in the administrative record for this permit.

**COMMENT 3:** EPA's Draft permit arbitrarily relies on Navajo Nation Water Quality Standards despite the fact that such standards apparently cannot be used to regulate the discharge of pollutants from the FCPP. On December 1, 1960, the Navajo Nation and the developers of the FCPP entered into an "Indenture of Lease" governing the construction and operation of the FCPP on the Navajo Nation. The lease was subsequently revised. The currently effective lease between the FCPP owners and the Navajo Nation includes the following provision:

"The Tribe covenants that, other than as expressly set out in the New Lease or in the Amended Original Lease, respectively, it will not directly or indirectly regulate or attempt to regulate the Lessees under the New Lease or Arizona under the Amended Original Lease or the construction, maintenance or operation of the Enlarged Four Corners Generating Station and the transmission systems of the Lessees and Arizona, or their rates, charges, operating practices, procedures, safety rules, or other policies or practices, or their sales of power..."

In 2000-2001, EPA issued a final NPDES permit for the FCPP that relied on the Navajo Nation Water Quality Standards. The permit was appealed by APS, which argued that EPA could not rely on such water quality standards. APS relied on the court decision in *Arizona Public Service Company v. Aspaas*, 77 F.3d 1128 (9th Cir. 1995) for the proposition that the Navajo Nation could not directly or indirectly regulate operations of the FCPP. In light of this appeal, EPA amended its final NPDES permit for the FCPP removing certain provisions applying the Navajo Nation Water Quality Standards and allowing regulation by the Navajo Nation. In 2006 EPA approved Navajo Nation's Section 518 "treatment as State" application to adopt tribal water quality standards, but this approval did not include Morgan Lake. As discussed more fully below, Morgan Lake is a "water of the United States", "navigable water", "water of the State of New Mexico", and "water of the Navajo Nation" and thus discharges into Morgan Lake must be regulated in this NPDES permit. In approving the "treatment as State" application, EPA stated:

"In approving the Tribe's Application, EPA is not making any findings about the Tribe's authority over Morgan Lake or the Four Corners Power Plant and Navajo Generating Station or their owners and operators. EPA is also deferring the issue of whether the Tribe's water quality standards, if and when approved by EPA, would apply to any CWA-permitted discharges from these facilities to Tribal waters. To the extent necessary, EPA will consider these issues, and how they relate to the lease provisions, in the context of future permitting or other relevant action taken by EPA."

EPA subsequently approved the Navajo Nation's Water Quality Standards, including those for Morgan Lake. The Navajo Nation's promulgation of water quality standards (approved by EPA) for Morgan Lake, No Name Wash, Chaco River, and/or the San Juan River appears to constitute a direct and/or

indirect regulation of the FCPP owners, operation of the FCPP, its operating practices, and/or procedures because these water quality standards could restrict the water pollution being emitted from the plant. Under the terms of the current lease, the Navajo Nation's Water Quality Standards for these watersheds appear unenforceable against the owners of the FCPP. Accordingly, EPA's reliance on the 2007 Navajo Nation Water Quality standards appears to be arbitrary and capricious because such standards may not be applied to the operations of the FCPP. EPA may not defer, or delay, any further its identification of which water quality standards apply to this permitting action. As such, EPA must apply state, federal, or tribal water quality standards to the operation of the FCPP that protect all uses, including but not limited to aquatic life, wildlife, livestock watering, primary recreational contact, and domestic water use. EPA acknowledged this issue in a September 15, 2006 Inspection Report and concluded that "U.S. EPA may opt to use either Navajo Nation or New Mexico standards." EPA needs to explain its legal basis for this statement in light of the lease, and relevant statutes and case law.

EPA should amend its Draft permit, fact sheet, and reasonable potential analysis to specifically identify which water quality standards (state, federal, or tribal) it is applying to each receiving water (Morgan Lake, No Name Wash, Chaco River, and the San Juan River) and why. After this clear identification of water quality standards and the legal basis for each, we request that EPA re-issue its Draft permit, fact sheet, and reasonable potential analysis for a new public comment period.

**RESPONSE 3:** The Navajo Nation, in its letter to Wayne Natri, EPA Regional Administrator, dated October 31, 2005, clarified that the Navajo Nation was explicitly not requesting TAS recognition as to Morgan Lake (and the associated No Name Wash, the outlet of Morgan Lake). EPA therefore excluded Morgan Lake from the list of Navajo Nation waterbodies for which EPA was recognizing the Navajo Nation's jurisdiction for purposes of CWA Section 303(c) and 401. *See* Decision Document: Approval of the Navajo Nation Application for Treatment in the Same Manner as a State for Sections 303(c) and 401 of the Clean Water Act, January 20, 2006, at page 2.

EPA recognizes that there was and may still be an ongoing dispute as to the jurisdictional status of Morgan Lake as between the Navajo Nation and APS. Nevertheless, unless and until that dispute is resolved by mutual agreement or otherwise, and the Nation applies for and receives EPA recognition of its TAS authority over these waters, EPA will continue to be the regulatory authority for purposes of CWA Sections 303(c) and 401 for Morgan Lake and No Name Wash. The status of Morgan Lake as a "water of the U.S." is discussed below in Comment 10.

When EPA reviewed and approved Navajo Nation water quality standards, EPA explicitly limited its approval of those standards to those areas that had received TAS recognition. ("To be consistent with the Navajo Nation's TAS approval, EPA is approving the Navajo Nation WQS to apply specifically to those waters for which the Navajo Nation has received TAS approval." EPA Letter Approving Navajo Nation Water Quality Standards, March 26, 2009, at p. 1). As discussed above, this limitation on the WQS approval means that the Navajo Nation WQS would not apply to Morgan Lake for purposes of the federal Clean Water Act. EPA retained responsibility for Morgan Lake under both CWA 303(c) and 401.

The action in front of EPA at this time is the renewal of an NPDES permit for the Four Corners Power Plant. Many of the permit terms are established with reference to technology-based effluent limits. In addition, the CWA requires EPA to review applicable water quality standards to determine if there is

reasonable potential to cause or contribute to an excursion above such water quality standards. 40 CFR 122.44(d)(1). Here, neither the Navajo Nation's nor the adjacent state's water quality standards have any formal regulatory standing as to Morgan Lake. That is, there are no federally-approved water quality standards that apply to Morgan Lake. EPA has recently discussed this problem broadly when it issued its "advance notice of proposed rulemaking" ("ANPRM") on potential "baseline water quality standards" for tribal waters without approved water quality standards. *See* Federal Baseline Water Quality Standards for Indian Reservations, Advance Notice of Proposed Rulemaking, 81 Fed.Reg. 66900 (September 29, 2016).

In the absence of a broader solution as suggested by the ANPRM, EPA permit writers must rely on "best professional judgment" to determine the appropriate targeted levels of protection. This reliance is explicitly authorized in CWA Section 402(a)(1)(B) ("...the Administrator may...issue a permit for the discharge of any pollutant, or combination of pollutants,...upon condition that such discharge will meet...such conditions as the Administrator determines are necessary to carry out the provisions of this chapter."). In our case, the permit writer has relied on the Navajo Nation water quality standards for the "downstream" Chaco River as a reference tool for defining the likely best targets for numeric and narrative goals that should be used in determining impacts to Morgan Lake. Using these standards as a reference tool is not intended to suggest that the Navajo Nation has any regulatory role in assigning WQSs to Morgan Lake; it is a conclusion by the permit writer that these Chaco River – the downstream receiving waters – water quality standards are a legitimate adjacent jurisdiction assessment of scientifically-based measures that would protect the uses in Morgan Lake.

By using the Navajo Nation Surface Water Quality Standards as a benchmark to conduct the reasonable potential analysis, EPA is exercising its Best Professional Judgment in determining what standards to apply to ensure that the discharge from Outfall 001 into the No Name Wash and from there into the Chaco River (which itself is a tributary to the San Juan River) protect the uses of the receiving waters.

Based on a review of the existing data on pollutants from discharge monitoring reports (DMRs) submitted by APS over the past five years, as well as supplemental ambient water quality data provided by the Navajo Nation EPA during the comment period and a review of the type of receiving water and designated uses as indicated by the Navajo Nation Surface Water Quality Standards, EPA concluded that other than the effluent limitations promulgated under the steam electric power generation ELGs, there was no reasonable potential for other pollutants to cause or contribute to an exceedance of such receiving water standards. However, to ensure that there is no likelihood of other pollutants being present and having the potential to cause or contribute to a violation of water quality standards, EPA has now included monitoring in the permit for arsenic, boron, cadmium, lead, mercury, and selenium. EPA also included general conditions as General Discharge Specifications in the proposed permit to preserve the water quality of the receiving water and meet the requirements of the CWA.

Finally, EPA notes that the 2007 Navajo Nation Water Quality Standards are substantially similar to federally-recommended criteria for priority pollutants. *See* CWA Section 304(a); 40 CFR 131.11(b). For that reason, in practical terms it is not likely to make a significant difference in the values of many of the actual limits that are imposed on the permittee in the proposed renewed permit whether EPA references the Navajo Nation Water Quality Standards or Federal "304(a)" water quality criteria. In neither case has EPA identified a reasonable potential for water quality standard violations as described in 40 CFR 144.22(d)(1).

**COMMENT 4:** We also note that this Draft permit should be subject to a water quality certification under Section 401 of the Clean Water Act (“CWA”). 33 U.S.C. § 1341. EPA’s administrative record for this permit proceeding is silent on this issue. EPA should amend its Draft permit and fact sheet to specifically whether a 401 certification is required, if so why, if not why not, and identify the governmental entity that will issue any such certification (the State of New Mexico or the Navajo Nation). After providing this explanation including the legal support, we request that EPA re-issue its Draft permit and fact sheet for a new public comment period on this issue.

**RESPONSE 4:** See Response to Comment 3. EPA continues to be the regulatory authority for purposes of CWA Section 401 certification as to federal permits involving Morgan Lake. Pursuant to CWA Section 401 and 40 CFR Section 124.53, certification can be waived by the certifying agency, and EPA did so in its email exchange dated May 29-30, 2018. Copies of the request for certification and the waiver of that certification are included in the Administrative Record for this permit. Given this waiver and in the absence of any related changes in the proposed permit, EPA does not believe there is a reason to extend the public comment period.

**COMMENT 5:** EPA’s draft permit fails to regulate all point sources that discharge or may discharge into navigable waters. Section 301 of the Clean Water Act mandates that all “discharge of pollutants” be subject to a permit or otherwise comply with the CWA. 33 U.S.C. §1311(a). The term “discharge of pollutant” is defined as “any addition of any pollutants to navigable waters from any point source...” 33 U.S.C. §1362(12). The term “point source” is defined to include “any discernable, confined and discrete conveyance...from which pollutants are or may be discharged.” U.S.C. §1362(14)(emphasis added).

EPA’s Draft Permit is deficient because it fails to require permitting for all point sources of water pollution that discharge, or may discharge, pollutants into waters of the United States from the FCPP: namely, 1) seepage from the coal ash facilities and related contamination; 2) the seepage from the garage fueling area and related contamination; 3) the discharge from the Morgan Lake spillway; and, 4) the discharge of Total Dissolved Solids and other pollutants into Morgan Lake from the FCPP and from Morgan Lake into receiving waters.

**RESPONSE 5:** The proposed NPDES permit appropriately regulates point source discharges to receiving waters which are Waters of the United States. See the response to individual comments below on each of the following: 1) seepage from the coal ash facilities and related contamination (Comment 6); 2) the seepage from the garage fueling area and related contamination (Comment 7); 3) the discharge from the Morgan Lake spillway (Comment 8); and, 4) the discharge of Total Dissolved Solids and other pollutants into Morgan Lake from the FCPP and from Morgan Lake into receiving waters (Comment 9).

**COMMENT 6:** EPA must permit the seepage from the coal ash facilities. An October 4, 2007 EPA Region 9 site inspection report of FCPP revealed seepage from the FCPP coal ash disposal facilities along the eastern bank of the Chaco River. These seeps have been previously documented to be emanating from the FCPP coal ash facilities. These seeps are more fully described in a letter from APS to OSM dated April 3, 2013. The May 8, 2012 EPA Inspection Report also states: Sanitary, fly ash and FGD blowdown wastewater is not regulated in the NDPEs Permit. Although there is no discrete outfall from the fly ash ponds, the ponds do have a potential to discharge to Waters of the U.S. through subsurface leaching.

The lease between the Navajo Nation and the owners of the FCPP specifically allows the discharge of coal ash seepage into Chaco River and its tributaries. More specifically, the Lease states, “In addition, the Company shall have the right to dispose of waste water on the Reservation by permitting waste water from the power plant to flow from the ash disposal area into the Chaco Wash.”

This lease provision makes it clear that the Navajo Nation has authorized the discharge of wastewater from the ash disposal areas into surface waters. The FCPP power plant and related coal ash facilities are man-made point sources. Pollutants “are or may be discharging” from these point sources into navigable waters. 33 U.S.C. §1362(14). As such, EPA has a duty to subject the historic and existing seepage from the coal ash facilities to NPDES permitting requirements. EPA’s Draft permit fails to comply with this obligation. The Draft permit fails to undertake a BPJ analysis of pollutants discharging from the coal ash facilities, fails to impose TBELs for pollutants discharging from the coal ash facilities, and fails to impose WQBELs for pollutants discharging from the coal ash facilities. Instead of imposing effluent limitations and monitoring requirements on the seepage, the Draft permit contains the following conditions to deal with the substantial problem of seepage from coal ash disposal facilities at the FCPP, a problem that has been documented for at least the past 10 years:

“Surface seepage intercept systems shall be constructed and operated for existing and future unlined ash ponds. Water collected by these intercept systems shall be returned to the ash ponds, or evaporation ponds. All provisions of the Seepage Monitoring and Management Plan as described below in the Special Conditions Section must be implemented.

“Part III. SPECIAL CONDITIONS

“A. Seepage Management and Monitoring Plan

A Seepage Monitoring and Management Plan shall be established and implemented to determine the source of and pollutants in seepages below all ash ponds that receive or received coal combustion residue either currently or in the past. The Plan shall be established and submitted to EPA within 120 days of the issuance of this permit. The Plan shall at a minimum do the following:

1. Identify all seeps within 100 meters down gradient of such impoundments
2. Conduct sampling (or provide summary of current data if sufficient and valid) of seepages for boron, mercury, nickel, selenium, uranium, zinc and total dissolved solids.
3. Provide information about number of flows observed and range of flows observed.
4. Provide information about exceedances of any human health, livestock, or chronic or acute aquatic life standards as established in the 2007 NNWQS in the samples collected for analysis.”

EPA’s proposed Seepage Monitoring and Management Plan is likewise deficient. Although preparation of the Seepage Monitoring and Management Plan is a time bound requirement (120 days), the timeframe for the obligation to construct and operate surface seepage intercept systems for existing and future



unlined ash ponds, is not specified in the Draft permit. As such, the Plan is unenforceable, arbitrary, and capricious. The Seepage Plan is also deficient because it only requires the FCPP owners to “[i]dentify all seeps within 100 meters down gradient of such impoundments.” The language of the Seepage Plan must be amended to trace the flow of all seeps from their source to the point where they either terminate or reach a receiving water. The Seepage Plan should require a calculation of flow for all seeps as they enter any receiving water and also require a full suite of water quality sampling of all seeps that enter receiving waters. The Seepage Plan should require monthly monitoring of flow and water quality and require that the FCPP owners submit to EPA such information in monthly Discharge Monitoring Reports. The final permit should also specify either that the obligation to finalize construction and operation surface seepage intercept systems is subject to the 120 day deadline, or impose a separate short deadline for the applicant to do so. The Seepage Plan should also require the FCPP owners to produce all existing studies on the hydrological connection of the coal ash facilities with all waters of the United States. The Seepage Plan should also require monthly water quality sampling immediately upstream and downstream in the receiving water both before and after any influence by any seepage. The Seepage Plan should also require the FCPP owners to conduct dye testing or some other technical study to definitively confirm the hydrologic connection between the coal ash facilities and the receiving waters.

As described above, EPA has arbitrarily failed to subject the seepage from the coal ash facilities to CWA permitting requirements. Because these discharges have never been subject to NPDES permitting, they may constitute “new” or “increased” discharges that are subject to both anti-degradation review and impaired waters limitations. EPA’s administrative record for this proceeding is silent on both these issues. Please identify which government’s (federal, state, or tribal) anti-degradation and impaired waters requirements apply to this permit proceeding and why. Then please reissue the draft permit, fact sheet, anti-degradation analysis, and impaired waters analysis/Total Maximum Daily Limit (“TMDL”) analysis for public review.

**RESPONSE 6:** Pursuant to CWA Section 402, NPDES permits only regulate discharge of pollutants from point sources to surface waters that are Waters of the U.S.<sup>1</sup> The commenter’s characterization of the seeps addressed in the permit under the provisions of a Seep Management Plan as point sources that are required to be regulated under an NPDES permit is not supported by the available data.

These seeps are not point sources discharges because they do not represent flows from discrete conveyances that discharge treated effluent to receiving surface waters of the United States. Additionally, there is no known direct hydrological connection to any flow from the seeps and once-through cooling water from Morgan Lake or from the combined waste treatment pond that are regulated under the listed outfalls in the proposed permit. There has been speculation that the water in the seeps comes from the fly ash disposal areas to the south of the power plant. The commenter cites several such sources of speculation including communication between the Permit applicant and the Office of Surface Mining Reclamation and Enforcement (OSMRE) and a speculative conjecture in an inspection report by an EPA inspector. However, a definitive connection between the water in the seeps and the wet fly ash disposal areas has not been established.<sup>2</sup> There are several potential sources for the water in seeps, including not

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<sup>1</sup> We note at the outset that commenter misstates the applicable standard in the first paragraph of this comment. The mere potential for a discharge does not, in and of itself, require a permit. See National Pork Producers Council v. EPA, 635 F. 3d 758 (5<sup>th</sup> Cir. 2011).

<sup>2</sup> We note that EPA has recently issued a notice requesting public comment on Clean Water Act coverage of “discharges of pollutants” via a direct hydrologic connection to surface water on . 83 Fed. Reg. 7126 (February 20,

just the lined fly ash disposal area, but several other sub-surface sources of water, including Morgan Lake.

Faced with the uncertainty over the source and nature of the seeps, EPA, in the previous permit cycle leading to the 2001 permit, required the permittee to construct and operate a seepage intercept system for the existing unlined ponds. These intercept systems return any collected water to the ponds. The permittee also installed monitoring wells down gradient from the intercept systems. The results of these monitoring wells evaluations were provided to EPA in 2013, and were recently updated. This information is included in the administrative record. The data collected in the monitoring wells is consistent with EPA's conclusions in developing the 2001 permit and this revised permit. As anticipated, water collected at the wells largely replicates background conditions, and overall groundwater levels are decreasing, likely in response to the seep intercept system.

Although the permittee is no longer actively using these ponds for disposal, EPA has enhanced the seep evaluation process in the present permit. The Seep Management Plan required in the permit is designed to determine the pollutants present and the source for such pollutants in seepages below the ash ponds that receive or received fly ash either currently or in the past. If this Seep Management Plan identifies an enhanced potential for a discharge covered under the NPDES program, the permit includes a reopen provision that would enable an appropriate response.

**COMMENT 7:** The Draft permit fails to regulate discharges from the garage fueling area and contamination. A February 2013 report prepared for APS by Mogollan Environmental Services documents continuing and ongoing releases of petroleum, benzene, and other petroleum byproducts from the FCPP Garage Fueling Area into soil, groundwater, and Morgan Lake [cite omitted]. The FCPP Garage Fueling Area is immediately adjacent to, and nearly surrounded by, Morgan Lake [cite omitted]. In the mid-1980's it was reported that "diesel was bubbling up" to the surface of Morgan Lake [cite omitted]. It was found that there were releases of petroleum substances from the FCPP Garage Fueling Area into Morgan Lake [cite omitted]. The results of the 2013 investigation revealed that petroleum substances are still present in the soil and groundwater at the FCPP Garage Fueling Area.

The Draft permit fails to impose permitting requirements on the discharge of petroleum substances from the FCPP Garage Fueling Area into Morgan Lake. The Draft permit fails to undertake a BPJ analysis, fails to impose TBELs, and fails to impose WQBELs for the discharges from the FCPP Garage Fueling Area. The permit should include effluent limits for all pollutants expected to be found in fuels used at FCPP, including, but not limited to benzene. The discharges from the FCPP Garage Fueling Area also violates the Navajo Nation narrative water quality standards because they "[c]ause solids, oil, grease, foam, scum, or any other form of objectionable floating debris on the surface of the water body; may cause a film or iridescent appearance on the surface of the water body; or that may cause a deposit on a shoreline, on a bank, or on aquatic vegetation." The permit must ensure that both numerical and narrative water quality standards are complied with.

The FCPP and/or Garage Fueling Areas are point sources under the CWA. As discussed below, Morgan Lake is a "water of the United States", "navigable water", "water of the Navajo Nation" and "water of the

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2018). Here, as noted above, EPA does not presently have data indicating that the water from the fly ash disposal areas has migrated to these seeps or other surface waters.

State of New Mexico.” As such, EPA must properly regulate this discharge of pollutants into Morgan Lake and downstream watersheds. In the event EPA claims that these discharges are covered under some other CWA discharge permit (i.e., stormwater) please identify the permit and the basis for such coverage. Then please reissue the draft permit and fact sheet for public comment on this issue.

**RESPONSE 7:** All Storm water runoff on the Four Corners Power Plant site is collected and channeled to the settling pond described as the combined waste treatment pond and from there discharged via internal outfall 01E to Morgan Lake. Any potential discharge from the garage fueling area would thus be collected by such storm water collection methods and treated via settling in the settling pond prior to discharge from internal Outfall 01E. As such, discharge from internal Outfall 01E is regulated under the ELGs for steam electric power generation and is subject to internal limits for total suspended solids (TSS) and oil and grease. The proposed permit includes an internal limit for Oil and Grease of 15 mg/L as a 30-day average, and 20 mg/L as a daily maximum. As discussed in Comment Response number 10, below, Morgan Lake is not a “water of the United States,” and these requirements for internal outfalls such as Outfall 01E are based on 40 CFR Section 122.45(h) (describing conditions under which limits and monitoring requirements might apply at internal outfalls).

The final discharge from Morgan Lake into No Name Wash (a water of the United States) is regulated under outfall 001 which is where the discharges, if any, from the garage fueling area would eventually also be released. While there is no explicit numeric limit for Oil and Grease at Outfall 001, the narrative requirement that the discharge be free from pollutants in amounts or combinations that, for any duration cause solids, oil, grease, foam, scum, or any other form of objectionable floating debris on the surface of the water body; may cause a film or iridescent appearance on the surface of the water body; or may cause a deposit on a shoreline, on a bank, or on aquatic vegetation applies.

In addition, the permit requires that a priority pollutant scan to be completed at least once during the permit cycle. The priority pollutant scans include testing for hydrocarbons commonly found in petroleum products and residues. The priority pollutant scans conducted by APS do not indicate the presence of any petroleum based pollutants at levels that present a reasonable potential to exceed any water quality standard established for such pollutants by the Navajo Nation in their 2007 Navajo Nation Water Quality Standards. These standards would apply to waters downstream from Outfall 001. In the absence of an identified potential water quality problem, there is no justification for the renewed permit to impose additional limits on possible discharges from the Garage Fueling Area.

**COMMENT 8:** The Draft permit fails to regulate discharges from Morgan Lake via the spillway. As discussed below, Morgan Lake is a “water of the United States”, “navigable water”, “water of the Navajo Nation” and “water of the State of New Mexico” and discharges into the Lake must be permitted and regulated. However, if EPA refuses to do so, it still must require a permit for discharges from the Morgan Lake spillway into No Name Wash, Chaco River, and/or the San Juan River. EPA’s 2012 Inspection Report notes, there are discharges from the Morgan Lake spillway into No Name Wash and/or Chaco River during high wind events [cite omitted]. EPA’s Draft permit states that Morgan Lake is a man-made cooling water pond and fails to treat it as a water of the United States. While we disagree with this conclusion, under EPA’s theory it must treat Morgan Lake as a point source and regulate all discharges from it. EPA’s inspection report admits that such discharges should be permitted. EPA’s Draft permit is

deficient because it fails to do so. EPA must permit all discharges from Morgan Lake and undergo the appropriate BPJ analysis, and impose TBELs and/or WQBELs in this renewal permit.

**RESPONSE 8:** The commenter asks EPA to regulate discharges from Morgan Lake via the spillway. The permit regulates point source discharges from the Morgan Lake Outfall 001. Any other discharge from Morgan Lake would be an unpermitted discharge and prohibited. Morgan Lake is an artificial cooling pond, and water levels are managed in real time through occasional releases through Outfall 001. We note that discharges from the spillway during high wind events have not been documented and that the EPA 2012 facility inspection report (included in the administrative record) discussed a hypothetical discharge.

*See also* Footnote 1, above (permit not required for potential, as opposed to actual, discharge), and Response 10, below, as to Morgan Lake’s jurisdictional status.

**COMMENT 9:** EPA’s permit must regulate discharge of TDS into and/or from Morgan Lake. An EPA Region 9 site inspection report of the FCPP on May 8, 2012 states:

“Total Dissolved Solids are built-up in Morgan Lake before being discharged to the receiving water. Elevated TDS may adversely impact downstream beneficial uses, however there is no criterion for TDS in the Navajo Nation Water Quality Standards.” [cite omitted].

As discussed below, Morgan Lake itself is a “water of the United States” and “navigable water” and thus EPA must establish effluent limitations for the discharge of TDS into Morgan Lake from the FCPP and/or all related point sources. In 2004 the Navajo Nation adopted a numerical TDS water quality standard for livestock watering of 2212 mg/l. Livestock watering is a current use of Morgan Lake, as well as primary contact recreation, aquatic life, and other uses. The 2004 TDS standard cannot be found in the 2007 Navajo Nation water quality standards. It is unclear why this standard was not carried forward into the 2007 Standards. We request that EPA explain why it approved the 2007 standards that appear to omit the 2004 TDS standard. Nevertheless, Morgan Lake is used for livestock watering and aquatic life and these uses must be protected by adopting TDS effluent limits and monitoring requirements into the current permit. Even if EPA refuses to regulate discharges of TDS into Morgan Lake, it still must incorporate effluent limitations in the permit for the discharge of TDS from Morgan Lake into No Name Wash, Chaco River, and the San Juan River. EPA’s permit is deficient because it fails to do so. EPA incorrectly and arbitrarily states that there are no TDS water quality standards for discharges from the FCPP. To the contrary, the current lease between the FCPP owners and the Navajo Nation contains the following provision establishing a concentration-based TDS standard:

“Total dissolved solids in the surface return flow shall be measured at the plant release point, and the effect of such release on the total dissolved solids in the river computed. The Lessees and Arizona agree that such water return will not increase the total dissolved solids of the San Juan River as so computed an average of more than 100 parts per million in any three calendar month period, or an average of more than 400 parts per million in any 24-hour period, provided that the river flow passes such point of return averages 200 cfs or more over such three months’ period. If the river averages less than 200 cfs in such a three-month period, such returned water will not increase the total dissolved solids in the river as so computed an average of more than 100 parts

per million multiplied by a factor equal to 200 cfs divided by the average actual river flows in cfs in said three-month period.”

The above lease provision requires monitoring of TDS “at the plant release point” prior to Outfall 001A and requires adoption of an effluent limitation at the same point of release from the plant to ensure that TDS is not increased above the limits established in the lease. Alternatively, this language imposes a water quality standard for TDS in the San Juan River that must be utilized by EPA in making a reasonable potential analysis. EPA’s Draft permit is defective because it fails to impose TDS monitoring requirements at the point of release of the discharge from the FCCPP, fails to impose a TDS effluent limit from the FCCPP plant to ensure compliance with the TDS water quality standard for the San Juan River contained in the lease, fails to require flow monitoring in the San Juan River above the point of discharge, and fails to require TDS monitoring upstream and downstream of the discharge in the San Juan River. Please include such requirements in the permit.

In addition, EPA’s March 2001 NPDES permit fact sheet states that, “[t]otal dissolved solids monitoring is required for discharges to tributaries of the San Juan River. These requirements are consistent with those of the previous permit.” It appears that EPA’s Draft permit violates the anti-backsliding provisions of the Clean Water Act by eliminating effluent limitations and/or required monitoring requirements for TDS. We request that EPA produce all previous NPDES permits for the FCCPP so the public can determine whether EPA’s Draft permit violates anti-backsliding requirements of the CWA. We then request that EPA allow for public comment on this issue before finalizing the Draft permit. As noted earlier, we ask that the EPA apply federal, state, lease, or tribal standards for TDS and other pollutant discharges into Morgan Lake, No Name Wash, Chaco River, and the San Juan River. Alternatively, we request that EPA apply the 2004 Navajo Nation TDS standard to Morgan Lake, No Name Wash, and the Chaco River, and apply the lease TDS standards to the San Juan River. We also request that EPA perform a reasonable potential analysis and submit the same for public notice and comment. We also request that EPA collect from the FCCPP owners the flow data and water quality data necessary to determine historic compliance with the TDS lease standards for the San Juan River. We ask that this compliance analysis, and EPA’s reasonable potential analysis, be released for public review and comment prior to the issuance of the final permit.

**RESPONSE 9:** The commenter makes several comments in this section. The commenter asks that the permit regulate TDS discharges and states that the permit violates the anti-backsliding provisions. The commenter proposes that the permit apply the numeric TDS standards for livestock watering that are set forth in the Navajo Nation WQS, or the TDS provision in the lease agreement between the Navajo Nation and the permit applicant. The commenter objects to the placement of the TDS monitors. In addition, the commenter requests copies of all previous NPDES permits for the power plant.

The permit regulates TDS by requiring the applicant to monitor TDS discharges from Morgan Lake’s Outfall 001 into No Name Wash; if monitoring shows that elevated concentrations of TDS would impair the beneficial uses of the receiving water or would cause acute environmental, health or other impacts, EPA may set an appropriate numeric limit under the permit’s re-opener clause.

As noted above in Comment Response 3, the Navajo Nation Water Quality Standards do not apply to Morgan Lake. In addition, as noted below in Comment Response 10, Morgan Lake is not a “water of the United States,” so the permit appropriately evaluates the discharge from Morgan Lake into No Name Wash (Outfall 001).

The permit does not violate the anti-backsliding provisions because it regulates TDS in the same manner as the prior permit. Neither the existing permit nor the proposed permit include effluent limits on TDS. Both permits require the same baseline monitoring at Outfall 001.

Navajo Nation WQS for livestock watering do not apply to Morgan Lake. *See* discussion at Response 3 (EPA explicitly carved out Morgan Lake in its approval of Navajo Nation WQS). Those Navajo Nation WQS do apply downstream of Outfall 001 in the Chaco River and San Juan River. However, the monitoring data does not suggest a reasonable potential that those standards are being violated downstream due to the discharge from Outfall 001.

The permit applies standards pursuant to the authority and processes specified in the CWA; the CWA specifies that EPA may, in relevant part, promulgate and enforce regulations, set permit terms using best professional judgement and approve and enforce water quality standards that have been set by states and tribes. A privately negotiated lease agreement provision is not applicable nor relevant to this permit, and does not establish water quality standards for any purpose under the Clean Water Act.

Finally, the commenter requests copies of all previous NPDES permits for the power plant. EPA correctly included a copy of the prior permit in the administrative record, because only the immediately previous permit is relevant to the permit renewal. The commenter may request earlier permits via a Freedom of Information Act request. EPA notes, however, that those earlier permits may not be available given that they are likely older than the applicable document retention period. *See* EPA Records Schedule 1047 (05/31/17) (providing a 10-year retention period for expired or superseded permits).

**COMMENT 10:** Morgan Lake is a “navigable water”, “water of the United States”, “water of the Navajo Nation” and “water of the State of New Mexico” and all discharges into Morgan Lake must comply with water quality standards. The Draft permit incorrectly labels Outfall 01A (Condenser Cooling Water Discharge) as an “Internal Outfall” when in fact it discharges to a water of the United States (Morgan Lake). EPA’s Draft permit is deficient because it fails to assure compliance with all water quality standards for pollutant discharges into Morgan Lake, which is a “navigable water”, “water of the United States”, “water of the Navajo Nation”, and “water of the State of New Mexico.” Instead, the Draft permit only purports to regulate pollutant discharges “of effluent from Morgan Lake to the No Name Wash, a tributary of the Chaco River which eventually drains to Segment 2-401 of the San Juan River...”

First, Morgan Lake is a “water of the Navajo Nation” as defined in the Navajo Nation’s Water Quality Standards, which includes:

all surface waters including, but not limited to, portions of rivers, streams (including perennial, intermittent and ephemeral streams and their tributaries), lakes, ponds, dry washes, marshes, waterways, wetlands, mudflats, sandflats, sloughs, prairie potholes, wet meadows, playa lakes, impoundments, riparian areas, springs, and all other bodies or accumulations of water, surface, natural or artificial, public or private, including those dry during part of the year, which are within or border the Navajo Nation. This definition shall be interpreted as broadly as possible to include all waters which are currently used, were used in the past, or may be susceptible to use in interstate, intertribal or foreign commerce [cite omitted]. (emphasis added).

The Navajo Nation has adopted water quality standards for all waters on the reservation [cite omitted]. EPA has approved the Navajo Nation's water quality standards[cite omitted]. Morgan Lake is designated for the following uses: primary human contact, fish consumption, aquatic and wildlife habitat, and livestock watering[cite omitted]. The Navajo Nation water quality standards include both narrative and numerical water quality standards for Morgan Lake[cite omitted]. As noted by EPA, Section 402 and 301(b)(1)(C) of the CWA require that NPDES permits contain effluent limits necessary to meet water quality standards[cite omitted]. Morgan Lake has numeric water quality standards for a large variety of organic, inorganic, and physical pollutants[cite omitted].

**RESPONSE 10:** Commenter, in comments 10 through 13, suggests that Morgan Lake should be treated as a “water of the U.S.” so that discharges into Morgan Lake would be regulated under the NPDES. We disagree.

The Four Corners Power Plant secured an updated NPDES permit effective April 7, 2001. *See* NPDES Permit (No. NN0000019) (available at [cite EPA website]). For purposes of the NPDES requirements, the 2001 permit treated the discharge point as the discharge from Morgan Lake into No Name Wash. As discussed below, EPA does not believe there is a justification at this time for changing this approach.

The NPDES program requires a permit for the “discharge of any pollutant” (CWA Section 402(a)(1)), and clarifies that this means, as relevant here, “any addition of any pollutant to navigable waters from any point source.” (CWA Section 502(12)). The Act defines “navigable waters” as “waters of the United States.” (CWA Section 502(7)). Due to its importance in a number of CWA regulatory programs, the precise definition of “waters of the United States” has become a complicated and frequently litigated issue. EPA and the Corps of Engineers (the co-regulatory agency for certain provisions of the CWA) promulgated a revised definition of the term. *See* 80 FR 37054 (June 29, 2015) (Final Rule). After public response, EPA and the Corps added an applicability date of February 6, 2020 to the 2015 regulations and initiated a new rulemaking effort. *See* 82 FR 34899 (July 27, 2017) (New Rulemaking); 83 FR 5200 (February 6, 2018) (Applicability Date Rule). Under the Applicability Date Rule, EPA intends that the regulations defining “waters of the United States” that were in place prior to the 2015 Rule are in effect. Furthermore, EPA will continue to interpret the statutory term “waters of the United States” to mean waters covered by the prior regulations, as they are currently being implemented, consistent with Supreme Court decisions and practice, and as informed by applicable agency guidance documents. 83 Fed. Reg. at 5201.

Until such time as new rulemaking is complete, EPA sees no sufficiently new evidence to justify a change in its prior permitting approach that regulates the discharge from Morgan Lake. EPA relies on a number of factors in continuing to treat the regulated discharge point as being the discharge from Morgan Lake into No Name Wash.

Morgan Lake is a man-made waterbody that was constructed in an upland area. EPA has reviewed the historical topographical maps and aerial photographs of Morgan Lake, some of which are approximately 50 years old, to confirm this fact. *See* Memorandum from Gary Sheth to File dated July 20, 2017. (available in the administrative record.)

Second, although there appears to be some boating and fishing use of Morgan lake, that use appears to be incidental and does not indicate the presence of “interstate commerce.” There are no boat rentals, marinas, or commercial fishing activities at the lake. There is an “old beat-up dock” and one ramp (“one

concrete single lane silted in in spots”). Although windsurfing is permitted, swimming is prohibited. (<http://www.emnrd.state.nm.us/spd/boatingweb/MorganLake.html>, last visited 02/12/18). In short, this incidental use of the cooling pond does not provide a sufficient nexus to interstate commerce to justify an assertion of federal jurisdiction.

Third, Morgan Lake is not a “tributary” to a water of the U.S. Morgan Lake is a closed-cycle cooling system operated as an integral part of the Four Corners Power Plant. It draws water from the San Juan River over two miles away, uses that water in its daily operations, cycling it through the cooling pond, and occasionally discharging excess water through a pipe and a flume into No Name Wash, which is a tributary to the Chaco River. Here, where the cooling pond (Morgan Lake) is fully integrated into plant operations and is for the most part isolated from the natural hydrological system, EPA does not see any new facts that would justify changing its previous approach to regulate at the point of discharge from Morgan Lake.

**COMMENT 11:** Morgan Lake is a “traditional navigable water” because it supports or could support commercial waterborne recreation. Under 40 CFR Section 122.2 Waters of the United States or waters of the U.S. means:

- (a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; In May 2011 the U.S. EPA issued “Draft Guidance on Identifying Waters Protected by the Clean Water Act” clarifying the meaning of these traditional navigable waters: “For purposes of CWA jurisdiction and this guidance, waters will be considered traditional navigable waters if they are waters currently being used for commercial navigation, including commercial waterborne recreation (for example, boat rentals, guided fishing trips, or water ski tournaments); or They have historically been used for commercial navigation, including commercial waterborne recreation; or They are susceptible to being used in the future for commercial navigation, including commercial waterborne recreation. Susceptibility for future use may be determined by examining a number of factors, including the physical characteristics and capacity of the water to be used in commercial navigation, including commercial recreational navigation (for example, size, depth, and flow velocity.), and the likelihood of future commercial navigation, including commercial waterborne recreation. A likelihood of future commercial navigation, including commercial waterborne recreation, can be demonstrated by current boating or canoe trips for recreation or other purposes. A determination that a water is susceptible to future commercial navigation, including commercial waterborne recreation, should be supported by evidence.

Morgan Lake is currently used for boating, including windsurfing[cite omitted]. Therefore, Morgan Lake is a traditional navigable water under the Clean Water Act.

**RESPONSE 11:** See Response 10. EPA is not treating Morgan Lake as a “water of the U.S.,” and is imposing NPDES requirements at the discharge point from Morgan Lake into No Name Wash.



**COMMENT 12:** Morgan Lake is a tributary of a Water of the United States because it contributes flow to a traditional navigable water. Under 40 CFR 122.2: Waters of the United States or waters of the U.S. means:

(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition; In May 2011 the U.S. EPA issued “Draft Guidance on Identifying Waters Protected by the Clean Water Act” clarifying the meaning of tributaries:

“EPA and the Corps will assert jurisdiction over tributaries under either the plurality standard or the Kennedy standard, as described below.

“For purposes of this guidance, a water may be a tributary if it contributes flow to a traditional navigable water or interstate water, either directly or indirectly by means of other tributaries. A tributary can be a natural, man-altered, or man-made water body. Examples include rivers and streams, as well as lakes and certain wetlands that are part of the tributary system and flow directly or indirectly into traditional navigable waters or interstate waters. A tributary is physically characterized by the presence of a channel with defined bed and bank. The bed of a stream is the bottom of the channel. The lateral constraints (channel margins) are the stream banks. Channels are formed, maintained, and altered by the water and sediment they carry, and the forms they take can vary greatly.”

Morgan Lake contributes flow to the San Juan River via No Name Wash and Chaco River as described in the draft permit (see below).

“Outfall No. 001 discharges from Morgan Lake to the No Name Wash which is tributary to the Chaco River, which in turn drains to Segment 2-401 of the San Juan River. The discharges according to the permit application submitted by APS from Outfall No. 001 are intermittent with an average of 2.5 days per week of discharge for about 6 months in a year. The average flow rate for the discharge is 4.2 million gallons a day. The length of the No Name Wash from Outfall 001 (parshall flume) to the Chaco River is about 2.5 miles and the point where the No Name Wash meets the Chaco River is about 7 miles from where the Chaco eventually meets the San Juan River. APS mostly discharges in order to regulate total dissolved solids (TDS) build up in the lake which is used for once through cooling of the generating units.”

Morgan Lake is therefore a tributary even though it is a “man-altered or man-made water body.”

**RESPONSE 12:** See Responses 10 and 11. EPA is imposing NPDES requirements at the discharge point from Morgan Lake into No Name Wash.

**COMMENT 13:** Morgan Lake is not a “waste treatment system” excluded from the definition of a water of the United States. Under 40 CFR 122.2 “Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States.”

The referenced section that supposedly defines “cooling ponds” does not exist in the current Code of Federal Regulations. However, at the time the original definition of “waters of the United States” was promulgated, “cooling ponds” were defined as “any manmade water impoundment which does not impede the flow of a navigable stream and which is used to remove heat from condenser water . . .” 40 C.F.R. §423.11(m) (1979). Because Morgan Lake is a manmade water impoundment that does not impede the flow of a navigable stream and is used to remove heat from condenser water, Morgan Lake is a ‘cooling pond’ and not a waste treatment system excluded from the definition of a water of the United States

**RESPONSE 13:** *See* Response 10. EPA is not relying on the regulatory definitions of “waste treatment systems” nor on exclusions therefrom in continuing its practice of regulating the discharge at the point of discharge from Morgan Lake.

**COMMENT 14:** EPA’s failure to regulate water pollution discharges into Morgan Lake is arbitrary and capricious because EPA has taken the opposite position in its NPDES permit for the Navajo Mine. In 2008 EPA issued a final permit for the adjacent Navajo Mine. EPA’s permit regulates discharges into Morgan Lake from the Navajo Mine and imposes effluent limitations based on water quality standards for the Lake. Likewise, APS has previously admitted that Morgan Lake is “a water of the U.S.” In summary, given EPA’s treatment of Morgan Lake as a “water of the United States,” “navigable water”, “water of the Navajo Nation” and “water of the State of New Mexico” for purposes of the CWA, EPA’s failure to regulate discharges into Morgan Lake is arbitrary and capricious.

**RESPONSE 14:** EPA acknowledges that the 2008 permit for Navajo Mine and the 2001 permit for the Four Corners Power Plant took different approaches to Morgan Lake. As discussed in Response 10, above, EPA believes that the jurisdictional approach taken in the earlier Four Corners Power Plant permit continues to be appropriate for this permit. The new permit for the expanded Navajo Mine has been revised to reflect this approach.

**COMMENT 15:** The draft permit erroneously concludes that discharges do not present a “reasonable potential” to cause or contribute to an exceedance of water quality standards. The Fact Sheet for the Draft Permit states:

“In addition to technology-based effluent limitations, the Clean Water Act (CWA) Sections 402 and 301(b)(1)(C) require that an NPDES permit contain effluent limitations that, among other things, are necessary to meet water quality standards. An NPDES permit must contain effluent limits for pollutants that are determined to be discharged at a level which has “the reasonable potential to cause or contribute

to an excursion above any State [or Tribal] water quality standard, including State [or Tribal] narrative criteria for water quality.” 40 CFR 122.44(d)(1)(i).

Based on an application of these factors to the APS FCPP operations and projected wastewater quality data provided in the application, EPA concluded that the discharges do not present a “reasonable potential” to cause or contribute to an exceedance of water quality standards. Due to the facility potentially discharging to dry washes, EPA has not considered available dilution, which may be present in the receiving waters. Therefore, EPA has made the most conservative and protective assumption of no available dilution in its analysis and that water quality standards must be met at the end of pipe prior to discharge. Therefore, based on sampling data and an evaluation of discharge characteristics, EPA has concluded, consistent with the previous permit, that other than the effluent limitations for pH, TSS, Oil and Grease, which are promulgated under the Steam Electric Power Generation ELGs as described in 40 CFR Section 423, that there is no reasonable potential for other pollutants to cause or contribute to a violation of receiving water standards. However, EPA has included monitoring in the permit for several additional parameters in order to further verify these assumptions.”

Outfall 01A and outfall 01E of the FCPP discharge wastewaters into Morgan Lake, which enjoys the following designated uses under the 2007 Navajo Nation Surface Water Quality Standards:

Table 205.1 (continued) Designated Uses for Navajo Nation Surface Waters

Surface Water Body	Basin	Cataloging Unit	Domestic Water Supply (Dom)	Primary Human Contact (PrHC)	Secondary Human Contact (ScHC)	Agricultural Water Supply (AgWS)	Fish Consumption (FC)	Aquatic & Wildlife Habitat (A&WHbt)	Livestock Watering (LW)
Morgan Lake	San Juan	Chaco		PrHC	ScHC		FC	A&WHbt	LW

Outfall 001 discharges from Morgan Lake to the Chaco River/Chaco Wash a tributary of the San Juan River, which enjoy the following designated uses under the 2007 Navajo Nation Surface Water Quality Standards.

Table 205.1 (continued) Designated Uses for Navajo Nation Surface Waters

Surface Water Body	Basin	Cataloging Unit	Domestic Water Supply (Dom)	Primary Human Contact (PrHC)	Secondary Human Contact (ScHC)	Agricultural Water Supply (AgWS)	Fish Consumption (FC)	Aquatic & Wildlife Habitat (A&WHbt)	Livestock Watering (LW)
Chaco River/Chaco Wash, mouth to mouth of Dead Man's Wash	San Juan	Chaco		PrHC	ScHC		FC	A&WHbt	LW
San Juan River and perennial tributaries (except as listed below)	San Juan	Numerous	Dom	PrHC	ScHC	AgWS	FC	A&WHbt	LW

Because Morgan Lake, Chaco River/Chaco Wash, and the San Juan River enjoy these designated uses, they are protected by a large set of numerical water quality standards for metals and other pollutants that are enriched in discharges from coal-fired power plants.

Of particular concern are mercury and selenium. Selenium levels in fish from Morgan Lake have been found to be elevated to the point where public health advisories, such as the one below, have been issued:

**Navajo Nation Fish Consumption Health Advisory**

The Navajo Nation Environmental Protection Agency (NNEPA) in cooperation with the Navajo Nation Division of Health and Navajo Nation Fish and Wildlife Department is issuing a fish consumption advisory for Red Lake near Navajo, NM, and Morgan Lake, NM. A recent fish tissue study completed by the U.S. Fish and Wildlife Service and NNEPA concluded that methylmercury concentrations in catfish caught from Red Lake exceeded the

U.S. Environmental Protection Agency (USEPA) recommended human health criterion. Selenium concentrations in bass and catfish caught from Morgan Lake also exceeded the USEPA human health criterion.

The U.S. EPA erroneously concluded that the discharges from the FCPP “do not present a ‘reasonable potential’ to cause or contribute to an exceedance of water quality standards” based on effluent quality analyses that employed detection limits far too high to ascertain whether discharges from the FCPP would impair water quality. The Navajo Nation Water Quality Standard for mercury for water bodies with a designated use of Aquatic & Wildlife Habitat (including Morgan Lake, Chaco River/Chaco Wash and the San Juan River) is 0.001 micrograms per liter (0.001 µg/L) on a long-term (chronic) basis. Yet, the test method that was employed in the priority pollutant scans for outfalls 001, 01A and 01E to ascertain whether discharges from the FCPP would impair water quality (EPA Test Method 200.7) has a detection limit for mercury of 0.2 µg/L – 200 times the applicable water quality standard.

Similarly, the Navajo Nation Water Quality Standard for selenium for water bodies with a designated use of Aquatic & Wildlife Habitat (including Morgan Lake, Chaco River/Chaco Wash and the San Juan River) is 2 µg/L on a long-term (chronic) basis. Yet, the test method that was employed in the priority pollutant scans for outfalls 001, 01A and 01E to ascertain whether discharges from the FCPP would impair water quality has a detection limit for mercury of 100 µg/L – 50 times the applicable water quality standard.

In addition to these inadequacies with respect to mercury and selenium, the test method that was employed in the priority pollutant scans for outfalls 001, 01A and 01E has a detection limit for arsenic of 100 µg/L compared to the water quality standard of 30 µg/L for waters with a designated use of Primary Human Contact, and 10 µg/L for waters with a designated use of Domestic Water Supply (the San Juan River); a detection limit for antimony 40 µg/L compared to the chronic water quality standard of 30 µg/L for waters with a designated use of Aquatic & Wildlife Habitat; and a detection limit for thallium of 100 µg/L compared to the water quality standard of 1 µg/L for waters with a designated use of Fish Consumption.

EPA relied largely on the 2012 priority pollutant scan (“PPS”) submitted by the FCPP owners in its determining that there is no reasonable potential for water quality standards to be violated by discharges from FCPP [cites omitted]. As stated above, EPA’s reliance on the 2012 PPS is arbitrary and capricious because the FCPP owners did not employ appropriate minimum detection limits to determine whether there could be a violation of water quality standards. The use of inappropriate detection limits violates the terms of the current NPDES Permit for the FCPP. EPA’s reliance on the 2012 PPS is arbitrary and capricious because it fails to employ detection limits necessary to determine whether the discharge has the reasonable potential to violate water quality standards.

Finally, all waters of the Navajo Nation are protected by the following narrative water quality standard. “A. All Waters of the Navajo Nation shall be free from pollutants in amounts or combinations that, for any duration:

“1. Cause injury to, are toxic to, or otherwise adversely affect human health, public safety, or public welfare.

“2. Cause injury to, are toxic to, or otherwise adversely affect the habitation, growth, or propagation of indigenous aquatic plant and animal communities or any member of these communities; of any desirable

non-indigenous member of these communities; of waterfowl accessing the water body; or otherwise adversely affect the physical, chemical, or biological conditions on which these communities and their members depend.”

**RESPONSE 15:** The commenter contends that EPA wrongly concluded that the discharges after the application of technology based effluent limits do not have a reasonable potential to cause or contribute to an exceedance of applicable water quality standards, because EPA relied on data from the 2012 PPS which was obtained using test methods with detection limits above the NNWQS for mercury, selenium and other pollutants. The commenter concludes that reliance on the 2012 PPS data is arbitrary and capricious. The commenter also urges EPA to bring an enforcement action against the applicant for using insufficiently sensitive test methods. In addition, the commenter contends that Morgan Lake, Chaco River and San Juan River are all waters of the United States, and therefore discharges to such waters are subject to the NNWQS.

*See Response to Comments 3 and 10, above.*

Although the commenter contends that EPA relied on the 2012 PPS data when conducting its analysis, EPA reviewed other sources of data in addition to the 2012 PPS to correctly conclude that discharges from Outfall 001 did not present a “reasonable potential to cause or contribute to an exceedance of water quality standards” set forth in the 2007 NNWQS for the Chaco River and the San Juan River. EPA reviewed data from the Data Monitoring Reports (DMRs) submitted by the applicant pursuant to its current permit, data from the whole effluent toxicity (WET) testing conducted during the previous permit cycle, and water quality monitoring data collected from 1998 to 2013 by the Navajo Nation Environmental Protection Agency (NNEPA). During the comment period, NNEPA presented data from samples collected at various locations, including the San Juan River, the Chaco River and Morgan Lake. The NNEPA study used test methods that were sensitive enough to detect mercury, selenium and other pollutants at levels established in the NNWQS, and the study’s data indicated that ambient water levels for mercury, selenium and other pollutants were below these detection levels at the locations monitored. All of this data is included in the administrative record. Thus, EPA had sufficient evidence to reasonably conclude that there is no reasonable potential for the discharge from Morgan Lake to No Name Wash to cause or contribute to the exceedance of any of the limits for mercury, selenium and other parameters.

To further verify that discharges from Outfall 001 have no reasonable potential, the revised permit explicitly requires additional monitoring using sufficiently sensitive testing methodologies. The permit requires that within the first 30 days after the permit is issued or the first 30 days after the first discharge from Outfall 001, whichever occurs earlier, the applicant must conduct a PPS using sufficiently sensitive methods pursuant to 40 CFR 136. If the initial PPS data indicates that there is reasonable potential for exceedance of any of the pollutants measured, the permit includes a reopener provision that would enable an appropriate response.

Additionally, the permit also includes further monitoring of mercury and selenium for the next 12 months. The applicant must continue to monitor monthly or, if no discharge in a given month, once per discharge. If data collected during the first 12 months of the permit continues to indicate that there is no reasonable potential for exceedance of the mercury or selenium the permit will require monitoring twice a year for the remainder of the permit term. In year five of the permit term and prior to submitting a permit renewal application, the permit requires applicant to conduct another PPS using sufficiently sensitive testing methods.

The commenter urges EPA to take an enforcement action against the applicant because of instances where the 2012 PPS reported “non-detects” based upon insufficiently sensitive test methodologies. This comment process concerns the terms and conditions of a permit. It would be inappropriate for EPA to comment on any enforcement in this proceeding. Also, as discussed in Response 10, Morgan Lake is not a Water of the United States.

**COMMENT 16:** The draft permit fails to include any analysis of how permitted discharges would meet Navajo Nation narrative water quality standards in Morgan Lake despite the following evidence that such discharges have and are causing water quality impairments:

The Draft permit is defective because it fails to include any analysis of how permitted discharges would impair narrative water quality standards in Morgan Lake despite the following evidence that such discharges have and are causing water quality impairments: “There have been several investigations into the quality of water or fish collected from Morgan Lake (Sanchez 1972, 1973; Blinn et al. 1976, Westinghouse Electric Corporation 1975; Geotz and Abeyta 1987; USFWS 1988; Esplain 1995, Bristol et al. 1997; and this study). Sanchez (1972) reported on the quality of water, sediment and invertebrates collected from 1966 to 1972. In 1973, a fish kill occurred during August 10 through 17, 1973. An estimated 33,674 fish ranging in total length from 5 to 24 inches (127 to 609 mm) were lost during the die-off (Sanchez 1973). A blue-green algal bloom and high surface water temperatures (32.2 to 40C) were thought to be contributing factors. In 1975, the Northern Arizona University was contracted to evaluate the probable causes of previous fish kills in the lake (Blinn et al. 1976). Blinn et al. (1976) identified the relationship between bluegreen (Cyanophyta) algal blooms, elevated water temperatures, early summer warming, and anoxic conditions. Westinghouse Electric Corporation (1975) also reported on the quality of Morgan Lake fish collected during 1973 and 1975. Management of the lake was changed to reduce the potential for frequent fish kills.”

Under Table 204.1 “Numeric Targets for Lakes and Reservoirs” of the Navajo Nation Surface Water Quality Standards 2007, Lakes designated for use as Primary Human Contact may not contain more than 20,000 blue-green algae per milliliter. No analysis is provided in the record for the draft permit showing how the hot water discharges from outfall 01A, which were measured at 42.4 degrees Celsius (108.3 degrees Fahrenheit) during the summer, will affect levels of blue-green algae in Morgan Lake.

**RESPONSE 16:** The commenter contends that the permit should apply the NNWQS [for blue-green algae] to discharges to Morgan Lake, and cites especially the studies of the fish kills in Morgan Lake in the early 1970’s. The commenter also contends that the permit analysis does not show the temperature for the internal outfall (01A) into Morgan Lake.

*See* Response 3 (Navajo Nation WQS do not apply to Morgan Lake for purposes of the CWA) and Response 10. The permit includes a narrative limit on blue-green algae for discharges from Outfall 001 to No Name Wash, a numeric temperature limit for discharges from Outfall 001 to No Name Wash of 32.2 degrees centigrade on an average monthly basis, and a maximum daily limit of 35 degrees centigrade.

EPA notes that no additional fish kills have been reported in the 40 years since the cited studies were conducted.

**COMMENT 17:** The draft permit fails to include any analysis of how permitted discharges would comply with Navajo Nation numerical water quality standards for temperature. The draft permit is defective because it fails to include any analysis of how permitted discharges would comply with the numerical water-quality standard for temperature contained in the Navajo Nation Surface Water Quality Standards 2007, reproduced below. Morgan Lake should be considered a warm water because it typically has temperatures exceeding 20o Celsius. Therefore, permitted discharges from the FCPP should not increase the ambient water temperature of Morgan Lake by more than 3o Celsius even though Morgan Lake is a cooling pond. Under Navajo Nation Surface Water Quality Standards 2007 at § 209: “A wastewater mixing zone is a defined and limited part of a surface water body with define boundaries adjacent to a point source of pollution, in which initial dilution of wastewater occurs, and in which certain numeric water quality standards may apply. ....

Mixing zones shall be limited to perennial streams, lakes and reservoirs. All mixing zones shall have defined boundaries, beyond which applicable water quality standards shall be met. In no instance shall mixing zones constitute more than 10% of the surface area of a lake or reservoir ..." Therefore, any permitted discharges from the FCPP that increase the ambient water temperature of Morgan Lake by more than 3o Celsius must be limited to a defined boundary of Morgan Lake that comprises 10% or less of this water body. For the reasons stated above, EPA’s conclusions that discharges from FPCC “do not present a ‘reasonable potential’ to cause or contribute to an exceedance of water quality standards” lacks a defensible foundation.

**RESPONSE 17:** The commenter contends that discharges to Morgan Lake must comply with NNWQS for temperature, and for that reason further contends that EPA wrongly concluded that discharges do not present a reasonable potential to exceed water quality standards. See Response 3 (Navajo Nation WQS are not applicable to Morgan Lake for purposes of the CWA) and Response 10. The permit sets a numeric temperature limit for discharges from Morgan Lake Outfall 001 to No Name Wash of 32.2 degrees centigrade on an average monthly basis, and a maximum daily limit of 35 degrees centigrade.

**COMMENT 18:** EPA’s draft permit fails to identify impaired waters and need for TMDLs. EPA’s Draft permit fails to determine whether the FCPP impacts any impaired waters and whether additional effluent limitations should be placed in the permit as part of a Total Maximum Daily Load. As part of the permitting for this facility, EPA should determine whether Morgan Lake, No Name Wash, Chaco River and the San Juan River are impaired by any pollutant. If so, EPA must impose restrictive effluent limits to achieve compliance with water quality standards. EPA’s Draft permit is defective because it fails to perform such an analysis and include any such effluent limitations.

**RESPONSE 18:** The commenter contends that the permit is defective because it fails to identify impaired waters, develop TMDLs and set effluent limits based on TMDLs. The NPDES regulations at 40 CFR 122.44(d)(1)(vii)(B) require that NPDES permits include effluent limitations developed consistent with the assumptions and requirements of any waste load allocation (WLA) that is part of an approved TMDL. In this case, however, neither the Navajo Nation nor EPA has developed a list of impaired waters or developed TMDLs for any of the relevant receiving waters pursuant to CWA Section 303(d). Such list or TMDLs would be developed separately pursuant to the process outlined in CWA Section 303(d), not in the process of issuing a particular NPDES permit. Therefore, because there are no TMDLs applicable to No Name Wash or the Chaco River, no additional permit conditions were required by 40 CFR 122.44(d)(1)(vii)(B).

**COMMENT 19:** There is no evidence that the intake system on the San Juan River is equivalent to interim best technology available (BTA) under EPA’s regulation for minimizing impacts due to entrainment.

Under 40 CFR Part 125, Subpart J—Requirements Applicable to Cooling Water Intake Structures for Existing Facilities Under Section 316(b) of the Clean Water Act, the following provisions apply: 40 CFR §125.94(a): “a) Applicable Best Technology Available for Minimizing Adverse Environmental Impact (BTA) standards. (1) On or after October 14, 2014, the owner or operator of an existing facility with a cumulative design intake flow (DIF) greater than 2 mgd is subject to the BTA (best technology available) standards for impingement mortality under paragraph (c) of this section, and entrainment under paragraph (d) of this section including any measures to protect Federally-listed threatened and endangered species and designated critical habitat established under paragraph (g) of this section.

40 CFR §125.94(d) states: “BTA standards for entrainment for existing facilities. The Director must establish BTA standards for entrainment for each intake on a site-specific basis. These standards must reflect the Director's determination of the maximum reduction in entrainment warranted after consideration of the relevant factors as specified in §125.98. The Director may also require periodic reporting on your progress towards installation and operation of site-specific entrainment controls.”

40 CFR §125.98(f) states: “(f) Site-specific entrainment requirements. The Director must establish site-specific requirements for entrainment after reviewing the information submitted under 40 CFR 122.21(r) and §125.95. These entrainment requirements must reflect the Director's determination of the maximum reduction in entrainment warranted after consideration of factors relevant for determining the best technology available for minimizing adverse environmental impact at each facility. These entrainment requirements may also reflect any control measures to reduce entrainment of Federally-listed threatened and endangered species and designated critical habitat (e.g. prey base). The Director may reject an otherwise available technology as a basis for entrainment requirements if the Director determines there are unacceptable adverse impacts including impingement, entrainment, or other adverse effects to Federally-listed threatened or endangered species or designated critical habitat. ....

(1) The Director must provide a written explanation of the proposed entrainment determination in the fact sheet or statement of basis for the proposed permit under 40 CFR 124.7 or 124.8. The written explanation must describe why the Director has rejected any entrainment control technologies or measures that perform better than the selected technologies or measures, and must reflect consideration of all reasonable attempts to mitigate any adverse impacts of otherwise available better performing entrainment technologies.

(2) The proposed determination in the fact sheet or statement of basis must be based on consideration of any additional information required by the Director at §125.98(i) and the following factors listed below. The weight given to each factor is within the Director's discretion based upon the circumstances of each facility.

(i) Numbers and types of organisms entrained, including, specifically, the numbers and species (or lowest taxonomic classification possible) of Federally-listed, threatened and endangered species, and designated critical habitat (e.g., prey base); ....

“(g) Ongoing permitting proceedings. In the case of permit proceedings begun prior to October 14, 2014. Whenever the Director has determined that the information already submitted by the owner or operator of the facility is sufficient, the Director may proceed with a determination of BTA standards for impingement mortality and entrainment without requiring the owner or operator of the facility to submit



the information required in 40 CFR 122.21(r). The Director's BTA determination may be based on some or all of the factors in paragraphs (f)(2) and (3) of this section and the BTA standards for impingement mortality at §125.95(c). In making the decision on whether to require additional information from the applicant, and what BTA requirements to include in the applicant's permit for impingement mortality and site-specific entrainment, the Director should consider whether any of the information at 40 CFR 122.21(r) is necessary.”

The record for the draft permit reveals the following correspondence between the US EPA and the permit applicant relevant to the issue of best technology available for minimizing impacts due to entrainment:

The administrative record is lacking in the collection and presentation of data, information, and discussion of fish impingement/entrainment and whether the FCPP intakes reflect the best technology available that would attain the maximum reduction in entrainment. Maintaining the intake flow velocity to below 0.5 feet per second will reduce losses due to impingement, but not entrainment. Intake structures with screens having a mesh size of 1-inch by 3-inches, and no fish collection or return facilities, is well short of best technology available that would attain the maximum reduction in entrainment. For example, fine mesh screens with a mesh size of less than 1/5 inch (less than 5 millimeters) would significantly reduce losses from entrainment of eggs, larvae and juvenile forms of fish by the FCPP[cite omitted].

It should be noted that the FCPP owners began collection of data on fish impingement and/or entrainment in 2005 [cite omitted] The Conservation Organizations issued a Freedom of Information request to EPA requesting certain information submitted by APS to the agency on fish impingement/entrainment and intake structure alternatives [cite omitted]. Despite apparently receiving such information from APS, EPA was unable to produce these documents to the Conservation Organizations [cite omitted]. There is no evidence in the record for this permitting proceeding that EPA has requested the results of any fish impingement/entrainment studies, impacts on threatened or endangered species, or any intake structure alternatives from the FCPP owners. This information is vital to a determination of BTA at the FCPP. This data is especially important due to the verified presence of several threatened and endangered fish species living in the San Juan River in the vicinity of the FCPP intake structures and discharge point. The Conservation Organizations request that EPA use its information gathering authority under the CWA and/or other federal statutes to obtain all fish impingement/entrainment data and intake structure alternatives from the FCPP owners and release the information for public comment prior to finalization of the NPDES permit for the FCPP.

**RESPONSE 19:** The commenter contends that the cooling intake system does not achieve Best Technology Available (BAT) to minimize adverse environmental impacts. The intake system achieves BTA to minimize adverse environmental impacts in accordance with the regulations implementing Section 316(b), which provide that on or after October 14, 2014, an owner or operator of an existing facility with a cumulative design intake flow greater than 2 mgd is subject to the BTA standards (i) for impingement mortality set forth in 125.94(c), and (ii) for entrainment mortality set forth in 125.94 (d).

An owner or operator of an existing facility may comply with the BTA standard for impingement by, in relevant part, operating a closed-cycle recirculating systems as provided by 40 CFR 125.94(c)(1). Here, the applicant operates a closed-cycle recirculating system as defined by 125.92(c), and therefore the intake system meets the BTA standard for impingement mortality.

EPA must establish BTA standards for entrainment mortality on a site specific basis under 40 CFR 125.94(d); if EPA determines that the site-specific BTA standard for entrainment requires performance equivalent to a closed-cycle recirculation system, then the facility must adopt a closed-cycle recirculation system to achieve BTA for impingement mortality. As the facility already employs a close-cycle recirculating system, the facility has achieved BTA for entrainment mortality pursuant to 40 CFR 125.94(d), and no additional conditions are necessary.

**COMMENT 20:** To reduce impingement and entrainment losses, the NPDES permit should place a cap on water intake from the San Juan River to reflect the applicant's retirement of three units. According to the Permit Fact Sheet: "Plant's total generation capacity was originally 2100 megawatts, but following the shutdown of Units 1, 2, and 3 (which occurred on December 30, 2013) the capacity is now 1540 megawatts. ..."

#### "D. Cooling Water Regulation

"APS operates a closed-cycle recirculating system, circulating from around 1000 up to about 1,700 million gallons a day (MGD) through Morgan Lake, a man-made cooling water impoundment. The applicant withdraws up to a maximum of 48 MGD of water from the San Juan River as make-up water to replenish losses that have occurred due to blowdown, drift, evaporation within Morgan Lake and the cooling system. Currently the San Juan River intake system is equipped with a weir and a channel with a gate. If the water in the river is too low at the intake screens to supply the pumps, the gate in the channel is lowered. The gate and the weir together increase the level at the intake screens to supply the pumps. The intake screens are periodically changed out for cleaning."

The administrative record for the Draft permit contains the following additional information: Because the applicant has retired more than 25% of its total generation capacity, a withdrawal of up to 48 MGD from the San Juan River is no longer necessary. Impingement and entrainment losses are proportional to the amount of water intake from the San Juan River. As a means of attaining the maximum reduction in impingement/entrainment as required by Section 316(b) of the Clean Water Act, the Draft permit must cap the applicant's intake of water from the San Juan River to a rate not more than is necessary for the applicant's reduced need for cooling water. The Conservation Organizations request, at a minimum, that the allowable water withdrawal from the San Juan River be reduced by 30% and such limitation be included as an enforceable requirement in any final permit.

**RESPONSE 20:** The commenter asks that the permit reduce the water intake from the San Juan River by 30% to reflect the retirement of Units 1, 2 and 3.

Pursuant to Reasonable and Prudent Measures established in the USFWS final Biological Opinion APS is required to implement an Intake Plan on the San Juan River at the point of intake of water to be pumped from the San Juan River to Morgan Lake. The Intake Plan, developed by APS and approved by USFWS, is currently being implemented at the intake facility on the San Juan River.

The plan includes among other measures requirements to remove the barrier between the two operating trains to reduce intake velocity, as well as prohibitions on intake during certain times of the year to minimize entrainment and impingement losses to fish larvae and eggs.

By implementing the Intake Plan, APS has minimized impingement and entrapment losses. Additionally, historical data on intake rates indicates that the average intake rate has been about 25 MGD, including during periods when all five Units were operational. It must also be noted that the two pumps at the intake facility operate on “all or nothing” basis with no adjustment for flow rate. Therefore, the flow rate measured in MGD or millions of gallons per day is a function of the fixed instantaneous operational flow rate of the pumps and the amount of time they are in operation. However, APS would like to retain the option to quickly pump water at the maximum operational flow rate in case the lake temperature exceeds permit limits, or if lake levels falls below certain minimums. With the retirement of Units 1, 2, and 3 the lake now runs cooler and APS has no incentive to intake more water than is necessary. Thus, EPA believes there is no need to cap the applicant’s intake of water from the San Juan River in the permit.

**COMMENT 21:** EPA failed to comply with the Endangered Species Act.

The Endangered Species Act (“ESA”) implements a Congressional policy that “all Federal Departments and agencies shall seek to conserve endangered species and threatened species.” 16 U.S.C. § 1531(c)(1). An “endangered species” is a species of plant or animal that is “in danger of extinction throughout all or a significant portion of its range,” while a “threatened species” is one which is likely to become endangered within the foreseeable future. 16 U.S.C. § 1532(6), (20). The operative core of the ESA is a list maintained by the Secretary of the Interior of threatened and endangered species, and the ESA permits citizens to petition the Secretary to add species to that list. 16 U.S.C. § 1533(b)(3)(A). At the heart of Congress’s plan to preserve endangered and threatened species is Section 7 of the ESA, which places affirmative obligations upon federal agencies. Section 7(a)(1) provides that all federal agencies “shall, in consultation with and with the assistance of the Secretary [of Commerce or the Interior], utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species.” 16 U.S.C. § 1536(a)(1). The mandate of section 7(a)(2) is even clearer:

Each Federal agency shall, in consultation with and with the assistance of the Secretary [of Commerce or the Interior], insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined . . . to be critical, unless such agency has been granted an exemption for such action . . . pursuant to subsection (h) of this section. 16 U.S.C. § 1536(a)(2). Thus, section 7(a)(2) imposes two obligations upon federal agencies. The first is procedural and requires that agencies consult with the FWS to determine the effects of their actions on endangered or threatened species and their critical habitat. See 16 U.S.C. § 1536(b). The second is substantive and requires that agencies insure that their actions not jeopardize endangered or threatened species or their critical habitat. See 16 U.S.C. § 1536(a)(2); see also, *Florida Key Deer v. Paulison*, 522 F.3d 1133, 1138 (11th Cir. 2008).

The requirements of the ESA are triggered by “any ‘agency action’ which may be likely to jeopardize the continued existence of the species or its habitat.” 16 U.S.C. § 1536(a). By this process, each federal agency must review its “actions” at “the earliest possible time” to determine whether any action “may affect” listed species or critical habitat in the “action area.” 50 C.F.R. § 402.14; 50 C.F.R. § 402.02. When there exists a chance that such species “may be present,” the agency must conduct a biological assessment (“BA”) to determine whether or not the species “may be affected” by the action. See 16 U.S.C. § 1536(c). The term “may affect” is broadly construed by FWS to include “[a]ny possible effect, whether beneficial, benign, adverse, or of an undetermined character,” and is thus easily triggered. 51 Fed. Reg. at

19926. If a “may affect” determination is made, “formal consultation” is required and a biological opinion (“BiOp”) must be prepared.

In determining whether an agency action jeopardizes listed species or adversely modifies critical habitat, the Services must “evaluate the current status of the listed species” and “[e]valuate the effects of the action and cumulative effects on the listed species or critical habitat.” 50 C.F.R. §§ 402.14(g)(2)-(3). This requires the Services to distinguish between the pre-action condition of all affected species and critical habitat and the direct, indirect, and cumulative effects of the agency’s action:

“Effects of the action” include both direct and indirect effects of an action that will be added to the “environmental baseline.” The environmental baseline includes “the past and present impacts of all Federal, State or private actions and other human activities in the action area” and “the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation.” *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, 422 F.3d 782, 790 (9th Cir. 2005) (citing regulatory definitions found at 50 C.F.R. § 402.02). This environmental baseline includes the existence of structures such as dams and power plants, but does not include fish kills or other adverse effects resulting from the operation of such structures and facilities, where such ongoing operation is within the control of the action agency. “The environmental baseline is a ‘snapshot’ of a species’ health at a specified point in time. It does not include the effects of the action under review in the consultation.”<sup>84</sup> Just as the Ninth Circuit held in the recent case of *National Wildlife Federation v. National Marine Fisheries Service*, 524 F.3d 917 (9th Cir. 2008), agencies cannot manipulate the environmental baseline in order to ignore or minimize the effects of future operation of already-built projects such as the FCPP. In *NWF v. NMFS*, the court held that it was illegal for federal agencies to attempt to disregard certain ongoing impacts of FCRPS operations, rather than focusing “on whether the action effects, when added to the underlying baseline conditions, would tip the species into jeopardy.” *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, 524 F.3d 917, 929 (9th Cir. 2008). The court explained that there was a critical difference between the basic existence of the dams and the discretionary federal decision about how to continue operating them:

The current existence of the FCRPS dams constitutes an “existing human activity” which is already endangering the fishes’ survival and recovery. See *ALCOA*, 175 F.3d at 1162 n.6 (citing 50 C.F.R. § 402.02). Although we acknowledge that the existence of the dams must be included in the environmental baseline, the operation of the dams is within the federal agencies’ discretion under both the ESA and the Northwest Power Act, 16 U.S.C. § 839. *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, 524 F.3d 917, 930-931 (9th Cir. 2008) (emphasis added).

Issuance of a (discretionary) NPDES permit is plainly a federal action subject to the requirements of ESA section 7, and compliance with the substantive minimum requirements of the CWA does not, in and of itself, necessarily satisfy the independent substantive requirements of ESA Section 7(a)(2). See *National Association of Home Builders v. Defenders of Wildlife*, 551 U.S. 644, 666-68 (2007) (CWA, ESA, and implementing regulations require consultation and jeopardy determination for discretionary permit issuance). Here, EPA, seeks to rely on the ongoing, but not yet completed, consultation process for the Office of Surface Mining Reclamation and Enforcement’s (OSMRE) Four Corners Power Plant and Navajo Mine Energy (FCPP/NM) Project. OSMRE has prepared a Biological Assessment (“BA”) finding adverse effect and adverse modification of critical habitat for the FCPP/NM project, beginning formal consultation, but the Fish and Wildlife Service has not yet issued its Biological Opinion (“BO”),

including findings on jeopardy and adverse modification and reasonable and prudent alternatives, if any.<sup>86</sup> The BA finds that OSMRE's proposed operation of the FCPP "may affect and is likely to adversely affect" both the Colorado pikeminnow and the razorback sucker, and that its proposed action will adversely modify designated critical habitat for both these listed fish species. These jeopardy and adverse modification findings result from several adverse impacts, including but not limited to entrainment of razorback sucker at the APS weir, release of non-native fish from Morgan Lake, and impaired passage of Colorado pikeminnow at the APS weir. "Because of the impairment of fish passage at the APS Weir and potential release of non-native fish from Morgan Lake, it is concluded that the Proposed Action would adversely modify critical habitat for Colorado pikeminnow and razorback sucker."

EPA states that "EPA as a cooperating agency plans to use the review and analysis conducted by OSMRE and rely on the Biological Opinion developed by the USFWS to complete its obligations under ESA for this permit."<sup>91</sup> It goes on to claim that "[h]owever, it should be noted that because the Federal Action that EPA is simply to reissue a NPDES permit for the discharge of cooling water to a surface water on Tribal land, the impacts evaluated for this Action relate only to the uptake of water from the San Juan River to the cooling water system and discharge of cooling water to the receiving surface water."<sup>92</sup> EPA's apparent attempted partial reliance on the OSMRE FCPP/NM consultation process to fulfill its ESA obligations is misplaced for two reasons.

First, as discussed in detail below, the BA relies on erroneous legal and factual assumptions and methodologies in an effort to obscure or downplay the effects of continued FCPP operations on listed species and their critical habitat. For EPA to meet its obligations under section 7(a)(2) to ensure that federal actions do not jeopardize listed species or adversely modify their critical habitat, it must address and rectify these errors and omissions.

Second, the EPA memorandum apparently attempts to argue that its Section 7 obligations include consideration only of the uptake of San Juan River water and discharge of cooling water. Under the law and FWS guidance, this constitutes improper segmentation of interrelated and interdependent actions. Under FWS consultation guidelines, "effects of the action under consultation are analyzed together with the effects of other activities that are interrelated to, or interdependent with, that action[cite omitted]."

These terms are defined as follows:

Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration[cite omitted].

EPA's issuance of a NPDES permit for the discharge of FCPP cooling water is both an interrelated activity and an interdependent activity for purposes of the larger FCPP/NM decision. There would be no justification for the uptake and discharge of cooling water absent the continued operation of the mine and coal combustion at FCPP, nor would water intake and discharge have any utility whatsoever save for operation of the plant and its cooling needs. When federal agencies are interdependent and/or interrelated, they must be combined in consultation, and a lead agency determined for the overall consultation[cite omitted]. NPDES permit issuance is an interrelated and interdependent action for purposes of the larger FCPP/NM action, and thus the consultation obligation to consider effects of the action includes the entirety of the actions at issue – not merely water intake and outflow.

**RESPONSE 21:** EPA agrees with commenter that it must comply with the Endangered Species Act (ESA) when it issues the Clean Water Act NPDES permit renewal for the Four Corners Power Plant.

At the outset, EPA emphasizes that ESA Section 7(a)(2) and the underlying regulations at 50 CFR 401.10, et seq., establish a process whereby the federal action agency consults with the USFWS about the anticipated effects of the proposed federal action on listed species and their critical habitat. During this consultation process, the action agency is responsible for alerting the USFWS of the proposed action, requesting a species list, initiating early, informal and/or formal consultations as appropriate, developing a biological assessment, reviewing the USFWS biological opinion on the proposed action, and implementing appropriate project changes and “reasonable and prudent measures” to ensure that the federal action is not likely to jeopardize the continued existence of the listed species or destroy or adversely modify critical habitat. The USFWS is responsible for evaluating the available information about the relevant listed species, relying on both the biological assessment prepared by the action agency and other scientific information that is “otherwise available,” and developing a biological opinion. *See* 50 CFR 402.14(g). The regulations anticipate that this will be a collaborative process, but it is clear that the USFWS, as the expert agency, is responsible for the scientific analysis and conclusions in the biological opinion.

A review of the record demonstrates that EPA consistently carried out its responsibilities as an action agency under the ESA.

The first challenge was to determine the scope of the analysis. Early discussions with the USFWS and other federal action agencies suggested that a broader analysis including all of the interrelated federal actions associated with the renewal of the FCPP permit and the expansion of the Navajo Mine would provide the best evaluation of potential impacts. *See* Final Environmental Impact Statement for the Four Corners Power Plant and Navajo Mine Energy Project (FEIS), Executive Summary, May 8, 2015, at page VI (Table of related federal actions considered in the NEPA and ESA reviews). A broader analysis would better identify direct, cumulative and indirect effects from all of the federal activities involved in the Four Corners Power Plant and Navajo Mine Energy Project (“Energy Project”) and would enable a coordinated and comprehensive response to any identified issues. For that reason, the Office of Surface Mining Reclamation and Enforcement (OSMRE), the Bureau of Land Management (BLM), the Bureau of Indian Affairs (BIA), the U.S Army Corps of Engineers (USACE), the National Park Service (NPS), and EPA developed a single Biological Assessment under the ESA and a single FEIS under the National Environmental Policy Act (NEPA). This approach is consistent with the ESA regulations, which encourage agencies to coordinate environmental reviews under the different statutes. *See* 50 CFR 402.06.

OSMRE was the lead agency for purposes of preparing these analyses, and BLM, BIA, USACE, NPS, and EPA were formal cooperating agencies for the FEIS and consulting federal agencies for purposes of ESA consultations. *See* 50 CFR 402.07 (designating a lead agency); Letter from David Smith (EPA) to Marcello Calle (OSMRE) dated October 11, 2012 (NEPA and NHPA cooperation); Final Biological Opinion for the Four Corners Power Plant and Navajo Mine Energy Project (April 8, 2015) (Final Biological Opinion) at p. 24 (formally including EPA’s permitting actions in the project description for purposes of Endangered Species Act consultations.) The ESA Biological Assessment (ESA BA) chronicles the significant early consultation (50 CFR 402.11) carried out by the USFWS and action agencies, as the agencies considered the scope of the necessary analyses. *See* ESA BA at pp. 1-6 to 1-9. The species list was developed and verified in the November 2013 to January 2014 timeframe (50 CFR 402.11(c) and (e)).

The ESA BA was finalized on August 8, 2014, and was amended primarily to reflect revised “reasonable and prudent measures” in a letter to USFWS dated March 13, 2015. The ESA BA made “not likely to adversely affect” findings as to certain listed species and the USFWS concurred with those findings in its letter dated April 8, 2015. The ESA BA also concluded that formal consultation was appropriate as to other listed species. See 50 CFR 402.12 and 402.14. The USFWS issued its Final Biological Opinion on April 8, 2015 (ESA BO). As noted below, EPA incorporated those measures of the ESA BO that were allocable to EPA into the proposed NPDES permit.

The FEIS for the Energy Project was released on May 8, 2015.

The commenter, who submitted in his letter February 18, 2015, was responding to issues raised by the ESA BA. In its response to comments, EPA will necessarily rely in part on information from the subsequent ESA BO, which is the currently operative document reflecting the completed ESA consultations on the Energy Project. The ESA BO relies in part on the scientific analyses in the ESA BA, but goes beyond that and includes other scientific analyses that supplement and in some instances supersede the analyses in the ESA BA.

On April 20, 2016, the commenter, amongst others, filed a lawsuit against OSMRE, BLM, USFWS, and BIA, raising many of the same claims about alleged deficiencies in the NEPA and ESA evaluations of the Energy Project that were raised in the comment letter. Dine Citizens Against Ruining Our Environment, et al. v. OSMRE, et al., Case No. 3:16-cv-08077, D. AZ (04/20/16.) That lawsuit was dismissed by the Court on September 11, 2017. The plaintiffs, including the commenter, filed a notice of appeal of that dismissal with the Ninth Circuit Court of Appeal on November 9, 2017. To date, no court ruling has invalidated, stayed or otherwise restricted federal agency use of the ESA BO or FEIS. Therefore, EPA continues to reasonably rely upon those documents to demonstrate compliance with its obligations under those federal laws, including in the reissuance of the NPDES permit on the FCPP.

Specific issues raised by the commenter are discussed in the following comment responses. EPA notes, however, that the structure of the ESA consultation – a single comprehensive evaluation of the many federal agency actions involved in the Energy Project – was explicitly designed to avoid the fragmentation or segmentation of analyses feared by the commenter. EPA believes that this single comprehensive evaluation in the ESA BA and corresponding ESA BO has allowed USFWS to identify the issues affecting threatened and endangered species and to develop a similarly comprehensive set of “conservation measures” and “reasonable and prudent measures” to address those issues.

**COMMENT 22:** The Biological Assessment (BA) incorrectly defines the environmental baseline.

The BA relies improperly on two arguments to contend that FCPP mercury and selenium emissions are “very small” in their impacts to listed fish and birds. First, it contends, misleadingly, that FCPP emissions alone are insufficient to cause risk to listed individuals or populations, ignoring the fact that those emissions, and resulting deposition of mercury and selenium, impact waterways and aquatic food webs already sufficiently impacted to cause harm to substantial proportions of listed fish within the San Juan River. BA at 7-15 ; see also

FCPP/NM Draft Environmental Impact Statement (DEIS) at 4.8-69. This overly-narrow definition of risk ignores the fact that Section 7 analyses must consider baseline conditions in the action area – “[t]he baseline includes State, tribal, local, and private actions already affecting the species or that will occur contemporaneously with the consultation in progress,” and that, by its own admission, “current mercury body burdens are at levels that may result in adverse effects to Colorado pikeminnow populations in the

San Juan River,” BA at 6-20, and that selenium poses high levels of population hazard to both Colorado pikeminnow and razorback sucker, see BA at 6-20 to 6-23 (“cumulative mercury and selenium concentrations are likely to adversely affect Colorado pikeminnow and razorback sucker in the 4 ERA modeling reaches of the San Juan River downstream into the San Juan River arm of Lake Powell.”). Second, the BA minimizes the contribution risk from FCPP emissions because toxicity risks to aquatic species such as the Colorado pikeminnow and razorback sucker are predicted to remain high from other sources:

The ERAs reported that the Proposed Action (e.g., future emissions from the FCPP) by itself would not result in harm to Colorado pikeminnow and razorback sucker. The ERAs reported that HQs were much less than one for exposures relating to future FCPP emissions in Morgan Lake and in the San Juan River within the Deposition Area and downstream into the San Juan River arm of Lake Powell. The HQs reported in the ERAs are based on the maximum predicted future fish tissue concentrations. As shown in Tables 7-2 and 7-3, comparison of ERA results for both Morgan Lake and the San Juan River show that the contribution of the Proposed Action is very small relative to Current Concentrations. These very small contributions would not measurably increase the existing effects associated with the environmental baseline. However, the combined concentrations under baseline conditions, with future contributions from the other regional and global sources, and future contributions from FCPP may affect and are likely to adversely affect Colorado pikeminnow, razorback sucker, and their critical habitat. FCPP/NM BA 7-15.

Just as in the DEIS, this reasoning is logically flawed. Simply because FCPP emissions alone (absent other sources of mercury and selenium deposition) would not be sufficient to cause population-level effects (i.e., have HQ of 1 or higher) does not excuse EPA from analyzing whether FCPP’s additional contribution to an already-compromised environmental baseline will be sufficient to jeopardize the continued existence of the species or adversely modify their critical habitat.

**RESPONSE 22:** EPA believes that the ESA BO’s analysis of mercury, including its definition of the environmental baseline and the classification of actions as “baseline” versus “federal action”, were appropriate. The ESA BO discussion, at pages 72-96 and again at the conclusions reflected primarily at pages 116-119 and 133-136, analyzed the many sources of mercury in the San Juan Basin, discussed the respective roles of atmospheric deposition and instream concentrations in the eventual intake of mercury by targeted species, and relied on a wide array of studies, including those cited in the ESA BA, to assess potential impacts from bioaccumulation. The ESA BO categorized and quantified each source of mercury so that the impacts of the Energy Project would be isolated and addressed. Although the USFWS discussed at length the serious adverse impacts of mercury on listed species, the USFWS also evaluated the actions that could be taken by EPA and the other federal action agencies to address mercury accretions in the San Juan Basin caused by the federal actions under consultation. USFWS concluded that the conservation measures and “reasonable and prudent measures” contained in the ESA BO, including the implementation of the San Juan River Basin Recovery Implementation Program (SJRRIP), would sufficiently offset any incremental adverse impact to the listed species from the actions under consultation. The ESA consultation process relies on the expert judgment of USFWS to assess the known science and assess likely beneficial responses. EPA believes that the USFWS evaluation of mercury impacts from the Energy Project fully complied with ESA Section 7 and the associated regulations.



**COMMENT 23:** Baseline mercury levels combined with additional mercury and selenium jeopardize endangered species. The BA acknowledges that “the available data on San Juan River mercury body burdens and mercury toxicity in fish clearly indicates that current mercury body burdens are at levels that may result in adverse effects to Colorado pikeminnow populations in the San Juan River.” The FWS has previously determined that baseline mercury levels in the San Juan River basin are causing reproductive impairment in 64 percent of pikeminnow, a number which is expected to rise to 72 percent by 2020. Desert Rock BiOp at 96. Even with the shutdown of Units 1-3 and the anticipated installation of pollution controls on Units 4-5, the FCPP is a major source of these mercury concentrations in the San Juan River basin, and its emissions of mercury are significantly contributing to these effects. The San Juan River basin is one of only three sub-basins where pikeminnow still survive, and it is critical to their long-term recovery from the brink of extinction. Mercury is an element that occurs naturally, but it is also a local, regional, and global pollutant that is harmful to wildlife and human health. Atmospheric mercury is produced from, among other things, combustion of coal at power plants, which releases mercury into the air where it is then deposited by precipitation water bodies, where micro-organisms convert it to methyl mercury – a particularly toxic form – at which point it becomes biomagnified through the food chain. A recent study by the Mountain Studies Institute reports that coal-fired power plants are the largest human source of mercury emissions in the United States, and atmospheric deposition appears to be the dominant source of mercury contamination in North America.

There are high mercury levels in southwestern Colorado and northwestern New Mexico. The state of Colorado has posted advisories warning against eating fish from McPhee, Totten, Narraguinnep, and Vallecito reservoirs and Navajo Lake due to mercury accumulation.

Nine water bodies in northwestern New Mexico have mercury consumption advisories. Sediment cores at four high-elevation lakes in the San Juan Mountains show mercury concentrations that are up to six times above pre-industrial times. San Juan County, New Mexico is among the highest emitters of mercury among U.S. counties due to its coal-fired power plants including FCPP. Data collected from Mesa Verde National Park show mercury deposition levels that are among the highest in the western U.S. Modeling of 47 single storm events from 2002 to 2008 and subsequent identification of storm source direction indicate that 87 percent of mercury deposition came from south of the Park – in particular, from air-pollution plumes from FCPP and the San Juan Generating Station (“SJGS”), another coal-fired power plant located nearby.

FCPP is a “significant source” of mercury deposition at the Park. FCPP has installed air pollution measures for sulfur dioxide and nitrogen oxides, and these emission reductions correlate with decreasing trends of sulfate, nitrate, and chloride, and an increasing trend in pH in precipitation, at the Park. Unlike SJGS, however, FCPP has not installed mercury pollution control measures, and there has been no change in mercury concentrations and deposition in the Park. Current rates of mercury deposition in the San Juan River basin from FCPP are expected to be unchanged over the next decade.

The Colorado pikeminnow is a critically-endangered fish and top natural predator in the Colorado River that has been federally protected since 1967. The pikeminnow is imperiled due to widespread destruction and modification of the Colorado River basin, including its tributaries, where it once occurred. It currently survives as a result of stocking programs in some areas of the upper and lower Colorado River basins, and in a limited stretch of the San Juan River. The San Juan River is critical to the long-term survival and recovery of the Colorado pikeminnow.

In considering the effects of the Desert Rock Energy Project (“Desert Rock”) – a coal-fired plant that was proposed to be sited on the Navajo Nation within 20 km of FCPP – FWS considered the effects of atmospheric mercury deposition to endangered and threatened species including the Colorado pikeminnow. Using a threshold for adverse effects of 0.2 mg/kg WW, 64 percent of Colorado pikeminnow experience reproductive impairment due to mercury presently. By 2020, the Desert Rock BiOp finds that mercury deposition in the San Juan River basin is expected to increase by 35.4 percent without or 35.5 percent with the construction of the proposed Desert Rock Energy Project. For this reason, FWS’s draft biological opinion predicts that 72 percent of Colorado pikeminnow in the San Juan River basin will experience mercury-induced reproductive impairment by 2020 – which “is likely to jeopardize the continued existence of the Colorado pikeminnow.”

Neither the DEIS nor either of the ERAs even attempts to provide such quantitative assessment of probable levels of reproductive impairment. The Deposition ERA, acknowledging risks to fish from mercury and selenium, goes on to state that “[a]lthough risks to mobile adult fish are likely overestimated by the [critical body residues “CBRs”], and in particular by the [No Observed Effect Concentration] CBRs, the potential for risks to sensitive life stages and listed species cannot be ruled out.” Deposition ERA at 7-4. Given OSMRE and FWS’s obligations to avoid jeopardy and contribute to the recovery of listed species under the ESA, it is not sufficient for the BA to simply conclude that the proposed action contributes to risks that would exist with or without continued FCPP operation. Rather, it must actually take a hard look at what the levels of harm are, including reproductive and other sublethal effects, under all scenarios (including comparing FCPP operation and closure), against a baseline that includes existing conditions and other local, regional, and global sources. In 2009, FWS determined that Desert Rock would jeopardize the continued existence of the Colorado pikeminnow and would adversely modify its critical habitat. FWS reached this determination, which is set forth in the peer-reviewed Desert Rock BiOp, in part due to existing coal-fired power plants, including FCPP, which have degraded the environmental baseline to such a degree that the emissions from an additional coal plant, Desert Rock, would have driven the pikeminnow to extinction in the San Juan River, one of only three sub-basins where it still survives. FWS determined that 64 percent of Colorado pikeminnow currently experience reproductive impairment due to mercury. FWS also determined that by 2020, mercury deposition in the San Juan River basin is expected to result in 72 percent of pikeminnow being reproductively impaired.

The Desert Rock BO and its conclusions are based on conservative estimates. Among other things, the Desert Rock BO does not specifically consider the significant contribution of mercury from CCW disposal at the Navajo Mine. According to EPA’s TRI, which provides BHP reported data from 2000-2007, thousands of pounds of mercury have been disposed of in the Navajo Mine annually as “minefill.” The CCW is not treated prior to disposal and a liner system or other control mechanism is not used, i.e., to prevent saturation and migration of the mercury or other constituents into surface or ground waters which flow directly into the San Juan River. The DEIS acknowledges, but does not analyze at all, the fact that releases are occurring from CCW disposal sites and that CCW leachate contains selenium. DEIS 4.5-14, 4.5-57 (“Previous studies found two primary areas of groundwater seepage beneath the ash disposal areas, the “north seep” and “south seepage area” (APS 2013”).

In reaching its conclusions in the Desert Rock BO, FWS relied on: (1) muscle tissue samples (“plugs”) collected from Colorado pikeminnow collected throughout the Upper Colorado River Basin, including within the San Juan River; (2) estimates of brain-tissue population-scale mercury concentrations derived from muscle-brain mercury tissue concentration ratios established in peer-reviewed literature; and, (3) peer-reviewed brain tissue mercury concentration thresholds for reproductive impairment derived [cite

omitted]. The BA should have been supported by similar reliance on actual physical evidence, not merely statistical models. Moreover, although the ERAs advocate consideration of “alternative” and more permissive thresholds for toxic exposure, they nevertheless acknowledge that the scientific-consensus exposure levels used in the Desert Rock BiOp are appropriate for listed species and sensitive life stages. Deposition ERA at 7-4.

Because, even under conservative estimates baseline mercury levels already exceed thresholds for reproductive impairment in a majority of individuals within Colorado pikeminnow, FCPP’s past and ongoing mercury emissions already jeopardize Colorado pikeminnow by polluting the fish’s critical habitat and preventing its survival and recovery. Because already-deposited mercury that has bio-accumulated in the San Juan River ecosystem will persist for decades, any future mercury emissions from FCPP will worsen baseline conditions for Colorado pikeminnow and other listed species. The fact that these species are already at risk does not excuse EPA/OSMRE from taking a hard look and disclosing the extent of, intensity of, and comparative effects of various alternatives on those risks.

**RESPONSE 23:** See Responses to Comments 21 and 22. In this comment, commenters cite the USFWS’s Draft Biological Opinion on the Desert Rock Energy Project (October 2009) (“Desert Rock Draft BO”), suggesting that conclusions and analyses included in the Desert Rock Draft BO are both relevant to and even determinative of some of the critical issues involved in assessing potential impacts from mercury of the present project, and somehow those were not addressed by EPA and USFWS here.

First, as previously noted, the comment referred to the BA, but that has been superseded by the ESA BO. Indeed, a review of the mercury discussion in the ESA BO currently at issue suggests that the ESA BO relied on a significant portion of the scientific analyses considered in the Desert Rock Draft BO, as supplemented by additional data and studies that have been developed during the period after the Desert Rock Draft BO was released. EPA also notes that the Desert Rock Draft BO was never finalized. That project was largely abandoned by 2011, and no further work was performed by the USFWS to move towards final conclusions in the Desert Rock Draft BO.

Regardless, EPA believes that the ESA BO has appropriately evaluated the baseline mercury conditions in the San Juan River Basin and has identified the likely contributions of additional mercury from the proposed project and the impacts of that additional mercury on listed species and their critical habitat. The ESA BO, at pages 132-35, clearly identifies the adverse effects of mercury on the listed species. However, in the ESA BO, USFWS determines that the anticipated adverse effects of the project will be “clearly offset” by the SJRRIP actions and by the Conservation Measures being implemented by the Project Proponents and federal actions agencies. See especially Letter from Rick Williamson, OSMRE, to Wally Murphy, USFWS, dated March 13, 2013 (amending biological assessment with a revised list of Conservation Measures that resulted from the ongoing consultations between the USFWS and the federal actions agencies).

Finally, the comment goes beyond the question of whether or not EPA has complied with its ESA consultation obligations in issuing the FCPP permit, which it has (see Response to Comment 21). While EPA can work with the USFWS to ensure that it has sufficient information to inform any biological opinion, ultimately those determinations are within the expertise of USFWS and not EPA.

**COMMENT 24:** The BA mischaracterizes APS’s own ecological risk analyses.

For its evaluation of potential effects of future emissions, the BA relies almost exclusively on two Ecological Risk Analyses prepared on behalf of Arizona Public Service. These ERA’s attempt to quantify a “hazard quotient,” a method of determining whether a particular constituent of potential ecological concern (“COPEC”) poses a risk to a specified biological receptor. San Juan ERA at 4-5; BA at 4-7. The actual quotient in question refers to an exposure point concentration (“EPC”) divided by an ecological screening value (“ESV”). San Juan ERA at 4-1, 4-5. The DEIS relies on the fact that hazard quotients for mercury and selenium exposure would be extremely high even without future FCPP emissions to avoid engaging in any quantitative or even qualitative analysis of the incremental effects of either FCPP emissions or cumulative emissions on pikeminnow and sucker toxicity, mortality, reproduction, or recovery. The ERA makes clear, however, that the hazard quotient method is designed only to determine whether or not a risk exists (i.e. whether or not the HQ is greater than 1), and that it does not quantify or describe the scope or severity of that risk. See San Juan ERA at 6-19 to 6-20 (“The simple ‘HQ’ approach provides a conservative measure of the potential for risk based on a ‘snapshot’ of conditions and the hazard quotient approach has no predictive capability. HQs are measures of levels of concern, not measures of risk.”) (“The HQ is not a measure of risk . . . the HQ is not a population-based measure, HQs do not refer to the number of individuals or percentage of the exposed population that is expected to be impacted . . . HQs are not linearly scaled, the level of concern for a receptor with a HQ of 10 may not be twice the concern over a HQ of 5.”) Because risk does not scale linearly with HQ nor does HQ quantify the extent of potential population effects, the existence of extremely high HQs alone does not excuse EPA from at least making some reasoned attempt to quantify or otherwise describe the numbers of endangered fish that will be adversely affected both with and without FCPP, and to assess the resulting impacts on species survival and/or recovery. The BA acknowledges briefly, but then fails to act upon, substantial limitations the hazard quotient approach in addressing community- and population-level effects:

It is important to recognize that these ERAs do not directly address potential effects to species communities or populations, but rather address potential effects to individuals. For generic ecological receptors, population-level effects may be of greater relevance than effects to individuals. It is generally assumed that as the number of affected individuals increases, the likelihood of population-level effects also increases. However, effects on individual organisms may occur with little or no population or community-level effects and, therefore, the analysis presented here is considered conservative in the context of population-level risk. Nevertheless, for special-status species and, in particular, federally listed species, potential effects to individuals may be relevant, especially for immobile early life-stage individuals.

Despite this acknowledgment, the DEIS’s treatment of listed species, including the Colorado pikeminnow, razorback sucker, and southwestern willow flycatcher, fails to undertake any informed analysis of population-level effects or effects on sensitive life stages.

**RESPONSE 24:** EPA believes that the ESA BA, including the Ecological Risk Assessments (ERAs) referenced by commenter, employed sound scientific methodologies and the best available data. Again, we note that the ESA BO relied on not just the ESA BA but on additional analyses and collaborative science (as described on ESA BO page 15), and addressed most of the information gaps suggested by this commenter.

The ESA BO identifies the baseline and proposed action levels of mercury deposition (p. 75 et seq), translated those to tissue and whole-body loads (p. 76 et seq.), described in detail the effects of these

anticipate whole body loads on individual fish (p. 81, et seq.), considered the corresponding effect on critical habitat (p. 93), and isolated the estimated effects of the projected whole body accumulations caused by the continued operation of the FCPP (p. 116-117). Notably, the consultation involved a collaborative science effort, including developing a model assessing anticipated population level impacts of actions in the San Juan Basin, including possible conservation measures. *See* Miller (2014). These additional analyses resulted in the set of conservation measures and reasonable and prudent measures outlined in the Amended Biological Assessment.

The USFWS conclusions (p. 132 et seq) clearly acknowledged the quantified anticipated impacts on the listed fish species, but found, based on the additional science effort, that the implementation of the Conservation Measures would both offset the effects of the present action and lead to recovery of these listed species.

The ESA BO explicitly recognized that better data and study was needed to evaluate potential impacts from the Energy Project. For that reason, the ESA BO included “conservation measures” and “reasonable and prudent measures” that laid out comprehensive monitoring requirements and proposed analyses to be done with the new data. *See* ESA BO and Amendment to the ESA BA (new Conservations Measures). The USFWS retains the discretion to reinitiate consultation should the new information indicate a different conclusion as to impacts on listed species.

Again, the comment goes beyond the question of whether or not EPA has complied with its ESA consultation obligations in issuing the FCPP permit, which it has (see Response to Comment 21). While EPA can work with the USFWS to ensure that it has sufficient information to inform any biological opinion, ultimately those determinations are within the expertise of USFWS and not EPA.

**COMMENT 25:** The BA must address reactive gaseous mercury deposition.

EPA must better evaluate FCPP/Navajo Mine Complex’s impact on endangered Colorado pikeminnow, the razorback sucker and their critical habitat. Both fish would be exposed to mercury emissions through surface and groundwater contamination and ambient air exposure, deposition, and runoff into aquatic habitats, and subsequent bioaccumulation through the food chain[cite omitted]. Upon entering the San Juan River ecosystem, microorganisms convert mercury to methylmercury, a highly toxic form of mercury [cite omitted]. Because methylmercury is stable and accumulates through the food chain, the highest mercury concentrations are found in top predators, such as the Colorado pikeminnow, causing reproductive impairment, behavioral changes, and brain damage [cite omitted]. The FWS and OSM must evaluate the relative contribution of reactive gaseous mercury deposition from FCPP and other coal-fired power plants in the action area. The Desert Rock BiOp notes that “[t]he reactive form of mercury is often deposited to land or water surfaces much closer to their sources due to its chemical reactivity and high water solubility” and that “[p]articulate mercury is transported and deposited at intermediate distances depending on aerosol diameter or mass.” [cite omitted]. Data from Mesa Verde National Park show mercury concentrations in precipitation that are “among the highest measured in the United States” and “have trajectories that trace back to within 50 km of the FCPP and SJGS,” supporting the theory that “air masses passing from south Arizona and near these coal-fired power plant facilities [FCPP and SJGS] are contributing to high deposition of mercury there.” [cite omitted] There is also a “clear increase” in mercury deposition in lake bottoms in southwestern Colorado that correlates with the construction of FCPP and SJGS between 1963 and 1977[cite omitted]. These two plants “are among the largest sources of mercury emissions in the western U.S.” [cite omitted] The BiOp suggests but does not explicitly link

the reactive form of mercury presumably coming from FCPP and SJGS and the fact that pikeminnow are experiencing reproductive impairment due to mercury.

**RESPONSE 25:** *See* responses to earlier Comments, especially Comments 22-24. The ESA BO considered all sources of mercury during the consultation. *See* pages 73 et seq., and page 133. *See* also Graphic at page 85 (reflecting anticipated reductions of mercury deposition from changes at APS power plants). The ESA BO then correctly translated those sources into both potential tissue concentrations and whole body loads to assess potential impacts on listed species. The possible effects of mercury on listed species are fully explained in the ESA BO. *See generally* pages 81, et seq. Moreover, the comment goes to the substantive biological analysis, and recommended Conservation Measures, performed by USFWS, and not to whether EPA has performed its ESA consultation obligations.

**COMMENT 26:** EPA and USFWS should undertake an analysis to determine whether and how much of the tissue-bound mercury in endangered fish species is derived from mercury deposited by FCPP and other regional coal-fired power plants. The BA does not answer this question. The ERAs, by focusing solely on the narrow question of whether a hazard quotient is greater or less than 1 (whether a risk exists or not) under various scenarios, also fail to address the relative contribution of FCPP and other four corners plants to mercury accumulation in fish tissues. In order to determine the sources from which mercury in endangered fish muscle tissue samples is derived, OSM, USFWS and USGS must, as part of the EIS and Biological Opinion process, undertake a study to compare isotopic signatures of mercury in endangered fish tissue samples to isotopic signatures of mercury from FCPP and other regional and pan-regional mercury sources. Short of undertaking of this or another such analyses, neither EPA nor USFWS can ensure that FCPP's past, ongoing, and future mercury deposition is not significantly responsible for elevated mercury and corresponding jeopardy in endangered San Juan River fish.

**RESPONSE 26:** *See* responses above, especially Response to Comment 24. The ESA BO, relying in part on information in the ESA BA and on other sources, does in fact estimate the expected portion of mercury in listed species that is allocable to the FCCP project. *See* ESA BO, pages 116; 133-34. Moreover, the comment goes to the substantive biological analysis, and recommended Conservation Measures, performed by USFWS, and not to whether EPA has performed its ESA consultation obligations.

**COMMENT 27:** Impingement and Entrainment will jeopardize Colorado Pikeminnow and Razorback Suckers and adversely modify Critical Habitat. Operation of water intake structures will adversely modify critical habitat for Colorado pikeminnow and kill and injure adult and larvae Colorado pikeminnow and razorback sucker through impingement and entrainment. Considered alongside the current status of the fish and an environmental baseline of jeopardy from mercury and selenium contamination, operation of intake structures will jeopardize the continued existence of listed species. The APS Weir at RM 163.3 is located in designated critical habitat for Colorado pikeminnow and upstream of designated critical habitat for razorback sucker. The weir extends across the San Juan River and impeding its flow, bank to bank. The weir diverts water from the San Juan River into two 10 by 10 ft. intakes. BA at 7-12. Each intake is covered by 1 by 3 inch wire mesh screen. *Id.* The intakes run in two modes at all times of day, extracting either 31 (17,000 gpm, 24.5 million gpd) or 71 (32,000 gpm, 46

million gpd) cubic feet of river water per second. Id. The former mode runs from October to May; the latter, higher flow, from May to October. Id.

The weir adversely modifies critical habitat for Colorado pikeminnow by impeding migration within critical habitat: [T]he weir lies within the critical habitat for Colorado pikeminnow, and may affect, and is likely to adversely affect the function of the habitat for the conservation and recovery of the species, as this structure may impede the migration of Colorado pikeminnow within its critical habitat (Listing Factor A, USFWS 2002a, b). Larval or adult Colorado pikeminnow and razorback sucker can be killed or injured when entrained or impinged. Death from impingement and entrainment can occur immediately or later as a result of injuries sustained during contact with a cooling water intake system. EPA defines impingement and entrainment as follows:

Impingement takes place when organisms are trapped against intake screens by the force of the water being drawn through the cooling water intake structure. The velocity of the water withdrawal by the cooling water intake structure may prevent proper gill movement, remove fish scales, and cause other physical harm or death of affected organisms through exhaustion, starvation, asphyxiation, and descaling. Entrainment occurs when organisms are drawn through the cooling water intake structure into the cooling system. Organisms that become entrained are typically relatively small, aquatic organisms, including early life stages of fish and shellfish. As entrained organisms pass through a facility's cooling system they may be subject to mechanical, thermal, and at times, chemical stress.

The BA acknowledges that intakes will entrain and kill endangered Colorado pikeminnow. Colorado pikeminnow larvae typically enter the drift from mid-July to early August and drift passively for 3 to 6 days after emergence (USFWS 2009). Larvae would be subject to loss at the diversion for about 30 days. Because the fish drift with the currents, it is assumed that they would be entrained in direct proportion to the amount of flow diverted and the proportion of larvae that enter the drift upstream of the diversion point.

The SJRRIP currently stocks the San Juan River with Colorado pikeminnow. Approximately 300,000 to 400,000 Colorado pikeminnow approximately 6 months of age (50 to 65 mm in size) are stocked each year. Historically, larger fish have been stocked, but there are no plans to do so in the future. Since 2007 nearly all of these fish have been stocked above the APS Weir. These fish could also be vulnerable to entrainment at the diversion. These fish are stocked in October and November when flows in the San Juan River are 728 to 1,530 cfs (USGS Gage 09365000). The diversion is typically operating in the 17,000 gpm mode during this time (37 cfs), and is diverting between 2.4 and 5.1 percent of the flow. These fish actively swim and do not drift passively, as the larvae do, so they would not necessarily be entrained in proportion to the amount of flow diverted. Behavioral characteristics are known to influence the entrainment risk of fish. However, these characteristics are unknown for Colorado pikeminnow, and so it cannot be predicted whether their entrainment risk would be higher or lower than that predicted by the proportion of water diverted. Therefore, it is assumed that these fish could be entrained in proportion to the amount of flow diverted.

And:

The Proposed Action, in combination with baseline conditions and reasonably foreseeable future conditions, may affect and is likely to adversely affect Colorado pikeminnow, as a result of entrainment at

the Arizona Public Service Company (APS) Weir, release of non-native fish from Morgan Lake into the San Juan River via No Name Wash and the Chaco River, and atmospheric emissions of contaminants that are already present in watershed in quantities that may adversely affect the species.

And:

OSMRE concludes that the Proposed Action may affect and is likely to adversely affect Colorado pikeminnow as a result of entrainment at the APS Weir, release of non-native fish from Morgan Lake into the San Juan River via No Name Wash and the Chaco River, and atmospheric emissions of contaminants, which are already present in watershed in quantities that may adversely affect the species.

OSMRE concludes that the Proposed Action may affect and is likely to adversely affect razorback sucker, as a result of entrainment at the APS Weir, release of non-native fish from Morgan Lake into the San Juan River via No Name Wash and the Chaco River, and atmospheric emissions of contaminants, which are already present in watershed in quantities that may adversely affect the species.

In formal consultation, after evaluating all relevant information, EPA/FWS must prepare a “biological opinion,” which considers the current status of the species, the environmental baseline, and the effects of the proposed action, and concludes “whether the action, taken together with cumulative effects, is likely to jeopardize the continued existence of listed species....” Id. § 402.14(g)(2)-(4). If “jeopardy” is likely to occur, EPA/FWS must prescribe in the BiOp “reasonable and prudent alternatives” to avoid that result. 50 C.F.R. § 402.14(i)(1)(ii).

Here, the proposed action will adversely modify critical habitat for Colorado pikeminnow and kill and injure adult, juvenile and larvae Colorado pikeminnow and razorback sucker through impingement and entrainment. Considered alongside the current status of the fish, including an environmental baseline of jeopardy from mercury and selenium contamination, any impingement or entrainment at intake structures will jeopardize the continued existence of Colorado pikeminnow and razorback sucker. EPA/FWS must therefore prescribe in the BiOp “reasonable and prudent alternatives” that avoid jeopardy from impingement and entrainment. 50 C.F.R. § 402.14(i)(1)(ii).

**RESPONSE 27:** The ESA BO has an extensive evaluation of the potential impacts of the diversion facilities on listed species. See ESA BO at pages 109-114. The USFWS included an Incidental Take Statement in the ESA BO (page 138 et seq.), and this Incidental Take Statement explicitly considers and prescribes reasonable and prudent measures (RPMs) addressing entrainment and impingement. See ESA BO at page 144. EPA believes that RPM 2, as reflected in the ESA BO and also in the Amended BA, will address the identified concerns about impacts to listed species.

**COMMENT 28:** EPA and USFWS must require closed-cycle or dry cooling technology in a reasonable and prudent alternative(s) (RPA). Closed-cycle cooling systems recirculate cooling water in low-profile towers, reducing water withdrawals and fish kills between 95 and 98 percent over once-through cooling systems. In its Clean Water Act 316(b) rulemaking process, analyses and comments thereto, EPA has at its disposal, and must make available to FWS in this instance, extensive information on the benefits of closed-cycle cooling technology for river fish, including San Juan River endangered fish. Commenters provide as reference information for closed-cycle cooling systems comments provided by Riverkeeper et al. to EPA’s rulemaking. In that rulemaking, EPA analyzed and concluded the effectiveness of closed-cycle cooling system for reducing impingement or entrainment:



In evaluating technologies that reduce impingement or entrainment mortality as the possible basis for section 316(b) requirements, EPA assessed a number of different technologies. Based on this technology assessment, EPA concluded that closed-cycle cooling reduces impingement and entrainment mortality to the greatest extent.

The ESA demands that federal agencies “afford first priority to the declared national policy of saving endangered species” in light of the “conscious decision by Congress to give endangered species priority over the ‘primary missions’ of federal agencies.” *Tennessee Valley Auth. v. Hill*, 437 U.S. 153, 185 (1978). This means that “[w]hen an agency, acting in furtherance of a broad Congressional mandate, chooses a course of action which is not specifically mandated by Congress and which is not specifically necessitated by the broad mandate, that action is, by definition, discretionary and is thus subject to Section 7 consultation.” *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, 524 F.3d 917, 929 (9th Cir. 2008). In this case, EPA’s discretion in carrying out its duty under the Clean Water Act must be exercised in a manner that neither jeopardizes the recovery or survival of listed species nor adversely modifies critical habitat. See, e. g., *Am. Rivers, Inc. v. U.S. Army Corps of Eng’rs.*, 421 F.3d 618, 631 (8th Cir. 2005) (“[T]he FCA does not mandate a particular level of river flow or length of navigation season, but rather allows the Corps to decide how best to support the primary interest of navigation in balance with other interests. . . . Because the Corps is able to exercise its discretion in determining how best to fulfill the purposes of the reservoir system’s enabling statute, the operation of the reservoir system is subject to the requirements of the ESA.”).

Because closed-cycle and dry cycle cooling systems would sharply reduce or eliminate endangered fish kills in the San Juan River, installation of those technologies at Four Corners Power Plant would avoid the likelihood of jeopardizing the continued existence of listed species and avert the destruction or adverse modification of critical habitat. FWS must therefore require the installation and use of those technologies in a reasonable and prudent alternative to the proposed action. By reducing or eliminating river water withdrawals within designated critical habitat, the use of closed-cycle or dry cooling technology at the Four Corners Power Plant can sharply reduce or eliminate endangered fish kills, adverse modification of critical habitat, and jeopardy to Colorado pikeminnow and razorback sucker. In satisfying its duty to avoid jeopardy of threatened and endangered species, an agency must formally consult with the FWS if, as here, a biological assessment finds that the action “may affect” a threatened or endangered species. 16 U.S.C. § 1536(b); 50 C.F.R. § 402.14; also see 51 Fed. Reg. 19,926, 19,949 (June 3, 1986) (“may affect” includes “[a]ny possible effect, whether beneficial, benign, adverse, or of an undetermined character”). Following this formal consultation, the Service issues a biological opinion (“BO”) summarizing its findings and determining whether the proposed action is likely to jeopardize the continued existence of the species and/or result in adverse modification of designated critical habitat. 50 C.F.R. §402.14(h). If FWS finds the action likely to jeopardize the continued existence of the listed species, the BO must suggest “reasonable and prudent alternative” that could be taken by the action agency to avoid such jeopardy. 16 U.S.C. § 1536(b)(3)(A). § 402.14(h)(3). “[R]easonable and prudent alternatives” are alternative actions identified during formal consultation that (1) can be implemented in a manner consistent with the intended purpose of the action, (2) can be implemented consistent with the scope of the action agency’s legal authority, (3) are economically and technologically feasible, and (4) would avoid the likelihood of jeopardizing the continued existence of listed species and/or avert the destruction or adverse modification of critical habitat

In this case, and as discussed elsewhere in these comments, the requirement of closed-cycle cooling system at Four Corners Power Plant is entirely consistent with the intended purpose of the action; closed-

cycle cooling systems can cool electric generating facilities with fewer environmental impacts, and fewer impacts to endangered species and designated critical habitat, than once-through cooling systems. Requiring a closed-system cooling system at Four Corners Power Plant is also well within EPA's legal authority to regulate facilities using cooling water intake structures (CWISs) under Section 316(b) the Clean Water Act (CWA), and it is entirely within the U.S. Fish and Wildlife Service's authority to regulate federal actions to avoid jeopardy to endangered species or adverse modification of critical habitat under the Endangered Species Act. 16 U.S.C. § 1536(a)(1), (a)(2). The Riverkeeper comments on the Section 316(b) rule, which we incorporate here by reference, provide extensive discussion and analysis demonstrating the technical and economic feasibility of installing closed-cycle cooling systems on existing facilities. Finally, insofar as: (1) existing direct, indirect and cumulative impacts create baseline conditions, such as contamination of endangered fish with mercury, that jeopardize endangered fish and adversely modify critical habitat; and, (2) operation of the APS weir and intakes would further contribute to jeopardy of Colorado pikeminnow and razorback sucker by adversely modifying critical habitat and injuring and killing endangered fish through impingement and entrainment, requiring installation and use of a closed-cycle or dry cooling system at Four Corners Power Plant in the context of a reasonable and prudent alternative to the proposed action would avoid the likelihood of jeopardizing the continued existence of listed species and/or avert the destruction or adverse modification of critical habitat.

**RESPONSE 28:** EPA notes that the ESA BO was a “non-jeopardy” opinion. Under the consultation regulations, USFWS did not, therefore, develop “reasonable and prudent alternatives” (RPAs). Instead, USFWS issued an Incidental Take Statement that includes “reasonable and prudent measures” (RPMs) that the action agency must implement to reduce negative impacts to listed species caused by carrying out the proposed project. *See* discussion above in Response to Comments 19.

Consistent with commenter's concerns, entrainment and impingement at the Cooling Water Intakes were discussed in depth in the ESA BO. *See* ESA BO, pp. 109-113. USFWS, as the expert agency, developed reasonable and prudent measures that addressed the entrainment issue. Those RPMs did not require the installation of any particular intake structures. Instead, the RPAs required the project proponents to develop and implement a “Pumping Plan” to reduce the magnitude and types of entrainment of Colorado pikeminnow and razorback suckers. *See* RPM 2, ESA BO at p. 144, and Amendment to BA, March 13, 2015, at page 3.

In terms of commenters request that a closed-loop system be required of FCPP as an RPA or RPM, EPA notes that the permittee does in fact already operate a closed-cycle recirculating system as defined by 40 CFR 125.92(c). *See* discussion above in Response to Comments 19. Section 316 of the Clean Water Act addresses thermal discharges, and Section 316(b) explicitly requires that the design and operation of cooling water intake structures utilize Best Technology Available (BTA) to minimize adverse environmental impacts from the cooling water intake process. The 316(b) regulations for existing electric generating plants, adopted by EPA in 2014, defined BTA Standards for impingement. 40 CFR 125.94(c) allows for seven alternatives to comply with this impingement standard, including the operation of a closed-cycle recirculating system. BTA standards for entrainment must be established on a site-specific basis. In the preamble to the existing facilities rule and the rule for new facilities promulgated in 2001, utilization of a closed-cycle recirculating system is established as being sufficient to meet BTA for entrainment reductions. Therefore, by operating a closed-cycle recirculating system, the permittee has demonstrated BTA for impingement and entrainment mortality.

Again, the comment goes beyond the question of whether or not EPA has complied with its ESA consultation obligations in issuing the FCPP permit, which it has (see Response to Comment 21). While EPA can work with the USFWS to ensure that it has sufficient information to inform any biological opinion, including any RPAs identified as part of the opinion, ultimately those determinations are within the expertise of USFWS and not EPA.

EPA received comments from Arizona Public Service Company (APS) on January 8, 2015 via a letter and three-page attachment regarding EPA's Draft renewal NPDES Permit for the Four Corners Power Plant, NPDES Permit No. NN0000019. EPA has summarized and responded to the comments below.

**COMMENT 29:** Section B.2, [of the proposed fact sheet] states in part, "Surface seepage intercept systems shall be constructed and operated for existing and future unlined ash ponds. Water collected by these intercept systems shall be returned to the ash ponds, or evaporation ponds."

APS requests that the paragraph in Section B.2 be revised to remove the reference to "unlined ash ponds", and reflect that the intercept system shall be constructed and operated for existing unlined ash ponds – which is consistent with the wording the NPDES fact sheet. Additionally, in this same section, the permit should reflect that intercept water is returned to the double lined water decant pond, which is also consistent with the language in the fact sheet, as opposed to the permit reference that intercept water is "returned to the ash ponds or evaporation ponds."

**RESPONSE 29:** The discrepancy between the language in the permit and that in the fact sheet was inadvertent and the permit language will be corrected to be consistent with the language in the fact sheet as indicated above.

**COMMENT 30:** Part 3 Section A.1 [of the proposed fact sheet] references that the seepage and monitoring plan shall be developed to identify all seeps within 100 meters down gradient of the ash impoundments. The referenced 100 meters is inconsistent with the permit fact sheet that states that the seepage monitoring is located within 650 meters of the ash impoundments. The geology in the area supports the location of the seepage monitoring within 650 meters and [APS] requests that the permit be changed to reflect this distance.

**RESPONSE 30:** The discrepancy between the language in the permit and that in the fact sheet was inadvertent and the permit language will be corrected to be consistent with the language in the fact sheet as indicated above.

**COMMENT 31:** on Page 1 [of the proposed permit] The title of the contact person, Tom Livingston, is currently stated as Site Manager. His actual title is "Plant Manager".

**RESPONSE 31:** The fact sheet will be changed to reflect the correct information.

**COMMENT 32:** As part of arms-length negotiations between APS and the Navajo Nation, the Navajo Nation granted APS a covenant not to regulate. Specifically, the Four Corners Power Plant owners' lease with the Navajo Nation provides that the Navajo Nation "will not directly or indirectly regulate or attempt to regulate the Company or the construction, maintenance or operation of the power plant and transmission system by the Company, or its rates, charges, operating practices, procedures, safety rules, or other policies or practices...." This covenant not to regulate was approved by or otherwise reaffirmed by the Navajo Nation in the original 1960 Lease, the 1966 Supplemental and Additional Lease, the 1985 Lease Amendment, and again in 2011 with Lease Amendment No. 2 and Lease Amendment No. 3. The Department of the Interior has similarly approved the lease and amendments containing the covenant not to regulate each time this question was before it. Moreover, the covenant not to regulate has been upheld by the United States Court of Appeals for the Ninth Circuit as lawful and binding on the Navajo Nation. In *Arizona Pub. Serv. Co. v. Aspaas*, 77 F.3d 1128, 1135 (9<sup>th</sup> Cir. 1995), the court held that "[t]he clear language contained in the Lease Documents, including the Non-regulation Covenant," demonstrate an "unmistakable waiver" by the Navajo Nation of regulatory authority at Four Corners." Ten years later, the Navajo Nation Attorney General acknowledged the covenant not to regulate in an amicus brief filed in *Dixon v. Babcock & Wilcox Constr. Co.*, No. NLC 2005-30 (Navajo Nation Labor Comm'n), when it quoted *Aspaas* with approval. Finally, just last year, in *Salt River Project Ag. Improvement & Power Dist. v. Lee*, No. CV-08-08028-PCT-JAT, 2013 WL 321884 (D. Ariz. Jan 28, 2013), the United States District Court for the District of Arizona read the plain language of the covenant not to regulate to prohibit regulation of the "operations" of Navajo Generating Station, whose lease contains a similar covenant not to regulate, to foreclose regulation of "how the [generating station] is run." In upholding applicability of the covenant not to regulate, the court placed special weight on the term "operations" contained in the covenant and adopted the plain meaning of "operate" to mean the exertion of force or influence; working, activity; a manner of working, the way in which a thing works."

Finally, the Navajo Nation itself, by its regulatory conduct subsequent to the existence of the covenant not to regulate, evinces agreement with the courts' interpretation of the covenant. In each of the major environmental statutes enacted by the Navajo Nation, the tribe explicitly provides that the environmental regulations "shall not apply to any person or property where, jurisdiction or covenant not [to] regulate or otherwise exercise jurisdiction over such person or property." While those statutory carve-outs cannot be construed as an express admission regarding the validity of the covenant, which has, in any event, already been decided by federal courts and expressly acknowledged by the Navajo Nation Department of Justice, they certainly demonstrate the Navajo Nation's understanding that its covenants not to regulate may bar it from regulating the environmental impacts of the plant. See Navajo Nation Code, tit. 4, Section 2106(B)(2) (CERCLA); *id.* tit. 22 Section 2505(C) (Safe Drinking Water Act); *id.* tit. 4, Section 104(B) (Solid Waste Act); *id.* tit. 4, Section 1504(B) (Underground Storage Tank Act); *id.* tit. 4, Section 1307(B) (Clean Water Act); *id.* tit 4, Section 304(B) (Pesticide Act).

These federal court decisions and actions taken by the Navajo Nation evince that the tribe has waived its sovereign power to regulate Four Corners Power Plant activities affecting water quality on the reservation. Accordingly, APS requests that EPA remove Special Condition III.A.4 in the draft NPDES permit, which reads as follows: "Provide information about exceedances of any human health, livestock, or chronic or acute aquatic life standards as established in the 2007 NNWQS in the samples collected for analysis." For these same reasons, APS also requests that EPA remove the following language from the Fact Sheet accompanying the draft permit:

Section V: “However, EPA has included monitoring in the permit for several additional parameters in order to further verify these assumptions. Although EPA has determined that the discharges do not have a reasonable potential to cause or contribute to an exceedance of water quality standards, the permit sets general conditions based on narrative water quality standards contained in Section 202 of the Navajo Nation Surface Water Quality Standards 2007. These standards are set forth in the Section entitled General Discharge Specifications of the permit.” (Consistent therewith, please also delete the bracketed words “or Tribal” contained in the third paragraph of P. 5 of the Fact Sheet.)

Section VI.B: “and Navajo Nation Water Quality Standards”

Section VII.A: “The Navajo Nation water quality standards contains narrative water quality standards applicable to the receiving water. Therefore, the permit incorporates applicable narrative water quality standards.”

Section VII.C.4: “Provide information about exceedances of any human health, livestock, or chronic or acute aquatic life standards in the samples collected for analysis.”

**RESPONSE 32:** *See* Response to Comment 3. At the outset, we note that EPA is not bound by any outside agreements between the Navajo Nation and the permittee. Moreover, that agreement is not relevant to the issue raised by this comment. As noted in Response to Comment 3, EPA explicitly retained CWA Section 303 authority over Morgan Lake when it recognized the Navajo Nation’s TAS. For purposes of this permit, therefore, the Navajo Nation water quality standards are not formal regulatory requirements, nor does this permit grant the Navajo Nation any regulatory jurisdiction under CWA 202 or 402. Where, as here, there are no approved water quality standards, EPA has significant latitude to determine the appropriate reference standards for protecting the uses of a water body. In this case, EPA has chosen to use the Navajo Nation WQS for nearby waters (the Chaco River, a downstream receiving water body) as the reference benchmarks for assessing the adequacy of the permit conditions protecting the waters of the U.S. impacted by discharges from the Four Corners Power Plant.

**COMMENT 33:** Finally, APS notes that Section XII.D of the Fact Sheet “references certification from the affected State, Territory, or Tribe that the proposed permit will meet all applicable water quality standards.” APS refers the agency to EPA’s Decision Document for the Approval of the Navajo Nation Application for Treatment in the Same Manner as a State for Sections 303(c) and 401 of the Clean Water Act dated January 20, 2006. In that document, EPA explains that in its application for treatment as a state, the Navajo Nation expressly excluded Morgan Lake from the scope of the application. As a result, EPA concluded that the application “effectively does not include land the Tribe leases for the Four Corners Power Plant and Navajo Generating Station,” including Morgan Lake. Moreover, as discussed above, the Four Corners Power Plant co-owners’ lease with the Navajo Nation expressly prohibits the applicability of Navajo Nation surface water quality standards to the plant. Accordingly, no Clean Water Act Section 401 certification is required from the Navajo Nation for purposes of the Four Corners Power Plant NPDES permit, and the Fact Sheet should be modified to reflect this.

**RESPONSE 33:** *See* Response to Comment 3, above. As noted in that Comment Response, EPA explicitly retained jurisdiction over the Morgan Lake when it recognized the Navajo Nation’s TAS for purposes of CWA Sections 303(c) and 401. EPA is therefore the regulatory agency certifying this permit pursuant to CWA Section 401.