Response to Comments Document
APS Four Corners Power Plant
NPDES Permit No. NN0000019

EPA received comments dated July 1, 2019, from the Law Office of John M. Barth ("Commenter") on behalf of San Juan Citizens Alliance, Center for Biological Diversity, Dine Citizens Against Ruining our Environment, Amigos Bravos, Sierra Club, and Western Environmental Law Center (collectively referred to as the "Conservation Organizations") on EPA's proposed renewal of the NPDES Permit for the Four Corners Power Plant, NPDES Permit No. NN0000019 ("Permit"). EPA has summarized the Conservation Organizations' comments, primarily through the use of excerpts, and responded below. EPA also received comments from Arizona Public Service Company ("APS") in support of the proposed permit on July 1, 2019, as well as several proposed corrections to the facility description in the proposed fact sheet. EPA's responses to APS's comments are included after the response to the Conservation Organizations' comments.

COMMENT 1: EPA's Public Notice for this draft permit states, "[i]nformation submitted by the Applicant as part of its Application is available as part of the administrative record of this proposed permit." The Public Notice also states, "[t]he administrative record, including …data submitted by the applicant, and other relevant documents, is available for review…". EPA has not established a docket on regulations.gov for this action. Instead, EPA created a webpage for the proposed permit action that contained only five documents. This is despite the fact that EPA's draft permit relies on a number of documents that were not made publicly available at the time of the issuance of the draft permit. Moreover, EPA has failed to post to its website any documents related to its proposed 401 certification waiver. This is despite the fact that EPA's Public Notice admits that, "[t]he Applicant has also submitted a request for certification of the Proposed Permit under Clean Water Act Section 401(a)(1)."

On May 2, 2019 the conservation organizations issued a Freedom of Information Act ("FOIA") request to EPA Region 9 requesting the documentation relied upon by EPA to issue the draft permit, fact sheet, and 401 Certification decision. As of May 30, 2019, the original comment deadline, the conservation organizations had not received a single document in response to its FOIA request. Instead, EPA agreed to respond to the FOIA request on two dates: with the first batch of responsive FOIA documents provided to the conservation organizations by June 10, 2019 and a second batch of documents by June 25, 2019. EPA also agreed to extend the comment deadline to July 1, 2019.

EPA failed to provide any documents by the June 10, 2019 deadline. Instead, the Conservation Organizations did not receive the first batch of documents until a June 12, 2019 interim release via email with a link to documents on FOIA Online, and a subsequent email with additional documents on June 13, 2019 (for a total of 177 documents). It appears that EPA posted a small set of additional responsive documents to FOIA Online on or about June 25, 2019.

RESPONSE 1:

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 did not inspect the Administrative Record at EPA's offices, and instead filed a Freedom of Information Act (FOIA) request. A FOIA response is generally lengthier than an administrative record, in that the EPA is required to conduct and process computerized searches for relevant documents and emails. Given the anticipated additional time necessary to complete the FOIA request, EPA extended the public comment period on this draft permit to July 1, 2019.

COMMENT 2: The Four Corners Power Plant ("FCPP"), a coal burning power plant, is located on the Navajo Nation. The FCPP was 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 installed 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 first NPDES permit was issued for discharges from the FCPP on July 1, 1977.[5] The last effective NPDES renewal permit for FCPP was issued by EPA in 2001, or nearly 18 years ago. On May 16, 2014, a coalition of environmental organizations issued a 60-day notice of intention to sue letter alleging that EPA had unreasonably delayed reissuing the renewal NPDES permit. In 2018, the coalition filed a mandamus action in the 9th Circuit Court of Appeals, which remains pending.

Approximately 2 weeks after the coalition filed their mandamus action, EPA issued a final NPDES permit for the facility. A coalition of environmental organizations then challenged the final NPDES permit before the EPA Environmental Appeals Board ("EAB"). Over the course of the next several months, and in direct response to the EAB appeal, EPA first withdrew portions of the final permit and then eventually withdrew the entire permit. The EAB then dismissed the appeal as moot. According to EPA, the 2001 NPDES permit for the facility remains the effective permit. The parties to the mandamus litigation recently filed a Joint Motion to Stay in the 9th Circuit Court of Appeals action with EPA agreeing to issue a final permit by August 31, 2019.

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 finalized a comprehensive environmental impact statement ("EIS") and Biological Opinion ("BO") pursuant to the National Environmental Policy Act ("NEPA") and Endangered Species Act ("ESA") that focused largely on the proposed expansion of CCR disposal facilities to allow FCPP to continue operating for up to 30 more years. EPA was a cooperating agency in this EIS process. In 2015, as required by section 7 of the Endangered Species Act, the Fish and Wildlife Service issued a Biological Opinion analyzing the effects of continued operation of the Four Corners Power Plant and related coal mine on endangered species as part of the lease extension allowing operation of the plant from 2016-2041. The Biological Opinion acknowledged the already dire state of the Colorado pikeminnow and razorback sucker populations in the San Juan River and cataloged substantial adverse impacts to these populations and their critical habitat from the continued operation of the FCPP and Navajo Mine, including impacts from water pollution and the FCPP cooling water intake. The Biological Opinion found that impingement and/or entrainment of fish in the coal plant's water intake system, as well as other impacts, would decrease the population viability of Colorado pikeminnow and razorback sucker in the San Juan River basin. 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. A coalition of environmental organizations also challenged the issuance of the Final EIS and BO in federal district court in Arizona and 9th Circuit Court of Appeals, which remains pending.

RESPONSE 2: Comment noted. Commenter has submitted a summary of the history of NPDES permitting for the FCPP. While this is a general summary, particular additional facts and, potentially, alternative conclusions on the issues raised in the comment letter are discussed in the individual responses below. The underlying documents cited in the comments speak for themselves.

COMMENT 3: 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 bioaccumulative 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 exceedence.

On November 3, 2015, EPA issued new effluent limitation guidelines for coal fired power plants. These new ELGs state, "there shall be no discharge of pollutants in bottom ash transport water" beginning as soon as November 1, 2018. *See,* 40 C.F.R. §423.13(k)(1)(i), 80 Fed. Reg. 67896 (November 3, 2015). EPA previously found that settlement ponds are ineffective for removing toxic pollutants such as dissolved metals and nutrients.

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.[18] 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."

RESPONSE 3: Comment noted. Commenter has submitted a summary of the regulatory provisions of NPDES permitting. While this is a general summary, the NPDES regulatory program is complex, and will be discussed as necessary in more detail in the comment responses below. Again, the underlying documents and statutory and regulatory provisions speak for themselves. *See also* Response 6, below.

COMMENT 4: EPA's draft permit arbitrarily applies the Navajo Nation Water Quality Standards despite the fact that such standards 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.[23] 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.

In 2006 EPA approved Navajo Nation's CWA 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. Further, the operator APS also takes the position that EPA may not rely on the Navajo Nation Water Quality Standards for discharges from the FCPP or for the EPA's 401 Certification decision.

EPA may not further defer "whether the Tribe's water quality standards…would apply to any CWA-permitted discharges from these facilities to Tribal waters." As part of the administrative record for this permitting action, EPA must produce a written rationale for its application of the Navajo Nation's water quality standards to this permitting action and 401 Certification decision. 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 in this permitting action why it chose to apply Navajo Nation water quality standards instead of New Mexico standards. EPA must also explain why it did not apply New Mexico water quality standards to Morgan Lake, No Name Wash, and the Chaco River. After EPA provides this written explanation, we request that EPA re-issue its draft permit, fact sheet, and reasonable potential analysis for a new public comment period. In the event EPA determines that it may not apply the Navajo Nation water quality standards due to the contractual prohibition or otherwise, the EPA must state whether it is applying the State New Mexico water quality standards and the legal basis for applying those standards. If EPA reaches the conclusion that neither Navajo Nation nor State of New Mexico water quality standards can be legally applied to Morgan Lake, No Name Wash, and the Chaco River, then EPA must promulgate federal water quality standards for these waterbodies prior to issuing a draft NPDES permit and 401 Certification decision.

The Conservation Organizations issued a FOIA request to EPA on May 2, 2019 requesting, inter alia, the administrative record supporting the draft permit and 401 Certification decision. EPA's administrative record for both the draft permit and the proposed 401 Certification are devoid of any rationale for EPA's application of the Navajo Nation water quality standards to these agency decisions.

In light of the contractual prohibition and EPA's silence on the legal impact of the contractual prohibition upheld by the federal courts, EPA's application of Navajo Nation Water Quality Standards to its 401 certification decision and draft NPDES permit is arbitrary, capricious, and contrary to law. EPA must reissue the its proposed 401 Certification decision and draft permit and provide a legal analysis explaining which water quality standards apply and why.

RESPONSE COMMENT 4:

Commenter is raising two distinct concerns[1]. First, who has jurisdiction – legal authority – to regulate and enforce the federal Clean Water Act (in particular Sections 303 and 401) at the

[1] The Navajo Nation letter to EPA dated October 31, 2005, speaks to the leasehold interest, and asks that EPA not include that leasehold interest in the TAS application process. This leasehold interest includes the plant facility, Morgan Lake, and a short segment of No Name Wash that is immediately downstream of the discharge point from Morgan Lake. Defining that boundary precisely might become necessary should a project requiring a certification

Four Corners Power Plant. Second, what technical provisions – standards or otherwise – will guide that regulation.

(1) Federal Clean Water Act Jurisdiction

The Navajo Nation, in its letter to Wayne Nastri, 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. Unless and until the Nation applies for and receives EPA recognition of its TAS authority over these particular waters, EPA will continue to be the regulatory authority for purposes of CWA Sections 303(c) and 401 for Morgan Lake and the upper segment of No Name Wash.

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 do not apply to Morgan Lake for purposes of the federal Clean Water Act. EPA retained responsibility for Morgan Lake and upper No Name Wash under both CWA Sections 303(c) and 401.

The commenter bases several comments on the fact that the lease agreement between the Navajo Nation and APS includes provisions limiting the Nation's ability to enforce tribal standards on the leasehold. Given that the Nation has explicitly excluded the leasehold from its request for TAS recognition, and that EPA has carried that "carve out" into the approval of Navajo Nation water quality standards, any continued contractual disagreements between those parties are irrelevant to EPA's action here. EPA retained responsibility for the Clean Water Act Section 303 water quality standards program and the Clean Water Act section 401 certification program for the permit renewal at issue.

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under federal Clean Water Act Section 401 be constructed in No Name Wash. For purposes of this Response to Comments, however, it is sufficient to note that the "carve out" from the Navajo Nation TAS request included the entire leasehold parcel. EPA remains the regulatory agency as to that carve out for purposes of the federal Clean Water Act.

(2) "What Standards Apply?"

The action in front of EPA at this time is the renewal of an NPDES permit for the Four Corners Power Plant and its discharges into No Name Wash. 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). As noted above, the Navajo Nation's water quality standards have no formal regulatory standing as to Morgan Lake or upper No Name Wash. That is, there are no federally-approved water quality standards.

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 and the upper No Name Wash. Using these standards as a reference tool is not intended to suggest that the Navajo Nation has any regulatory role in assigning WQSs to these waterbodies; it is a conclusion by the permit writer that these Chaco River – the downstream receiving waters – water quality standards are a legitimate adjacent jurisdictional assessment of scientifically-based measures that would protect the uses in Morgan Lake and upper No Name Wash.

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.[2]

[2] This use of the Navajo Nation water quality standards as a benchmark has already been noted and its regulatory status explained. See [Response to Comments; 2018 Permit].

Commenter notes that the record includes documents suggesting that EPA could "use" either the Navajo Nation or the New Mexico water quality standards. As noted, any such "use" would be as benchmark or reference standards; it would not confer on the Navajo Nation or New Mexico any federal Clean Water Act regulatory authority, which is retained by EPA.

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 in the 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), except to the extent noted and reflected in the Permit.

See also discussion at Response #8 regarding the status of Morgan Lake under the federal Clean Water Act.

COMMENT 5: The proposed permit selects December 31, 2023 as the date by which APS must comply with the best available technology economically achievable ("BAT") effluent limit for bottom ash transport water. This compliance date has no support in the record and violates applicable Clean Water Act requirements, as explained below.

1. *The compliance date violates the Clean Water Act and its implementing regulations.*

The Clean Water Act requires each NPDES permit renewal to include "all applicable requirements," including effluent limitations issued under section 1311 of the Act. 33 U.S.C. § 1342(a)(1); *see also* 80 Fed. Reg. 67,838, 67,882 (Nov. 3, 2015) ("Under the CWA, the permitting authority must incorporate these ELGs into NPDES permits as a floor or a minimum level of control."). Given that the Four Corners plant discharges bottom ash transport water to a water of the United States, the Four Corners plant is subject to the BAT limits for bottom ash transport water that EPA promulgated in 2015, 80 Fed. Reg. 67,838, codified at 40 C.F.R. pt. 423. EPA established BAT limits for bottom ash transport water equal to zero discharge, meaning that "there shall be no discharge of pollutants in bottom ash transport water." 40 C.F.R. § 423.13(k)(1)(i).

The 2015 ELG Rule provided that the compliance date for the bottom ash BAT limit would be "as soon as possible beginning November 1, 2018, but no later than December 31, 2023." 40 C.F.R. §§ 423.11(t), 423.13(k)(1)(i) (2015). In 2017, EPA postponed the earliest compliance date by two years,[32] but did not alter either the substantive BAT limit (*i.e.*, the zero discharge standard) or the latest permissible compliance date. *See* 82 Fed. Reg. 43,494 (Sept. 18, 2017). Thus, at present, the date for complying with the bottom ash BAT limit must be "as soon as possible beginning November 1, 2020, but no later than December 31, 2023." 40 C.F.R. §§ 423.11(t), 423.13(k)(1)(i).

The ELG Rule establishes the earliest compliance date, November 1, 2020, as the presumptive compliance date. *See* 40 C.F.R. §§ 423.13(k)(1)(i) (requiring that compliance with the bottom ash BAT limit be achieved "as soon as possible beginning November 1, 2020"), 423.11(t) ("'as soon as possible' means November 1, 2020 . . . unless the permitting authority establishes a later date"). A permitting authority can establish a compliance date later than November 1, 2020 only if it documents that it has considered the factors listed in 40 C.F.R. § 423.11(t). Moreover, the ELG Rule requires a permitting authority that selects a compliance date later than November 1, 2020 to explain why a later date is appropriate and why the discharger cannot meet the earliest compliance date:

> EPA recommends that the permitting authority provide a well-documented justification of how it determined the ''as soon as possible'' date in the fact sheet or administrative record for the permit. If the permitting authority determines a date later than November 1, 2018, the justification should explain why allowing additional time to meet the limitations is appropriate, and why the discharger cannot meet the final effluent limitations as of November 1, 2018.
> 80 Fed. Reg. at 67,883.

In issuing the draft NPDES permit for Four Corners, EPA has not even attempted to

satisfy the legal requirements for a permitting authority to select compliance date later than November 1, 2020. Specifically, the proposed compliance date violates at least three separate legal requirements.

First, EPA has not made publicly available any document in which EPA considers the factors listed in 40 C.F.R. § 423.11(t). The fact sheet for the proposed permit recites the factors in 40 C.F.R. § 423.11(t), and claims that the Applicant submitted information to EPA addressing these factors. However, the ELG Rule requires the permitting authority—not the Applicant—to select the compliance date and consider the factors in 40 C.F.R. § 423.11(t). *See, e.g.*, 80 Fed. Reg. at 67,883 ("Assuming that the permitting authority receives relevant information from the discharger, in order to determine what date is 'as soon as possible' within the implementation period, *the permitting authority must then consider* the following factors . . .") (emphasis added); *id.* at 67,854 ("The final rule specifies the factors that *the permitting authority must consider* in determining the 'as soon as possible' date") (emphasis added). Indeed, in the preamble to the 2015 ELG Rule, EPA explains in detail what "the permitting authority" must evaluate for each of the factors listed in 40 C.F.R. § 423.11(t). *Id.* at 67,883. EPA's abdication of its responsibility to consider the factors in 40 C.F.R. § 423.11(t) renders the bottom ash BAT compliance date in the proposed permit unlawful.

Second, EPA fails to explain why a date later than November 1, 2020 is appropriate, as required by the ELG Rule, 80 Fed. Reg. at 67,883. The draft fact sheet merely notes that the Applicant requested a compliance date of December 31, 2023. But EPA's mere reference to the Applicant's requested compliance date does not satisfy the agency's obligation to explain why a date later than November 1, 2020 is appropriate.

Third, EPA fails to explain why APS cannot meet the bottom ash BAT limit by November 1, 2020, 80 Fed. Reg. at 67,883. Here too, EPA references the Applicant's requested compliance date, as well as information submitted by the Applicant. But the 2015 ELG Rule places the burden on the permitting authority to explain why a discharger cannot meet the earliest possible compliance deadline. *See id.* EPA has not provided such an explanation in the draft permit, fact sheet, or any other document prepared by EPA.

2. EPA's potential reconsideration of the bottom ash BAT requirements does not justify selecting December 31, 2023 as the compliance date.

The proposed permit provides no rationale for selecting the latest possible compliance date, December 31, 2023, for meeting the bottom ash BAT limit. In particular, EPA does not rely on the potential reconsideration of the bottom ash BAT requirements as justification for the compliance date it selected. While EPA has not raised this issue, we wish to make clear that it is not a permissible reason for selecting December 31, 2023 as the compliance date.

EPA has an obligation to comply with the legal requirements that are in effect when EPA issues the final NPDES permit for Four Corners. Currently, the substantive BAT limit contained in the 2015 ELG Rule is in effect, and that BAT limit prohibits the discharge of any bottom ash transport water. 40 C.F.R. § 423.13(k)(1)(i). While EPA postponed the earliest compliance date for the bottom ash BAT limit, it did not alter the substantive effluent limit, nor did EPA change the obligation for each permitting authority to incorporate all applicable effluent limits into each

NPDES permit. *See* 82 Fed. Reg. at 43,496 ("This maintains the 2015 Rule as a whole at this time, with the only change being to postpone specific compliance deadlines for two wastestreams."); *see also* EPA, Response to Comment Document, EPA-HQ-OW-2009-0819, SE06669, at 8 ("The only thing the Postponement Rule does is revise the 2015 ELG Rule's new, more stringent compliance dates for two wastestreams discharged from existing sources (bottom ash transport water and flue gas desulfurization wastewater). Otherwise, it leaves the Rule unchanged.").

Moreover, as of the date these comments are being submitted, EPA has not yet initiated a formal reconsideration proceeding by issuing a proposal to revise the bottom ash BAT limits. Even if EPA were to subsequently issue such a proposal, there is no realistic possibility that EPA will finalize revisions to the bottom ash BAT limit prior to August 31, 2019, when EPA has said it intends to finalize this permit. In addition, EPA is prohibited from prejudging the outcome of any reconsideration rulemaking, and one possibility is that EPA will not change the bottom ash BAT limits at all, as the agency has acknowledged.[33] Given that EPA cannot know during this permit proceeding whether it will change the bottom ash BAT limit, it would be unlawful and unreasonable for EPA to select a compliance date for the bottom ash BAT limits based on the assumption that the agency will revise the bottom ash BAT limit.

Finally, the mere possibility that EPA might change the bottom ash BAT limits is not a permissible rationale for selecting December 31, 2023 as the compliance date. It is always possible for EPA to convene a rulemaking to reconsider prior effluent limits. Indeed, the Clean Water Act requires EPA to review, and as necessary revise, each effluent limit every 5 years, 33 U.S.C. § 1311(d). Yet the overriding statutory goal was to eliminate water pollution by 1985, *id.* § 1251(a)(1). It would be inconsistent with the Clean Water Act's statutory goal of swiftly eliminating water pollution for EPA to set the latest permissible date for complying with an existing effluent limit based on nothing more than the speculative possibility that the effluent limit may change in the future. *See Kennecott v. EPA*, 780 F.2d 445, 448 (4th Cir. 1985) ("The BAT standard reflects the intention of Congress to use the latest scientific research and technology in setting effluent limits, pushing industries toward the goal of zero discharge as quickly as possible.").

3. The rationale provided by APS for a compliance date of December 31, 2023 is unsupported and unlawful.

In an April 4, 2019 document, APS asks that EPA select December 31, 2023 as the deadline for complying with the bottom ash BAT limitations for Four Corners. *See* NPDES Effluent Limitation Guideline Compliance Project Summary, APS, Four Corners Power Plant [hereinafter, *Project Summary*]. APS' Project Summary fails to consider the factors listed in 40 C.F.R. § 423.11(t) that are a prerequisite to selecting a compliance deadline later than November 1, 2020.

40 C.F.R. § 423.11(t) provides that a compliance date later than November 1, 2020 must be based on a consideration of the "[t]ime to *expeditiously* plan (including to raise capital), design, procure, and install equipment to comply with the requirements of this part." (emphasis added). It is now more than three-and-a-half years since EPA issued the final ELG Rule on November 3, 2015, but the Project Summary expressly states that "APS has yet to develop a firm

schedule for implementing this project" for a closed-loop recycling system to meet the bottom ash BAT limit. Project Summary at pdf p. 5. Having failed to even "develop a firm schedule" for complying with the ELG Rule, APS has not documented the "time to expeditiously plan" to comply with the bottom ash BAT requirements. Given that APS has not provided any information on the first factor listed in 40 C.F.R. § 423.11(t)(1), and EPA has not conducted its own analysis of this issue, the record is devoid of any information on the factor listed in 40 C.F.R. § 423.11(t)(1). The absence of record evidence on the first, mandatory factor in 40 C.F.R. § 423.11(t)(1) precludes EPA from selecting a compliance date later than November 1, 2020.

Moreover, the APS Project Summary unlawfully relies on alleged "uncertainty" concerning the bottom ash BAT requirements as justification for selecting the latest possible compliance date, December 31, 2023. APS claims that the "uncertainty" stems from both the possibility that EPA will reconsider the bottom ash BAT standards and pending litigation in the Fifth Circuit Court of Appeals over the standards.

As mentioned above, the Clean Water Act and implementing regulations require EPA to incorporate into this NPDES permit all applicable effluent limitations that are in effect at the time the final permit is issued. The zero-discharge bottom ash BAT limits contained at 40 C.F.R. § 423.13(k)(1)(i) are in effect now, and should be in effect when EPA issues the final Four Corners permit in a few months. Moreover, the regulations concerning selection of the bottom ash BAT compliance date do not list uncertainty over potential revisions of the BAT standards as a factor to consider. *See* 40 C.F.R. § 423.11(t). Nor is the speculative possibility that the BAT standards may change an "appropriate" factor to consider under 40 C.F.R. § 423.11(t)(4). As discussed above, given that EPA has not even proposed a rule revising the bottom ash BAT standards, and given that EPA cannot prejudge the outcome of any rulemaking, it is entirely speculative whether EPA will revise the zero-discharge BAT limit for bottom ash. Moreover, it is always possible for EPA to convene a rulemaking to reconsider effluent limits that are currently in effect, and indeed, the CWA requires regular review of all effluent limits, *see* 33 U.S.C. § 1311(d). It would be inconsistent with the Clean Water Act's statutory goal and structure to set the latest permissible date for complying with an existing effluent limit based on nothing more than the speculative possibility that the effluent limit may change in the future. For all these reasons, the potential for EPA to revise the underlying bottom ash BAT limits is not an appropriate factor to consider under 40 C.F.R. § 423.11(t)(4) when selecting the compliance date.

Similarly, the pending Fifth Circuit litigation cited by APS is not an appropriate or lawful basis for selecting a compliance date later than November 1, 2020. The Fifth Circuit already issued a decision resolving claims by Environmental Petitioners challenging the legacy wastewater and leachate provisions of the 2015 ELG Rule. *See Sw. Elec. Power Co. v. EPA*, 920 F.3d 999 (5th Cir. 2019). The claims in the Fifth Circuit challenging other portions of the 2015 ELG Rule, including the bottom ash BAT standards, remain in abeyance until any reconsideration proceeding concludes. Even if the abeyance of the Fifth Circuit litigation were to end, it is entirely speculative whether the Fifth Circuit would vacate and/or remand the bottom ash BAT standards. We are not aware of any precedent for a permitting agency to delay compliance with a BAT standard that is currently in effect, solely or primarily because of the

speculative possibility that a court could vacate and/or remand the standard.

4. The final permit must require compliance with the bottom ash BAT limit no later than November 1, 2020.

As explained above, EPA has failed to "explain why allowing additional time to meet the limitations is appropriate, and why the discharger cannot meet the final effluent limitations as of" November 1, 2020. 80 Fed. Reg. at 67,883. As a result, the ELG Rule directs EPA to require compliance with the bottom ash BAT limits by November 1, 2020. *See* 40 C.F.R. §§ 423.13(k)(1)(i), 423.11(t).

The accompanying report from Dr. Ranajit Sahu provides additional support for setting a compliance deadline of November 1, 2020.[34] As Dr. Sahu explains, even if APS had not begun any preparations to comply with the bottom ash BAT standards, APS would need no more than 24 months to achieve compliance. But as explained above, APS has in fact been on notice of the final ELG Rule requirements since the Rule was issued in November 2015, 80 Fed. Reg. 67,838 (Nov. 3, 2015). In the preamble to the 2015 ELG Rule, EPA directed all power plant owners and operators to begin preparing to comply with the ELG Rule's requirements:

> Regardless of when a plant's NPDES permit is ready for renewal, the plant should immediately begin evaluating how it intends to comply with the requirements of the final ELGs. In cases where significant changes in operation are appropriate, the plant should discuss such changes with the permitting authority and evaluate appropriate steps and a timeline for the changes, even prior to the permit renewal process.
> 80 Fed. Reg. at 67,883.

Given EPA's admonition to begin preparations to comply immediately after the November 2015 ELG Rule was issued, and that Dr. Sahu documents that compliance with the bottom ash BAT limit can be achieved within 24 months, APS had more than enough time to meet a November 1, 2020 compliance deadline. To the extent that APS has chosen not to "develop a firm schedule for implementing this project" to meet the bottom ash BAT limit, Project Summary at pdf p. 5, APS should not be rewarded with a later compliance deadline when it failed to heed EPA's instructions to begin compliance preparations immediately after the ELG Rule was finalized in November 2015.

Even accounting for the approximately five months during which EPA stayed the effectiveness of the entire ELG Rule,[35] the new bottom ash BAT limits have been in effect for more than three years. Thus, based on Dr. Sahu's conclusion that compliance can be achieved within 24 months, APS has already had ample time to come into compliance with the bottom ash BAT requirements, and a November 1, 2020 deadline is appropriate.

Finally, permitting agencies have required other facilities to meet a November 1, 2020 deadline for complying with the bottom ash BAT limit, which supports selecting the same compliance deadline here. In renewing the NPDES permits for the Chalk Point and Dickerson

plants, the Maryland Department of the Environment required compliance with the zero discharge limit for bottom ash transport water by November 1, 2020. The compliance deadlines in these two permits have been upheld by the Maryland Court of Appeals.

For all these reasons, the final NPDES permit issued to APS for the Four Corners plant must require compliance with the zero-discharge limit for bottom ash transport water by November 1, 2020.

RESPONSE 5:

To provide background on the 2015 ELGs and to respond to this comment, the following excerpt is taken from the April 29, 2019 Fact Sheet for the proposed permit.

> The ELGs for Steam Electric regulations, were last updated in 2015 via a final rule entitled "Effluent Limitation Guidelines and Standards for the Steam Electric Power Generating Point Source Category" ("2015 ELGs") which were published in the Federal Register on November 3, 2015. The 2015 ELGs provide there shall be no discharge of pollutants in bottom ash transport water. The 2015 ELGs required dischargers to meet the new discharge prohibition by a date determined by EPA that is as soon as possible beginning November 1, 2018, but no later than December 31, 2023. On September 18, 2017, EPA issued a rule "Postponement of Certain Compliance Dates for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category" ("Postponement Rule") extending the earliest compliance date for the 2015 ELGs for bottom ash transport water from November 1, 2018, to November 1, 2020. The Postponement Rule did not extend the December 31, 2023 date.
>
> The revised proposed permit is updated from the June 2018 withdrawn permit to include the 2015 ELGs for bottom ash transport water. The 2015 ELGs, 40 CFR Section 423.11(t), allow EPA to select a later date within the range, after receiving information from the discharger, based on the following factors 1) time to expeditiously plan, design, procure, and install equipment; 2) changes being made at the plant pursuant to other regulations, including coal combustion residuals (CCR) under the Resource Conservation and Recovery Act of 1976, as amended (RCRA), and 3) other factors as appropriate.

Commenter incorrectly asserts that EPA did not consider the factors in 40 CFR Section 423.11(t) and inappropriately deferred to the Permittee in selecting December 31, 2023, as the date by which APS must meet the no discharge requirement for bottom ash transport water ("BATW"). APS's April 4, 2019 submittal to EPA, *NPDES Effluent Limitation Guideline Compliance Project Summary, APS, Four Corners Power Plant,* set forth to EPA how these factors apply to Four Corners Power Plant. Although EPA did not prepare a formal memorandum or detailed explanation in the fact sheet explaining how the criteria in 40 CFR Section 423.11(t) are met, EPA considered the information and applied it to the factors in the regulation and independently determined that the appropriate "as soon as possible" date is December 31, 2023.

The information submitted by APS goes into detail to address 40 CFR 423.11(t)(1)(time to expeditiously plan, design, procure, and install equipment) and 40 CFR 423.11(t)(2)(changes being made at the plant pursuant to other regulations, including the CCR Rule under RCRA). With respect to 40 CFR 423.11(t)(1-2), APS is currently making substantial changes to how the plant's waste is handled in order to address the CCR rule. APS committed to stop sending CCR and non-CCR wastestreams to the Combined Waste Treatment Pond by October 31, 2020, and initiate closure procedures within 30 days thereafter. APS estimated this work will cost $9.4 million.

To address the cessation of using the Combined Waste Treatment Pond by October 31, 2020, a new system of concrete holding and treatment tanks will be needed to manage BATW flows. This system of tanks will be used prior to the compliance date for the revised ELGs for BATW (i.e., as a holding, treatment, and discharge mechanism), along with afterwards as part of a closed-loop BATW management system (i.e., as a holding and treatment tank for BATW recycling). APS indicated it will complete construction by 2019, test it in the first and second quarter of 2020, and shift all BATW flows to the new tank in the third quarter of 2020 at a total all-in project cost of $11.5 million for the tank system. APS indicated that a conveyor system would add an addition $8-$12 million.

APS indicated that it is necessary to sequence these projects so that construction of the BATW closed-loop recycling system follows the finalization of the BATW holding and treatment tank system because of construction access limitations that arise from the existence of significant plant infrastructure in this area that allows for narrow construction access to build piping, pumps, and other project components. APS also indicated that there is no room for both of these projects to be constructed at the same time, and power plant operational requirements require that the BATW holding and treatment tank system be built first. EPA evaluated this information and determined that it is appropriate to sequence the construction in this manner.

To address the no discharge of BATW, APS intends to develop a closed-loop recycling system for BATW. APS indicated that based upon the expected timing for each of the critical-path tasks comprising this project, along with the need to implement this project after initiating closure of the Combined Waste Treatment Pond and commissioning the BATW holding and treatment tank system, that the soonest the closed-loop recycling system for BATW can be implemented is by December 31, 2023. EPA evaluated all of the technical information submitted by APS pursuant to the factors in 40 CFR Section 423.11(t)(1-2) and determined that December 31, 2023, is the appropriate "as soon as possible" date considering the factors set forth in the regulations and the information in the record submitted by APS.

Although it is not necessary for EPA to evaluate 423.11(t)(4) "other factors as appropriate," including the Postponement Rule and whether the ELG may be amended, given EPA's analysis of the factors in 40 CFR 423.11(t)(1-2); EPA acknowledges that the date selected for technical reasons may allow APS to know if the requirements change before it begins construction and implementation of its closed loop recycling system. This factor also supports selection of the December 31, 2023 date.

Finally, Commenter includes a report by Dr. Sahu which asserts that APS could achieve compliance with the no discharge prohibition within 24 months and cites two other permits issued by the Maryland Department of the Environment that selected November 1, 2020, as the "as soon as possible" date. Given the complexity of the design, construction, and operation of the FCPP as well as the sequencing of construction necessary to comply with the CCR rule; Dr. Sahu's estimate does not impact EPA's evaluation of the factors in 40 CFR 423.11(t). Furthermore, it is irrelevant what "as soon as possible" date other permitting authorities have selected for different facilities. The factors in 40 CFR 423.11(t) are site specific and based upon the time needed to design, procure, and install the equipment necessary to meet the no discharge prohibition taking into account other changes necessary to comply with other regulatory requirements, including the CCR Rule. Thus, EPA's selection of December 31, 2023, as the applicable date for the no discharge prohibition for BATW is consistent with the requirements set forth in 40 CFR Section 423.11(t).

COMMENT: 6 The Final Permit Must Include a BPJ Determination for Legacy Bottom Ash Transport Water Discharged by the Four Corners Plant.

1. The Clean Water Act requires a permitting authority to set BAT limits for a Wastestream when there are no applicable, nationwide effluent limitations guidelines establishing BAT for that wastestream.

Each NPDES permit must ensure that discharges "will meet . . . all applicable requirements under sections 1311, 1312, 1316, 1317, 1318, and 1343 of this title." 33 U.S.C. § 1342(a)(1). Section 1311 in turn requires that for toxic and other pollutants, there "shall be achieved . . . effluent limitations . . . which (i) shall require application of the best available technology economically achievable for such category or class" and "shall require the elimination of discharges of all pollutants" if achievable. *Id.* § 1311(b)(2)(A); *see also* 40 C.F.R. § 125.3(a) ("[t]echnology-based treatment requirements under Section 301(b) of the [CWA] represent the minimum level of control that must be imposed" in a NPDES permit). The Supreme Court held long ago that BAT must represent "a commitment of the maximum resources economically possible to the ultimate goal of eliminating all polluting discharges." *EPA v. Nat'l Crushed Stone Ass'n*, 449 U.S. 64, 74 (1980). Moreover, "BAT limitations must 'be based on the performance of the single best-performing plant in an industrial field.'" *Sw. Elec. Power Co. v. EPA*, 920 F.3d 999, 1006 (5th Cir. 2019) (quoting *Chem. Mfrs. Ass'n v. EPA*, 870 F.2d 177, 226 (5th Cir. 1989)).

There are two primary ways in which a permitting authority incorporates the required BAT limits into a NPDES permit. If EPA has issued nationwide effluent limitations guidelines ("ELG") that establish BAT, each permitting authority must incorporate that BAT limit into NPDES permits. 40 C.F.R. § 125.3(c)(1). If EPA has not issued applicable ELGs that establish BAT, then each permitting authority must determine BAT on a case-by-case basis using best professional judgment ("BPJ"). *Id.* § 125.3(c)(2).

In 1982, EPA issued ELGs establishing best practicable technology ("BPT") limits for bottom ash transport water. *See* 47 Fed. Reg. 52,290 (Nov. 19, 1982). However, in the 1982 rule, EPA declined to set BAT limits for priority pollutants in bottom ash transport water. *Id.* at 52,297 ("EPA determined at proposal that the available data regarding the degree of toxic pollutant reduction to be achieved beyond BPT were too limited to support national limitations. Therefore, EPA did not propose BAT limitations or PSES for the priority pollutants."). Indeed, the 1982 guidelines did not set any specific limits on the discharge of toxic metals in power plant wastewater. *See* 80 Fed. Reg. at 67,840-41.

The 2015 ELG Rule created two sets of BAT limits, based on when coal ash wastewater is generated: wastewater generated after the compliance date is subject to more stringent BAT limits; whereas wastewater generated before the compliance date is considered "legacy wastewater" and is subject to extremely lax BAT limits. For non-legacy wastewater, the BAT standard established in 2015 prohibits the discharge of any bottom ash transport water. 40 C.F.R. § 423.13(k)(1)(i). By contrast, for legacy bottom ash transport water (and all other legacy wastewater), EPA set the BAT limit "equal to the previously promulgated BPT limitations," 80 Fed. Reg. at 67,854, which contain numeric limits for only total dissolved solids and oil and grease, and lack numeric limits for toxic metals, *see* 40 C.F.R. § 423.13(k)(1)(ii).

However, the BAT limits for legacy bottom ash transport water are no longer in effect. In April 2019, the Fifth Circuit Court of Appeals agreed with Environmental Petitioners that the legacy wastewater limits are unlawful, and vacated and remanded the legacy wastewater limits to EPA. *Sw. Elec. Power Co. v. EPA*, 920 F.3d 999, 1033 (5th Cir. 2019). As of the date of these comments, there are no nationwide ELGs establishing BAT limits for legacy bottom ash transport water.[41] As a result, EPA must use its best professional judgment to set BAT limits for Four Corners' discharge of legacy bottom ash transport water—specifically, the discharge of any bottom ash transport water that is generated prior to the date EPA selects for Four Corners to meet the zero-discharge BAT standard for bottom ash transport water.

EPA must use its best professional judgment to set BAT limits for legacy bottom ash transport water even though BAT limits are in effect for non-legacy wastewater. The Fifth Circuit recently held in *Sw. Elec. Power Co. v. EPA* that the agency must set BAT limits on a wastestream by wastestream basis. In that case, EPA argued that lax BAT limits on leachate were justified because of more stringent BAT limits for other wastestreams such as scrubber and ash transport wastewaters. The Court rejected EPA's argument, stating that:

> the Act does not permit the agency to set a BAT by playing one pollution source off against another. As petitioners point out, the Act instead requires a BAT determination to be made with respect to a discrete "point source." 33 U.S.C. § 1314(b)(2)(B). . . . This broad definition easily includes leachate, and the rule leaves no doubt that it treats leachate as a distinct point source. . . . The Act thus specifically requires the BAT factors be applied with respect to a specific point source—here, leachate. *See* 33 U.S.C. § 1314(b)(2)(B) (providing that regulations "shall ... specify factors to be taken into account in determining the best measures and practices available to comply with [the BAT requirements in § 1311(b)(2)] applicable to any point source ... within such category or classes" (emphasis added)). But in the final rule the agency has explicitly factored into its BAT determination the regulation of wastestreams other than leachate, which contravenes the plain text and structure of the Act. *Sw. Elec. Power Co.*, 920 F.3d at 1027.

The Fifth Circuit's holding is consistent with EPA regulations providing that "[w]here promulgated effluent limitations guidelines only apply to certain aspects of the discharger's operation, or to certain pollutants, other aspects or activities are subject to regulation on a case-by-case basis in order to carry out the provisions of the Act." 40 C.F.R. § 125.3(c)(3). Here, the only nationwide BAT limits that are in effect apply to only the non-legacy bottom ash transport water discharged by Four Corners, and thus under 40 C.F.R. § 125.3(c)(3), EPA must set BAT limits for legacy bottom ash wastewater using its best professional judgment.

In sum, given that the 2015 BAT limits for legacy wastewater have been vacated are no longer in effect, EPA must use its best professional judgment to set BAT limits for legacy bottom ash transport water.

2. EPA must consider the multiple technologies that are more effective than impoundments at treating legacy bottom ash transport water, and set BAT limits based on the

technology used at the best-performing plant.

In setting BAT limits for legacy bottom ash transport water, EPA must consider technologies more effective than surface impoundments at removing toxic metals and other pollutants. EPA has repeatedly concluded that surface impoundments do not represent BAT because they are ineffective at treating the dissolved metals present in coal ash wastewaters. *See, e.g.*, 80 Fed. Reg. at 67,851 ("pollutants that are present mostly in soluble (dissolved) form, such as selenium, boron, and magnesium, are not effectively and reliably removed by gravity in surface impoundments"); 78 Fed. Reg. 34,432, 34,459 (June 7, 2013) ("For metals present in both soluble and particulate forms (such as mercury), surface impoundments will not effectively remove the dissolved fraction."). The Fifth Circuit held that EPA's decision to base BAT limits for legacy wastewater on the use of surface impoundments was unlawful in light of EPA's findings that surface impoundments are archaic and ineffective. *Sw. Elec. Power Co.*, 920 F.3d at 1017 ("[T]he final rule describes impoundments as an outdated and ineffective pollution control technology, and yet the same rule chooses to freeze impoundments in place as BAT for legacy wastewater. That is inconsistent with the 'technology-forcing' mandate of the CWA."). The Fifth Circuit's decision forecloses EPA from basing BAT limits for legacy ash transport water on the use of surface impoundments, unless EPA develops a record materially different from the record for the 2015 ELG Rule—which EPA has not done here.

EPA must consider the multiple technologies that are more effective than surface impoundments at treating legacy bottom ash transport water. For example, chemical precipitation is capable of treating many of the pollutants present in bottom ash transport water. While EPA did not select chemical precipitation as BAT in the 2015 ELG Rule, EPA noted that it was an available technology for treating bottom ash transport water. *See* EPA, Final Technical Development Document at 7-36 (Sept. 2015). Even if a portion of Four Corners' bottom ash transport water is commingled with other wastestreams, chemical precipitation is still an available technology, because it has been used by coal-fired power plants to treat commingled coal ash wastewaters. *See* 80 Fed. Reg. at 67,855 n.29 (stating that EPA was aware of "fewer than ten plants that use chemical precipitation to treat [impoundment] wastewater that contains, among other things, ash transport water.").

Biological treatment systems can also address pollutants of concern in bottom ash transport water. Various vendors have been developing biological treatment systems for compliance with the ELG Rule. For example, Frontier Water Systems has developed compact biological treatment systems,[44] which EPA should consider as an available technology for developing BAT limits for legacy bottom ash transport water.

Finally, it is unclear from the existing record the extent and capabilities of Four Corners' on-site wastewater treatment system. EPA should examine whether it is feasible to route legacy bottom ash transport water to any existing wastewater treatment system at Four Corners.

RESPONSE 6:

Commenter asserts that EPA is required to use its Best Professional Judgement ("BPJ") to establish best available technology economically achievable ("BAT") effluent limitations for legacy BATW because the Fifth Circuit vacated and remanded EPA's 2015 BAT regulations for legacy BATW in *Southwestern Electric Power Company v. EPA,* 920 F.3d 999 (Apr. 12, 2019), and thus they assert there are no applicable ELGs. Commenter cites, in part, Clean Water Act Sections 402 and 301, as well as 40 C.F.R 125.3, as support for its position.

EPA's final Permit includes effluent limitations for TSS and oil & grease in legacy BATW (BATW generated before December 31, 2023, the date on which the new, more stringent zero-discharge requirements begin to apply). These limitations are consistent with ELGs currently in effect. For the reasons explained below, EPA is not withdrawing the proposed permit to conduct a BPJ analysis for this facility.

There are arguments both in support of and in opposition to Commenter's assertion. However, even if EPA agreed with Commenter that there are no applicable ELGs with respect to FCPP's discharges of BATW generated before December 31, 2023, EPA would exercise its discretion and decline to do a site-specific BPJ analysis at this time. In this case, it is appropriate to await a national response to the Fifth Circuit's remand and vacatur before imposing any more stringent requirements in this Permit. EPA notes that the Ninth Circuit has previously upheld EPA's decision not to impose BPJ limits in the case of an anticipated promulgation of a national guideline. *Nat. Res. Def. Council v. EPA*, 863 F.2d 1420, 1424-25 (9th Cir. 1988). As with the oil & gas permit in the *NRDC* case, EPA has concerns about imposing limitations based on a more stringent technology in this Permit than might be used as a basis for a national rule. EPA would like to have this Permit conform to national standards, which are developed using industry-wide cost, availability, and other data. Furthermore, even if EPA were to conduct a BPJ analysis for discharges of legacy BATW in this Permit, it is likely that analysis would result in limitations equal to those in the final Permit, for the reasons discussed further below.

The FCPP is working toward achieving a zero discharge requirement by December 31, 2023. To this end, the plant is in the process of constructing and testing a completely new zero discharge system to be operational by that time. As the permitting authority, EPA selected December 31, 2023, as the date when the zero-discharge technology is available for this plant because EPA concluded that the FCPP cannot achieve zero discharge any sooner. Any other treatment system for legacy BATW would require time and expense to design, construct, and test. Moreover, the plant is currently in the process of closing its combined waste treatment pond by October 31, 2020, to meet requirements in the CCR Rule, and constructing a new system of concrete holding and treatment tanks to manage its BATW. This concrete holding tank and treatment system for BATW is being designed and constructed to allow FCPP to add a closed-loop recycling system to meet the no discharge of BATW requirement by December 31, 2023. Any legacy BATW in the holding and treatment tanks will be recirculated as part of the closed-loop system as of December 31, 2023. Once the plant's construction of a new system of concrete holding and treatment tanks to manage BATW is complete by October 31, 2020, the plant would have only until December 31, 2023, before the new zero discharge limitations are applicable to any newly

generated BATW (i.e., BATW generated on or after December 31, 2023). The plant does not have any other treatment systems in place currently to be able to treat legacy BATW. It would take time and be costly for the plant to install a new treatment system for its legacy BATW at the same time it is working toward the zero discharge requirement that applies as of December 31, 2023. These are costs that would be incurred for treatment of a wastestream that would cease to be generated by December 31, 2023 (i.e., anything generated thereafter would be subject to the zero-discharge requirement). In other words, any legacy BATW treatment technology would have a much more limited lifespan than is generally expected for treatment technologies (for example, EPA has previously used 20 years as the projected lifespan of a treatment technology in its cost estimates). Moreover, there may be operational constraints in installing and testing new treatment technologies at the same time that the plant is actively working to install and test a closed-loop system to meet its zero discharge requirement. Considering the statutory factors, which include "costs," "age of equipment," "process changes" and "other factors," as specified in Section 304(b)(2)(B), it is unlikely EPA would impose more stringent limitations in the final permit on legacy BATW were it to use its BPJ.[3] Thus, EPA is not withdrawing the proposed permit again to do a BPJ analysis to cover this limited time period.

[3] EPA does not view this discussion regarding the likely outcome of a BPJ analysis as in conflict with the Fifth Circuit's decision in *Southwestern Electric Power Company v. EPA,* 920 F.3d 999 (5th Cir. 2019). While the Court found EPA's use of surface impoundments as the technology basis for effluent limitations on legacy wastewater to be arbitrary and capricious, the Court left open the possibility that surface impoundments could be used as the basis for BAT effluent limitations so long as the Agency identifies a statutory factor, such as cost, in its rationale for selecting surface impoundments. *Id*. at 1018 n.20.

COMMENT 7A: 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."** 33U.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.

1. *EPA must permit the seepage from the coal ash facilities.*

The FCPP began operations in 1963. As early as 1971, the State of New Mexico identified coal ash seepage from the plant. In 1977, APS began operating a "system to collect seepage water from the ash disposal facilities, a system that operates today." 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 are more fully described in a letter from APS to OSM dated April 3, 2013. A 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: conclude and document whether a discharge of coal ash waste from FCPP is reaching the Chaco River; undertake a BPJ analysis of pollutants discharging from the coal ash facilities; apply any applicable ELGs to such a discharge; impose TBELs for pollutants discharging from the coal ash facilities; and, impose WQBELs for pollutants discharging from the coal ash facilities.

Instead of imposing effluent limitations and monitoring requirements on the seepage, the

draft permit now 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 decades.

"2. Surface Seepage
"Surface seepage intercept systems shall be maintained and operated for existing unlined ash ponds. Water collected by these intercept systems shall be returned to the double lined water decant pond. All provisions of the Seepage Monitoring and Management Plan as described below in the Special Conditions Section must be implemented…

This provision is deficient and inconsistent with Part III A. of the draft permit because it only requires "surface seepage intercept systems" for seepage from "existing unlined ash ponds", whereas Part III A. of the draft permit requires seepage management for "seepage below ***all*** ash ponds that receive or received coal combustion residue either currently or in the past" (emphasis added). At a minimum, Provision 2 of page 12 should be amended to state that the "[s]urface seepage intercept systems shall be ***constructed***, maintained and operated for ***all*** ash ponds."

As to Part III A. of the draft permit, it now states

"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 650 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 Navajo Nation Water Quality Standards in the samples collected for analysis."

EPA's proposed Seepage Monitoring and Management Plan ("SMMP") is 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 650 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. EPA's draft permit, fact sheet, and administrative record fail to contain any rationale for limiting the capture of seepage to 650 meters down gradient of such impoundments. For example, the Water Resources section of the FEIS shows coal ash seepage approximately 2.6 miles downgradient of the impoundments. Further, the FEIS also states that the French drains

used to collect the ash pond seepage are "2 miles long" confirming that the extent of the coal ash seepage problem far exceeds EPA's 650 meter limit. To further illustrate, 650 meters is only four tenths (.4) of a mile thus is wholly inadequate to collect the coal ash seepage located 2.6 miles or further down gradient of the impoundments. In fact, EPA's own April 2019 Supplemental Reasonable Potential analysis admits that the coal ash seeps exist "one mile and a half downstream of Outfall 001 from Morgan Lake…" If EPA intends to rely on the seepage management plan to avoid NPDES permitting of the seeps, it must provide evidentiary support that the seepage monitoring plan will collect all seeps and that no seepage is entering No Name Wash or the Chaco River. EPA's administrative record for the draft permit does neither.

Also, the SMMP should require a calculation and reporting of flow for all seeps as they enter any receiving water and also require a full suite of water quality sampling of all seeps. This monitoring data should be reported monthly to EPA in 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 SMMP 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 SMMP 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 SMMP 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.

RESPONSE 7A: Pursuant to CWA Section 402, NPDES permits regulate only discharge of pollutants from point sources to surface waters that are Waters of the U.S.[4] Commenter's characterization of the seeps addressed in the proposed 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 pollution to receiving surface waters of the United States. Additionally, there is no known direct hydrological connection between flow from the seeps and cooling water from Morgan Lake or from the combined waste treatment pond that is 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. Commenter cites several such sources of speculation including communication between the Permit applicant and the Office of Surface Mining Reclamation and Enforcement (OSMRE) and speculation in an

[4] 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 (5th Cir. 2011).

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.[5] There are several potential sources for the water in seeps, including not just the lined fly ash disposal area, but several other sub-surface sources of water, including nearby upslope irrigated agriculture and Morgan Lake itself.

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 reopener provision that would enable an appropriate response.

[5] 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, 2018).

COMMENT 7B:

2. 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. The FCPP Garage Fueling Area is immediately adjacent to, and nearly surrounded by, Morgan Lake. In the mid-1980's it was reported that "diesel was bubbling up" to the surface of Morgan Lake. It was found that there were releases of petroleum substances from the FCPP Garage Fueling Area into Morgan Lake.[60] 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 (which EPA claims are applicable) 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 State of New Mexico." As such, EPA must properly regulate this discharge of pollutants into Morgan Lake and downstream watersheds.

EPA's response to comments on this issue for the previous 2014 draft permit argues that any discharges from the garage fueling area would be covered by the facility's stormwater permit.[63] However, this response ignores that these discharges are coming from "soil and groundwater" not surface stormwater flows. Thus, the stormwater permit would do nothing to regulate the garage fueling area discharges. Further, EPA's administrative record for the 2019 draft permit provides no evidence to contradict the technical findings in the 2013 Mogollan Environmental Services report that the source of the continuing discharges are from soil and groundwater. As such, EPA's failure to regulate the discharges from the garage fueling area is arbitrary, capricious, and contrary to the requirements of the CWA.

RESPONSE 7B: 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 Permit includes an internal limit for Oil and Grease of 15 mg/L as a 30day average, and 20 mg/L as a daily maximum.

As discussed in Response #8, 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 twice 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. *See also* discussion of use of Navajo Nation water quality standards as reference standards in Response #4. 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 7C

2. 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.[64] 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, if Morgan Lake is not a water of the United States and instead is a "waste treatment facility", then it is a "point source" and all discharges from Morgan Lake must be permitted. EPA's inspection report admits that such discharges should be permitted. [65] EPA's draft permit is deficient because it fails to do so. If EPA is going to treat Morgan Lake as a "waste treatment system", it must permit all discharges from Morgan Lake and undergo the appropriate BPJ analysis, and impose TBELs and/or WQBELs in this renewal permit.

RESPONSE 7C:

Commenter asks EPA to regulate discharges from Morgan Lake via the spillway. The Permit regulates point source discharges from 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 by pumping water into the lake from the San Juan River and by releasing water through Outfall 001. The design of this artificial lake relies on Outfall 001 as the mechanism for managing and maintaining water levels. 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 3, above (permit not required for potential, as opposed to actual, discharge).

COMMENT 7D:

3. 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."

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 standards 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 dissolve 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." (emphasis added).

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. The "plant release point" would be the power plant's discharge ***into*** Morgan Lake. 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 FCPP, fails to impose a TDS effluent limit from the FCCP 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 includes monitoring requirements for TDS at Outfall 001. These requirements are consistent with those of the previous permit." EPA's draft permit violates the anti-backsliding provisions of the Clean Water Act, Section 402(o)), by eliminating effluent limitations and/or required monitoring requirements for TDS. At a minimum, the TDS monitoring requirements at Outfall 1 must be reinstated in this 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 FCPP 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 7D:

Commenter makes several comments in this section. Commenter asks that the Permit regulate TDS discharges and states that the proposed permit violates the anti-backsliding provisions. Commenter proposes that the Permit apply the numeric TDS standards for livestock watering that are set forth in the Navajo Nation water quality standards, or the TDS provision in the lease agreement between the Navajo Nation and the permit applicant. Commenter objects to the placement of the TDS monitors.

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 Response #4, the Navajo Nation water quality standards do not apply to

Morgan Lake. In addition, as noted below in Response #8, 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 Navajo Nation water quality standards for TDS, which are being used as benchmark standards for discharges into upper No Name Wash, reference the plan of implementation contained in the "2005 Triennial Review, Water Quality Standards for Salinity, Colorado River System." Colorado River Basin Salinity Control Forum (October 2005). Pursuant to the plan of implementation, existing facilities or any discharging facility, the construction of which was commenced before October 18, 1975 (which is the case here), the permitting authority may permit the discharge of salt if it is not practicable to prevent the discharge of all salt from the existing facility.

EPA reviewed the monitoring data for TDS submitted pursuant to the 2001 permit. This data did not indicate any TDS issues in terms of significant impacts to beneficial uses; therefore, the permit does not impose a TDS limit, but continues to instead require monthly monitoring of the TDS at Outfall 001.

The Permit does not violate the anti-backsliding provisions because it regulates TDS in the same manner as the prior permit. Contrary to Commenter's assertion, the Permit does include the same monitoring requirements that were included in the 2001 permit. Neither the 2001 permit nor this Permit include effluent limits on TDS. Both permits require the same baseline monitoring at Outfall 001. *See* proposed permit, Table 1, numbered page 3; 2001 permit, Unlabeled Table, number page 2.

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.

COMMENT 8: 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 water quality standards for pollutant discharges into Morgan Lake, which is a "navigable water," a "water of the United States," a "water of the Navajo Nation," and a "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…"

1. *Morgan Lake is a "water of the Navajo Nation"*

In its previous NPDES permits, EPA regulated Morgan Lake as a water of the United States. More specifically, EPA's 1983, 1988, and 1993 NPDES permits for the FCPP all treated Morgan Lake as a "receiving water," and thus a water of the United States. Any deviation from this status violated the CWA anti-backsliding provision because EPA would be imposing less stringent requirements in the subsequent permit.

EPA applies the Navajo Nation water quality standards to this permit. Therefore, EPA must apply all aspects of the Navajo Nation water quality standard regulations, including its definition of "waters of the Navajo Nation." The Navajo Nation's Water Quality Standards defines "waters of the Navajo Nation" as follows:

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.*** (emphasis added).

This broad definition of "waters of the Navajo nation clearly includes Morgan Lake as a because it is a "lake…within…the Navajo Nation." This definition does not create any exception for "artificial" lakes, cooling ponds, waste treatment ponds. Instead, it broadly includes "all surface waters" including any "all other bodies or accumulations of water." If EPA is going to apply the Navajo Nations' water quality standards to this permit, it must also apply its definition of the "waters of the Navajo Nation." Therefore, EPA must regulate Morgan Lake as a "water of the Navajo Nation" and "water of the United States" for purposes of this draft permit.

Further, The Navajo Nation has adopted water quality standards for all waters on the reservation. EPA has approved the Navajo Nation's water quality standards. Morgan Lake is designated for the following uses: primary human contact, fish consumption, aquatic and wildlife habitat, and livestock watering. The Navajo Nation water quality standards include both narrative and numerical water quality standards for Morgan Lake. 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. Morgan Lake has numeric water quality standards for a large

variety of organic, inorganic, and physical pollutants. EPA's Draft Permit must regulate the discharge of these pollutants ***into*** Morgan Lake to comply with its legal requirements under Section 402 and 301(b)(1)(C) of the CWA.

2. Morgan Lake is a "water of the United States"

EPA's website states:

"The definition of "waters of the United States" currently applicable in 28 states is the definition promulgated in 1986/1988, implemented consistent with subsequent Supreme Court decisions and guidance documents."
EPA's website also states that the 1986/1988 definition of "waters of the United States" is as follows:
1986/1988 Regulatory Definition of "Waters of the United States"
40 CFR 230.3(s) The term waters of the United States means:
1. All waters which are currently used, or 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;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
1. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
2. (From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
3. Which are used or could be used for industrial purposes by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under this definition;
5. Tributaries of waters identified in paragraphs (s)(1) through (4) of this section;
6. The territorial sea;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (s)(1) through (6) of this section; 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.

According to EPA, New Mexico and the Navajo Nation are both subject to the pre-2015 regulations and guidance, which is the 1986/1988 definition identified above.

Under 40 CFR § 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, on-water fishing, and windsurfing. Therefore, Morgan Lake is a traditional navigable water under the Clean Water Act.

3. 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."

EPA's 2001 permit acknowledges that Morgan Lake contributes flow to the San Juan River via No Name Wash and Chaco River. More specifically, EPA's 2001 permit states, "…Morgan Lake, a tributary to No Name Wash, a tributary to the Chaco River, and then to Segment 2-401 of the San Juan River basin…"

Further, the 2019 draft permit also states:

"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 to the San Juan River, an interstate water, even though it is a "man-altered or man-made water body."

Further, EPA previous NPDES permits for the FCPP regulated discharges into Morgan Lake and acknowledged that Morgan Lake is tributary to No Name Wash, the Chaco River, and the San Juan River. More specifically, EPA's 2001 regulates discharges into Morgan Lake from the FCPP by stating, "Arizona Public Service Company…is authorized to discharge from the APS Four Corners Power Plant…to receiving waters named Morgan Lake…" Further, the 2001 NPDES permit also acknowledges that Morgan Lake is tributary to No Name Wash, the Chaco River, and San Juan River by stating, "…Morgan Lake, a tributary to No Name Wash, a tributary to the Chaco River, and then to Segment 2-401 of the San Juan River basin…" Accordingly, any finding in the 2019 draft permit that Morgan Lake is ***not*** tributary to the San Juan River and/or is ***not*** a water of the United States is contrary to EPA's own findings in previous NPDES permits for the facility and this is arbitrary, capricious, and contrary to law.

Further, any finding in the 2019 draft permit that Morgan Lake is ***not*** a water of the United States and is ***not*** tributary to the San Juan River is precluded by the anti-backsliding rule Section 402(o) of the CWA, that prevent EPA from renewing or reissuing an NPDES permit that contains effluent limits less stringent than those established in the previous permit.

4. Morgan Lake is a water of the State of New Mexico

The New Mexico Water Quality Act also broadly defines the term "water" to include, "all water, including water situated wholly or partly within or bordering upon the state, whether surface or subsurface, public or private, except private waters that do not combine with other surface or subsurface water." NMSA §74-6-2 (H). Further, New Mexico regulations define "surface water(s)

of the state" to include:

"all surface waters situated wholly or partly within or bordering upon the state, including lakes, rivers, streams, (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, reservoirs or natural ponds. Surface waters of the state also means all tributaries of such waters, including adjacent wetlands, and manmade bodies of water that were originally created in surface waters of the state or resulted in the impoundment of surface water of the state, and any "waters of the United States" as defined under the Clean Water Act that are not included in the preceding description. Surface waters of the state does not include private waters that do not combine with other surface or subsurface water or any water under tribal regulatory jurisdiction pursuant to Section 518 of the Clean Water Act. Waste treatment systems, including treatment ponds or lagoons designed and actively used to meet requirements of the Clean Water Act (other than cooling pond as defined in 40 CFR Part 423.11(m) that also meet the criteria of this definition), are not surface waters of the state, unless they were originally created in surface water of the state or resulted in the impoundment of surface waters of the state." NMAC §20.6.4.7(S)(5).

Because Morgan Lake, No Name Wash, and the Chaco River are surface waters within the border of New Mexico that combine with other surface waters, they are "water[s]" of the State of New Mexico." Under New Mexico regulation, Morgan Lake, No Name Wash and the Chaco River are not "closed basin[s]" because the topography does not prevent the surface outflow of water…" NMAC §20.6.4.7(C)(4). Morgan Lake is not a "waste treatment system" in New Mexico because it is a cooling pond resulting from the impoundment of surface waters of the state (the San Juan River). Further, because of the contractual waiver and EPA's refusal to approve tribal water quality standards for Morgan Lake, No Name Wash, and the Chaco River, the Navajo Nation does not have tribal regulatory jurisdiction pursuant to Section 518 of the Clean Water Act over Morgan Lake, No Name Wash, and the Chaco River and thus they are "waters of the State of New Mexico."

5. *There is a hydrologic connection between the San Juan River and Morgan Lake*

EPA has found that "Morgan Lake is restocked with water from the San Juan River through an intake and diversion structure located on the side of the river (Figure 23). Facility representatives indicated that they pull no more than 48 MGD from the river ti pump up to the lake." EPA has also found that "Outfall 001 (Figure 20) discharges effluent from Morgan Lake to the effluent-dependent No Name Wash which flows to the San Juan River." Morgan Lake discharges water into the San Juan River via No Name Wash and the Chaco River downstream of the point withdrawal. The flow rate of this discharge from Morgan Lake is approximately 4.2 million gallons/day. The San Juan River is an interstate water of the United States. These findings by EPA establish a hydrologic surface water connection between the San Juan River and Morgan Lake, thus p[roving that Morgan Lake is a "water of the United States" for purposes of NPDES permitting.

The second largest of the three sub-basins of the Colorado River, the San Juan River is one of the most important waterways in the Southwest. Morgan Lake, No Name Wash, and the Chaco River are tributary to the San Juan River. Morgan Lake is a 1,200-acre cooling pond for the power plant that is also operated as a public recreation area. Primary contact recreation is allowed on the lake, including windsurfing, waterskiing, boating, fishing, and other activities which can result in ingestion, inhalation, and direct contact with the waters of Morgan Lake.

The lake is also used for livestock watering. EPA previously required the adjacent Navajo coal mine to obtain an NPDES permit for discharges into the lake, thus concluding that the lake was a "water of the United States."

The Navajo Nation has adopted water quality standards for all waters on the reservation. EPA approved the Navajo Nation's water quality standards in 2009. The Navajo Nation's water quality standards establish water quality classifications and standards for Morgan Lake and designate the lake for the following uses: primary human contact, fish consumption, aquatic and wildlife habitat, and livestock watering. The activities considered primary human contact include water skiing, which is a use of the lake. The Navajo Nation water quality standards include both narrative and numerical water quality standards for Morgan Lake. Morgan Lake has numeric water quality standards for a large variety of organic, inorganic, and physical pollutants. Section 402 and 301(b)(1)(C) of the CWA require that NPDES permits contain effluent limits necessary to meet water quality standards.

Further, there is an aquatic life connection between the San Juan River. APS admits that there is "some incidental introduction of aquatic organisms" between the San Juan River and Morgan Lake. Further APS also admits that Morgan Lake "pose[s] a risk to threatened or endangered species in nearby waterbodies (i.e. the San Juan River) if these species were to be transported downstream of Morgan Lake." Further, the Department of Fish and Wildlife found that "gizzard shad have been introduced into the San Juan River by way of Morgan Lake and have made it down to Lake Powel [sic]. Also, it is likely that the San Juan River has been the source of introduction of the common carp into Morgan Lake." Additionally, as recently as 2016 the US Fish and Wildlife Agency reported that APS "will develop and implement a Nonnative
Species Escapement Prevention Plan, which will include the following measures to minimize: (a) the risk of non-native species (plants, invertebrates, and fish) that inhabit Morgan Lake invading San Juan River…[and] b. Project Proponents will install and operate a device designed to prevent the transfer of nonnative fish species from Morgan Lake to the San Juan River."

As such, Morgan Lake has a biological connection to an interstate water of the United States, namely the San Juan River.

6. *Morgan Lake is a "traditional navigable water" because it supports interstate and foreign commerce and commercial waterborne recreation.*

Under 40 CFR § 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.

EPA has previously recognized that Morgan Lake "is frequently used by aquatic life and recreationally. Navajo Nation and US Fish & Wildlife stock the lake with fish. Bass thrive in the lake to the point that the lake hosts bass fishing tournaments…[c]ommon recreational activities on the lake include fishing, wind surfing and jet skiing. A publicly accessible dock and boat ramp are available on the north side of the lake…"

There is extensive interstate commerce on Morgan Lake. Fishing clubs from New Mexico, Colorado and other states regularly hold winter fishing tournaments on the lake.

Because the Navajo Nation requires a tribal fishing license, Morgan Lake generates extensive interstate commerce. There is also extensive boating, water skiing and windsurfing on the lake. As such, Morgan Lake meets the definition of a "traditional navigable water" under the Clean Water Act.

7. Morgan Lake is not a 'waste treatment system' excluded from the definition of a water of the United States.

For the first time, EPA claims that Morgan Lake is excluded from the definition of a "water of the United States" because it is allegedly falls under the "waste treatment system" exclusion. None of EPA's prior NPDES permits for the FCPP asserted this exemption for Morgan Lake.

Under 40 CFR 122.2 states:
"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" (emphasis added).

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. Further, the "waste treatment system" exclusion does not apply because Morgan Lake resulted from the impoundment of waters from the San Juan River, a water of the United States.

Finally, Morgan Lake was not constructed wholly in uplands. Instead, it is connected to the San Juan River via a pipeline, as well as via Outfall 001 which discharges to No Name Wash, the Chaco River, and the San Juan River. The "constructed wholly in uplands" criteria does not apply to waters that are tributary to other "waters of the United States", as is Morgan Lake. For the reasons stated above, Morgan Lake does not qualify for the "waste treatment system" exclusion to the definition of "waters of the United States. EPA's attempt to invoke this exclusion for the first time in 2019 violates the anti-backsliding requirements of Section 402(o) of the CWA because it results in less stringent requirements for Morgan Lake.

8. EPA's analysis fails to comply with its own requirements for conducting a WOTUS determination.

In a wholly incomplete analysis, EPA cites 40 C.F.R. 122.2 for its finding that Morgan Lake is excluded from the definition of "waters of the United States." For the reasons stated below, EPA's "water of the United States" analysis is legally and technically deficient and is arbitrary and capricious.

First, the administrative record for this permitting proceeding confirms that neither the EPA nor U.S. Army Corps of Engineers has issued "any approved jurisdictional determinations for activities within the ordinary high water mark of Morgan Lake." EPA's July 20, 2017 Memo fails to conduct a site inspection, wetlands or "water of the United States" delineation, or other required technical analysis. Instead, EPA relies solely on photographs and maps provided by APS.

Further, EPA's factual finding that the "artificial cooling pond [was] constructed wholly in uplands" is not supported by the agency's own administrative record. Instead, the administrative record proves that in 2005 EPA found "the dry wash that was impounded to create Morgan Lake contained valuable ecosystem functions." Thus, Morgan Lake was constructed in a watershed located on the Navajo Nation, not "wholly in uplands" as stated by EPA in 2019. This fact is confirmed by the construction of a dam on Morgan Lake for the purpose of containing the flow of the watershed. Further, EPA's 2019 finding ignores that Morgan Lake is hydrologically connected to No Name Wash via both the dam, spillway, and Outfall 001 (all components of Morgan Lake) and thus was not constructed "wholly in uplands."

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 Navajo Mine permit treats Morgan Lake as a "water of the United States" by regulating discharges into Morgan Lake from the Navajo Mine and imposing effluent limitations based on water quality standards for the lake. Further, even APS has previously admitted that Morgan Lake is "a water of the U.S."

Finally, Morgan Lake and the FCPP have been in operation since approximately 1960. In its previous permitting actions, EPA has never taken the position that Morgan Lake qualifies as a "waste treatment system" for purposes of 40 CFR 122.2. EPA's finding in this 2019 draft permit is inconsistent with its previous findings, is arbitrary and capricious for the reasons stated herein, and violates the CWA anti-backsliding provisions.
In summary, EPA must treat 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, capricious, and violates the provisions of the CWA identified herein.

RESPONSE 8:

Morgan Lake is a man-made cooling pond that was constructed in uplands "to serve as part of the [FCPP's] recirculating cooling water system, providing both a reliable supply of cooling water and waste heat treatment." Letter from Saliba (APS) to Yoshikawa (EPA) dated November 29, 2006 (at Attachment p. 4). EPA's regulations provide that "[w]aste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act" are not "waters of the United States." 40 CFR 122.2. As an artificial cooling pond designed and constructed to be used as treatment for the FCPP's waste heat, Morgan Lake is a waste treatment system and is excluded from the definition of "waters of the United States." *See id.*; *see also N. Cal. River Watch v. City of Healdsburg*, 496 F.3d 993, 1001 (9th Cir. 2007) ("The waste treatment system exemption was intended to exempt . . . waters that are incorporated in an NPDES permit as part of a treatment system."); *Cal. Sportfishing Prot. Alliance v. Cal. Ammonia Co.*, No. 05-0952, 2007 WL 273847, at *6-7 (E.D. Cal. 2007) ("[T]he waste treatment exemption would apply to waters that are incorporated into an NPDES permit as part of a treatment system.").

Since Morgan Lake is excluded from the definition of "waters of the United States" as a waste treatment system, issues such as whether Morgan Lake supports interstate and foreign commerce are not relevant. Further, because Morgan Lake is not a jurisdictional "water of the United States," discharges into Morgan Lake need not comply with the CWA. However, discharges *from* Morgan Lake to jurisdictional downstream waters are subject to the Act's requirements. Morgan Lake falls within the waste treatment system exclusion under both the 2015 rule defining "waters of the United States" and the pre-existing regulations, as the 2015 rule made no substantive changes to the pre-existing waste treatment system exclusion.

Commenter suggests that a letter from Eberhardt (EPA) to Saliba (APS) dated July 6, 2005 ("2005 316 Letter") discussing restoration crediting under CWA Section 316 should be determinative of the issue as to whether Morgan Lake is an impoundment of a "water of the United States." EPA believes that this reads too much into that letter and ignores the subsequent developments in the agency's long-term effort to characterize the decades-old man-made Morgan Lake.

The 2005 316 Letter was addressing a specific proposal from APS that it should receive restoration credits for the ecosystem values created when Morgan Lake was constructed in the 1950's and early 1960's. EPA suggested at the time that there were likely existing ecosystem values on site before construction of Morgan Lake, and that, given the passage of time, there was likely no mechanism for quantifying any such values and generating a net ecological benefit, all of which would have been necessary to receive restoration credits under 40 CFR 125.95(b)(5)(iii). That is as far as the 2005 316 Letter went, which was adequate for its purpose. It did not, however, purport to be making any kind of specific site evaluation or jurisdictional determination, nor did it consider whether the lake was a jurisdictional "water of the United States."

EPA acknowledges that the jurisdictional status of Morgan Lake has not been addressed consistently throughout its nearly 60-year existence. Given the inconsistencies in the permits issued since the 1980s, EPA Region 9 conducted a review between 2014 and 2017 to ascertain more information regarding how Morgan Lake was constructed and should be addressed under the CWA. This effort included site visits to Morgan Lake and a search for evidence from the construction of Morgan Lake in the 1950s and 1960s. That effort ultimately resulted in securing maps and aerial photographs of the Morgan Lake site before and during construction. These materials, included in the Administrative Record and summarized in the Memorandum from Gary Sheth dated July 20, 2017, show that Morgan Lake was created in uplands.

Given this evidence, which is the only known historical information available, EPA concluded that the Morgan Lake site constitutes uplands. This is supported by the fact that Morgan Lake was created by pumping water from the San Juan River and is maintained by pumping an average of 14.3 million gallons per day from the San Juan River. Morgan Lake would dry up and cease to exist if APS ceased replenishing it with water from the San Juan River. Since Morgan Lake is a cooling pond that is subject to the waste treatment system exclusion, the point of regulation under CWA Section 402 is the discharge point from Morgan Lake into No Name Wash, and the proper point of compliance for Section 316(b) is the CWIS on the San Juan River.

Commenter also asserts that Morgan Lake does not fall within the waste treatment system exclusion because it meets the definition of "cooling pond" cross-referenced in the pre-2015 rule regulatory definition of "waters of the United States." Specifically, the pre-existing regulations provide:

> Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 C.F.R. § 423.11(m) which also meet the criteria of this definition) are not waters of the United States.

See 82 Fed. Reg. 34,899, 34,906 (July 27, 2017). Though EPA deleted the definition of "cooling pond" at 40 CFR 423.11(m) in 1982, the agency did not revise the regulatory definition of "waters of the United States" to remove the outdated cross-reference until the 2015 rule. Upon the effective date of the final rule titled "Definition of 'Waters of the United States': Recodification of Pre-Existing Rules," the pre-2015 regulations—including the outdated "cooling pond" cross-reference—will be reinstated. However, EPA has found that "given the deletion of the steam electric cooling pond definition," the waste treatment system exclusion may be interpreted "as encompassing all steam electric cooling ponds." EPA, Memorandum, "Waters of the United States" Determination for Proposed Cooling Pond Site in Polk County, Florida. December 13, 1993 ("Perciasepe Memo 1993"). Thus, under either the 2015 rule or the pre-existing regulations, Morgan Lake falls within the waste treatment system exclusion.

Commenter suggests further that a finding that Morgan Lake is not a "water of the United States" is inconsistent with prior NPDES permits for the FCPP and is arbitrary and capricious.

As noted above, EPA acknowledges that NPDES permits for the FCPP have taken different and at times internally inconsistent approaches to discharges into Morgan Lake since the first permits were issued in the 1970s. The 1983 and 1988 permits, issued by the Region VI office of EPA, permitted discharges from the FCPP into Morgan Lake and again from Morgan Lake into No Name Wash at Outfall 001 (effectively regulating the same discharge twice). When EPA Region 9 began issuing revised permits for FCPP (in 1993), it found it appropriate to regulate direct discharges from the FCPP into Morgan Lake as "internal outfalls" as authorized under 40 CFR 122.45(h). That regulatory provision authorizes EPA to set limits on internal outfalls when imposing such limits at the final discharge point would be impracticable because the wastes at the point of final discharge would be so diluted as to make monitoring and detection very difficult if not impossible. Since 1993, the discharges from the FCPP into Morgan Lake have been labeled as Internal Outfalls and the discharge from Morgan Lake into upper No Name Wash has been treated as the discharge into jurisdictional waters of the U.S.

Even if the Permit's approach to Morgan Lake differed from that of earlier FCPP permits, EPA has provided a reasoned explanation for revising the earlier permit and for its finding that Morgan Lake falls within the waste treatment system exclusion. *See Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Serv.*, 545 U.S. 967, 981 (2005) ("[I]f the agency adequately explains the reasons for a reversal of policy, 'change is not invalidating'"); *Rust v. Sullivan*, 500 U.S. 173, 186-87 (1991) (rejecting the argument that an agency's change in position is invalid simply because it is inconsistent with a prior position). Similarly, although EPA acknowledges that prior permits for the nearby Navajo Mine mistakenly regulated discharges *into* Morgan Lake, those outfalls do not appear in the current NPDES permit for the Navajo Mine, which was issued in early 2018.

It is also irrelevant that EPA did not previously explicitly identify Morgan Lake as falling within the waste treatment system exclusion. "Neither the statute nor the [agency's] regulations requires an explicit determination . . . that the exclusion is being relied upon so long as the record . . . includes the analysis required by the regulations, i.e., that the waste treatment system be designed to meet the requirements of the CWA." Letter from Benjamin H. Grumbles, Assistant Administrator, EPA, to John Paul Woodley, Assistant Secretary of the Army (Civil Works), U.S.

Department of the Army (Mar. 1, 2006). A waste treatment system may be considered "designed to meet the requirements of the CWA" where discharges from the system meet the requirements of CWA section 402. As evidenced in the administrative record, discharges from Morgan Lake meet the requirements of CWA section 402. For this and the other reasons discussed above, Morgan Lake properly falls within the waste treatment system exclusion.

Finally, contrary to Commenter's claim, the revised Permit does not violate the CWA's antibacksliding provision. The antibacksliding requirements under the CWA and its implementing regulations are triggered only when permit effluent limitations are revised to be "less stringent than the comparable effluent limitations in the previous permit." *See* CWA Section 402(o)(1); 40 CFR 122.44(l)(2). Because the effluent limits in this revised Permit are identical to those in the previous permit, and therefore not less stringent, the antibacksliding prohibition does not apply.

COMMENT 9: EPA's draft permit finds that "APS operates a closed-cycle recirculating system, circulating from approximately 1000 up to about 1700 million gallons a day ("MGD") through the FCPP manmade cooling pond, Morgan Lake." This finding has regulatory implications for both effluent limits and CWA Section 316(b) cooling water intakes. EPA has always regulated the FCPP cooling system as a "once through" cooling system, not as a recirculated system. For the reasons stated below, EPA must continue to regulate the FCPP cooling system as a "once through" cooling system for all purposes.

First, EPA's currently effective 2001 NPDES permit regulates Outfall 001A as a "once through cooling water" discharge. Further, as recently as 2005 even the operator APS admitted that "Four Corners has five once-through cooling Units." APS's 2005 renewal permit application also admits that its cooling system is "Once through Cooling Water." APS' attempt to re-characterize its cooling system should be rejected by EPA. Second, EPA has consistently regulated the cooling system as a "once through" system. In an EPA inspection of FCPP as recent as May 8, 2012, EPA found that "[o]nce-through cooling water from units 4 and 5 is then discharged into an effluent channel…" Third, the definition of "recirculated cooling water" in 40 CFR 423.11(h) does not apply to FCPPP because the cooling water is not "passed through a cooling device for the purpose of removing heat from the water and then passed again." Instead, it is discharged into Morgan Lake, where it is then mixed with existing water in the Lake and eventually discharged into No Name Wash. Morgan Lake is not a "device" because it is a "water of the United States." Further, Morgan Lake is not a "closed" system. It receives approximately 50 million gallons per day from the San Juan River and discharges approximately 4.2 million gallons a day back the San Juan River from the Lake. As such, it is not a "closed" re-circulating system and instead is a "once through cooling system." FCPP's cooling system is not best technology available ("BTA") for purposes of 40 CFR 125.92 or 125.94.

Because EPA has historically regulated the FCPP cooling system as a "once through" system and because the cooling system does not meet the definition of "recirculated cooling water", EPA must amend this draft permit and regulate the cooling system as a "once through" cooling system for all purposes, both to set effluent limits for discharges into Morgan Lake and for purpose of CWA Section 316(b). . EPA's failure to regulate the FCPP system as a "once through" cooling system violates the anti-backsliding requirements of Section 402(o) of the CWA because it results in less stringent requirements for Morgan Lake.

RESPONSE 9:

APS operates a closed-cycle recirculating system, circulating approximately 1000 to 1,700 MGD through Morgan Lake, a man-made cooling pond. The Applicant withdraws up to a maximum of 24.5 MGD of water from the San Juan River as make-up water to replenish losses that have occurred due to blowdown, drift, and evaporation within Morgan Lake and the cooling system. The maximum amount of withdrawal from the San Juan River has been revised to reflect current practices at the facility. The Fact Sheet has been updated to reflect this change.

Morgan Lake is a closed cycle recirculating system, as defined by 40 CFR 125.92(c):

> (c) *Closed-cycle recirculating system* means a system designed and properly operated using minimized make-up and blowdown flows withdrawn from a water of the United States to support contact or non-contact cooling uses within a facility, or a system designed to include certain impoundments. A closed-cycle recirculating system passes cooling water through the condenser and other components of the cooling system and reuses the water for cooling multiple times.
>
> (1) *Closed-cycle recirculating system* includes . . . a system of impoundments that are not waters of the United States, or any combination thereof. A properly operated and maintained closed-cycle recirculating system withdraws new source water (make-up water) only to replenish losses that have occurred due to blowdown, drift, and evaporation. . . .
>
> (2) *Closed-cycle recirculating* . . For impoundments constructed in uplands or not in waters of the United States, no documentation of a section 404 or other permit is required. If waters of the United States are withdrawn for purposes of replenishing losses to a closed-cycle recirculating system other than those due to blowdown, drift, and evaporation from the cooling system, the Director may determine a cooling system is a closed-cycle recirculating system if the facility demonstrates to the satisfaction of the Director that make-up water withdrawals attributed specifically to the cooling portion of the cooling system have been minimized.

As noted herein, Morgan Lake is not a water of the United States because it is a cooling pond that was constructed in uplands that meets the criteria for the waste treatment exemption. The applicable cooling water intake structure (CWIS) for FCPP for purposes of Section 316(b) is the CWIS that withdraws water from the San Juan River.

Approximately 99% of the water that is pumped from the San Juan River to Morgan Lake is used for cooling purposes and is reused multiple times. See APS Comments on Proposed NDPES Permit, July 1, 2019. APS reuses the water multiple times for cooling purposes as illustrated by the volume recirculated from Morgan Lake for cooling compared to the volume withdrawn from the San Juan River. Since APS withdraws on average14.3 MGD of water from the San Juan River, but circulates approximately 1,000 to 1,700 MGD through the FCPP, the facility is circulating approximately 70 to 119 times[6] more water for cooling purposes than it withdraws from the San Juan River; FCPP uses only approximately 1 percent of the water from the San Juan River that it would use if it were a once through system.[7]

The preamble to the final 316(b) regulations supports EPA's determination that Morgan Lake is a closed cycle recirculating system. The preamble notes the following:

> As explained above, *section 316(b) and today's final rule apply only to withdrawals of cooling water from waters of the United States*; accordingly, to the

[6] (1,000 MGD divided by 14.3 MGD = 69.93) & (1,700 MGD divided by 14.3 MGD = 118.88).
[7] (14.3 MGD divided by 1,700 MGD x 100 = 0.84%) & (14.3 MGD divided by 1,000 MGD x 100 = 1.43%).

> extent a facility withdraws cooling water from a pond or reservoir that is not itself a water of the United States and does not withdraw any makeup water from waters of the U.S., the requirements of today's rule do not apply to such systems. *Impoundments that are not constructed from a waters of the U.S. but do withdraw make-up water from waters of the U.S. can be closed-cycle recirculating systems subject to the requirements of today's rule, provided that withdrawal for make-up water is minimized*. 79 Fed. Reg. 158, at 48307 (Aug. 15, 2014). *(emphasis added)*

Consistent with the preamble, Morgan Lake is a not a water of the U.S., but withdraws makeup water from a water of the U.S., the San Juan River, and APS minimizes make up water withdrawals for cooling purposes.

EPA acknowledges that APS referred to Morgan Lake as a once through system in earlier submittals pursuant to 316(b) as noted by Commenter. However, APS subsequently updated its application to correct the error and identified Morgan Lake as a "recirculated cooling water system" pursuant to 40 CFR 423.11(h). *See* May 4, 2007, NPDES Permit Renewal Application # NN0000019; Corrections, May 4, 2007, from David L. Saliba to Douglas Eberhardt; and NN0000019 – Corrections and Permit Change Requests, November 17, 2009, from David L. Saliba to Douglas Eberhardt.

Similarly, prior references by EPA to a once through cooling system have no impact on whether Morgan Lake is a closed cycle recirculating system pursuant to the CWA and its implementing regulations. EPA chose to regulate the discharge into Morgan Lake as an internal outfall pursuant to 40 CFR 122.45(h) in previous permits because imposing such limits at the final discharge point would be impracticable because the wastes at the point of final discharge would be so diluted as to make monitoring and detection very difficult if not impossible.

The Permit does not violate the CWA's anti-backsliding provision. The anti-backsliding requirements under the CWA and its implementing regulations are triggered only when permit effluent limitations are revised to be "less stringent than the comparable effluent limitations in the previous permit." *See* CWA Section 402(o)(1); 40 CFR 122.44(l)(2). Because the effluent limits in this revised Permit are identical to those in the previous permit, the anti-backsliding prohibition does not apply.

Morgan Lake is a closed cycle recirculating system. The regulated CWIS pursuant to Section 316(b) is the intake from the San Juan River; not the intake from Morgan Lake.

COMMENT 10: 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(3)(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:

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.

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:

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. 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."

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.

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.

EPA also prepared a supplemental memo dated April 22, 2019 supplementing its Reasonable Potential Analysis. The 2019 memo only reviews mercury and selenium data

provided by the Navajo Nation from 2002-2010. The data contained seven sampling events from Morgan Lake and only one sampling event from unspecified locations in No Name Wash and seeps down gradient of the fly ash ponds. A map of the sampling sites was not provided. From this meager data, EPA concludes that "[t]here is no reasonable potential for exceedance of either mercury or selenium from the permitted discharge of cooling water from Morgan Lake to No Name Wash." The Memo notes that one sample in No Name Wash had a mercury value of 9.2 nanograms per liter but EPA concluded, "it is very unlikely that the source of mercury is solely or even mostly from discharge Outfall 001 as the sampling point was over a mile and a half downstream of Outfall 001, and there are several other sources including runoff from other ephemeral washes and runoff from surrounding lands, as well as potential air deposition of mercury." The conclusions reached by EPA in its April 2019 memo are arbitrary and capricious because:

 EPA only reviewed mercury and selenium and no other constituents;
 EPA only provided "average" results and did not evaluate individual sample results.
 EPA did not provide a map of sampling locations
 Conclusions can not be reached based on a single sample from nearly a decade ago.
 EPA did not evaluate discharge of temperature or TDS from Morgan Lake into No Name Wash

Further, the water quality data provided by EPA show that fingerprinted coal ash byproducts, including boron and other constituents, from the coal ash ponds are reaching No Name Wash and the Chaco River. This data supports the conclusion that APS is discharging pollutants into No Name Wash and the Chaco River from point sources (the FCPP and its coal ash ponds). As such, EPA must regulate these discharges in this permit.

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 10:

Commenter erroneously assumes that because the 2007 Navajo Nation Surface Water Quality Standards have designated uses and water quality based effluent limits for Morgan Lake these automatically would apply to this Permit. Here, due to an explicit limitation of the applicability of the Navajo Water Quality Standards due to lack of treatment as a state (TAS) recognition for Morgan Lake and associated No Name Wash, the outlet of Morgan Lake, neither the Navajo Nation's nor the adjacent state's water quality standards have any formal regulatory standing as to Morgan Lake. (See RESPONSE 4)

EPA permit writers must thus rely on "best professional judgment" (BPJ) to determine the appropriate standards to apply. In this case, the permit writer using BPJ applied the 2007 Navajo Nation Water Quality Standards for the "downstream" Chaco River to the discharge from

Morgan Lake. Using these standards as a reference 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 water quality standards are a legitimate adjacent jurisdiction assessment of scientifically-based measures that would protect the uses in the Chaco River, and the San Juan River, to which the Chaco is a tributary.

By using the appropriate Navajo Nation WQS as a benchmark to conduct a reasonable potential analysis, EPA is exercising its BPJ authority in determining what standards to apply to ensure that the discharge from Outfall 001 into No Name Wash and from there into the Chaco River (which itself is a tributary to the San Juan River) is protective of the uses in receiving waters.

EPA analyzed the existing data on pollutants from discharge monitoring reports (DMRs) submitted by APS over the past ten years, as well as supplemental ambient water quality data provided by the Navajo Nation EPA (NNEPA) in 2015 and again in 2019. The NNEPA data was obtained using sufficiently sensitive methodologies for the parameters monitored and was collected from 23 separate sampling locations with exact latitudes and longitudes provided in the vicinity of the FCPP. This data, along with and a review of the type of receiving water and designated uses as indicated by the Navajo Nation Surface Water Quality Standards, led EPA to conclude 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.

The data reviewed and analyzed by EPA included monitoring for not just mercury and selenium but other parameters such as antimony, boron, cadmium, chromium, nickel, and zinc, as well as more traditional water quality parameters such as pH, dissolved oxygen, temperature, and hardness. No reasonable potential for these pollutants to cause or contribute to an exceedance of receiving water standards was found. However, to ensure that there is no likelihood of other pollutants being present and having the potential to cause or contribute to an exceedance of water quality standards, EPA has now included monitoring for arsenic, boron, cadmium, chromium, mercury, nickel, selenium and zinc in the Permit.

Commenter also cited fish studies from the 1970s indicating that fish kills due to algal blooms and elevated water temperatures occurred at Morgan Lake, and questioned why there is no temperature limit imposed at the internal Outfall 01A. The current Permit in fact has an average monthly and daily maximum temperature limit imposed at Outfall 001from Morgan Lake. However, imposing a temperature limit at internal Outfall 01A where the canal that returns cooling water from the boiler units to Morgan Lake is illogical as the purpose of the lake is to provide cooling, and by design there is a gradient of temperature from high temperatures at Outfall 01A to relatively tepid temperatures (no higher than 35 degrees centigrade as a daily maximum) at Outfall 001.

Commenter suggests that the presence of constituents such as boron in the data submitted by NNEPA and reviewed by EPA indicates that there is discharge from the existing coal ash ponds to the Chaco River that must be regulated under the Permit. There is no evidence that there is a direct hydrologic connection either surface or subsurface from the two currently existing ponds to any receiving waters that are Waters of the United States which would require regulation

under a NPDES permit. (See RESPONSE 7A). When the two current fly ash ponds which are slated for closure by October 2020 are replaced by a much smaller return water pond this is likely to continue to be the case.

COMMENT 11: 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 11:

Commenter contends that the proposed 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).

It is not efficient nor environmentally desirable to delay issuing an NPDES permit pending the completion and adoption of a TMDL on the Chaco River or No Name Wash. Concerns about the adequacy or absence of a TMDL should be raised in a separate action in U.S. District Court. *See generally* In re Upper Blackstone Water Pollution Abatement Dist., 14 E.A.D. 577, 605 (EAB 2010) (find that "[t]here is no clear error in the Region's conclusion that the statute does not contemplate a delay in processing applications for permit renewal to wait for development of a wasteload allocation or TMDL.")

COMMENT 12: 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); ….

EPA's duty to make a site-specific determination of the best technology available that would attain the maximum reduction in entrainment for the FCPP is not dependent on receipt of further information from the applicant. 40 CFR §125.98 (g) states:

"(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 "requirements of this rule will be implemented in NPDES permits as the permits are issued." When the agency began a permit proceeding prior to October 14, 2014, the permit must be issued by July 14, 2018. The EPA has failed to comply with this deadline.

Further, APS has failed to comply with all of the application requirements found in Attachment A to EPA's December 11, 2014 Section 316(b) Memo, including:
 Failure to submit an adequate water baseline characterization study
 A description of the existing impingement and entrainment technology or operational measures and a summary of their performance, including reductions in impingement and mortality
 Studies addressing technology efficacy, through-plant entrainment survival and other entrainment studies
 Entrainment characterization studies
 A benefits valuation study
 A comprehensive technical feasibility and cost evaluation study
 External peer review studies.

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 answer in the record from the permit applicant that is relevant to the issue of best technology available for minimizing impacts due to entrainment is reproduced below:

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.

It should be noted that the FCPP owners began collection of data on fish impingement and/or entrainment in 2005. 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. Despite apparently receiving such information from APS, EPA was unable to produce these documents to the Conservation Organizations. 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 12:

The FCPP intakes greater than 2 MGD of cooling water, so it must meet requirements under CWA Section 316(b), regulating the design and operations of intake structures for cooling water operations. A rule for existing facilities was adopted by EPA on May 19, 2014, and effective October 14, 2014. See 40 CFR 125.90-98. Forty CFR 125.94 requires facilities to utilize BTA to minimize adverse environmental impacts due to impingement mortality and entrainment of aquatic organisms in the intake structure. Forty CFR 125.94(c & d) provide that a closed cycle recirculating system as defined by 40 CFR 125.92(c) may be BTA. Forty CFR 125.94(g) allows

EPA to include additional measures to protect Federally listed threatened and endangered species and designated critical habitat identified by U.S. Fish and Wildlife Service (USFWS).

EPA determined that BTA for the cooling water intake structure for the proposed permit consists of a closed cycle recirculating system pursuant to 40 CFR 125.94(c & d) and the USFWS approved Pumping Plan pursuant to 40 CFR 125.94(g). Since this is an ongoing permit proceeding as provided in 40 CFR 125.98(g)(APS submitted its revised application on February 15, 2013), EPA determined that is was not necessary to submit the information required pursuant to 40 CFR 122.21(r) prior to selecting closed cycle recirculating as BTA pursuant to 40 CFR 125.94(c & d) and the USFWS approved Pumping Plan pursuant to 40 CFR 125.94(g).

Commenter asserts that because the proposed permit was not issued before July 14, 2018, EPA may not rely upon 40 CFR 125.98(g) and cites EPA's December 11, 2014 Clean Water Act Section 316(b) Regulations for Cooling Water Intake Structures at Existing Facilities: NPDES Permitting Process When Federally Listed Threatened and Endangered Species and/or Designated Critical Habitat Are or May Be Present ("2014 ESA Memo"), from Deborah Nagle to Water Division Directors. EPA acknowledges that the December 2014 ESA Memo provides that in an ongoing permit proceeding a permit may be issued based on the available information so long as it is issued prior to July 14, 2018. However, the December 2014 ESA Memo cannot alter the regulations. The December 2014 ESA Memo also explicitly acknowledges it is guidance and is not intended to add any new requirements. Since EPA is relying upon 40 CFR 125.98(g), EPA could require the information in the next permit cycle as provided in the proposed permit. *See,* Part I.B.3.(i) of the proposed permit (requiring APS to submit the information the information required pursuant to 40 CFR 122.21(r)(1-8) in the next permit cycle.)

However, to address concerns raised by Commenter, EPA modified the proposed permit in Part I.B.3(i) to require the information pursuant to 40 CFR 122.21(r)(1-8) within two years of the effective date of this Permit. If after EPA reviews the information provided pursuant to 40 CFR 122.21(r)(1-8), EPA determines that it is necessary to modify the Permit to require additional controls (beyond closed cycle recirculating pursuant to 40 CFR 125.94(c & d) and the USFWS approved Pumping Plan pursuant to 40 CFR 125.94(g)), then EPA could reopen the Permit pursuant to Section III.B.

EPA's selection of a closed cycle recirculating system based upon 40 CFR 125.94(c) is consistent with the regulations for Section 316(b). Section 125.94(c) provides that an existing facility must select one of the alternatives in paragraphs (c) (1-7). Closed cycle recirculating systems are authorized in 40 CFR 125.94(c)(1). In fact, closed cycle recirculating systems were recognized by EPA in the preamble as the most effective technology for impingement and entrainment. EPA noted the following in the preamble to the final rule: "EPA concluded that closed cycle recirculating systems reduce entrainment (and impingement mortality) to the greatest extent and are the most effective performing technology…. EPA also determined that there were no other ''available'' technologies for entrainment whose performance came close to that of closed-cycle recirculating systems). *See* National Pollutant Discharge Elimination System—Final Regulations to Establish Requirements for Cooling Water Intake Structures at Existing Facilities and Amend Requirements at Phase I Facilities, 79 Fed. Reg. 48,300, at 48,340

(Aug. 15, 2014). It is worth noting that closed cycle recirculating systems or their equivalent are also BTA for both impingement and entrainment for new units at existing facilities pursuant to 40 CFR 125.94(e)(1-2).

Selection of closed cycle recirculating system is also consistent with 40 CFR 125.94(d) BTA Standards for Entrainment. EPA selected closed cycle on a site specific basis for FCPP based on the information submitted by the applicant to EPA and to USFWS for the BO and the factors in 40 CFR 125.98. 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. The Reasonable and Prudent Alternatives ("RPMs") 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. EPA considered all of this information in selecting closed cycle as BTA for entrainment pursuant to 40 CFR 125.94(d). EPA incorporated the Pumping Plan and the additional measures required therein as BTA pursuant to 40 CRF 125.94(g).

COMMENT 13: 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 13:

APS minimizes the intake from the San Juan River so as to withdraw only as much water as necessary for Morgan Lake management purposes. APS is also implementing the Pumping Plan to further minimize the impingement and entrainment of fish from the CWIS in the San Juan River. By implementing the Pumping Plan, APS has minimized impingement and entrapment losses. Additionally, FCPP has reduced its average intake rate from the San Juan River to 14.3 MGD and its maximum intake to 24.5 MGD. With the retirement of Units 1, 2, and 3, APS has no incentive to intake more water than is necessary to provide adequate cooling for the two remaining units. Thus, there is no need to cap the applicant's intake of water from the San Juan River in the proposed permit beyond the requirements in the Pumping Plan. *See also* Reponse 9.

COMMENT 14: EPA's reliance on a future, undisclosed, pumping plan to mitigate impacts to endangered fish species is arbitrary and capricious. For the first time, the 2019 draft permit states that "EPA determined that BTA for the cooling water intake structure for the proposed permit consists of a closed cycle recirculating system pursuant to 40 CFR 125.94(c & d) and the USFWS approved Pumping Plan pursuant to 40 CFR 125.94(g)." EPA claims "[t]he Pumping Plan includes removing the barrier between the two pump trains to reduce intake flow velocity, as well as prohibiting intake during certain periods of the year to minimize inadvertent intake of fish eggs and larvae." How EPA knows the contents of the pumping plan is unknown because EPA's own draft permit does not require APS to produce the plan until 60 days after issuance of the permit. More specifically, the draft permit states, "[a] copy of the Pumping Plan must be provided to EPA within 60 days of issuance of the permit and within 30 days of any updates." Further, EPA has not produced a copy of the actual pumping plan in response [sic] the Conservation Organizations' May 2019 FOIA request and thus have denied the public the opportunity to comment on this important aspect of the draft permit.

EPA's reliance on a future, undisclosed pumping plan for its finding that "BTA for the cooling water intake structure for the proposed permit consists of a closed cycle recirculating system pursuant to 40 CFR 125.94(c & d) and the USFWS approved Pumping Plan pursuant to 40 CFR 125.94(g)" is arbitrary and capricious because the pumping plan has yet to be created, produced to EPA, or provided to the public for review and comment with the draft permit.

RESPONSE 14:

The Pumping Plan is contained in the Administrative Record and was provided to Commenter in response to the FOIA request. *See* Email from Nathan Franssen, U.S. Fish and Wildlife Service, to Richard L. Grimes, APS; Re: Four Corners Power Plant San Juan River Intake Pumping Plan Proposal, February 9, 2017 (thanking Richard Grimes for sending the memo and presentation of the pumping plan from the December 6, 2016 meeting; and approving the proposed pumping plan in writing via the email pursuant to RPM #2 of the BO for FCPP); *see also* December 6, 2016 APS PowerPoint, Four Corners Power Plant San Juan River Pumping Plan. EPA included the Pumping Plan, in addition to the requirement to operate a closed cycle recirculating system pursuant to 40 CFR 125.94(c & d), pursuant to 40 CFR 125.94(g), as BTA pursuant to Section 316(b).

COMMENT 15A: EPA has failed to comply with the Endangered Species Act's ("ESA") requirement to consult with the Fish and Wildlife Service to avoid jeopardizing the continued existence of species listed under the Act, including the endangered Colorado pikeminnow. The Colorado pikeminnow is at acute risk of extinction in the San Juan River due to a number of factors including decreased flows, mercury and selenium toxicity, and impingement/entrainment in the FCPP cooling water system. EPA's proposed permit would violate its obligation to consult and avoid jeopardy in four major respects. First, EPA's reliance on the 2015 Biological Opinion ("BO" or "BiOp") for the Four Corners Power Plant and Navajo Mine Project both fails to address fatal legal flaws in that Biological Opinion. Second, EPA's draft permit fails to address significant new information subsequent to that BiOp relevant to the status of Colorado pikeminnow in the San Juan River and the threats to its continued existence. Third, EPA has arbitrarily deferred adoption of recommended monitoring measures that could enable the agency to better assess mercury and selenium levels in fish tissue. Fourth, EPA has improperly segmented the scope of its review of endangered species impacts by ignoring related actions.

The 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 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.*" 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 consultation process for the Office of Surface Mining Reclamation and Enforcement's (OSMRE) Four Corners Power Plant and Navajo Mine Energy (FCPP/NM) Project. In 2015, OSMRE has prepared a Biological Opinion including findings on jeopardy and adverse modification and reasonable and prudent alternatives. OSMRE's 2014 Biological Assessment 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." The 2015 BiOp acknowledged that operations of the Four Corners Power Plant and Navajo Mine will continue to have adverse effects, including releases of mercury and selenium, blockage of fish passage, and release of non-native fish from Morgan Lake. The 2015 BiOp concluded, however, that the FCPP/NM Project would not jeopardize the continued existence of the 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." 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." EPA's apparent attempted partial reliance on the OSMRE FCPP/NM consultation process to fulfill its ESA obligations is misplaced for three reasons.

First, as discussed in detail below, the BiOp 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, significant new information since the 2015 BiOp suggests that the conservation measures for the FCPP/NM

Project, including reliance Colorado River Recovery program, are not sufficient to avoid jeopardy to the Colorado pikeminnow and razorback sucker and/or adverse modification of their critical habitats.

Third, 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." 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.
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. 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 15A: 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 402.10, 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) and (h). 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 this Permit.

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

On April 20, 2016, 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 District Court on September 11, 2017, on the narrow grounds that the litigation did not join an indispensable party. Upon appeal, the Ninth Circuit Court of Appeals upheld the District Court's dismissal. *See* Dine Citizens Against Ruining Our Environment et al v. Bureau of Indian Affairs, et al., (No. 17-17320; 9th Cir. 07/29/19). On September 12, 2019, the plaintiffs requested a rehearing by the Ninth Circuit. A Ninth Circuit decision on that request is pending.

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 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 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 15B

1. Reliance on the 2015 BiOp Is Arbitrary and Capricious Due to Multiple Legal and Factual Errors

a. The Biological Opinion Omits Endangered Species Recovery Needs from Adverse Modification and Jeopardy Analyses

The 2015 BiOp is arbitrary and capricious because it excludes a "detailed discussion" regarding the species' recovery needs as required by the ESA. Under the ESA, 16 U.S.C. 1536(a)(2), the Service must evaluate the effects and cumulative effects of the proposed project on listed species and critical habitat in the formal consultation process. In issuing conclusions on jeopardy and adverse modification, the Service must provide a detailed discussion of its findings of the direct and cumulative effects of the proposed action considered in the BiOp in providing an analysis of such actions on the recovery of an endangered species.

In the Service's 2015 BiOp of the FCPP/NM Project for the OSM, the Service failed to include a detailed discussion of the project's adverse effect to the recovery of the Colorado pikeminnow and Razorback sucker in reaching the no-jeopardy conclusion and no adverse modification conclusions. Although the BiOp mentions the issue of recovery in isolated instances in the BiOp, it fails to provide any sort of scientific, detailed discussion of the adverse impacts of the effects of the proposed action to the recovery of the species. The BiOp fails entirely to mention the delisting criteria for Colorado pikeminnow, which includes a self sustaining [sic] population in the San Juan River. Similarly, the BiOp makes only one mention of the criteria for downlisting [sic] and then fails entirely to discuss whether meeting that criteria is feasible given the myriad and decades-long impacts of the FCPP/NM Project. Further, the BiOp's analysis and conclusion of impacts to critical habitat fails entirely to address any recovery criteria. This omission is particularly troubling, given that the threshold mercury levels set by the BiOp for adverse modification of critical habitat correlate with extirpation of the Colorado pikeminnow from the San Juan River. Similarly the BiOp's no jeopardy and no adverse modification analyses for the Razorback sucker do not address the recovery criteria, particularly the requirement of a self-sustaining population. These omissions render the no-jeopardy and no adverse modification conclusions of the BiOp arbitrary and capricious.

The BiOp unlawfully excludes from its analysis significant expected increases in selenium concentrations in the San Juan River due to the approved expansion of the Navajo Indian Irrigation Project ("NIIP"). The full expansion of NIIP was approved by the Bureau of Indian Affairs (BIA), following informal consultation with the Service in 1999. In the draft Biological Opinion for the Desert Rock Energy Project (DREP), the Service predicted that completion of NIIP would lead to a 119% increase in selenium concentrations in the San Juan River, resulting in significant impairment of Colorado pikeminnow and Razorback sucker. The BiOp attempts to justify the exclusion of selenium increases from NIIP by stating that "BIA has agreed to reconsider its effects findings associated with the Navajo Indian Irrigation Project (NIIP) and other irrigation projects. BIA has begun developing additional scientific information that may be necessary to supplement their BA (BIA 1999). Therefore, potential future Se

discharges potentially from BIA irrigation projects and associated effects to listed species were not considered part of cumulative effects during the ESA consultation." BIA's informal agreement to "reconsider" its prior findings, however, is no basis for excluding the expected impacts from the fully approved future expansion of NIIP. The BiOp's failure to consider this significant projected increase in selenium concentrations in the San Juan River was arbitrary and capricious.

Significant omissions aside, the BiOp's discussion of selenium impacts to Colorado pikeminnow and Razorback sucker is also arbitrary and capricious. The BiOp states that selenium deposition from the NMEP will cause significant harm to eggs and ovaries of Colorado pikeminnow and Razorback sucker. But the BiOp provides no information about how it arrived at such figures, no citation to any authorities, no discussion of population-level impacts, and no discussion of projected selenium increases in the San Juan River. This latter point is significant because a number of the Service's own documents predict an increase in selenium concentrations in the San Juan River, with increasing negative impacts to Colorado pikeminnow and Razorback sucker. Furthermore, the BiOp's no-jeopardy and no adverse modification conclusions rely on "conservation measures," but no conservation measures actually address selenium concentrations in the San Juan River. Further, the BiOp's reliance on the effects of stocking to mitigate impacts to critical habitat is illogical. Putting more fish in the river may, temporarily, provide the illusion of a stable fish population, but it does nothing to alter the underlying habitat conditions that threaten the fishes' survival and recovery. Notably, the BiOp recognizes that current habitat conditions are "insufficient to support successful Colorado pikeminnow and razorback sucker recruitment at levels that will provide for the species conservation." Further, Miller 2014 recognizes that if stocking were to cease, the pikeminnow population would plummet and population would quickly be extirpated. Thus, currently the primary constituent elements in the San Juan River are insufficient to support Colorado pikeminnow or Razorback sucker and the myriad negative impacts of the Project will only worsen these conditions, as the BiOp recognizes. It is illogical for the BiOp to conclude, in these circumstances, that the Project will not adversely modify critical habitat.

RESPONSE 15B:

First, Commenter contends that the ESA BO did not appropriately consider the applicable recovery plans and associated recovery criteria. We note at the outset that the comment conflates the requirements for a biological opinion discussed in ESA Section 7 with the requirements of a recovery plan prepared under ESA Section 4. The operative requirement for a biological opinion is that it must provide a statement "detailing how the agency action affects the species or its critical habitat." ESA Section 7(b)(3)(A). *See also* 50 CFR Section 402.14(h) (contents of a biological opinion). Although any existing recovery plan may include information that would be useful for the Service to consider in making its Section 7 determination, there is no explicit

requirement that a biological opinion include, as stated by Commenter, "a 'detailed discussion' regarding the species' recovery needs." Comment, at page 50.

In this case, the Service did in fact reference the recovery plan where that plan was relevant. *See, for example*, the conclusions as to project effects on the Colorado pikeminnow and Razorback sucker, both of which cite the Recovery Goals for these species in their analyses. ESA BO, at pages 134-135. The Biological Assessment similarly relied on the Recovery Plan in evaluating potential impacts. *See, for example*, ESA BA at page 5-5 (Colorado pikeminnow recovery goals and delisting criteria); ESA BA at page 5-11 (Razorback sucker recovery goals and delisting criteria).

Commenter raises concerns about alleged increases in selenium loads caused by the multi-year completion of the Navajo Indian Irrigation Project (NIIP) upstream of the Four Corners Power Plant San Juan River diversions. Discussions of selenium impacts to aquatic resources are a major concern of the biological assessment and opinion process, as reflected in the discussion in the ESA BO (Discussion at pp. 96-103; conclusions at pp. 133-35). Selenium impacts to fishes on the San Juan are a particular concern, given the complex interplay between several different diversions, irrigation return flow facilities, and power plant operations. The most recent biological opinion[8] in the San Juan River basin, the Final Biological Opinion for the San Juan River Navajo Irrigation Rehabilitation and Improvement Project – Fruitland -Cambridge and Hogback-Cuder Irrigation Units – and Colorado River Salinity Program Habitat Replacement (USWFS, January 2, 2018) ("Navajo Irrigation Improvement Project 2018 BO") actually declined to reach a conclusion on the effects of that proposed project from selenium, citing the lack of adequate scientific information. That biological opinion concluded that additional scientific work needed to be done, and set that in motion through the terms and conditions of the biological opinion.

> "The direct effect of selenium on endangered fishes and point source contribution is difficult to identify. The proposed action includes an analysis of the contribution of selenium to the San Juan River from both irrigation units. Also, a study is currently in place and being funded by BIA, which will quantify relationship between waterborne

[8] Commenter cites and relies on 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 of the present project. EPA 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. Furthermore, the scientific analyses included in the Desert Rock Draft BO are at least 10 years old. For that reason, EPA is relying on the Four Corners ESA BO and more recent analyses by the FWS such as the Navajo Irrigation Improvement Project 2018 BO, the USFWS Concurrence of Not Likely to Adversely Affect with regards to the San Juan Mine Deep Lease Extension (USFWS, June 25, 2018) ("San Juan Mine NLAE 2018") (Reviewing effects of mercury deposition in the San Juan Basin), and the San Juan River Basin Recovery Implementation Program Sufficient Progress Memorandum (USFWS, February 26, 2019) ("Sufficient Progress Memorandum 2019") discussed below.

> selenium and its contribution to selenium in Razorback Sucker diet and thus the fish's body burden (Buhl and Cleveland 2015). Once this study is completed and the contribution of selenium from Hogback-Cudei and Fruitland-Cambridge irrigation drains is quantified, the effects on listed fishes can be assessed. Until that time, the impact of the proposed project on the listed fishes and their critical habitat as it pertains to selenium is not provided by this BO." See Navajo Irrigation BO page 83.

It is worth noting that ESA consultation is a dynamic process, wherein the action agencies and the Service are engaged in a virtually constant monitoring and reevaluation process as proposed projects change and new scientific information is developed. This is especially true in the case of the San Juan basin. To address these changes, the Service relies on both the traditional "reinitiation of consultation" process included in each biological opinion (*see*, for example, the reinitiation provisions included in the ESA BO at p. 157) and a more rigorous periodic review of the implementation by all of the parties by preparing a San Juan River Basin Recovery Implementation Program Sufficient Progress Memorandum ("Sufficient Progress Memorandum 2019.") The most recent of these periodic reviews was released February 26, 2019, and included a review, based on new science, of the status of the species at risk. It also made conclusions about the progress and adequacy of the agency efforts to implement commitments in the biological opinions and other efforts in the basin. The Sufficient Progress Memorandum 2019 concluded that "[t]he FWS considers the Program's overall progress toward San Juan River Basin Colorado Pikeminnow and Razorback Sucker recover sufficient for the Program of continue as the ESA compliance mechanism for the San Juan River Basin water development, management and operations." This review explicitly considered selenium and mercury issues (pp. 20-21).

Commenter contends that the ESA BO improperly relies on fish stocking in its finding of no jeopardy. The FWS has clearly articulated a "self-sustaining population" goal for both the Colorado pikeminnow and the Razorback Sucker. *See* ESA BA at 5-5 and 5-11. Further, the recent Sufficient Progress Memorandum 2019 (pp. 22-23) includes a significant discussion of the fish stocking program as to both Colorado Pikeminnow and Razorback Suckers. FWS agrees that stocking is a promising approach, but that it may take many years to determine if it will ultimately be successful in re-establishing wild populations. Under the ESA FWS's analyses of adverse effects from proposed action can factor in "artificial programs" such as the fish stocking effort as an interim method towards a self-sustaining population.

COMMENT 15C:

b. The Biological Opinion Fails to Analyze Cumulative Impacts of Climate Change

The BiOp recognizes that the impacts of climate change are projected to be significant throughout the American Southwest, including the San Juan Basin. The best-available science predicts streamflow in the San Juan River will decrease by eight to forty-five percent by midcentury. The BiOp acknowledges that this dramatic reduction in water will "make it increasingly challenging" to meet flow requirements, especially the high flow requirements that provide both for channel maintenance and create the backwater habitat required by Colorado pikeminnow. The BiOp also recognizes that this "may also exacerbate contaminant issues." Despite this acknowledgement, the BiOp fails to factor these projected significant changes into its analysis of the overall impacts of the project on Colorado pikeminnow. The BiOp does not consider potential increased mercury and selenium concentrations due to reduced flows in its analysis of the impacts of those pollutants. Nor does the BiOp consider reduced flows in its analysis of impingement/entrainment, water withdrawals (the BiOp notes that any increased depletions beyond 3,000 AFY will harm Colorado pikeminnow and Razorback sucker), or the blockage of fish passage due to the APS weir. This failure was arbitrary and capricious and in violation of the ESA. Notably, the BiOp considered the cumulative effects of climate change in its analysis of impacts to the southwestern willow flycatcher and the yellow-billed cuckoo. By contrast, the BiOp failed at any point to consider how the project impacts of climate change would affect or exacerbate the FCPP/NMEP's impacts on the Colorado pikeminnow or the Razorback sucker.

Further, while the BiOp acknowledges that climate change will lead to significant changes in streamflow in the San Juan River, it fails to address other climate change related impacts that may adversely affect Colorado pikeminnow. For example, the BiOp does not consider that water shortages and reduced precipitation due to climate change could cause irrigators to call on previously unused water rights, which in turn would further reduce instream flows. This would be particularly problematic given that the San Juan River is over appropriated: if all water rights are used (which is currently not the case), there would be no water for fish.

Climate change will also affect the timing of flows in the San Juan River. This could in turn interfere with spawning. It is possible that Colorado pikeminnow and the Razorback sucker would not be able to adjust their spawning in response to changes in runoff and river flows. In its draft BiOp for DREP, the Service noted that "fish may not be able to adjust to an earlier spawning date, especially if it were one or two months earlier." Increased air and water temperatures could lead to increased mercury uptake by Colorado pikeminnow and Razorback sucker. Altered river conditions could also create an environment in which non-native species could out-compete native Colorado pikeminnow and Razorback sucker. The BiOp fails entirely to address the harmful impacts of climate change, rendering its analysis arbitrary and capricious and in violation of the Endangered Species Act.

Moreover, the BiOp bases its conclusions regarding jeopardy and adverse modification of critical habitat on the current state of the San Juan River and the expectation that that state will remain at the completion of the Project in 2042. However, the best available science clearly

demonstrates that the climate in the Southwest is changing rapidly and that the San Juan River will be very different in 2042 than it is currently. The failure of the BiOp to assess the impacts of the Project in light of the environment that will exist in 2042 when it is completed was arbitrary and capricious and inconsistent with the Endangered Species Act and its implementing regulations.

RESPONSE 15C:

The ESA BO, at pp. 104-5, discusses the nature of the climate change future in the San Juan River basin. It notes the anticipated higher air temperatures and reduced rainfall. It also notes how hydromodification complicates a climate change analysis; for example, the onstream dams such as the Navajo Reservoir can actually result in colder water being released downstream than would be appropriate for native fishes. The ESA BO starts to address the resource needs that may be affected by climate change through reliance on habitat protection in the SJRRIPs (see RPM 4; ESA BO p. 146.) *See also* discussion at Sufficient Progress Memorandum 2019 at pp. 4-13 (discussing mechanisms for addressing reduced flows and temperature issues).

EPA notes that its proposed action – renewing the FCPP NPDES permit for a term of 5 years, when combined with the flexibility in the ESA BO to reinitiate consultation if new information or conditions arise, provide flexibility for both the FWS and the action agencies to make any necessary changes in response to climate change developments.

COMMENT 15D:

c. The Biological Opinion Fails to Consider Impacts of Fish Stocking or Reduced Genetic Diversity of Colorado Pikeminnow and Razorback Sucker

The BiOp bases its conclusions regarding jeopardy and adverse modification of critical habitat in large part on the SJRRIP's ongoing fish stocking program. There is, however, no analysis of the various potentially negative impacts of this massive fish stocking effort, particularly on the effect of stocking on any remaining wild Colorado pikeminnow or Razorback sucker in the San Juan River. Artificial stocking of fish has inherent risks of genetic introgression, hybridization, inbreeding depression, and outbreeding depression. Hatchery fish can also threaten wild stocks by competition, predation, and potential transmission of disease. Stocking can lead to decreased genetic diversity, reduction in effective population, and long-term genetic drift, all of which affect the long-term health of the species. Stocking should only be considered a temporary management tool to be used as a last resort. Notably, stocking cannot be considered a long-term solution because, aside from the negative effects of stocking, stocking does not address underlying habitat problems.

The Service's BiOp relies primarily on the ongoing, massive stocking efforts of SJRRIP to justify its no jeopardy and no adverse modification conclusions. However, at no point does the BiOp address the many potential negative effects of artificial stocking. Further, the BiOp relies heavily on the population viability analysis from Miller 2014 to justify its no jeopardy and no adverse modification conclusions, but Miller 2014 also does not address potential inbreeding depression or the impacts of stocking on the remaining wild Colorado pikeminnow in the San Juan River. The BiOp's complete failure to address the potential impacts of stocking and lack of genetic diversity was arbitrary and capricious.

RESPONSE 15D:

As noted above in Response 15B, the FWS agrees that a sustainable population is the goal for species recovery (ESA BA 5-5 and 5-11). Further, the USFWS, in Sufficient Progress Memo 2019, discusses at length the need to move towards a self-sustaining wild population. Nevertheless, EPA disagrees with the suggestion that FWS cannot issue a nonjeopardy opinion when it examines a proposed federal action, if that action is including a hatchery strategy as part of the recovery approach. Here, hatchery production is the only mechanism maintaining the species (in the case of the Colorado pikeminnow).

COMMENT 15E:

d. The Biological Opinion Fails to Employ Best Available Science or Adequately Assess the Impacts of Mercury Deposition on Endangered Species

The BiOp's analysis of mercury impacts is wholly inadequate. The BiOp relies significantly on the analysis and modeling from EPRI 2014 and the population viability analysis from Miller 2014. Based on these models, the agency concludes that mercury levels will only reach levels that cause "significant decline" in Colorado pikeminnow populations in 2046, five years after the cessation of the FCPP/NMEP. The BiOp fails however to assure that these models accurately reflect real world conditions. For example, the EPRI 2014 study premises its analysis on annual mercury emissions from the Four Corners Power Plant of 102 lbs/yr. The BiOp itself notes however that the projected annual emissions from the power plant are in fact 50% higher, 149 lbs./yr. Further, the BiOp, in accepting the analysis from EPRI 2014, repeatedly adopts the lowest possible estimates of mercury emissions and concentrations in water and fish, without providing any explanation for rejecting higher mercury levels. The ERPI 2014 study and BiOp rejected actual water quality measurements in favor of lower estimates based on modeling. The BiOp consequently adopts EPRI 2014's estimated mercury concentrations that are significantly lower than actual measurements, alternative models, and the Service's own calculations. No justification for these decisions is provided. The Service provides no explanation for accepting EPRI's modeled mercury concentrations over the other measurements, models, and calculations. The BiOp then adopts the lowest possible estimate of mercury transfer to Colorado pikeminnow eggs, without providing any explanation, even though the transfer rate adopted by the Service was up to two orders of magnitude lower than other studies had estimated. Next the BiOp adopted lower injury estimates from ERM 2014a, b (a study paid for by the Navajo Mine's strip mine operator—BHP Billiton), which were notably lower than estimates from the peer reviewed Dillon 2010 report. The BiOp also relied on the population viability analysis of Miller 2014 to establish the supposed threshold for adverse habitat modification from mercury, even though Miller 2014 expressly did not address behavioral or genetic injury to Colorado pikeminnow. Miller 2014 acknowledges that its analysis is an underestimate of mercury impacts because of these exclusions. The BiOp recognizes that continuing mercury pollution in the San Juan River will cause behavioral injury in 43 to 60 percent of Colorado pikeminnow and also estimates that these behavioral injuries will lead to mortality of 1.1% of the adult pikeminnow population. Despite this, the BiOp's no jeopardy and no adverse modification conclusions relied entirely on the population viability analysis of Miller 2014, without addressing or explaining the projected harmful behavioral or genetic injury to pikeminnow. On account of these multiple, unexplained unrealistically low estimates, the BiOp failed to use the best available science and failed to adequately assess mercury impacts on Colorado pikeminnow and their critical habitat. This conclusion is all the more arbitrary because it does not take into account at all lead pollution in the basin, which is a recognized threat to Colorado pikeminnow and Razorback sucker.

RESPONSE 15E:

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. In particular, 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 15A). 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.

Commenter suggests that modeling assumptions for the EPRI Modeling understated mercury emissions. Recent events and data suggest the opposite. The EPRI Modeling study assumed future emission scenarios from three power plants in the San Juan basin – FCPP, the Navajo Generating Station, and the San Juan Generating Station. In all scenarios, it assumed the NGS would close in 2044, and that the SJGS would stay in operation until 2074. *See* ESA BA, p. 4-5. These projections have proven incorrect, in that the NGS is closing in 2019, and the SJGS is proposing to close in 2022. These early closures suggest that the EPRI modeling study

significantly *overstated* the modeled mercury emissions. Recent data also shows the FCPP itself is emitting less mercury than the ESA BO assumes.[9]

[9] See Email from Louis Nichols, EPA, to Tom Hagler, EPA dated 09/19/19, and the attached table of FCPP mercury emissions in 2016 – 2018. This information was taken from the publicly available FACT database (https://www.epa.gov/airmarkets/field-audit-checklist-tool-fact), which contains Discharge Monitoring Report (DMR) data from air pollution sources. The data show a significant decline in mercury emissions at the FCPP beginning in 2018. This decline is due to the installation of stricter NOx control technologies at the FCPP, which has the ancillary benefit of reducing mercury emissions.

COMMENT 15F:

e. The Biological Opinion Fails to Assess Impacts of Impingement on Endangered Fish

The Arizona Public Service Company (APS), part owner of the FCPP, operates a Weir for the FCPP in the San Juan River Basin action area. The APS Weir is used to divert water from the San Juan River to Morgan Lake, for use in coal plant operations. River diversion to Morgan Lake occurs just upstream from the APS Weir by two 8 by 8.5 foot intake pipes. There is one diversion pump at each intake pipe. The pipes pump river water to a single pipe for transport to Morgan Lake. Both intake pipes are fully screened with 1 by 3 inch mesh screens. The pumps divert an average of 76.4 cfs (cubic-feet per second) daily, depending on the seasonal flow of the river, with the greatest withdrawal occurring in the summer, when river flows are the lowest. Annually, an average of 27,682 acre-feet per year (AFY) of water is pumped from the San Juan River to Morgan Lake, though APS has the right to withdraw nearly twice this amount. The intake pipes were installed pursuant to the original FCPP lease. No modifications to the intake pipes are planned or proposed by project proponents. The Weir does not have any fish passage, collection or return facilities. The APS Weir's intake pipes are located in critical habitat for the Colorado pikeminnow.

Although the Service observed that the risk of impingement was an adverse effect, the Service's failed to include any detailed discussion of the project's adverse effect of impingement for the jeopardy or adverse modification of critical habitat of the Colorado pikeminnow and Razorback sucker. This omission was arbitrary and capricious.

RESPONSE 15F:

The APS diversion intakes and associated weir at river mile 163.3 are discussed at length in both the ESA BA (p. 7-12) and in the ESA BO at pp 109-114. In addition, the ESA BO imposed a significant reasonable and prudent measure (RPM 2 at p. 144) requiring a Pumping Plan to address entrainment and impingement at the weir and intakes. *See also* discussion of the Clean Water Act Section 316(b) requirements in Response 12, above.

COMMENT 15G:

f. The Biological Opinion Fails to Consider Foreseeable Impacts from the Project that Will Occur After 2041

The Service concludes that the proposed action, along with cumulative effects, will not adversely modify or destroy critical Colorado pikeminnow habitat because mercury concentrations are not expected to reach critical levels until 2046. The agency argues that it is precluded by law from assessing any cumulative impacts that occur after completion of the action. Because the proposed action (mine expansion and extension of the lease for the power plant) will be complete in 2041, the agency insists that it must ignore the critical impacts projected to occur in 2046. The BiOp is mistaken as a matter of law. The ESA requires the Service to consider the impacts of the proposed action along with cumulative impacts for the duration of the effects of the proposed action, even if those effects extend beyond the completion of the proposed action. Accordingly, the BiOp's analysis of impacts to critical habitat is mistaken as a matter of law. The EPRI (2014) report on which the Service principally relies models mercury concentrations well beyond 2041. It is also arbitrary for the Service to rely on this report throughout the BiOp, but then arbitrarily conclude that the report is not reliable for mercury estimates beyond 2041.

RESPONSE 15G:

The ESA BO articulates the anticipated increases in cumulative mercury deposition in the San Juan River Basin, and shows those depositions reaching peak after the 2041. *See* ESA BO at pp. 133-36. *See also*, ESA BA, pp. 4-4/4-5 (Describing modeling assumptions for WARMF modeling used in the ESA BA, which projects impacts to 2074). The ESA BO's conclusions about critical habitat are not based on the absence of adverse impacts; those conclusions are based on the USFWS's evaluation of the measures included in the ESA BO Conservation Measures and, more importantly, on the anticipated benefits of the recovery efforts being undertaken in the multiagency, multipurpose SJRRIP that will more than offset those impacts in the future. *See* ESA BO at pp. 135-36. As noted above, the USFWS, in the Sufficient Progress Memorandum 2019, has concluded that this SJRRIP is in fact making progress towards the goals of species recovery. In the event that adjustments are required to protect the listed species or critical habitat in the future, there are both reinitiation of consultation provisions in the ESA BO itself and reopener provisions in the NPDES Permit. Further, the NPDES Permit is a five year permit, which will allow a reexamination of ESA compliance on a regular basis.

COMMENT 15H:

g. The Biological Opinion Improperly Bases Its Conclusions on Jeopardy and Adverse Modification on Uncertain and Vague Mitigation Measures

The BiOp identifies eleven voluntary conservation measures drafted by the action agencies and project proponents. The conservation measures were developed after the release of the initial Biological Assessment. The Service relied on these proposed conservation measures to mitigate the adverse effects that "would otherwise occur as a result of the proposed action..." The Service incorrectly relied on the implementation and success of the drafted conservation measures to reach the no jeopardy or adverse modification conclusion. First, although an agency may rely on a clear, definite commitment of resources for future improvements that minimize the adverse impacts of a proposed project, it may not depend on such future improvements in reaching a no jeopardy or adverse modification determination if they are not binding or they are uncertain or vague. This is because the ESA requires the agencies' to *assure* that the species and their critical habitat will not be jeopardized or adversely modified. In the BiOp, the conservation measures were listed in the "Description of the Proposed Action" section. At the time of the BiOp's release, implementation of the conservation measures had not begun in the action area. Additionally, the measures were not included in the initial project proposal. Finally, the Service failed to include any discussion of the conservation measures in the effects analysis of the proposed action. Therefore, the measures were incorrectly relied on by the Service in reaching a no jeopardy or adverse modification determination. Next, the conservation measures were improperly incorporated in the reasonable and prudent measures and terms and conditions of the incidental take statement. Reasonable and prudent measures are only issued after a no jeopardy or adverse modification determination is made. By contrast, the conservation measures were relied on by the Service in reaching the no jeopardy or adverse modification conclusion. Thus, the Service incorrectly relied on conservation measures which cannot retroactively to mitigate adverse effects of the project. This retroactive application of the conservation measures directly contradicts the preventative intent of the ESA. Further, the conservation measures are not sufficiently specific or binding. They do not address all of the adverse impacts from the Project, such as water withdrawals and selenium loading. In many cases, as with mercury, the pumping, and non-native fish releases, the conservation measures are merely vague promises to formulate plans to mitigate impacts in the future. Similarly, because there is no discussion about *how* the conservation measures will supposedly offset the impacts of the Project, there is no indication that the conservation measures will entirely offset the harmful effects and, if not, whether the remaining adverse impacts will cause jeopardy or adverse modification to Colorado pikeminnow, Razorback sucker, or their critical habitat.

Further, reliance on the Colorado pikeminnow and Razorback sucker stocking programs to supposedly mitigate impacts was arbitrary and capricious. There is no indication and no obligation that these programs will continue through the entirety of the project life (2041). Further, artificial propagation of stocked fish does not offset impacts to wild fish and, because it

does not address impacts to the primary constituent elements for Colorado pikeminnow and Razorback sucker critical habitat, it cannot "mitigate" those effects. All it does is temporarily mask the admittedly insufficient and degraded critical habitat in the San Juan River.

RESPONSE 15H:

After extensive discussions between the USFWS and the action agencies, the action agencies provided a detailed description of the conservation measures developed to address anticipated adverse impacts from the project. *See* BA Amendment. These conservation measures were then included as part of the project description in the ESA BO. *See* ESA BO at p. 15. Unapproved deviation from these conservation measures results in the project being out of compliance with the ESA consultation conclusions. This set of conservation measures is both specific and binding. It assigns specific tasks to specific agencies (Amended BA, throughout), includes dollar-specific funding commitments by the action agencies (Amended BA, pp 4-5), imposes monitoring and annual reporting requirements (ESA BO at p. 156, p. 138 in BO; Amended BA p. 6), and establishes an ongoing review process through the SJRBRIP. As noted above, this review process (most recently in its Sufficient Progress Memorandum 2019) reviews and confirms that satisfactory progress is being made in the implementation of conservation measures under the applicable biological opinions.

COMMENT 15I:

h. The Biological Opinion's Conclusions on Jeopardy and Adverse Modification of Critical Habitat Are Inconsistent

The Service's BiOp is also arbitrary and capricious because its ultimate determinations are inconsistent. Key to the BiOp's no jeopardy determination is the conclusion that "any increases in Hg deposition are due, not to the proposed action, but attributable to global sources." By contrast, in reaching its no adverse modification determination, the BiOp states that the lack of co-occurrence of the primary constituent elements for Colorado pikeminnow and Razorback sucker are "attributable to the degraded environmental baseline, the proposed action and future predicted increased global contributions of Hg to the basin." Further, the BiOp also recognizes that mercury deposition from FCPP "ha[s] a clear but lesser effect" on overall mercury deposition in the San Juan Basin. Inconsistent findings and conclusions are the mark of arbitrary decision-making. The Service cannot maintain on one hand that continued mercury deposition from FCPP does not contribute to the worsening problem of mercury pollution in the San Juan River and, on the other hand, admit that mercury deposition from the proposed action has a clear contribution to the problem and that impacts on endangered fish are "attributable" to the proposed action. Furthermore, there is no rational connection between the agency's findings that Colorado pikeminnow and Razorback sucker are unable to recruit at sufficient rates to sustain their populations under current conditions (which are expected to worsen), and its conclusion that the species will not face jeopardy because of continuation of current conditions (along with non-specific and non-binding mitigation measures).

RESPONSE 15I:

See Discussion at Response 15E.

Commenter seems to suggest that "adverse effect" is synonymous with "jeopardy" and that is not the case. USFWS's obligation in the consultation process is to describe the effects of the proposed action on threatened or endangered species and to then determine whether, in light of other factors and mediation actions, the proposed action will jeopardize the continued existence of that species or destroy or adversely modify its critical habitat. That is exactly what USFWS has done in this consultation.

As noted above, 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. This 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 15A). 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.

COMMENT 15J:

2. EPA Must Take Into Account New Information Regarding Endangered Fish Populations and Baseline Mercury and Selenium Levels

The 2014 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. Exhibit 64 hereto (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.

Subsequent research has continued to show that, even with continued Recovery Program efforts, Colorado pikeminnow have been unsuccessful at reestablishing sustainable populations in the San Juan River. A 2019 peer-reviewed study of Colorado pikeminnow and mercury exposure noted that the San Juan River population contains essentially zero wild-spawned adults:

> The status of wild Colorado pikeminnow populations in all upper basin rivers remains tenuous. The San Juan River population consists almost exclusively of stocked fish, the last capture of a wild adult having occurred in 2000 (Ryden 2003; Furr and Davis 2009; Durst and Franssen 2014). At least some of the stocked fish have survived to maturity and the presence of larvae in the system verifies successful reproduction has occurred. However, recruitment of these wild-produced larvae to the adult phase has not yet been documented (Durst and Franssen 2014).

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 Mesa Verde National 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 – a coal-fired plant that was proposed to be cited 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 FCPP/NM BiOp 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."

Subsequent research has continued to show that mercury concentrations in the tissue of Colorado pikeminnow throughout its range exceed levels shown to have adverse physiological and behavioral effects, and that baseline mercury contamination is sufficiently high as to lead to expected negative effects at the population level. The researchers examined muscle tissue from Colorado pikeminnow throughout their range and found that fish longer than 400 millimeters contained mercury above recommended toxicity guidelines.

A recent decline in wild adults has been reported for the Green River basin

> (Bestgen et al. 2016a, b) as well as the upper Colorado River (Osmundson and White 2017; Elverud and White 2017). Especially concerning is the very weak age-0 representation in the middle Green River from 1999 to 2013 (Bestgen and Hill 2015; Bestgen et al. 2016a). A similar decline in young of the year fish (YOY) in the Colorado River from 1997 to 2013 led researchers to conclude that recruitment rates have been insufficient to offset adult mortality rates Exhibit 62 (Osmundson and White 2017).
>
> Water regulation is thought to negatively affect reproductive success and habitat suitability for young (Bestgen and Hill 2015; Osmundson and White 2017), while persistently high densities of nonnative predators (e.g., smallmouth bass (*Micropterus dolomieu*), northern pike, and walleye), particularly in the Yampa River (Johnson et al. 2008; USFWS 2014a, b, 2015), reduce survival of juveniles. In combination, rates of recruitment to the adult stage are depressed. Predation by nonnative fish on young Colorado pikeminnow is an obvious, direct cause of mortality, while river regulation and the pathways by which associated impacts affect reproduction and recruitment are more complex and therefore less well understood. Layered on this are the effects of environmental contaminants. Our results, along with those from studies of other fish, suggest mercury burdens are sufficiently high in Colorado pikeminnow that negative effects at the population level should be expected.

Due to the failure of stocked fish to survive to adulthood in the San Juan River, the researchers found relatively few examples of large adult fish to sample in the San Juan. "Many of the stocked Colorado pikeminnow in the San Juan River were < 400-mm long, and those that were larger had concentrations exceeding the toxicity guideline." They noted, however, that

> A population viability analysis recently modeled for Colorado pikeminnow in the San Juan River estimated that current levels of mercury toxicity would reduce reproductive success by 2% among newly recruited adult females (Miller 2014). As these females age, the percent injury was expected to increase to 5%. If mercury deposition in the San Juan River increases in the future as anticipated, injury estimates are predicted to increase to 3.5–9%. Under this assumption, the estimated injuries to both reproductive success and age specific survival led to decreases in simulated population growth potential (Miller 2014). Thus, anticipated mercury load increases in the San Juan sub-basin are expected to reduce the effectiveness of current recovery efforts.
>
> High mercury concentrations are known to adversely affect reproductive output and adult survival in fishes. For Colorado pikeminnow, the high concentrations documented here may act multiplicatively with other threats to reduce population growth rate and ultimately impact recovery potential. Mercury exposure was found in all sampled Colorado pikeminnow. Those > 400-mm long contained mercury above recommended toxicity guidelines designed to protect demographic endpoints, such as reproduction and survival. Although the role that selenium may play in counteracting mercury toxicity is unknown, the relationship we found

> between mercury concentration and reduced body condition strongly suggests that injury is occurring. Tissue-level studies are needed to better understand physiological pathways of impairment and quantify toxicity effects. Managers tasked with restoring sustainable Colorado pikeminnow populations need to consider mercury contamination as an important threat to demographic rates and recovery of Colorado pikeminnow.

Despite this well-documented threat, EPA continues to rely entirely on a 2014 BiOp and a recovery program that has neither succeeded in establishing self-sustaining populations nor addressed, in any way, mitigation of mercury and selenium toxicity. EPA must engage in separate consultation, employing the best available current scientific information, to evaluate whether the proposed discharges, in conjunction with the continued operation of the Four Corners Power Plant, will contribute to mercury-related impairment, and resulting population level effects, in endangered fish.

Given EPA's obligations to avoid jeopardy and contribute to the recovery of listed species under the ESA, it is not sufficient 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. 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.

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.

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.

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. Upon entering the San Juan River ecosystem, microorganisms convert mercury to methylmercury, a highly toxic form of mercury. 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. 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." 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." 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. These two plants "are among the largest sources of mercury emissions in the western U.S." 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.

EPA and FWS should undertake an analysis to determine whether and how much of the tissue-bound mercury in endangered Colorado pikeminnow 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, EPA must, as part of the permitting and consultation 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 and the role of permitted discharges in mercury and selenium loading in endangered fish. 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.

In 2016 communications between FWS and EPA, FWS recommended six conditions for NPDES permits designed as reasonable and prudent measures to minimize adverse impacts to endangered species including the Colorado pikeminnow and razorback sucker. These measures were to include (a) evaluation of relationships between water column concentrations and fish tissue concentrations; (b) use of Navajo Nation and EPA fish tissue criteria for mercury and selenium respectively; (c) EPA's provision of "an analysis of the duration, magnitude, concentration and contribution of the flows in the vicinity downstream from the NPDES permitted discharges to clarify the potential contribution of such flows to the overall impacts from Hg and Se," (d) antidegradation provisions if fish tissue concentrations are well below guidelines; (e) water quality based effluent limitations if permitted discharges contribute to exceeding standards; and (f) a requirement to monitor effluents for mercury and selenium. EPA, however, has incorporated only measure (f) (water column monitoring) into the permit, deferring implementation of measures (a) through (e) to the "next permit cycle." Although EPA asserts, without detail, that it has "initiated a longer term effort to identify appropriate protocols for evaluating fish tissue concentration and water column values," it has failed to incorporate multiple reasonable and FWS-recommended measures into permit terms and conditions. In particular, given recent available data regarding the failure of pikeminnow recovery efforts and baseline mercury contamination, failure to immediately incorporate conditions requiring monitoring of fish tissue concentrations, compliance with Navajo Nation and EPA mercury and selenium tissue standards, and effluent limitations where necessary, violates EPA's obligation to prevent jeopardy and adverse modification to listed fish. EPA has provided no reasonable justification for deferring implementation of measures (a) through (e) until the "next permit cycle," which will allow for at least five years, if not more, of unnecessary impacts to endangered fish.

RESPONSE 15J:

See generally Response 15E.

Commenter cites and relies extensively on 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 of the present project. EPA 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. Furthermore, the scientific analyses included in the Desert Rock Draft BO are at least 10 years old. For that reason, EPA is relying on the Four Corners ESA BO

and more recent analyses by the FWS such as the Navajo Irrigation Improvement Project 2018 BO, the USFWS Concurrence of Not Likely to Adversely Affect with regards to the San Juan Mine Deep Lease Extension (USFWS, June 25, 2018) ("San Juan Mine NLAE 2018") (Reviewing effects of mercury deposition in the San Juan Basin), and the San Juan River Basin Recovery Implementation Program Sufficient Progress Memorandum (USFWS, February 26, 2019) ("Sufficient Progress Memorandum 2019") discussed below.

Commenter also cites as new information the most recent update of "Field Assessment of Colorado pikeminnow Exposure to Mercury…." (2019). Osmundsen and Lusk are recognized experts on the fishes of the San Juan Basin, and they have separately and jointly published significant work on Colorado pikeminnow and other basin fishes for decades. Their most recent contributions are listed in the bibliography to the Navajo Irrigation Project 2018 BO at pp. 89-116.

Commenter's citation of Osmundsen and Lusk vividly illustrates the significant effort underway to continuously develop and update the scientific analyses of the fisheries resources in the San Juan Basin. As noted, those are most comprehensively evaluated in the ESA BO (2015), the Navajo Irrigation Project 2018 BO, and the Sufficient Progress Memorandum 2019 (at pp. 37-45.)

Commenter suggests that the Mountain Studies Institute Report (2010) is new information (*see* Comment at p. 58-9). Although relevant and important, this report was actually reviewed and cited, along with several other reports on atmospheric mercury in the San Juan Basin area, in the ESA BO, at p. 94.

Commenter provides a lengthy discussion of the adverse impacts of mercury on fishery resources. *See* Comment at pp. 58-66. The ESA BO and ESA BA agree, and the FWS has developed Reasonable and Prudent Measures in the ESA BO to address mercury. *See* RPM 1 at pp. 142- 44; RPM 5 at p. 147; RPM 6 at 148-49). RPM 6 in particular asks EPA to begin work on the evaluation of tissue-bound mercury and selenium and the development of appropriate regulatory responses. This is an issue of national importance for both EPA and for the FWS, and these agencies have worked collaboratively to develop workable approaches to measuring, evaluating, and regulating selenium and mercury using a tissue concentration approach. *See, generally*, the rulemaking effort discussed on EPA's website at https://www.epa.gov/wqs-tech/water-quality-standards-establishment-numeric-criterion-selenium-fresh-waters-california. A similar effort in California to regulate mercury using the fish tissue approach was recently developed and approved. *See* discussion at https://www.epa.gov/newsreleases/us-epa-approves-limits-mercury-california-waters. At the national level, EPA is maintaining and expanding its sampling program for toxins, including mercury and selenium, in both river systems and lakes. *See* https://www.epa.gov/fish-tech/fish-tissue-data-collected-epa#tab4-mercury. EPA has also issued, with USGS and FWS, a draft technical report outlining the challenges and options for tissue based water quality measures. *See* https://www.epa.gov/sites/production/files/2016-10/documents/technical-support-fish-tissue-monitoring-selenium.pdf. The next steps in this effort would likely be to identify data sets in the San Juan Basin that could support site-specific measures.

COMMENT 15K:

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. Exhibit 61 (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).g 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 15K: The APS diversion intakes and associated weir at river mile 163.3 are discussed at length in both the ESA BA (p. 7-12) and in the ESA BO at pp 109-114. In addition, the ESA BO imposed a significant reasonable and prudent measure (RPM 2 at p. 144; *see also* Amended BA) requiring a Pumping Plan to address entrainment and impingement at the weir and intakes. *See also* discussion of the Clean Water Act Section 316(b) requirements in Response 12, above.

COMMENT 15L:

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 (CW A), 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 15L:

See Response 12. As noted in the Response to Comment 12, APS currently operates a closed cycle recirculating system that EPA determined is BTA for the CWIS for this Permit pursuant to 40 CFR 125.94(c & d) and the USFWS approved Pumping Plan pursuant to 40 CFR 125.94(g). EPA selected closed cycle on a site specific basis for FCPP based on the information submitted

by the applicant to EPA and to FWS for the BO and the factors in 40 CFR 125.98. 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. 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. EPA incorporated the Pumping Plan and the additional measures required therein as BTA pursuant to 40 CRF 125.94(g).

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 15A). 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.

COMMENT 16: EPA relied on the Navajo Nation water quality standards in making its 401 Certification decision on this draft permit. As stated above, EPA may not rely on the Navajo Nation water quality standards due to the contractual waiver and relevant case law. As such, EPA's reliance on the Navajo Nation water quality standards in issuing its 401 Certification decision is likewise arbitrary and capricious because EPA relies on tribal water quality standards that can not [sic] be applied to the facility. EPA also fails to provide a written rationale for relying on the Navajo Nation water quality standards for its permit action or 401 Certification decision. Despite the passage of 18 years since EPA's last issuance of this permit, EPA has failed to promulgate federal water quality standards for Morgan Lake, No Name Wash, the Chaco River, and the San Juan River. Finally, EPA has not applied State of New Mexico Water Quality Standards to the discharges in the draft permit or explained why it has not applied the State standards. For the reasons stated in this comment letter, EPA's 401 Certification decision is arbitrary and capricious.

RESPONSE 16

See discussion of the applicable water quality standards at Response 4. *See* discussion of the waiver of certification pursuant to Clean Water Act Section 401 at Response 24.

EPA received comments from Arizona Public Services Company (APS) on July 1, 2019 via an emailed letter regarding EPA's Draft renewal NPDES Permit for the Four Corners Power Plant, NPDES Permit No. NN0000019. EPA has summarized the comments, primarily through the use of excerpts, and responded below.

COMMENT 17: Various comments with respect to the Draft Fact Sheet were provided as follows:

Page 1 - Tom Livingston I no longer the FCPP Plant Manager. The current facility Plant Manager is Jeffrey Jenkins.

Page 2 – El Paso Electric Company is no longer an FCPP co-owner. Instead, as of July 2018, NTEC acquired an ownership share of the FCPP equivalent to the shares previously owned by El Paso Electric Company.

Page 2 – BHP Minerals no longer operates the Navajo Mine. Instead, North American Coal, Bisti Fuels currently operates the Navajo Mine on behalf of NTEC.

Page 2 – In the first full paragraph of Part III., the Draft Fact Sheet states that the discharges 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 per day."** (emphasis added). To be accurate and reflect current operations, this should be revised instead to read that the discharges from Outfall 001 "are intermittent, with an average of four days per week of discharges throughout the course of the year, resulting in an average flow rate of 4.2. million gallons per day."

Page 3 – In the fourth paragraph of Part III., the Draft Fact Sheet states that the CWTP **"is a treatment lagoon that treats about 8-13 MGD of various waste streams, including in plant storm water runoff"** (emphasis added). To be accurate and reflect current operations, this should be revised instead to read that the CWTP "is a treatment lagoon that treats between 5 and 8 MGD of various waste streams, including in-plant storm water runoff."

Page 3 – …the two [coal-combustion residual] (CCR) surface impoundments used to treat and store [flue gas desulfurization] (FGD) and chemical metal cleaning wastewater prior to reuse will be initiating closure and cease receiving wastewater as of October 31, 2020. The Draft Fact Sheet should be updated to reflect the new system that will then go into operation to facilitate fly-ash and FGD wastewater blending, hence reducing substantially the volume of liquid wastes generated and managed on-site at the FCPP.

RESPONSE 17:

Noted. The Final Permit and accompanying Fact Sheet have been updated and/or corrected as appropriate.

COMMENT 18: Various comments with respect to the Proposed Permit were provided as follows:

Part I.B.2 (Page 12) – The first sentence of this part specifies that the Plant's surface seepage intercept systems **"shall be maintained and operated for existing unlined ash ponds"** (emphasis added). This refers to the [lined-ash impoundment] (LAI) and [lined-decant water pond] (LDWP), which operate as multi-unit series of impoundments for FGD and chemical metal cleaning wastewater treatment and storage prior to wastewater recycling. While these units are actually lined with HDPE geomembranes, their construction specifications do not match those provided in the federal CCR regulations or lined CCR surface impoundments. *See* 40 C.F.R § 257.70(b)-(c). As such, …, these units must initiate closure and cease receiving wastewater by October 31, 2020. At that time, the LAI and LDWP will be replaced by a much smaller, approximately sever acre CCR surface impoundment constructed in compliance with the federal requirements. This new CCR surface impoundment, the [return water pond] (RWP), will be part of the Plant's overall system to managing and reusing FGD and chemical metal cleaning wastewater. Given the confusion that may result from the current language in Part I.B.2., we suggest replacing the quoted [**bold**] language (above) with the following: "shall be maintained and operated for the FGD and chemical wastewater surface impoundments operated in accordance with 40 C.F.R Part 257, Subpart D, as currently existing or to be constructed in the future."

Part I.B.2. (Page 12) – The second sentence of this part specifies that the water collected by the plants surface seepage intercept systems **"shall be returned to the double lined water decant pond"** (emphasis added). While the water collected by the intercept system is currently returned to the LDWP, prior to being pumped back to the Plant for reuse as FGD make-up water, this current orientation will change by October 31, 2020, as described above. By that time, any water collected by the Plant's surface seepage intercept system will be stored for eventual Plant reused in the RWP. As such, to address the current and eventual operating orientations for these systems, we suggest replacing the quoted, [**bold**] language (above) with the following: "shall be returned to the power plant for reuse as make-up water for the facility's flue-gas desulfurization system."

RESPONSE 18:

Noted. The Permit has been revised as appropriate to reflect these suggestions and clarifications.

COMMENT 19: APS agrees with the Region that, as set forth in the Proposed Permit, the appropriate point of discharge is the discharge **from** Morgan Lake (Outfall Number 001). The proposed NPDES Permit is consistent with how the Region has addressed the Plant's discharges in its previous NPDES permits. *See* Permit No. NN0000019 (2001). The proposed point of discharge is appropriate because Morgan Lake is not a jurisdictional "water of the United States" (WOTUS) under the Clean Water Act (CWA). Region 9 issued a memorandum in 2017 confirming for purposes of both APS's NPDES permit for the FCPP (NN0000019) and NTEC's NPDES permit for the Navajo Mine (NN0028193) that Morgan Lake is not a WOTUS. Gary Sheth, EPA Region 9, Memorandum to the Administrative Record for NPDES Permit NN0000019 and NPDES Permit NN0028193 (July 20, 2017) (Sheth Memo).

Morgan Lake is a man-made cooling pond that was constructed wholly in upland areas for the purposes of dissipating heat from the Plant. Under the EPA's and the U.S. Army Corps. Of Engineers' (Corps') (together, the Agencies') 2015 Clean Water Rule, 80 Fed. Reg. 37,054 (June 29, 2015) (2015 WOTUS Rule), Morgan Lake is excluded from WOTUS jurisdiction under the waste treatment system (WTS) exclusion. WTS features have been excluded from the WOTUS definition since 1979. *See* 44 Fed. Rg. 32,854, 32,858 (June 7, 1979) (WTS exclusion intended to exempt waters that are incorporated into an NPDES permit as part of a treatment system, including, but not limited to, holding ponds, cooling ponds, and closed-cycle lagoons). The current EPA regulations state that "[w]aste treatment systems, including ponds or lagoons designed to meet the requirements of the Clean Water Act…" are **not** WOTUS even where they could otherwise be interpreted to fall into one of the jurisdictional categories of WOTUS. 40 C.F.R [Section] 122.2 (2015).

The preamble to the 2015 WOTUS Rule explained that cooling ponds, like Morgan Lake, that are part of an NPDES-permitted system "are subject to the waste treatment system exclusion" and would "remain excluded under the new rul." 80 Fed. Reg. at 37,099. The Agencies have indicated their intent to preserve the WTS exclusion going forward, and have proposed to clarify in the regulator text that cooling ponds are WTS features. The 2019 Proposed Revised Definition of "Waters of the United States" (2019 Propose WOTUS Rule), would exclude "waste treatment systems," which "includes all components, including lagoons and treatment ponds (such as settling or **cooling ponds**), designed to convey or retain, concentrate, settle, reduce, or remove pollutants, either actively or passively, from wastewater prior to discharge (or eliminating and such discharge). 84 Fed. Reg 4,154 4,2015 (Feb 12, 2019) (emphasis added). Morgan Lake is exactly the type of feature for which the WTRS exclusion is meant. As the Ninth Circuit has recognized, "The [WTS] exception was meant to avoid requiring dischargers to meet effluent discharge standards for discharges **into** their own closed system treatment ponds." *N. Cal. River Watch v. City of Healdsburg*, 496 F.3d 993, 1001-02 (9th Cir. 2007). Imposing NPDES requirements at the discharge point **from** Morgan Lake into No Name Wash, as proposed, ensures that the permittee is not subject an arbitrary requirement for FCPP to meet effluent standards for discharges into the Plant's own closed system treatment pond.

Moreover, even if Morgan Lake did not qualify for the WTS exclusion, it would be excluded from WOTUS jurisdiction under the 2015 WOTUS Rule's exclusion for "[a]rtificial, constructed lakes or ponds created by excavating and/or diking dry lands such as farm and stock watering ponds, irrigation ponds, settling basins, log cleaning ponds, **cooling ponds**, or fields flooded for rice growing." 40 C.F.R [Section] 122.2 (2015). The 2019 Proposed WOTUS Rule likewise excludes certain artificial lakes and ponds constructed in upland." *See* 84 Fed. Reg. at 4,204.

Although further WOTUS analysis is not necessary given the applicability of the WTS and artificial lake and pond exclusions, APS notes that, as the Region has previously recognized, Morgan Lake does not qualify under the category of waters commonly referred to as "traditional navigable waters" (TNWs) or "commerce water" – waters identified under the 2015 Rule and previous WOTUS regulations "which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce." 40 C.F.R. [Section] 122.2 (2015). Under the landmark Supreme Court case, *Rapanos v. United States*, 547 U.S. 715 (2006), the waters to which both the plurality and Justice Kennedy refer when they discuss TNWs are unmistakably clear from the cases they cite to describe them – *The Daniel Ball*, 77 U.S. 557 (1870), and *United States v. Appalachian Elec. Power Co*., 311 U.S. 377 (1940). These cases are cornerstones of well-established case law that define TNWs as waters that: (1) are navigable-in-fact and (2) together with other waters, form waterborne highways used to transport commercial goods in interstate or foreign commerce. *See The Daniel Ball*, 77 U.S. at 563. The TNWs as understood by the *Rapanos* plurality and concurring opinions are waters used to transport goods in interstate commerce. They are not so broad as to include any water feature that can float a boat, and they do not include Morgan Lake. *Cf. In re Borden Inc./Colonial Sugars*, 1 E.A.D. at 907 n.26 ("[E]vidence of an occasional interstate traveler who engages in recreational fishing or hunting on the wetlands would be and insufficient basis[,] standing alone, to establish commerce clause jurisdiction."). In its 2015 Response to Comments on the previous iteration of the FCPP Proposed Permit (2015 RTC), the Region considered the boating and fishing uses of Morgan Lake, and appropriately determined that such uses "appear[] to be incidental" and "do[] not provide a sufficient nexus to interstate commerce to justify an assertion of federal jurisdiction." RTC at 15-16. Morgan Lake would not qualify as a TNW under the 2015 WOTUS Rule or previous WOTUS regulations.

For all these reasons, the Proposed Permit appropriately clarifies that Morgan Lake is not a WOTUS and selects the appropriate point of discharge as the discharge **from** Morgan Lake.

RESPONSE 19:

See Response 8.

COMMENT 20: APS supports the Proposed Permit's selection of December 31, 2023, as the date by which APS must meet EPA's new zero-liquid discharge standard for bottom-ash transport water (BATW). As discussed in more detail below, this selection is consistent with the Postponement Rule, allows for integrated planning for the Plant's compliance with the 2015 Effluent Limitation Guidelines (ELG) Rule and applicable RCRA Coal Combustion Residuals (CCR) requirements, and enables APS to account for uncertainty in the pending BATW ELG rulemaking.
EPA promulgated revisions to its steam electric ELGs in 2015. 80 Fed. Reg. 67,838 (Nov. 3, 2015) (2015 ELG Rule). The 2015 ELG Rule established several new effluent limitations applicable to the steam electric power generation industry based on EPA's selection of the "best available technology economically achievable" (BAT) under 33 U.S.C. §§ 1311(b)(2)(A) and 1314(b)(2)(B). Because BAT is "technology-forcing," *NRDC v. EPA*, 808 F.3d 556, 563-64 (2d Cir. 2015), EPA recognized that some of the 2015 ELG Rule's advanced technologies were not immediately "available" to industry, and thus their corresponding BAT limits would not be immediately achievable. 80 Fed. Reg. at 67,854 ("[T]he final rule takes this approach in order to provide the time that many facilities need to raise capital, plan and design systems, procure equipment, and construct and then test systems."). Therefore, the 2015 ELG Rule prescribed a range of dates within which the technologies would be deemed "available" and the effluent limits would be "achievable" for individual plants. The BAT limits would apply to point sources in the industry as soon as they are achievable, as determined by the plant's permitting authority. *Id.* Among the revised standards finalized in the 2015 ELG Rule, EPA established a new ELG for BATW that would impose a zero-liquid discharge requirement. *See* 40 C.F.R. § 423.13(k)(1)(i). The new zero-liquid discharge limit for BATW was to apply to individual plants "as soon as possible" after November 1, 2018, but no later than December 31, 2023. *Id.*

In 2017, EPA announced that it would be undertaking a rulemaking to reconsider the limit for BATW as well as for flue gas desulfurization (FGD) wastewater.6 Because EPA intends to conduct a rulemaking to potentially revise the limits for FGD wastewater and BATW, on September 18, 2017, EPA issued a final rule postponing the near-term applicability date for FGD wastewater and BATW from November 1, 2018, to November 1, 2020. 82 Fed. Reg. 43,494 (Sept. 18, 2017) (Postponement Rule). The purpose of the Postponement Rule is to authorize permit writers to select applicability dates that will avoid any expenditures to comply with the 2015 ELG Rule for FGD wastewater and BATW until EPA completes further rulemaking governing those waste streams, "which may result in substantive changes to the 2015 Rule." 82 Fed. Reg. at 43,496-98. EPA expects to complete its rulemaking for BATW and FGD wastewater by November 2020. *Id.*7 The Postponement Rule did not modify the 2015 ELG Rule's "no later than" compliance deadlines, which remain December 31, 2023. 40 C.F.R. §§ 423.13(g)(1)(i), 423.13(k)(1)(i).

On April 4, 2019, APS submitted to the Region a NPDES ELG Compliance Summary for FCPP providing information regarding the three separate, yet interrelated projects that FCPP plans to implement to address compliance with the revised ELGs for BATW and requirements under EPA's CCR regulations:
1. Closure of FCPP's Combined Waste Treatment Pond ("CWTP") – The FCPP CWTP is the structure through which FCPP's BATW discharges flow and is a regulated CCR-management unit. Under the current CCR regulations, this unit must cease receiving CCR and non-CCR waste

streams by October 31, 2020, and thereafter initiate closure procedures within 30 days. 40 C.F.R. §§ 257.60(a) and 257.101(b)(1), as revised pursuant to 83 Fed. Reg. 36,435 (July 30, 2018).8

2. BATW Holding and Treatment Tank Construction – A new system of concrete holding and treatment tanks will be constructed to manage BATW flows. Prior to the "as soon as" compliance deadline, the system of tanks will be used for holding, treatment, and discharge. After the BATW zero-liquid discharge requirement is in effect, the system will be used as part of a closed-loop BATW management system.

3. BATW Closed-Loop Recycling System – To comply with the 2015 ELG Rule's BATW zero-liquid discharge requirement, APS plans to develop a closed-loop recycling system for BATW. 40 C.F.R. § 423.11(t) instructs permit writers to determine the "as soon as possible" compliance date for BATW based on the following factors: (1) time to expeditiously plan (including to raise capital), design, procure, and install equipment to comply with the requirements; (2) changes being made or planned at the plant in response to other environmental regulations, including regulations that address the management and disposal of CCR, as provided in 40 C.F.R. Part 257, Subpart D; and (3) "[o]ther factors as appropriate." "Other factors" that are relevant for EPA's consideration include the substantial uncertainty surrounding the 2015 ELG Rule and the need for integrated planning decisions regarding compliance with the 2015 ELG Rule and other environmental rules identified in § 423.11(t). *See* 82 Fed. Reg. at 43,498; *Coosa River Basin Initiative v. Dunn*, Docket Nos. 1825406 and 1826761, at 13, Ga. Office of State Admin. Hearings (Oct. 4, 2018).

As explained in more detail in FCPP's ELG Compliance Summary, all three factors identified in 40 C.F.R. § 423.11(t) support the Region's determination that the BATW "as soon as" compliance deadline for FCPP is December 31, 2023. Integrated planning is required for changes to the FCPP to comply with applicable ELGs and CCR requirements. Altogether, APS estimates that these three projects will cost between $33.4 and $38.9 million. Because of the uncertainty surrounding the applicable effluent limits for BATW and CCR requirements, both of which could change as a result of EPA's further rulemaking and therefore could result in changes to the plans for these three projects, APS's preliminary plans have sequenced these three projects in a way that would allow APS to avoid major expenditures to comply with the BATW ELG until EPA completes its new rulemaking. The ELG Compliance Summary further details the project sequencing, and explains that the BATW holding and treatment tank system is an integral component of and must be completed before implementation of the BATW closed-loop recycling system. December 31, 2023, is the soonest date by which APS can close the CWTP, construct the BATW holding and treatment tank system, and implement the BATW closed-loop recycling system. For all of these reasons, APS supports EPA's determination that the BATW "as soon as possible" compliance deadline for FCPP is December 31, 2023.

RESPONSE 20:

See Response 5, above.

COMMENT 21: The Proposed Permit Complies with EPA's § 316(b) Requirements for Cooling Water Intake Structures

The cooling water for Units 4 and 5 comes from the adjacent Morgan Lake. APS operates a closed-cycle recirculating system, circulating from approximately 1,000 to 1,700 MGD through Morgan Lake. The 1,200-acre Morgan Lake withdraws an average of 14.3 MGD of water from the San Juan River as make-up water to replenish losses that have occurred due to blowdown, drift, and evaporation within Morgan Lake and the cooling system. Approximately, 99 percent of the water withdrawn from the San Juan River is reused for cooling purposes. Cooling water passes through the FCPP condenser and other components of the cooling system and is reused for cooling multiple times. *See* FCPP Wastewater Flow Schematic, Attachment D to Proposed Permit.

The intake structure on the San Juan River consists of two 10-foot by 10-foot intake bays, placed perpendicularly to the flow of the river. The intakes are screens with an approximately 1- inch by 3-inch openings. The intake system is equipped with a weir and a channel with a gate. The control gate provides the ability to control water depths at the intake location. 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.

As a result of Endangered Species Act (ESA) section 7 interagency consultation between the U.S. Fish and Wildlife Service (FWS), EPA, and the Office of Surface Mining Reclamation and Enforcement (OSMRE), FWS issued a Biological Opinion for the FCPP and Navajo Mine Energy Project (Apr. 8, 2015) (BO). Pursuant to the 2015 BO, APS has implemented a Pumping Plan, which was approved by FWS and provided to the Region, to minimize impingement and entrainment of fish, fish larvae, and fish eggs at the San Juan intake system. BO at 144. First, pursuant to the Pumping Plan, APS has reduced the intake flow velocity. The Pumping Station has two independent pump trains with separate intake screens and suction sumps. APS connected the sumps, which has the effect of reducing the screen-approach and through-screen velocities by up to 50 percent during one train operation. With the closure of Units 1, 2, and 3, FCPP will maintain one pump train operation the majority of the time. Approach velocities toward the screens are now approximately 0.38 feet per second. Second, APS is implementing strategic pump outages during certain periods of the year to minimize inadvertent take of fish eggs and larvae, including periods when Colorado pikeminnow stocking occurs upstream of the pump station and when FWS determines that Colorado pikeminnow are spawning upstream. Third, APS commissioned an engineering investigation to evaluate optimal intake screen opening size, which concluded that the current screen size openings are optimal.9 Finally, APS has agreed to fund substantial recovery actions in the San Juan River Basin to create, maintain, and/or improve habitat for endangered fish species. *See* BO at 146-47. These measures include (among others) funding of fish passage at the APS weir, monitoring and management of fish habitat, and funding of studies that will help recovery and adaptive management efforts. *See* BO at 146-48. The measures taken pursuant to the Pumping Plan have resulted in major changes to the San Juan River intake system.

APS agrees with the Proposed Permit's determination that FCPP's closed-cycle recirculating system and Pumping Plan constitute the best technology available (BTA) for impingement and entrainment pursuant to EPA's CWA § 316(b) regulations. For permits like the FCPP permit, which were applied for before October 14, 2014, and issued after October 14, 2014, the permit

writer may make a BTA determination without requiring the facility to submit the information required in 40 C.F.R. § 122.21(r). *See* 40 C.F.R. § 125.98(g). EPA's regulations contemplate that, for such permits, the permit writer should require submittal of information necessary under 40 C.F.R. §§ 122.21(r) in the subsequent permit renewal. *See* 40 C.F.R. § 125.98(b)(ii)(6). That is exactly what the Region has done in the Proposed Permit, which would require APS to submit applicable materials under 40 C.F.R. § 122.21(r)(1)-(8) along with submission of the next FCPP renewal application. *See* Proposed Permit at 12. The 2015 BO and its supporting analyses provide extensive information on the facility's intake struc
ture and a robust evaluation of potential environmental effects, which the Region has drawn upon for its BTA determination.

As the Proposed Permit recognizes, FCPP uses a "closed-cycle recirculating system," which is defined by EPA regulations as follows:

Closed-cycle recirculating system means a system designed and properly operated using minimized make-up and blowdown flows withdrawn from a water of the United States to support contact or non-contact cooling uses within a facility, or a system designed to include certain impoundments. A closed-cycle recirculating system . . . includes a facility with wet, dry, or hybrid cooling towers, a system of impoundments that are not waters of the United States, or any combination thereof. A properly operated and maintained closed-cycle recirculating system withdraws new source water (make-up water) only to replenish losses that have occurred due to blowdown, drift, and evaporation.

40 C.F.R. § 125.92(c). As explained above, FCPP operates a system that uses minimized make-up and blowdown flows withdrawn from the San Juan River, a water of the United States, to support cooling uses within the facility. FCPP's system withdraws make-up water to replenish losses that have occurred due to blowdown, drift, and evaporation within Morgan Lake and the cooling system. 99 percent of the water withdrawn from the San Juan River is reused for cooling purposes. Cooling water passes through the FCPP condenser and other components of the cooling system and is reused for cooling multiple times. Accordingly, the Proposed Permit correctly determines that the FCPP's system falls squarely within the "closed-cycle recirculating system" definition set forth at § 125.92(c).

EPA's § 316(b) regulations do not set a national BTA for entrainment. Instead, the permit writer is instructed to make a site-specific determination. EPA recognized in its 2014 rulemaking that "closed-cycle recirculating systems reduce entrainment (and impingement) to the greatest extent and are the most effective performing technology." 79 Fed. Reg. 48,300, 48,340 (Aug. 15, 2014) (2014 § 316(b) Rule). EPA's regulations provide that operation of a closed-cycle recirculating system can satisfy BTA for entrainment. *See* 40 C.F.R. § 125.94(d). Here, the Region reasonably determined that FCPP's existing closed-cycle recirculating system, operated as set forth in the aforementioned Pumping Plan, is BTA for entrainment.

As to impingement mortality, EPA's § 316(b) regulations set forth seven compliance options for impingement mortality BTA. One of the compliance options is operation of a closed-cycle recirculating system, as defined at § 126.92(c), with an additional requirement to conduct daily intake flow monitoring or daily calculation of the cycle of concentrations. *See* 40 C.F.R. § 125.94(c)(1). The regulations also provide that "[i]f the [permit writer] determines that the site-specific BTA standard for entrainment . . . requires performance equivalent to a closed-cycle recirculating system . . . your facility will comply with the impingement mortality standard for

that intake." 40 C.F.R. § 125.94(d). The preamble to EPA's 2014 § 316(b) Rule stated that a closed-cycle recirculating system will typically reduce impingement by more than 95 percent. 79 Fed. Reg. at 48,345 (Aug. 15, 2014). EPA anticipated that approximately 18 percent of intake structures already have an existing closed-cycle recirculating systems and would satisfy impingement mortality BTA with this compliance option. *Id.* The Region reasonably determined that FCPP's existing closed-cycle recirculating system, operated as set forth in the aforementioned Pumping Plan, is BTA for impingement.

Finally, under 40 C.F.R. § 125.94(g), the permit writer may establish additional control measures, monitoring requirements, and/or reporting requirements to protect Federally listed threatened and endangered species and critical habitat, including, for example, measures identified by FWS. In the Proposed Permit, the Region establishes several additional measures, including two measures identified in the 2015 FWS BO—implementation of the Pumping Plan, and sufficiently sensitive sampling methods for mercury and selenium—and additional monitoring requirements. *See* Proposed Permit at 12. APS supports the inclusion of these requirements in the Proposed Permit.

RESPONSE 21:

See Response 12, above. *See also* Responses 9 and 13.

COMMENT 22: The Region Has Fulfilled its ESA § 7 Consultation Obligations
As described in the Proposed Permit and Draft Fact Sheet, the Region has fulfilled its ESA § 7 consultation obligations. ESA § 7(a)(2) requires that a federal action agency, "in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of [listed] species or result in the destruction or adverse modification of [critical habitat]." 16 U.S.C. § 1536(a)(2). EPA consulted with FWS as part of the OSMRE and EPA consultation for the FCPP and Navajo Mine Energy Project (also commonly discussed as the 2015 Lease Renewal), which explicitly included the FCPP NPDES permit action. BO at 26-27, 121. The 2015 BO evaluated impingement and entrainment at the FCPP intake. The BO determined that, with the conservation measures, the lease action (including the FCPP NPDES permit renewal) "is not likely to jeopardize the continued existence of the Colorado pikeminnow and the razorback sucker." BO at 133. It is appropriate for EPA to rely on the 2015 BO, and indeed the Region has incorporated the relevant reasonable and prudent measures identified by the 2015 BO into the Proposed Permit.

RESPONSE 22: *See* Discussion at Responses #15A through #15L, above.

COMMENT 23: APS Supports the Inclusion of the Seepage Management and Monitoring Plan

APS supports EPA's decision to include the Seepage Management and Monitoring Plan in the Proposed Permit in order to prevent and control potential discharges from the seepage intercept and water recycle system to navigable waters. As APS has explained, the seepage management system involves intercepting groundwater before seeps can emerge from the ground and travel over land, collecting the intercepted water in a containment trench, and then returning the captured water to the plant for reuse as make-up water for the plant's FGD system. The seepage management system is designed to prevent any discharges of waters collected by the system to the nearby Chaco River as well as to capture groundwater flows before they emerge as seeps that could enter that water, a jurisdictional water.

Because the FCPP is located in an arid region, reuse of available water is important to the operation of the plant. As a result, the Seepage Management and Monitoring Plan has been included in prior FCPP NPDES permits both to allow for this reuse and to address risks posed by potential discharges from the system to navigable waters. APS fully supports and expressly requests that the final permit include the Seepage Management and Monitoring Plan to allow for the continued operation of the seepage intercept and recycle systems.

In this regard, EPA has long interpreted the CWA to authorize NPDES permits to impose non-numeric "best management practices" to control pollution when "[n]umeric effluent limitations are infeasible." 40 C.F.R. § 122.44(k); *see also* Proposed Permit at 18 (defining "best management practices" to include "maintenance procedures, and other physical, structural and/or managerial practices to *prevent* or reduce pollution of waters of the U.S.") (emphasis added). For example, EPA has authorized the use of "management practices, control techniques," and other non-numeric standards in permits for discharges of stormwater from municipal separate storm sewer systems. 42 U.S.C. § 1342(p)(3)(B)(iii). Controlling the risks of seepage through the intercept and reuse system is akin to controlling unconventional discharges of stormwater during heavy rainfall events. Given the unpredictable nature of any potential discharges, numerical limits are not feasible to address them. Rather, best management practices are the correct approach under the NPDES program—in fact, based on many years of experience at the plant, the Seepage Management and Monitoring Plan has proven to be the best means to prevent potential discharges to jurisdictional waters, and that plan should remain in the permit to ensure ongoing protection.

RESPONSE 23:

See Response 7A, above. EPA agrees that the seep management system is appropriately included in the Permit.

COMMENT 24: EPA's Proposed Waiver of CWA § 401 Water Quality Certification is Appropriate

Under CWA § 401, 33 U.S.C. § 1341, a federal agency cannot issue a federal permit or license for an activity that may result in a discharge to WOTUS until the state or authorized tribe where the discharge originates has granted or waived § 401 water quality certification. Federal licenses and permits subject to § 401 water quality certification include NPDES permits issued by EPA. EPA provides § 401 certification in cases where a state or interstate agency has no certification authority. 33 U.S.C. § 1341(a)(1); 40 C.F.R. § 131.5(c). As a result, EPA typically acts as the certifying authority on tribal lands where, as is the case for FCPP, the tribe lacks certification authority.10 The principal mechanism for establishing water quality standards for Indian reservation waters is through 33 U.S.C. § 1377(e), under which a tribe interested in establishing water quality standards must obtain "Treatment in the Same Manner as a State" (TAS) authority from EPA. Tribes with TAS designation are authorized to adopt and submit water quality standards to EPA for approval, where such standards must meet the same requirements applicable to states. 33 U.S.C. § 1377(e). Here, even though FCPP is located within the Navajo Nation, the TAS determination was structured such that EPA retained responsibility for Morgan Lake under CWA §§ 303(c) and 401.

Although APS believes that CWA § 401 water quality certification requirements set forth at 40 C.F.R. Part 121 do not apply to NPDES permits,12 it has been argued that APS, as the applicant, is required to submit a request to start the CWA § 401 water quality certification process for the permit. Therefore, out of an abundance of caution, on March 27, 2019, APS sent a letter to Mr. Tomás Torres, Director of EPA Region 9 Water Division, formally requesting that EPA, as the agency with CWA § 401 water quality certification jurisdiction, either certify that the discharges to be authorized by the Proposed Permit will not violate applicable water quality standards, or waive water quality certification. APS provided all of the application materials describing the project and its impacts to Gary Sheth in the Region 9 permits office. In its public notice, Region 9 proposes to waive § 401 certification "[g]iven the aquatic resources protected by the certification program are the same as the aquatic resources being protected pursuant to the Proposed Permit and the Proposed Permit contains conditions necessary to achieve compliance with the CWA . . . ." The Region asks for public comments on its proposed waiver.

It is appropriate for the Region to waive § 401 water quality certification for the Proposed Permit. The decision to deny, certify, or condition permits or licenses is based, in part, on the proposed project's compliance with water quality standards. 33 C.F.R. § 1341(a)(2); 40 C.F.R. § 124.53(e). "'The purpose of the certification mechanism ... is to assure that Federal licensing or permitting agencies cannot override State water quality requirements.'" *Sierra Club v. U.S. Army Corps of Eng'rs*, No. 18-1173, 2018 WL 6175671, at *8 (4th Cir. Nov. 27, 2018) (quoting S. Rep. No. 92-414, at 69 (1971)). Here, there are no state or Navajo Nation water quality standards applicable to Morgan Lake. In its role as both the permit writer and certification authority, it is entirely appropriate for the Region to waive certification because it has imposed conditions in the Proposed Permit that are necessary to achieve compliance with the CWA.

RESPONSE 24: EPA's regulations at Section 124.53(a) state that EPA may not issue an NPDES permit "until a certification is granted or waived in accordance with (Section 401)."

Here, where EPA is both the certifying and the permitting authority, and where the purpose of both the certification and the permit is to protect water quality, it is appropriate for EPA to meet its obligations under Section 401 by waiving the certification requirement. EPA agrees that the provisions of Part 121 do not apply to this issuance of an NPDES permit, which is covered by the more specific provisions of Part 124, Subpart D. *See In re Ketchikan Pulp Company*, 6 E.A.B. 675, 686, n. 14, NPDES Appeal No. 95-6, 1996 WL 7780308 (Dec. 10, 1996).