Sheth, Gary

From:	John Barth <barthlawoffice@gmail.com>
Sent:	Wednesday, February 18, 2015 2:14 PM
To:	Sheth, Gary; Smith, DavidW
Cc:	mike@sanjuancitizens.org; Erik S.G.; Travis Ritchie; Rachel Conn; Lori Goodman; Mary Whittle; tmckinnon@biologicaldiversity.org; Michael Saul; Shannon Fisk
Subject:	Comment letter, Four Corners Power Plant Draft NPDES Permit
Attachments:	FCPP NPDES comment letter FINAL 02182015.pdf; Exhibit 24 Final_NNLFWQI_Report.pdf

Dear Mr. Sheth and Mr. Smith

Attached please find a comment letter submitted on behalf of a coalition of conservation organizations regarding EPA Region 9's Draft NPDES permit for the Four Corners Power Plant. Yesterday I sent to you by overnight mail 2 CD/DVDs containing the exhibits to this comment letter. The only exhibit missing from those CD/DVDs was Exhibit 24, which is attached hereto.

Please confirm receipt of this comment letter, exhibit 24, and the 2 CD/DVDs.

Thank you for the opportunity to comment. Please keep me apprised of all future actions with regard to this matter. Thank you.

--

John Barth
Attorney at Law
P.O. Box 409
Hygiene, CO 80533
(303) 774-8868
barthlawoffice@gmail.com

Arizona Public Service Company
FOUR CORNERS STEAM ELECTRIC STATION
P.O. Box 355 • FRUITLAND, NEW MEXICO 87416

January 8, 2015

CERTIFIED MAIL

Mr. Gary Sheth
NPDES Permits Section
Water Division (WTR-2-3)
U.S. EPA Region 9
75 Hawthorne Street
San Francisco, CA 94105

RE: Comments on Proposed Four Corners NPDES Permit No. NN0000019

Arizona Public Service Company (APS) appreciates the opportunity to provide comments on the Environmental Protection Agency's (EPA or Agency) proposed NPDES draft permit and fact sheet for the Four Corners Steam Electric Station.

As discussed in the attached comments, APS would like to point out a few technical discrepancies found in the proposed draft NPDES permit and fact sheet. APS respectfully requests that EPA consider these comments in the development of the final NPDES permit.

If you have any questions regarding this submittal, please contact Craig Chavet by phone at (602) 250-5310.

Sincerely,

Thomas Livingston
Four Corners Plant Manager
Four Corners Steam Electric Station

cc: Patrick Antonio, NNEPA

Enclosure

I. Draft Permit

a. Part 1, Section B.2 Surface Seepage

Section B.2, states in part, "Surface seepage intercept systems shall be constructed and operated for existing and future unlined ash ponds. Water collected by these intercept systems shall be returned to the ash ponds, or evaporation ponds."

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

b. Part 3, Section A, Seepage Management and Monitoring Plan

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

II. Draft Fact Sheet

a. Page 1, Contact Person

The title of the contact person, Tom Livingston, is currently stated as Site Manager. His actual title is "Plant Manager".

III. Draft Fact Sheet and Permit

As part of arms-length negotiations between APS and the Navajo Nation, the Navajo Nation granted APS a covenant not to regulate. Specifically, the Four Corners Power Plant owners' lease with the Navajo Nation provides that the Navajo Nation "will not directly or indirectly regulate or attempt to regulate the Company or the construction, maintenance or operation of the power plant and transmission system by the Company, or its rates, charges, operating practices, procedures, safety rules, or other policies or practices. . . ." This covenant not to regulate was approved by or otherwise reaffirmed by the Navajo Nation in the original 1960 Lease, the 1966 Supplemental and Additional Lease, the 1985 Lease Amendment, and again in 2011 with Lease Amendment No. 2 and Lease Amendment No. 3. The Department of Interior has similarly approved the lease and amendments containing the covenant not to regulate each time this question was before it. Moreover, the covenant not to regulate has been upheld by

the United States Court of Appeals for the Ninth Circuit as lawful and binding on the Navajo Nation. In *Arizona Pub. Serv. Co. v. Aspaas*, 77 F.3d 1128, 1135 (9th Cir. 1995), the court held that "[t]he clear language contained in the Lease Documents, including the Non-regulation Covenant," demonstrate an "unmistakable waiver" by the Navajo Nation of regulatory authority at Four Corners." Ten years later, the Navajo Nation Attorney General acknowledged the covenant not to regulate in an amicus brief filed in *Dixon v. Babcock & Wilcox Constr. Co.*, No. NLC 2005-030 (Navajo Nation Labor Comm'n), when it quoted *Aspaas* with approval. Finally, just last year, in *Salt River Project Ag. Improvement & Power Dist. v. Lee*, No. CV-08-08028-PCT-JAT, 2013 WL 321884 (D. Ariz. Jan. 28, 2013), the United States District Court for the District of Arizona read the plain language of the covenant not to regulate to prohibit regulation of the "operations" of Navajo Generating Station, whose lease contains a similar covenant not to regulate, to foreclose regulation of "how the [generating station] is run." In upholding applicability of the covenant not to regulate, the court placed special weight on the term "operations" contained in the covenant and adopted the plain meaning of "operate" to mean "the exertion of force or influence; working, activity; a manner of working, the way in which a thing works."

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

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

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

- Section VI.B: *"and Navajo Nation Water Quality Standards"*

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

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

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

As discussed above, making Clean Water Act Section 401 certification requirements and Navajo Nation water quality standards applicable to activities affecting water quality on the reservation under the Four Corners Power Plant NPDES permit would be the equivalent of finding the covenants not-to-regulate to be of no effect, in contradiction of existing federal case law. APS, therefore, requests that EPA not include the italicized language above in the final NPDES permit and Fact Sheet.

LAW OFFICE OF
JOHN M. BARTH

P.O. Box 409 Hygiene, Colorado 80533 (303) 774-8868 barthlawoffice@gmail.com

February 18, 2015

By email: sheth.gary@epa.gov

Gary Sheth (WTR-2-3)
Water Division
U.S. EPA Region 9
75 Hawthorne Street
San Francisco, CA 94105

Re: Comments on draft renewal NPDES permit for Four Corners Power Plant, Permit NN0000019

Dear Mr. Sheth:

On behalf of San Juan Citizens Alliance, Center for Biological Diversity, Dine Citizens Against Ruing the Environment, Amigos Bravos, Sierra Club, Earthjustice, and Western Environmental Law Center (collectively referred to as the "Conservation Organizations") I am submitting comments on EPA's Draft renewal NPDES Permit for the Four Corners Power Plant, NPDES Permit # NN0000019 to Arizona Public Service Company "that would permit the discharge 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] On February 17, 2015 a copy of the exhibits to this comment letter were sent to you by overnight mail on two CD/DVDs. Please confirm receipt of this comment letter and the CD/DVDs.

I. Factual Background

The Four Corners Power Plant ("FCPP"), a coal burning power plant, is located on the Navajo Nation. The FCPP has operated as a 5-unit coal plant, but units 1, 2, and 3 were retired from service on December 31, 2013. Units 4 and 5 continue to operate and are required to install selective catalytic reduction ("SCR") on or before July 31, 2018 to reduce nitrogen oxide

[1] EPA Public Notice, p. 1. On January 15, 2015, EPA Region 9 sent me a letter along with an index to its Administrative Record for this permit proceeding, which included the Public Notice. *See,* Exhibit 28 hereto. This comment letter incorporates by reference all of the documents identified in EPA's Index to the Administrative Record. Since EPA admits that these documents will be part of its Administrative Record for this proceeding, the Conservation Organizations are generally not attaching to this comment letter the documents that are already part of the Administrative Record.

emissions pursuant to EPA's Clean Air Act regional haze Best Available Retrofit Technology ("BART") determination for the plant.[2]

The FCPP currently disposes of its coal combustion residuals ("CCR's") in on-site ponds. FCPP historically disposed of CCRs in mine pits at the adjacent and related Navajo coal mine. The federal government is currently preparing a comprehensive environmental impact statement ("EIS") pursuant to the National Environmental Policy Act ("NEPA") that focuses largely on the proposed expansion of CCR disposal facilities to allow FCPP to continue operating for up to 30 more years.[3] EPA is a cooperating agency in this EIS process. A coalition of environmental organizations submitted written comments on the draft EIS for the FCPP/Navajo Mine, a copy of which is attached hereto and incorporated herein by reference.[4]

An NPDES permit was originally issued to the FCPP on July 1, 1977.[5] The term of an NPDES permit cannot exceed 5 years in length. The last NPDES renewal permit for FCPP was issued by EPA in 2001, or nearly 14 years ago. On May 16, 2014, San Juan Citizens Alliance and Center for Biological Diversity issued a 60-day notice of intention to sue letter to EPA alleging that EPA has unreasonably delayed reissuing the renewal NPDES permit.[6]

On November 13, 2014 EPA issued a Notice of Proposed Action proposing to issue a renewal NPDES Permit, which is the subject of this comment letter. Under the terms of EPA's public notice, the comment period was scheduled to expire on January 12, 2015. However, at the time it issued its public notice, EPA had failed to make publicly available a number of documents in EPA's administrative record for its proposed decision. As such, the Conservation Organizations requested that EPA make these documents available to the public to allow a thorough review of EPA's proposed action. As of December 29, 2014 EPA had posted some, but not all, additional administrative record material to its website. Thus, on December 29, 2014 SJCA requested an extension of time to submit comments on EPA's draft renewal NPDES permit.[7] EPA formally granted an extension of the comment period until February 18, 2015.[8] As such, this comment letter is timely submitted.

---

[2] 77 Fed. Reg. 51620 (August 24, 2012).

[3] The Office of Surface Mining, Reclamation, and Enforcement issued a Draft Environmental Impact Statement which is available at: http://www.wrcc.osmre.gov/initiatives/fourCorners/documentLibrary.shtm. The DEIS is incorporated herein by reference.

[4] Exhibit 1 hereto (FCPP DEIS comment letter). A copy of the conservation organization's exhibits to the DEIS comment letter were included on a CD/DVD sent to Gary Sheth at EPA Region 9 by overnight mail on February 17, 2015.

[5] Exhibit 2 hereto (EPA Inspection Report, p. 3). In order to conduct a proper anti-backsliding analysis, we request that the EPA produce to the Conservation Organizations all prior FCPP NPDES permits and allow for public comment on the same prior to finalizing this permit.

[6] Exhibit 3 hereto (60-day notice of intent letter).

[7] Exhibit 4 hereto (emails between Barth and Sheth requesting comment period extension).

[8] Exhibit 2 hereto.

II. Legal Background

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.[9] Toxic metal discharges from steam electric power can pose a serious threat to public health and the environment.[10] 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.[11]

Under the Clean Water Act, an NPDES permit must contain effluent limits that "restore" and "maintain" the quality of the receiving water body.[12] At a minimum, EPA must set technology based effluent limits ("TBELs") that reflect the ability of available technologies to reduce or eliminate pollution discharges.[13] 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.[14]

EPA is in the process of revising its effluent limitations and guidelines ("ELGs") to control discharges of pollutants into the waters of the U.S. from coal-fired power plants.[15] These revised ELGs will update the TBEL requirement.[16] These ELGs have not been updated since 1982.[17] The 1982 ELGs were based on settling ponds as the technology for removing only Total Suspended Solids ("TSS").[18] EPA has found that such ponds are ineffective for removing toxic pollutants such as dissolved metals and nutrients.[19] A coalition of environmental organizations submitted written comments on EPA's June 2013 proposed revision to the ELGs.[20] We request that EPA review the environmental coalition comment letter and incorporate our suggestions into the FCPP renewal NPDES permit.

---

[9] Notice of Availability of Preliminary 2008 Effluent Guidelines Program Plan, 72 Fed. Reg. 61,335- 61,342 (Oct. 30, 2007).
[10] *See,* U.S. Envtl. Prot. Agency, Steam Electric Power Generating Point Source Category: Final Detailed Study http://www.epa.gov/waterscience/guide/stream/finalreport.pdf.U.S.
[11] *Id.*
[12] 33 U.S.C. §1251(a)(2011).
[13] 33 U.S.C. §§1311, 1342(a).
[14] 33 U.S.C. §1312(a); 40 C.F.R. §122.44(d)(i)(2010).
[15] 78 Fed. Reg. 34432. *See also, http://www.gpo.gov/fdsys/pkg/FR-2013-06-07/html/2013-10191.htm* which is incorporated herein by reference.
[16] 33 U.S.C. §§1311(b), 1314(b).
[17] EPA August 20, 2013 Power Point Presentation "Reducing Toxic Water Pollution from Power Plants" p. 6 attached hereto as Exhibit 5.
[18] *Id.*
[19] *Id.*
[20] *See,* Comments of Thomas Cmar, Earthjustice, et. al., attached hereto as Exhibit 6 and also found at Docket Number EPA–HQ–OW–2009–0819 at www.regulations.gov (which comments and attachments are incorporated herein by reference).

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.[21] Some of these best available technologies are described in the attached comment letter on EPA's proposed revision to the ELGs.

The existing ELGs for the Steam Electric Category do not address pollutants in scrubber discharges or discharges from coal combustion waste landfills and impoundments. EPA has made clear that "state(s) must include technology-based effluent limitations in its permits for pollutants not addressed by the effluent guidelines" for the Stream Electric category, noting that the "CWA requires permitting authorities to conduct the 'BPJ' analysis...on a case-by-case basis for those pollutants in each permit."[22]

This Clean Water Act requirement does not only apply to discharges of FGD wastewater; rather, EPA must conduct a BPJ analysis for any pollutant not addressed by the ELGs, including discharges from coal combustion waste landfills and impoundments.[23] In fact, EPA stressed the importance of BPJ limitations for these types of discharges over ten years ago when it promulgated ELGs for the landfills point source category.[24] EPA declined to promulgate effluent guidelines for leachate generated at captive landfills, which are landfills "associated with an industrial or commercial operation" such as power plant ash landfills "because NPDES writers must impose limitations on discharges of these wastewater sources that are developed on a case-by-case, best professional judgment (BPJ) basis."[25] EPA emphasized that the decision would "not [] allow these wastewater sources to escape treatment. Landfill wastewater at captive facilities is and will remain subject to treatment and controls on its discharge. The CWA requires wastewater discharges to meet technology-based effluent limitations on the discharge whether the mechanism for imposing these limitations is EPA-established national effluent limitation guidelines or a permit writer's imposition on a case-by-case basis of BPJ limitations."[26]

The longstanding legal obligation to set TBELs in NPDES permits for all pollutants not addressed by the Steam Electric ELGs was recently confirmed by EPA commenting on NPDES permits for Steam Electric plants.[27] Because toxic pollutants in scrubber and other coal

---

[21] *Id.* at 183. 33 U.S.C. §1311(b)(2)(A); 40 C.F.R. §122.44.
[22] *See,* Memorandum from the Director of the Office of Wastewater Mgmnt., U.S. Envtl. Prot. Agency on NPDES Permitting of Wastewater Discharges from Flue Gas Desulfurization and Coal Combustion Residuals Impoundments at Steam Electric Power Plants 2 (June 7, 2010)(emphasis added) attached hereto as Exhibit 7.
[23] *Id. (emphasis added);* 33 U.S.C. §1311(b); 40 C.F.R. §§122.44(a)(1), 123.25, 125.3.
[24] 65 Fed. Reg. 3008, 3012 (Jan. 19, 2000).
[25] *Id.*
[26] *Id.*
[27] Letter from James A. Hanlon, Director, Office of Wastewater Management, EPA Headquarters to Jennifer Peterson, Environmental Integrity Project and Dianne Dasalu-Joffee, Chesapeake Climate Action Network, Inc. (April 26, 2012)(attached hereto as Exhibit 8).

combustion wastewater are not addressed in ELGs, EPA must set TBELs on a case-by-case basis for the pollutants in these wastewater discharges.

The Conservation Organizations submit these comments on EPA's Draft renewal NPDES Permit for the FCPP and request that EPA amend the Draft permit to incorporate these comments.

III. Comments

1. **EPA's Draft permit arbitrarily relies on apparently unenforceable Navajo Nation Water Quality Standards.**

EPA's Draft permit arbitrarily relies on Navajo Nation Water Quality Standards despite the fact that such standards apparently cannot be used to regulate the discharge of pollutants from the FCPP. On December 1, 1960, the Navajo Nation and the developers of the FCPP entered into an "Indenture of Lease" governing the construction and operation of the FCPP on the Navajo Nation.[28] The lease was subsequently revised.[29] 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..."[30]

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.[31] 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.[32] In light of this appeal, EPA amended its final NPDES permit for the FCPP removing certain provisions applying the Navajo Nation Water Quality Standards and allowing regulation by the Navajo Nation.[33]

In 2006 EPA approved Navajo Nation's Section 518 "treatment as State" application to

---

[28] Exhibit 9 hereto (Indenture of Lease excerpt).
[29] Exhibit 10 (September 1978 Lease Amendment) and Exhibit 11 (April 1985 Lease Amendment).
[30] Exhibit 10, p. 41, ¶ 22.
[31] Exhibit 31 hereto.
[32] *Id.*
[33] *Id.*

adopt tribal water quality standards, but this approval did not include Morgan Lake.[34] 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."[35]

EPA subsequently approved the Navajo Nation's Water Quality Standards, including those for Morgan Lake.[36] The Navajo Nation's promulgation of water quality standards (approved by EPA) for Morgan Lake, No Name Wash, Chaco River, and/or the San Juan River appears to constitute a direct and/or indirect regulation of the FCPP owners, operation of the FCPP, its operating practices, and/or procedures because these water quality standards could restrict the water pollution being emitted from the plant. Under the terms of the current lease, the Navajo Nation's Water Quality Standards for these watersheds appear unenforceable against the owners of the FCPP. Accordingly, EPA's reliance on the 2007 Navajo Nation Water Quality standards appears to be arbitrary and capricious because such standards may not be applied to the operations of the FCPP.

EPA may not defer, or delay, any further its identification of which water quality standards apply to this permitting action. As such, EPA must apply state, federal, or tribal water quality standards to the operation of the FCPP that protect all uses, including but not limited to aquatic life, wildlife, livestock watering, primary recreational contact, and domestic water use.[37] 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."[38] EPA needs to explain its legal basis for this statement in light of the lease, and relevant statues and case law.

EPA should amend its Draft permit, fact sheet, and reasonable potential analysis to specifically identify which water quality standards (state, federal, or tribal) it is applying to each receiving water (Morgan Lake, No Name Wash, Chaco River, and the San Juan River) and why.

---

[34] Exhibit 30 hereto, page 2 of Decision Document.
[35] Exhibit 30, p. 11, footnote 4 of Decision Document.
[36] Exhibits 16 and 18 hereto.
[37] In the event EPA ignores this comment and continues to rely on the 2007 Navajo Nation Water Quality Standards for this permit, EPA's reliance on such standards is also arbitrary and capricious for the additional reasons discussed in this comment letter.
[38] Exhibit 2, p. 3.

After this clear identification of water quality standards and the legal basis for each, we request that EPA re-issue its Draft permit, fact sheet, and reasonable potential analysis for a new public comment period.

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

2. EPA's Draft Permit Fails to Regulate All Point Sources that Discharge or May Discharge Into Navigable Waters

Section 301 of the Clean Water Act mandates that all "discharge of pollutants" be subject to a permit or otherwise comply with the CWA. 33 U.S.C. §1311(a). The term "discharge of pollutant" is defined as "any addition of any pollutants to navigable waters from any point source..." 33 U.S.C. §1362(12). The term "point source" is defined to include "any discernable, confined and discrete conveyance...from which pollutants are **or may be discharged."** 33 U.S.C. §1362(14)(emphasis added). EPA's Draft Permit is deficient because it fails to require permitting for all point sources of water pollution that discharge, or may discharge, pollutants into waters of the United States from the FCPP: namely, 1) seepage from the coal ash facilities and related contamination; 2) the seepage from the garage fueling area and related contamination; 3) the discharge from the Morgan Lake spillway; and, 4) the discharge of Total Dissolved Solids and other pollutants into Morgan Lake from the FCPP and from Morgan Lake into receiving waters.

2.1 EPA must permit the seepage from the coal ash facilities.

An October 4, 2007 EPA Region 9 site inspection report of FCPP revealed seepage from the FCPP coal ash disposal facilities along the eastern bank of the Chaco River.[39] These seeps have been previously documented to be emanating from the FCPP coal ash facilities. These seeps are more fully described in a letter from APS to OSM dated April 3, 2013.[40] The May 8, 2012 EPA Inspection Report also states:

> Sanitary, fly ash and FGD blowdown wastewater is not regulated in the NDPES Permit. Although there is no discrete outfall from the fly ash ponds, the ponds do have a potential to discharge to Waters of the U.S. through subsurface leaching.[41]

The lease between the Navajo Nation and the owners of the FCPP specifically allows the

[39] Exhibit 12 hereto. (EPA Inspection Report (October 4, 2007).
[40] Exhibit 13 hereto (APS letter to OSM April 3, 2013).
[41] Exhibit 12 at p. 5.

discharge of coal ash seepage into Chaco River and its tributaries.[42] 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."[43]

This lease provision makes it clear that the Navajo Nation has authorized the discharge of wastewater from the ash disposal areas into surface waters. The FCPP power plant and related coal ash facilities are man-made point sources. Pollutants "are or may be discharging" from these point sources into navigable waters. 33 U.S.C. §1362(14). As such, EPA has a duty to subject the historic and existing seepage from the coal ash facilities to NPDES permitting requirements. EPA's Draft permit fails to comply with this obligation. The Draft permit fails to undertake a BPJ analysis of pollutants discharging from the coal ash facilities, fails to impose TBELs for pollutants discharging from the coal ash facilities, and fails to impose WQBELs for pollutants discharging from the coal ash facilities.

Instead of imposing effluent limitations and monitoring requirements on the seepage, the Draft permit contains the following conditions to deal with the substantial problem of seepage from coal ash disposal facilities at the FCPP, a problem that has been documented for at least the past 10 years.

> "2. Surface Seepage
> "Surface seepage intercept systems shall be constructed and operated for existing and future unlined ash ponds. Water collected by these intercept systems shall be returned to the ash ponds, or evaporation ponds. All provisions of the Seepage Monitoring and Management Plan as described below in the Special Conditions Section must be implemented.
> "Part III. SPECIAL CONDITIONS
> "A. Seepage Management and Monitoring Plan
> A Seepage Monitoring and Management Plan shall be established and implemented to determine the source of and pollutants in seepages below all ash ponds that receive or received coal combustion residue either currently or in the past. The Plan shall be established and submitted to EPA within 120 days of the issuance of this permit. The Plan shall at a minimum do the following:
> 1. Identify all seeps within 100 meters down gradient of such impoundments;
> 2. Conduct sampling (or provide summary of current data if sufficient and valid) of seepages for boron, mercury, nickel, selenium, uranium, zinc and total dissolved solids.
> 3. Provide information about number of flows observed and range of flows observed.
> 4. Provide information about exceedances of any human health, livestock, or chronic or acute aquatic life standards as established in the 2007 NNWQS in the samples collected for analysis."

---

[42] Exhibit 9 hereto, p. 6, ¶2)c. (Indenture of Lease)
[43] *Id.*

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

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

2.2. <u>The Draft permit fails to regulate discharges from the garage fueling area and contamination.</u>

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.[44] The FCPP Garage Fueling Area is immediately adjacent to, and nearly surrounded by, Morgan Lake.[45] In the mid-1980's it was reported that "diesel was bubbling up" to the surface of Morgan

[44] Exhibit 14 hereto (2013 Petroleum Spill Report) and Exhibit 15 (Field Sampling Plan 2013).
[45] Exhibit 14 at Figure 1. *See also,* Exhibit 15 hereto (2013 FCPP Field Sampling Plan at Figure 1 and 2).

Lake.[46] It was found that there were releases of petroleum substances from the FCPP Garage Fueling Area into Morgan Lake.[47] The results of the 2013 investigation revealed that petroleum substances are still present in the soil and groundwater at the FCPP Garage Fueling Area.[48]

The Draft permit fails to impose permitting requirements on the discharge of petroleum substances from the FCPP Garage Fueling Area into Morgan Lake. The Draft permit fails to undertake a BPJ analysis, fails to impose TBELs, and fails to impose WQBELs for the discharges from the FCPP Garage Fueling Area. The permit should include effluent limits for all pollutants expected to be found in fuels used at FCPP, including, but not limited to benzene. The discharges from the FCPP Garage Fueling Area also violates the Navajo Nation narrative water quality standards because they "[c]ause solids, oil, grease, foam, scum, or any other form of objectionable floating debris on the surface of the water body; may cause a film or iridescent appearance on the surface of the water body; or that may cause a deposit on a shoreline, on a bank, or on aquatic vegetation."[49] 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. In the event EPA claims that these discharges are covered under some other CWA discharge permit (i.e., stormwater) please identify the permit and the basis for such coverage. Then please reissue the draft permit and fact sheet for public comment on this issue.

2.3. <u>The Draft permit fails to regulate discharges from Morgan Lake via the spillway.</u>

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.[50] EPA's Draft permit states that Morgan Lake is a man-made cooling water pond and fails to treat it as a water of the United States. While we disagree with this conclusion, under EPA's theory it must treat Morgan Lake as a point source and regulate all discharges from it. EPA's inspection report admits that such discharges should be permitted.[51] EPA's Draft permit is deficient because it fails to do so. EPA must permit all discharges from Morgan Lake and undergo the appropriate BPJ analysis, and impose TBELs and/or WQBELs in this renewal permit.

---

[46] *Id.*
[47] *Id.*
[48] *Id.*
[49] Exhibit 16 hereto (Navajo Nation 2007 Water Quality Standards, §202A.5.).
[50] Exhibit 17 hereto (EPA 2012 Inspection Report, p. 4).
[51] *Id.* at p. 5.

2.4. 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."[52]

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.[53] Livestock watering is a current use of Morgan Lake, as well as primary contact recreation, aquatic life, and other uses.[54] 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."[55] (emphasis added).

---

[52] Exhibit 17 at p. 4.
[53] Exhibit 18 attached, p. 30 (2004 Navajo Nation water quality standards).
[54] Exhibit 16.
[55] Exhibit 10 (Supplemental and Additional Indenture of Lease, Four Corners) pp. 54-55, ¶35a.

The above lease provision requires monitoring of TDS "at the plant release point" prior to Outfall 001A and requires adoption of an effluent limitation at the same point of release from the plant to ensure that TDS is not increased above the limits established in the lease. Alternatively, this language imposes a water quality standard for TDS in the San Juan River that must be utilized by EPA in making a reasonable potential analysis. EPA's Draft permit is defective because it fails to impose TDS monitoring requirements at the point of release of the discharge from the 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 fact sheet states that, "[t]otal dissolved solids monitoring is required for discharges to tributaries of the San Juan River. These requirements are consistent with those of the previous permit."[56] It appears that EPA's Draft permit violates the anti-backsliding provisions of the Clean Water Act by eliminating effluent limitations and/or required monitoring requirements for TDS. We request that EPA produce all previous NPDES permits for the FCPP so the public can determine whether EPA's Draft permit violates anti-backsliding requirements of the CWA. We then request that EPA allow for public comment on this issue before finalizing the Draft permit.

As noted earlier, we ask that the EPA apply federal, state, lease, or tribal standards for TDS and other pollutant discharges into Morgan Lake, No Name Wash, Chaco River, and the San Juan River. Alternatively, we request that EPA apply the 2004 Navajo Nation TDS standard to Morgan Lake, No Name Wash, and the Chaco River, and apply the lease TDS standards to the San Juan River. We also request that EPA perform a reasonable potential analysis and submit the same for public notice and comment. We also request that EPA collect from the 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.

3. Morgan Lake is a "navigable water", "water of the United States", "water of the Navajo Nation" and "water of the State of New Mexico" and all discharges into Morgan Lake must comply with water quality standards.

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

[56] Exhibit 32 hereto, p. 3.

the San Juan River..."[57]

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

> ***all surface waters*** including, but not limited to, portions of rivers, streams (including perennial, intermittent and ephemeral streams and their tributaries), lakes, ponds, dry washes, marshes, waterways, wetlands, mudflats, sandflats, sloughs, prairie potholes, wet meadows, playa lakes, impoundments, riparian areas, springs, and ***all other bodies or accumulations of water, surface, natural or artificial, public or private, including those dry during part of the year, which are within or border the Navajo Nation. This definition shall be interpreted as broadly as possible to include all waters which are currently used, were used in the past, or may be susceptible to use in interstate, intertribal or foreign commerce.***[58] (emphasis added).

The Navajo Nation has adopted water quality standards for all waters on the reservation.[59] EPA has approved the Navajo Nation's water quality standards.[60] Morgan Lake is designated for the following uses: primary human contact, fish consumption, aquatic and wildlife habitat, and livestock watering.[61] The Navajo Nation water quality standards include both narrative and numerical water quality standards for Morgan Lake.[62] 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.[63] Morgan Lake has numeric water quality standards for a large variety of organic, inorganic, and physical pollutants.[64]

3.1. Morgan Lake is a 'traditional navigable water' because it supports or could support 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

---

[57] EPA Public Notice, p. 1.
[58] Exhibit 16 hereto (Navajo Nation water quality standards 2007, §104, XX.).
[59] Exhibit 16 hereto (Navajo Nation water quality standards 2007).
[60] *See,* http://water.epa.gov/scitech/swguidance/standards/wqslibrary/tribes.cfm (last visited on 1/2/15).
[61] Exhibit 16, p. 27 (Navajo Nation water quality classifications for Morgan Lake 2007).
[62] Exhibit 16 (Navajo Nation water quality standards 2007).
[63] EPA Fact Sheet, p. 5.
[64] Exhibit 16 hereto (2007 Navajo Nation Water Quality Standards).

Water Act" clarifying the meaning of these traditional navigable waters:

> "For purposes of CWA jurisdiction and this guidance, waters will be considered traditional navigable waters if....
>
> • They are waters currently being used for commercial navigation, including commercial waterborne recreation (for example, boat rentals, guided fishing trips, or water ski tournaments); or
>
> • They have historically been used for commercial navigation, including commercial waterborne recreation; or
>
> • They are susceptible to being used in the future for commercial navigation, including commercial waterborne recreation. Susceptibility for future use may be determined by examining a number of factors, including the physical characteristics and capacity of the water to be used in commercial navigation, including commercial recreational navigation (for example, size, depth, and flow velocity.), and the likelihood of future commercial navigation, including commercial waterborne recreation. A likelihood of future commercial navigation, including commercial waterborne recreation, can be demonstrated by current boating or canoe trips for recreation or other purposes. A determination that a water is susceptible to future commercial navigation, including commercial waterborne recreation, should be supported by evidence.

Morgan Lake is currently used for boating, including windsurfing.[65] Therefore, Morgan Lake is a traditional navigable water under the Clean Water Act.

3.2 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

[65] Exhibit 19 hereto (APS website). See also, http://www.emnrd.state.nm.us/SPD/BOATINGWeb/MorganLake.html; https://www.aps.com/en/communityandenvironment/environment/morganlakewebcam/Pages/home.aspx

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

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

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

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

3.3 <u>Morgan Lake is not a 'waste treatment system' excluded from the definition of a water of the United States</u>.

Under 40 CFR 122.2:

> "Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (<u>other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition</u>) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States."

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

Because Morgan Lake is a manmade water impoundment that does not impede the flow of a navigable stream and is used to remove heat from condenser water, Morgan Lake is a 'cooling pond' and not a waste treatment system excluded from the definition of a water of the United

States.

3.4 EPA's failure to regulate discharges into Morgan Lake from FCPP is arbitrary and capricious.

EPA's failure to regulate water pollution discharges into Morgan Lake is arbitrary and capricious because EPA has taken the opposite position in its NPDES permit for the Navajo Mine. In 2008 EPA issued a final permit for the adjacent Navajo Mine. EPA's permit regulates discharges into Morgan Lake from the Navajo Mine and imposes effluent limitations based on water quality standards for the Lake.[66] Likewise, APS has previously admitted that Morgan Lake is "a water of the U.S."[67]

In summary, EPA's treatment of Morgan Lake as a "water of the United States," "navigable water", "water of the Navajo Nation" and "water of the State of New Mexico" for purposes of the CWA. EPA's failure to regulate discharges into Morgan Lake is arbitrary and capricious.

4. **The Draft Permit erroneously concludes that 'discharges do not present a "reasonable potential" to cause or contribute to an exceedance of water quality standards.**

The Fact Sheet for the Draft Permit states:

> "In addition to technology-based effluent limitations, the Clean Water Act (CWA) Sections 402 and 301(b)(1)(C) require that an NPDES permit contain effluent limitations that, among other things, are necessary to meet water quality standards. An NPDES permit must contain effluent limits for pollutants that are determined to be discharged at a level which has "the reasonable potential to cause or contribute to an excursion above any State [or Tribal] water quality standard, including State [or Tribal] narrative criteria for water quality." 40 CFR 122.44(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

[66] Exhibit 20 hereto (EPA's Navajo Mine NPDES Permit #NN0028193).
[67] Exhibit 33 hereto, p. 1.

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:[68]

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

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

Outfall 001 discharges from Morgan Lake to the Chaco River/Chaco Wash a tributary of the San Juan River, which enjoy the following designated uses under the 2007 Navajo Nation Surface Water Quality Standards.[69]

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

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

Because Morgan Lake, Chaco River/Chaco Wash, and the San Juan River enjoy these designated uses, they are protected by a large set of numerical water quality standards for metals and other pollutants that are enriched in discharges from coal-fired power plants.[70]

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:[71]

Navajo Nation Fish Consumption Health Advisory

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

[68] Exhibit 16.
[69] Exhibit 16.
[70] Exhibit 16 at Table 206.1
[71] http://www.navajonationepa.org/Pdf%20files/unsavefish.pdf

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.[72] 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.[73] 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.[74] 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

---

[72] The federal water quality criteria for selenium is 5ug/l. *See,* Exhibit 21 attached hereto.
[73] Exhibit 22 hereto (Priority Pollutant Scan).
[74] Exhibit 23, p. 7, §E.1.b. (Current NPDES Permit for FCPP).

quality standard:[75]

> "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."[76]

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,[77] will affect levels of blue-green algae in Morgan Lake.

---

[75] Exhibit 16 at § 202.

[76] Exhibit 24 hereto (United States Fish and Wildlife Service and the Navajo Nation Environmental Protection Agency (2005) "Methylmercury and Other Environmental Contaminants in Water and Fish Collected from Four Recreational Fishing Lakes on the Navajo Nation" at page 12).

[77] Exhibit 25 hereto (EPA Consolidated Permit Program Wastewater Discharge Information Form 2C for permit NN000019.

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.

F. **Temperature:** The maximum allowable increases in ambient water temperature, expressed in degrees Celcius, due to a thermal discharge are as follows:

A&WHbt (warm water)	A&WHbt (cold water)
3.0	1.0

This does not apply to a stormwater discharge.

Morgan Lake should be considered a warm water because it typically has temperatures exceeding 20° Celsius.[78] Therefore, permitted discharges from the FCPP should not increase the ambient water temperature of Morgan Lake by more than 3° 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. <u>In no instance shall mixing zones constitute more than 10% of the surface area of a lake or reservoir</u> ..." Therefore, any permitted discharges from the FCPP that increase the ambient water temperature of Morgan Lake by more than 3° Celsius must be limited to a defined boundary of Morgan Lake that comprises 10% or less of this water body.

For the reasons stated above, EPA's conclusions that discharges from FPCC "do not present a 'reasonable potential' to cause or contribute to an exceedance of water quality standards" lacks a defensible foundation.[79]

5. EPA's draft permit fails to identify impaired waters and need for TMDLs.

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

---

[78] Exhibit 16 at § 205 A

[79] Exhibit 26 (EPA's Reasonable Potential Analysis).

6. **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 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:

From: Sheth, Gary
Sent: Tuesday, June 10, 2014 1:08 PM
To: Michele.Robertson@aps.com
Subject: RE: Questions about Morgan Lake Intake

Hi Michele,

Please provide a full description of the intake structure, mechanism, and process for intake of water from the San Juan River to Morgan Lake. Please include information about the exact location of the intake structure, design capacity, average intake volume, as well as any measures in place to minimize entrainment and impingement of biota resulting from the intake of water.

Thanks,

Gary Sheth
NPDES Permits Office (WTR-5)

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:

From:	Michele.Robertson@aps.com
Sent:	Friday, August 08, 2014 11:16 AM
To:	Sheth, Gary
Cc:	Pamela.Norris@aps.com
Subject:	RE: Questions about Morgan Lake Intake
Attachments:	removed.txt

Gary,

I apologize for the delay in responding to your request. Here is the information on the river station intake.

Morgan Lake Intake

The intake structure on the San Juan River consists of two 10- by 10-foot intake bays, placed perpendicularly to the flow of the river. These intake bays are located just upstream of the APS Weir. The weir includes a control gate that provides the ability to control water depths at the intake location. The intakes are screens with an approximately 1-inch by 3-inch opening. Approach velocities toward the screens are approximately 0.38 foot per second. No fish collection or return facilities are associated with the intake

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 then 5 millimeters) would significantly reduce losses from entrainment of eggs, larvae and juvenile forms of fish by the FCPP.[80]

[80] U.S. EPA (2004) "Technical Development Document for the Final Section 316(b) Phase II Existing Facilities Rule: Chapter 4: Efficacy of Cooling Water Intake Structure Technologies." http://water.epa.gov/lawsregs/lawsguidance/cwa/316b/upload/Cooling-Water_Phase-

It should be noted that the FCPP owners began collection of data on fish impingement and/or entrainment in 2005.[81] 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.[82] Despite apparently receiving such information from APS, EPA was unable to produce these documents to the Conservation Organizations.[83] 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.

7. 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, <u>but following the shutdown of Units 1, 2, and 3 (which occurred on December 30, 2013) the capacity is now 1540 megawatts.</u> ...
>
> "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. <u>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.</u> 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:

2_TDD_2004.pdf

[81] Exhibit 27 hereto (Fish Impingement Studies).

[82] Exhibit 29 hereto.

[83] *Id.*

Impacts of Units 1-2-3 Shutdown

It is estimated that the shutdown of units 1-2-3 will occur about mid-year 2013. The shutdown of these three units will impact some of the water and wastewater discharges. These include:

1. The closed cycle recirculating cooling water volume will decrease by about 30%.

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.

8. EPA Failed to Comply With the Endangered Species Act.

The Endangered Species Act ("ESA") implements a Congressional policy that "all Federal Departments and agencies shall seek to conserve endangered species and threatened species." 16 U.S.C. § 1531(c)(1). An "endangered species" is a species of plant or animal that is "in danger of extinction throughout all or a significant portion of its range," while a "threatened species" is one which is likely to become endangered within the foreseeable future. 16 U.S.C. § 1532(6), (20). The operative core of the ESA is a list maintained by the Secretary of the Interior of threatened and endangered species, and the ESA permits citizens to petition the Secretary to add species to that list. 16 U.S.C. § 1533(b)(3)(A).

At the heart of Congress's plan to preserve endangered and threatened species is Section 7 of the ESA, which places affirmative obligations upon federal agencies. Section 7(a)(1) provides that all federal agencies "shall, in consultation with and with the assistance of the Secretary [of Commerce or the Interior], utilize their authorities in furtherance of the purposes of this chapter by carrying out programs for the conservation of endangered species and threatened species." 16 U.S.C. § 1536(a)(1). The mandate of section 7(a)(2) is even clearer:

> Each Federal agency shall, in consultation with and with the assistance of the Secretary [of Commerce or the Interior], insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined . . . to be critical, unless such agency has been granted an exemption for such action . . . pursuant to subsection (h) of this section.

16 U.S.C. § 1536(a)(2). Thus, section 7(a)(2) imposes two obligations upon federal agencies. The first is *procedural* and requires that agencies consult with the FWS to determine the effects of their actions on endangered or threatened species and their critical habitat. *See* 16 U.S.C. § 1536(b). The second is *substantive* and requires that agencies insure that their actions not jeopardize endangered or threatened species or their critical habitat. *See* 16 U.S.C. § 1536(a)(2); *see also, Florida Key Deer v. Paulison,* 522 F.3d 1133, 1138 (11th Cir. 2008).

The requirements of the ESA are triggered by "any 'agency action' which may be likely to jeopardize the continued existence of the species or its habitat." 16 U.S.C. § 1536(a). By this process, each federal agency must review its "actions" at "the earliest possible time" to determine whether any action "may affect" listed species or critical habitat in the "action area." 50 C.F.R. § 402.14; 50 C.F.R. § 402.02. When there exists a chance that such species "may be present," the agency must conduct a biological assessment ("BA") to determine whether or not the species "may be affected" by the action. *See* 16 U.S.C. § 1536(c). The term "may affect" is broadly construed by FWS to include "[a]ny possible effect, whether beneficial, benign, adverse, or of an undetermined character," and is thus easily triggered. 51 Fed. Reg. at 19926. If a "may affect" determination is made, "formal consultation" is required and a biological opinion ("BiOp") must be prepared.

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

> "Effects of the action" include both direct and indirect effects of an action that will be added to the "environmental baseline." The environmental baseline includes "the past and present impacts of all Federal, State or private actions and other human activities in the action area" and "the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation."

Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., 422 F.3d 782, 790 (9th Cir. 2005) (citing regulatory definitions found at 50 C.F.R. § 402.02). This environmental baseline includes the existence of structures such as dams and power plants, but does not include fish kills or other adverse effects resulting from the *operation* of such structures and facilities, where such ongoing operation is within the control of the action agency. "The environmental baseline is a 'snapshot' of a species' health at a specified point in time. *It does not include the effects of the action under review in the consultation.*"[84] 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

[84] U.S. Fish and Wildlife Service, Endangered Species Act Consultation Handbook 4-22 (1998) (emphasis added).

operation of already-built projects such as the FCPP. In *NWF v. NMFS*, the court held that it was illegal for federal agencies to attempt to disregard certain ongoing impacts of FCRPS operations, rather than focusing "on whether the action effects, when added to the underlying baseline conditions, would tip the species into jeopardy." *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 929 (9th Cir. 2008). The court explained that there was a critical difference between the basic existence of the dams and the discretionary federal decision about how to continue operating them:

> The current existence of the FCRPS dams constitutes an "existing human activity" which is already endangering the fishes' survival and recovery. See ALCOA, 175 F.3d at 1162 n.6 (citing 50 C.F.R. § 402.02). Although we acknowledge that the existence of the dams must be included in the environmental baseline, *the operation of the dams is within the federal agencies' discretion* under both the ESA and the Northwest Power Act, 16 U.S.C. § 839.

Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., 524 F.3d 917, 930-931 (9th Cir. 2008) (emphasis added).

Issuance of a (discretionary) NPDES permit is plainly a federal action subject to the requirements of ESA section 7, and compliance with the substantive minimum requirements of the CWA does not, in and of itself, necessarily satisfy the independent substantive requirements of ESA Section 7(a)(2). *See National Association of Home Builders v. Defenders of Wildlife*, 551 U.S. 644, 666-68 (2007) (CWA, ESA, and implementing regulations require consultation and jeopardy determination for discretionary permit issuance).

Here, EPA, seeks to rely on the ongoing, but not yet completed, consultation process for the Office of Surface Mining Reclamation and Enforcement's (OSMRE) Four Corners Power Plant and Navajo Mine Energy (FCPP/NM) Project.[85] OSMRE has prepared a Biological Assessment ("BA") finding adverse effect and adverse modification of critical habitat for the FCPP/NM project, beginning formal consultation, but the Fish and Wildlife Service has not yet issued its Biological Opinion ("BO"), including findings on jeopardy and adverse modification and reasonable and prudent alternatives, if any.[86] The BA finds that OSMRE's proposed operation of the FCPP "may affect and is likely to adversely affect" both the Colorado pikeminnow and the razorback sucker,[87] and that its proposed action will adversely modify designated critical habitat for both these listed fish species.[88] These jeopardy and adverse modification findings result from several adverse impacts, including but not limited to

---

[85] Memorandum from Gary Speth, United States Environmental Protection Agency, Re: Review of Information and Literature to Assess Impacts on Threatened and Endangered Species and Critical Habitat Pursuant to the Federal Endangered Species Act (Nov. 10, 2014) in the Administrative Record.

[86] Office of Surface Mining and Reclamation, Four Corners Power Plant and Navajo Mine Energy Project Biological Assessment (August 2014) (hereinafter FCPP/NM BA) in the Administrative Record.

[87] FCPP/NM BA at 9-1.

[88] FCPP/NM BA at 9-4.

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.[89] "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."[90]

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."[91] 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."[92] EPA's apparent attempted partial reliance on the OSMRE FCPP/NM consultation process to fulfill its ESA obligations is misplaced for two reasons.

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

Second, the EPA memorandum apparently attempts to argue that its Section 7 obligations include consideration only of the uptake of San Juan River water and discharge of cooling water. Under the law and FWS guidance, this constitutes improper segmentation of interrelated and interdependent actions. Under FWS consultation guidelines, "effects of the action under consultation are analyzed together with the effects of other activities that are interrelated to, or interdependent with, that action."[93] 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.[94]

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

---

[89] FCPP/NM BA at 9-1 to 9-3.
[90] FCPP/NM BA at 9-4.
[91] Speth ESA Memo at 2.
[92] Speth ESA Memo at 2.
[93] ESA Consultation Handbook 4-26.
[94] 50 C.F.R. § 402.02.

overall consultation.[95] NPDES permit issuance is an interrelated and interdependent action for purposes of the larger FPDES/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.

8.1 The BA incorrectly defines the environmental baseline.

The BA relies improperly on two arguments to contend that FCPP mercury and selenium emissions are "very small" in their impacts to listed fish and birds. First, it contends, misleadingly, that FCPP emissions alone are insufficient to cause risk to listed individuals or populations, ignoring the fact that those emissions, and resulting deposition of mercury and selenium, impact waterways and aquatic food webs already sufficiently impacted to cause harm to substantial proportions of listed fish within the San Juan River. BA at 7-15 ; *see* also FCPP/NM Draft Environmental Impact Statement (DEIS) at 4.8-69. This overly-narrow definition of risk ignores the fact that Section 7 analyses must consider baseline conditions in the action area – "[t]he baseline includes State, tribal, local, and private actions already affecting the species or that will occur contemporaneously with the consultation in progress,"[96] and that, by its own admission, "current mercury body burdens are at levels that may result in adverse effects to Colorado pikeminnow populations in the San Juan River," BA at 6-20, and that selenium poses high levels of population hazard to both Colorado pikeminnow and razorback sucker, *see* BA at 6-20 to 6-23 ("cumulative mercury and selenium concentrations are likely to adversely affect Colorado pikeminnow and razorback sucker in the 4 ERA modeling reaches of the San Juan River downstream into the San Juan River arm of Lake Powell.").

Second, the BA minimizes the contribution risk from FCPP emissions because toxicity risks to aquatic species such as the Colorado pikeminnow and razorback sucker are predicted to remain high from other sources:

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

[95] 50 C.F.R. § 402.02 ("*Effects of the action* refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline.").
[96] United States Fish and Wildlife Service, Endangered Species Consultation Handbook 4-22.

> from the other regional and global sources, and future contributions from FCPP may affect and are likely to adversely affect Colorado pikeminnow, razorback sucker, and their critical habitat.

FCPP/NM BA 7-15. Just as in the DEIS, this reasoning is logically flawed. Simply because FCPP emissions alone (absent other sources of mercury and selenium deposition) would not be sufficient to cause population-level effects (i.e., have HQ of 1 or higher) does not excuse EPA from analyzing whether FCPP's additional contribution to an already-compromised environmental baseline will be sufficient to jeopardize the continued existence of the species or adversely modify their critical habitat.

8.2 Baseline mercury levels combined with additional mercury and selenium jeopardize endangered species.

The BA acknowledges that "the available data on San Juan River mercury body burdens and mercury toxicity in fish clearly indicates that current mercury body burdens are at levels that may result in adverse effects to Colorado pikeminnow populations in the San Juan River."[97] The FWS has previously determined that baseline mercury levels in the San Juan River basin are causing reproductive impairment in 64 percent of pikeminnow, a number which is expected to rise to 72 percent by 2020. Desert Rock BiOp at 96. Even with the shutdown of Units 1-3 and the anticipated installation of pollution controls on Units 4-5, the FCPP is a major source of these mercury concentrations in the San Juan River basin, and its emissions of mercury are significantly contributing to these effects. The San Juan River basin is one of only three sub-basins where pikeminnow still survive, and it is critical to their long-term recovery from the brink of extinction.[98]

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.[99] 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.[100] 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.[101]

---

[97] FCPP/NM BA at 6-20.
[98] *See* United States Fish and Wildlife Service, Colorado pikeminnow (*ptychocheilus lucis*) recovery goals: amendment and supplement to the Colorado squawfish recovery plan (2002).
[99] MSI Report attached hereto as Exhibit 38.
[100] *See* U.S. Dep't of the Interior, U.S. Fish and Wildlife Service, *Draft Biological Opinion for the Desert Rock Energy Project, U.S. Bureau of Indian Affairs, Gallup, New Mexico* at 9-10 (Oct. 2009) [hereinafter "Desert Rock BiOp"] (attached as Exhibit 35 hereto).
[101] *See* MSI Report.

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.[102] Nine water bodies in northwestern New Mexico have mercury consumption advisories.[103] 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.[104] Data collected from Mesa Verde National Park show mercury deposition levels that are among the highest in the western U.S.[105] 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.[106] [107]

FCPP is a "significant source" of mercury deposition at the Park.[108] 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.[109] 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.[110] Current rates of mercury deposition in the San Juan River basin from FCPP are expected to be unchanged over the next decade.[111]

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

In considering the effects of the Desert Rock Energy Project ("Desert Rock") – a coal-fired plant that was proposed to be cited on the Navajo Nation within 20 km of FCPP – FWS

---

[102] *Id.*
[103] *Id.*
[104] *Id.*
[105] *Id.*
[106] *Id.*
[107] Public Resources New Mexico ("PNM"), the operator of SJGS, recently installed new pollution controls at SJGS as part of a court-ordered Consent Decree. These new improvements include mercury removal on Units 3 and 4 of SJGS. The improvements were completed in early 2009, and are expected to reduce mercury emissions by 62 percent. APS has not taken steps to install any such improvements at FCPP.
[108] MSI Report.
[109] *Id.*
[110] *Id.*
[111] *See* Desert Rock BiOp, Appendix A.

considered the effects of atmospheric mercury deposition to endangered and threatened species including the Colorado pikeminnow.[112] Using a threshold for adverse effects of 0.2 mg/kg WW, 64 percent of Colorado pikeminnow experience reproductive impairment due to mercury presently.[113] 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.[114] 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."[115] Neither the DEIS nor either of the ERAs even attempts to provide such quantitative assessment of probable levels of reproductive impairment. The Deposition ERA, acknowledging risks to fish from mercury and selenium, goes on to state that "[a]lthough risks to mobile adult fish are likely overestimated by the [critical body residues "CBRs"], and in particular by the [No Observed Effect Concentration] CBRs, the potential for risks to sensitive life stages and listed species cannot be ruled out." Deposition ERA at 7-4 (emphasis added).

Given OSMRE and FWS's obligations to avoid jeopardy and contribute to the recovery of listed species under the ESA, it is not sufficient for the BA to simply conclude that the proposed action contributes to risks that would exist with or without continued FCPP operation.[116] Rather, it must actually take a hard look at what the levels of harm are, including

---

[112] *See* Desert Rock BiOp at 106; The Desert Rock BiOp was prepared by FWS pursuant to section 7(a)(2) of the ESA, which imposes a "substantive duty on federal agencies" to "insure" that any action they undertake or authorize is "not likely to jeopardize the continued existence of any endangered species or threatened species"; it is each agency's duty to "insure no jeopardy." 16 U.S.C. § 1536(a)(2); 51 Fed. Reg. at 19926. The ESA's implementing regulations set forth a process by which an action agency ensures that its affirmative duties under section 7(a)(2) are satisfied. 50 C.F.R. § 402.14(a); *Sierra Club v. Babbitt*, 65 F.3d 1502, 1504-05 (9th Cir. 1995). 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. If the biological assessment concludes that the action is "likely" to adversely "affect listed species," the agency must enter into "formal consultation," with FWS. *Id.* §§ 402.14(a), 402.01(b), 402.12(k); *Gifford Pinchot Task Force v. U.S. Forest Service*, 378 F.3d 1059, 1063 (9th Cir. 2007). In formal consultation, after evaluating all relevant information, FWS prepares 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, FWS must prescribe in the BiOp "reasonable and prudent alternatives" to avoid that result. 50 C.F.R. § 402.14(i)(1)(ii).

[113] *Id.*

[114] *Id.* at 3.

[115] *Id.* at 120 (emphasis added).

[116] FCPP/NM BA 9-4 ("Atmospheric emissions from FCPP were reduced substantially at the end of the baseline period due to the shutdown of Units 1, 2, and 3, but some emissions will continue

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.[117] FWS determined that 64 percent of Colorado pikeminnow currently experience reproductive impairment due to mercury.[118] 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. [119]

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."[120] 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;[121] (2) estimates of brain-tissue

---

to occur and add to this condition, although the amount of this contribution is anticipated to be minute and would not increase the potential effects on these species.")

[117] The Desert Rock Energy Project has been on hold following the EPA's Environmental Appeals Board ("EAB") remand of a Prevention of Significant Deterioration permit to EPA, in part due to violations of ESA in connection with the analysis of Desert Rock's effects to endangered and threatened species. *See In re Desert Rock Energy Company, LLC*, 2009 EPA App. LEXIS 28 (EPA App. 2009).

[118] Desert Rock BiOp.

[119] *Id.* Adult fish with diets high in mercury do not typically experience associated mortality; rather, they deposit excess mercury or selenium in the yolks of developing eggs that fry then use as an energy and protein source; it is at this stage that developmental anomalies occur. *Id.* at 120-21. The deformities are either lethal or cause the fry to be more susceptible to predators or other environmental stressors. *Id.*

[120] *See* Environmental Protection Agency, *Toxics Release Inventory*, available at: http://www.epa.gov/tri/.

[121] Environmental Contaminants Data Management System (ECDMS) Catalogs, *Hg in San Juan*

population-scale mercury concentrations derived from muscle-brain mercury tissue concentration ratios established in peer-reviewed literature;[122] and, (3) peer-reviewed brain tissue mercury concentration thresholds for reproductive impairment derived.[123] The BA should have been supported by similar reliance on actual physical evidence, not merely statistical models. Moreover, although the ERAs advocate consideration of "alternative" and more permissive thresholds for toxic exposure, they nevertheless acknowledge that the scientific-consensus exposure levels used in the Desert Rock BiOp are appropriate for listed species and sensitive life stages. Deposition ERA at 7-4.

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

8.3 <u>The BA mischaracterizes APS's own ecological risk analyses.</u>

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.[124] 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

---

River Colorado Pikeminnow Muscle (obtained from Desert Rock BiOp record) (attached as Exhibit 36).

[122] *See* Appendix E, *Mercury concentrations in both brain and muscle tissues from fish toxicity studies* (obtained from Desert Rock BiOp record) (attached as Exhibit 34).

[123] Raw data on effects to Pikeminnow (obtained from Desert Rock BiOp record) (attached as Exhibit 37).

[124] *See* BA at 4-1 to 4-12.

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.[125]

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.

8.4 The BA must address reactive gaseous mercury deposition.

EPA must better evaluate FCPP/Navajo Mine Complex's impact on endangered Colorado pikeminnow, the razorback sucker and their critical habitat. Both fish would be exposed to mercury emissions through surface and groundwater contamination and ambient air exposure, deposition, and runoff into aquatic habitats, and subsequent bioaccumulation through the food chain.[126] Upon entering the San Juan River ecosystem, microorganisms convert mercury to methylmercury, a highly toxic form of mercury.[127] 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.[128] 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

[125] FCPP/NM BA at 4-7.
[126] Desert Rock BiOp, at 120.
[127] *Id.*
[128] *Id.*

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."[129] 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."[130] 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.[131] These two plants "are among the largest sources of mercury emissions in the western U.S."[132] 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.

8.5 Analysis of mercury in muscle plugs and emissions sources.

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, OSM, USFWS and USGS must, as part of the EIS and Biological Opinion process, undertake a study to compare isotopic signatures of mercury in endangered fish tissue samples to isotopic signatures of mercury from FCPP and other regional and pan-regional mercury sources. Short of undertaking of this or another such analyses, neither EPA nor USFWS can ensure that FCPP's past, ongoing, and future mercury deposition is not significantly responsible for elevated mercury and corresponding jeopardy in endangered San Juan River fish.

8.6 Impingement and Entrainment Will Jeopardize Colorado Pikeminnow and Razorback Sucker and Adversely Modify Critical Habitat

Operation of water intake structures will adversely modify critical habitat for Colorado pikeminnow and kill and injure adult and larvae Colorado pikeminnow and razorback sucker through impingement and entrainment. Considered alongside the current status of the fish and an environmental baseline of jeopardy from mercury and selenium contamination, operation of intake structures will jeopardize the continued existence of listed species.

---

[129] *Id.* at 74.
[130] *Id.* at 75; *see also* MSI Report.
[131] *Id.*
[132] *Id.* at 76.

The APS Weir at RM 163.3 is located in designated critical habitat for Colorado pikeminnow and upstream of designated critical habitat for razorback sucker. The weir extends across the San Juan River and impeding its flow, bank to bank. The weir diverts water from the San Juan River into two 10 by 10 ft. intakes. BA at 7-12. Each intake is covered by 1 by 3 inch wire mesh screen. *Id.* The intakes run in two modes at all times of day, extracting either 31 (17,000 gpm, 24.5 million gpd) or 71 (32,000 gpm, 46 million gpd) cubic feet of river water per second. *Id.* The former mode runs from October to May; the latter, higher flow, from May to October. *Id.*

The weir adversely modifies critical habitat for Colorado pikeminnow by impeding migration within critical habitat:

> [t]he weir lies within the critical habitat for Colorado pikeminnow, and may affect, and is likely to adversely affect the function of the habitat for the conservation and recovery of the species, as this structure may impede the migration of Colorado pikeminnow within its critical habitat (Listing Factor A, USFWS 2002a, b).g Factor A, USFWS 2002a, b).[133]

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.[134]

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

[133] *See* BA at 7-12.

[134] Final Rule: National Pollutant Discharge Elimination System-Final Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities, 69 Fed. Reg. 41,576, 41,586 (Jul. 9, 2004) [hereinafter "2004 Cooling Water Intake Structures at Phase II Rule"].

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.[135]

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.[136]

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.[137]

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.[138]

---

[135] BA at 7-13.
[136] *Id* at xiv.
[137] *Id* at 9-1.
[138] *Id.*

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).

8.6 <u>EPA/FWS must require closed-cycle or dry cooling technology in a reasonable and prudent alternative(s) (RPA).</u>

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.[139] 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.[140]

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.*

[139] Exhibit 39 hereto.
[140] 76 Fed. Reg. at 22,207.

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).[141] 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.

IV. Conclusion

Thank you for the opportunity to submit comments on EPA's Draft NPDES permit for the FCPP. We ask that you incorporate all of our comments into EPA's final permitting decision. In addition to sending you this letter by email, I also sent you by overnight mail on February 17, 2015 two CD/DVDs containing the exhibits referenced in this letter. Please confirm receipt of this comment letter and the CD/DVDs. Please contact me at (303) 774-8868 if you have any questions. Thank you.

Sincerely,

s/ John Barth

Conservation Organizations

Mike Eisenfeld
San Juan Citizens Alliance
1309 E 3rd Ave #5, Durango, CO 81301
(970) 259-3583
mike@sanjuancitizens.org

Taylor McKinnon
Michael Saul
Center for Biological Diversity
P.O. Box 1178
Flagstaff, AZ 86002-1178
tmckinnon@biologicaldiversity.org

[141] Exhibit 39 (Riverkeeper 316(b) comments).

msaul@biological diversity.org

Rachel Conn
Interim Executive Director
Amigos Bravos
105-A Quesnel, Taos, NM 87571
(575) 758-3874
rconn@amigosbravos.org

Lori Goodman
Dine Citizens Against Ruining the Environment
Dine CARE
10A Town Plaza, Suite 138
Durango, CO 81301
Telephone: (970) 259-0199
lgoodman89@gmail.com

Travis Ritchie
Staff Attorney
Sierra Club Environmental Law Program
85 Second Street, 2nd Floor
San Francisco, CA 94105
415-977-5727
travis.ritchie@sierraclub.org

Mary Whittle
Staff Attorney
Earthjustice Northeast Office
1617 John F. Kennedy Blvd., Suite 1675
Philadelphia, PA 19103
T: 215.717.4524
F: 212.918.1556
mwhittle@earthjustice.org

Erik Schlenker-Goodrich
Western Environmental Law Center
208 Paseo del Pueblo Sur, #602
Taos, New Mexico 87571
Ph: 575-751-0351
eriksg@westernlaw.org