February 26, 2019

Ms. Michelle Siebal
State of California
State Water Resources Control Board
Division of Water Rights
Water Quality Certification Program
P.O. Box 2000
Sacramento, CA 95812-2000

Re: Draft Environmental Impact Report (EIR)
for Surrender of the Lower Klamath Project License

Dear Ms. Siebal:

I write out of conscience, as the former counsel retained during 2016 by two local Oregon and California state instrumentalities, the Klamath Irrigation District, Klamath Falls, Oregon, and the Siskiyou County Board of Supervisors, Yreka, California, and as the former counsel retained during 2016-2017, by a private citizens-operated nonprofit organization, the Siskiyou County Water Users Association. Each of these entities, during my tenure as retained counsel, was integrally involved in the public debate surrounding the removal of the above-referenced dams and decidedly against their removal.

The ITSSD and I thank the California State Water Resources Control Board for the opportunity to participate in this open stakeholder process, and hereby submit the attached comments for the Board's review.

Please don't hesitate to contact us should you have any questions.

Very truly yours,

Lawrence A. Kogan

Lawrence A. Kogan
President

ITSSD Comments Regarding
The SWRCB Draft Environmental Impact Report
for the Lower Klamath Project License Surrender
Pacificorp Federal Energy Regulatory Commission Project No. 14803

February 26, 2019

I. Introduction

There is no genuine material difference between the substance of the discussion about dam reservoir sediments in the December 2018 "Draft Environmental Impact Report for the Lower Klamath Project License Surrender" prepared by Stillwater Sciences, and the September 2011 CDM report which Stillwater Sciences helped prepare, entitled, "Screening-Level Evaluation of Contaminants in Sediments from Three Reservoirs and the Estuary of the Klamath River, 2009-2011." In both reports, the authors omit material information about the toxicity of the reservoir sediments at each of the four PacifiCorp owned and operated Klamath River dams slated for removal (John C. Boyle, Copco 1, Copco 2 and Iron Gate).

More specifically, there is little to no information about the hazards such sediments would pose to human health and welfare when they are released upon dam removal, and there are no bona fide human health risk assessment-related data of the potential exposure from dam reservoir sediments at each of the four Klamath River dams. This strongly suggests that USEPA has performed no human health risk assessments at all which the California State Water Resources Control Board ("SWRCB") or the California Environmental Protection Agency ("EPA") has publicly disclosed. Rather there are only perfunctory data of screened contaminants in dam reservoir sediments which were gathered and publicly disclosed by the U.S. Department of Interior's Fish and Wildlife Service.

Indeed, the legal pathway the former Obama administration had used to initiate this process – i.e., the Clean Water Act § 401 certification process – had intentionally been chosen because the U.S. Department of Energy's Federal Energy Regulatory Commission ("FERC") would retain jurisdiction over this process to assure a favorable dam removal outcome. This was and remains a pure case of 'the ends justifying the means,' no matter the projected wildlife losses dam sediment release upon removal would engender, and completely without regard to the potential risks to human health and welfare that dam sediment releases would pose.

Had the proper legal pathway been selected – the Clean Water Act §§ 303(d) process – EPA would have retained jurisdiction over the calculation by California of the total maximum daily load for the lower Klamath River, *including the dam reservoirs*, and EPA would have been required to conduct human health risk assessments to evaluate the potential human exposure to sediments released at each of the four dam reservoirs. This would have especially been the case if EPA had determined that any

one or more of the dam reservoirs constituted a Superfund site under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA").

It is quite remarkable that the State of California EPA has not yet admitted to the members of the public how USEPA had previously conditioned its prior approval of the North Coast Regional Water Quality Control Board's December 2010 TMDLs for the Klamath River on the State's quiet agreement to treat the incremental impairments it had calculated from the dams as something other than a TMDL load allocation.

In sum, the California EPA, rather than the SWRCB should be the primary agency involved in evaluating the pros and cons of dam removal, and the process should be one of addressing each dam's contribution to the total maximum daily load of the impaired lower Klamath River, rather than one of water quality certification relating to FERC dam license transfer and termination and hydroelectric decommissioning. The State of California has unnecessarily continued to deceive the public in favor of its political agenda of dam removal, and to deny it the material facts concerning the potential hazards to human health and welfare the release of toxic sediments from the four Klamath River dam impoundments would trigger upon removal.

II. Historic and Recent Sources of Toxic Contamination in the Upper Klamath Basin

During the 2004, the National Research Council issued a report describing the historic human activities that shaped the Klamath River Basin and ultimately endangered and threatened fish in the Basin. These activities included significant cattle ranching and pasturing in Klamath County, Oregon during the 1950's and 1960's with only slight declines in the 1990's and increased cattle production intensity by 2002. "In 1998, the Environmental Protection Agency's Index of Watershed Indicators estimated that at least 110,000 acres of the watershed had been converted to irrigated pasture or other agricultural activities." "The effects of grazing in the watershed were probably profound but are impossible to quantify. […] Grazing can mobilize nutrients and sediments, both of which are of concern in the upper Klamath basin."[1]

These activities also included substantial commercial logging over more than two-thirds (e.g., 73%) of the upper Klamath Basin which subjected the forest land to severe erosion.[2] Logging had accelerated during the late 1910's because of national demand for ponderosa pine, and by 1918, "large amounts of reservation timber were being sold to private parties." "[B]y 1920, annual harvest rates had increased to 120 million board ft.[,…and p]eak lumber production occurred in 1941, when 22 lumber mills processed a total of 808.6 million board ft within the upper basin. Harvest has dropped to about 400 million board ft in recent year."[3]

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[1] *See* National Research Council, *Endangered and Threatened Fishes in the Klamath River Basin: Causes of Decline and Strategies for Recovery* (National Academies Press 2004), at 64-65, available at: https://www.nap.edu/download/10838#.
[2] *Id.*, at 66.
[3] *Id.*

During 2012, the U.S. Geological Survey issued a report documenting the historical contamination of the Klamath River. It stated that "[d]ocumented contaminant impacts within the Klamath Basin date back to at least the 1960's when wildlife deaths were linked to organochlorine pesticides (such as dichlorodiphenyltrichloroethane [DDT]) that were commonly applied to the National Wildlife Refuges and surrounding agricultural land."[4] "Organochlorines (OCs) are a class of pesticide introduced in the 1940s that experienced widespread and heavy use through the subsequent 20 to 30 years. DDT, aldrin, dieldren, toxaphene, chlordane, and heptachlor were among the most commonly used compounds, and their popularity was due, in part, to their high insect toxicity, relatively low acute mammalian toxicity, and their persistence in the environment." [5]

Subsequent research on the environmental effects of these compounds, however, revealed that many were highly bioaccumulative and non-degrading. As the result, "they caused significant impacts to upper trophic level fish, birds, and mammals."[6] "Organochlorine use in the Upper Basin was widespread from the 1940s to the 1960s, with some applications of a few compounds continuing into the 1970s."[7] "The last applications of DDT, toxaphene, and dieldrin reported in the Klamath basin (California side) were in 1971, 1982, and 1976, respectively. […] However, dicofol (which commonly contained DDT and DDE as contaminants) was used until 1981."[8] "[T]wo major pesticide classes, organophosphate and carbamate insecticides, emerged as major constituents of post-1960s pest management in agricultural lands of the Klamath Basin." Although there was increased use of "a suite of herbicides, fungicides, and fumigants" for pest control during this period, "there is[, however,] limited information on their distribution and pathways through the Klamath basin ecosystem."[9]

The USGS report further documented how, in 1988, mercury (Hg) distribution had been quantified "in abiotic and biotic matrices in the Upper Klamath Basin. Although aqueous concentrations were less than reporting limits, sediment concentrations of total [mercury] Hg (THg; inorganic + [methylmercury] MeHg) were similar to geometric mean values for soils in the Western United States, with the exception of sediments downstream of the Link River Dam, which had concentrations that exceeded the rest of the basin by at least 4-fold."[10]

Moreover, the USGS report documented anthropogenic sources of arsenic in the upper Klamath basin including industrial processes and wood preservatives. "The environmental toxicity of arsenic strongly depends on its speciation. The most common inorganic forms are arsenite (As (III)) and arsenate (As (V)), with arsenite being substantially more toxic. […] The inorganic speciation (and thus environmental risk) of arsenic is reliant on pH and redox conditions, with As (V) being reduced to As

[4] *See* United States Geological Survey Forest and Rangeland Ecosystem Science Center, *Contaminants in the Klamath Basin: Historical Patterns, Current Distribution, and Data Gap Identification – Administrative Report* (2012), at 15, available at: https://www.fws.gov/arcata/fisheries/reports/technical/Eagles-Smith%20and%20Johnson%202012_Klamath%20contaminants_Final_052312.pdf.
[5] *Id.*, at 15-16.
[6] *Id.*, at 16.
[7] *Id.*, at 18.
[8] *Id.*
[9] *Id.*, at 19-21.
[10] *Id.*, at 23.

(III) under anoxia." [11] Since "the measured arsenic was not speciated," the environmental risks of their findings were unclear."[12] Nevertheless, "arsenic in water was highest (62 µg/L) at Lower Klamath Lake unit 12C (range <1–62 µg/L, median = 7 µg/L, N=18) and arsenic in bottom sediment was highest at Klamath Straits Drain at pumping plant FF (range 0.6–16 µg/g, median = 6.3 µg/g, N=13)."[13]

Additionally, the report expressed uncertainty regarding the extent of major lead sources in the Klamath basin. "It is currently unclear if there are any major lead sources in the Klamath Basin, but some evidence exists for substantial lead exposure in wildlife in the area."[14]

The USGS report also documented more recent sources of contamination in the Klamath basin. For example, it states that "use of numerous pesticides, combined with the active management of irrigation and drain water present the possibility of pesticide exposure in fish and wildlife species through overspray, *runoff*, and dissolution and transport." (emphasis added).[15] "Pesticide use on the lease lands averages approximately 52,125 kg of active ingredient per year across more than 30.8 km2 of agricultural land."[16] "Annual pesticide use patterns likely reflect a combination of changes in (1) use requirements or restrictions, (2) type of crops grown, (3) pest outbreaks, and (4) water availability. Herbicide and fungicide applications have seen steady decreases since the late 1990s, from 7,000 to 8,000 kg of active ingredient per year to just more than approximately 4,000 kg of active ingredient per year in 2009 (fig. 6). Conversely, fumigant use has increased sharply over that time period from less than 10,000 to more than 90,000 kg of active ingredient per year."[17] "Some chemical classes, such as chloronitrile (fungicide), organophosphates (insecticides), phenoxycarboxylic acid (herbicide), and triazinone (herbicide) have seen relatively consistent annual use between 1998 and 2009. […A] handful of classes, such as arylphenoxypropionate (herbicide/fungicide), biopesticide bacterium (insecticide), carbamates (insecticide), carboximide (fungicide), chloroacetamide (herbicide), cyclohexidione derivitives (fungicide), dithiocarbamates (fumigant), halocarbons (fumigant), and strobilurin (fungicide) have seen a steady or recent increase in their use ."[18]

"Importantly, the leased lands within the Refuge boundaries represent only a very small proportion of total agricultural activity in the Basin. *Within the Upper Basin alone*, agriculture accounts for nearly 2,000 km2 of land area of which 68 km2 are the lease lands. Moreover, 80 percent of the agriculture in Klamath and Siskiyou Counties and 27 percent of the agriculture in Modoc County occurs within the boundaries of the Klamath Basin." (emphasis added).[19]

"Additionally, much of the irrigated cropland surrounding the refuge is hydrologically connected to the refuge via canals that are part of the Klamath Project (National Research Council, 2004). Farmers

[11] *Id*., at 24.
[12] *Id*.
[13] *Id*., at 24-25.
[14] *Id*., at 25.
[15] *Id*., at 38.
[16] *Id*., at 44.
[17] *Id*., at 45.
[18] *Id*., at 46.
[19] *Id*., at 54.

within those adjacent and nearby agricultural properties *are not restricted in their pesticide use in the same ways as those that use the leased lands. Thus, there exists the possibility for wildlife and fish within the Refuge boundaries to be exposed to chemicals that are not approved for refuge use*. In fact, *in 2008 and 2009 there were a total of 189 different chemicals reportedly used as pesticide in those three counties*, and only 41 of them (22 percent) were approved for refuge use (table 6). […] Moreover, some of those compounds were either used at exceptionally high rates (for example, methyl bromide), or are particularly toxic (for example, acrolein, diazinon, ethoprop, etc.). Thus, it is important to consider ecological exposure potential for these compounds as well."[20]

"Elemental analysis of recent sediment cores taken from the three major upstream reservoirs, and the Klamath Estuary, show relatively low concentrations of chromium and nickel within the reservoir sediments, and substantially more elevated concentrations in the sediments from the Estuary (fig. 20). *Conversely, arsenic and lead data in reservoir sediments were substantially more elevated* than in the estuary." (emphasis added).[21]

The report, moreover, reveals that "based on EPA databases, there are at least 2 superfund sites, 8 brownfields, 3 pesticide producers, 3 major NPDES dischargers, and 21 minor NPDES dischargers that are identified within the Basin (fig. 21). These sites are associated with a broad range of contaminants, including: petroleum products, asbestos, volatile organic compounds (VOCs), lead and other heavy metals, dioxins, polyaromatic hydrocarbons (PAHs), and other organic contaminants (fig. 22). The extent to which contaminants from these potential sources reach the surrounding environment is unclear, but there is a possibility that at least some of these sites result in exposure of the Basin's biological resources. Further, human population centers are often situated adjacent to water resources and are frequently associated with various contaminants they may enter the environment, *but the specific compounds are not readily documented and potential effects of exposure to biota are not well understood*." (emphasis added). [22]

III. Features and Water Quality (But Not) Sediment Reporting of the Four PacifiCorp Hydroelectric Klamath River Dams Slated for Removal

Looking upstream from the mouth of the Klamath River at the Pacific Coast, the Iron Gate Dam, completed in 1962, is located between river mile (RM) 190.1 and RM 196.9 (encompassing a total of approximately 7 RM). The Iron Gate hydroelectric dam reservoir "impounds a reservoir of 944 surface acres," "contains about 50,941 acre-feet of total storage capacity (at elevation 2,328.0 feet) and 3,790 acre-feet of active storage capacity."[23] It has "a maximum depth of 162 feet."[24] The Iron Gate dam has been operational for approximately 56 years, and thus its large reservoir/impoundment, contains 56 years' worth of accumulated sediment.

[20] *Id*.
[21] *Id*., at 79.
[22] *Id*., at 82.
[23] *Id*.
[24] *Id*., at 49.

Copco 2 Dam, completed in 1925, is located between RM 198.3 and RM 198.6 (encompassing a total of approximately 1/3 RM). The Copco 2 hydroelectric dam reservoir "is about 0.25 miles long and has a relatively small storage capacity of 73 acre-feet."[25] The Copco 2 dam has been operational for approximately 93 years, and thus, its reservoir/impoundment contains 93 years' worth of accumulated sediment.

Copco 1 Dam, completed in 1918, is located between RM 198.6 and RM 203.1 (encompassing a total of approximately 4.5 RM). The Copco 1 hydroelectric dam reservoir "impounds a reservoir of 1,000 surface acres," "contains approximately 33,724 acre-feet (40,000 acre-feet[26]) of total storage capacity at elevation 2,607.5 feet and approximately 6,235 acre-feet of active storage capacity. The normal maximum and minimum operating levels of the reservoir are at elevations 2,607.5 and 2,601.0 feet, respectively."[27] It has a maximum depth of 115 feet.[28] The Copco 1 Dam has been operational for approximately 100 years, and thus, its large reservoir/impound contains 100 years' worth of accumulated sediment.

John C. Boyle Dam, completed in 1958, is located between RM 220.4 and RM 228.3 (encompassing a total of approximately 8 RM).[29] The John C. Boyle hydroelectric dam reservoir impounds "420 surface acres of water," "contains approximately 3,495 acre-feet of total storage capacity and 1,724 acre-feet of active storage capacity."[30] It's "maximum depth is about 40 feet."[31] The John C. Boyle dam has been operational for approximately 61 years, and thus, its reservoir/impoundment contains 61 years' worth of accumulated sediment.

PacifiCorp has not frequently or recently reported about the composition *of the sediment* at the bottom of the four dam reservoirs/impoundments; it has reported, however, about the reservoir water quality. During 2004, PacifiCorp reported that both Copco and Iron Gate reservoirs are dominated by thermal stratification, where water temperature, pH, and chlorophyll are lower at lower reservoir surface levels in both reservoirs.[32] The 2004 report notes that, "[h]owever, Copco reservoir has a much higher concentration of ammonia, orthophosphate, total phosphorous and TKN [Kjeldahl nitrogen]" in the

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[25] *Id*., at 23.
[26] *Id*., at 47.
[27] *Id*., at 22.
[28] *Id*., at 47.
[29] *See* PacifiCorp, *PacifiCorp Klamath Hydroelectric Project Interim Operations Habitat Conservation Plan for Coho Salmon* (Feb. 16, 2012), at 1, Table 1 at 20, available at: https://www.nfwf.org/klamathriver/Documents/PacifiCorpHCP_Feb162012Final.pdf.
[30] *Id*., at 21.
[31] *Id*., at 41.
[32] *See* PacifiCorp, Klamath Hydoelectric Project (FERC Project No. 2082), "Final Technical Report" (Feb. 2004), at *Exhibit E – Environmental Report*, at 3-103, available at: https://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Klamath_River/Exhibit_E_Water_Use_and_Quality.pdf.

upper reservoir surface water levels. In "Iron Gate reservoir those constituents are the same concentration in both" the upper and lower reservoir surface water levels.[33]

And, in 2012, PacifiCorp similarly reported about the variations in water temperature in the John C. Boyle reservoir's upper and lower surface water levels,[34] and about the nutrients load in the upstream and downstream ends of said reservoir. According to the 2012 report, "J.C. Boyle is not appreciably retaining (reducing) nutrient [nitrogen and phosphorous] levels under typical conditions. This is in contrast to the larger downstream Copco and Iron Gate reservoirs which retain (reduce) significant amounts of the annual load of nutrients that flow into those reservoirs."[35] The report also notes that the John C. Boyle reservoir experiences low dissolved oxygen levels at the deeper portions near the bottom, and receives organic matter input that reduces dissolved oxygen levels primarily from upstream sources.[36] "J.C. Boyle reservoir is eutrophic because of the large nutrient load from upstream sources and seasonally warm temperatures."[37]

The 2012 report also relays that the Copco reservoir complex experiences seasonal water temperature stratification, "acts as an annual net sink for both total nitrogen and total phosphorous," and produce "[n]uisance bloom-forming blue-green algae […] in the summer." "Sustained *Microsystis* blooms in Copco reservoirs are consistent with the potentially elevated levels of inorganic nitrogen (ammonia) and organic matter in influent waters."[38] The report admits that the Copco reservoir "bears the burden of accepting and processing the water quality that is ultimately borne out of Upper Klamath Lake and any agricultural and municipal/industrial return flows."[39]

Moreover, the 2012 report concedes that Iron Gate reservoir "is eutrophic largely due to nutrient inputs (organic and inorganic) from upstream sources."[40] It also admits that, "[a]t times, the upstream conditions from Upper Klamath Lake and Keno reservoir may produce large quantities of organic matter and can increase the nutrient fluxes into both Copco and Iron Gate reservoirs substantially."[41] "[M]eteorological conditions, hydrology, and upstream water quality conditions playing important roles in the species timing, and magnitude, persistence, and duration of algal standing crop."[42] According to the report, "Iron Gate reservoir is the second relatively large mainstem reservoir on the Klamath River below Upper Klamath Lake. Iron Gate reservoir receives large hydraulic and nutrient loads from the inflowing Klamath River. The result of these substantial upstream loads is a eutrophic reservoir."[43]

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[33] *Id*. *See also Id*., at 3-106 to 3-110.
[34] *See* PacifiCorp, *PacifiCorp Klamath Hydroelectric Project Interim Operations Habitat Conservation Plan for Coho Salmon* (Feb. 16, 2012), *supra* at 41.
[35] *Id*.
[36] *Id*., at 42.
[37] *Id*., at 43.
[38] *Id*., at 47-48.
[39] *Id*., at 49.
[40] *Id*., at 50.
[41] *Id*.
[42] *Id*., at 51.
[43] *Id*.

IV. USEPA Failed to Exercise its Primary Clean Water Act Jurisdiction Over Point and Nonpoint Sources of Pollution in Waters of the United States Within California

Only the U.S. Environmental Protection Agency, ("EPA"), and neither the U.S. Department of Interior Fish and Wildlife Service, nor the Federal Energy Regulatory Commission, is responsible for enforcing the provisions of the U.S. Clean Water Act ("CWA") in waters of the United States ("WOTUS") within the State of California. If California State water quality standards are inadequate to protect a WOTUS (e.g., the Klamath River that flows from southern Oregon through northern California on its way to the Pacific Ocean) via imposition of point source (i.e., discrete conveyance (pipe or tunnel)) pollution effluent limitations or permitting adjustments, then California must identify and list the Klamath River as "impaired," pursuant to CWA§ 303(d). California would then be required, pursuant to CWA § 303(d)(1)(A), to identify the Klamath River and, pursuant to CWA § 303(d)(1)(C), to determine the "total daily maximum load" ("TMDL") for each problematic pollutant in said river. The TMDL, generally is the calculation of the maximum amount of each such pollutant that can occur in the waterbody (i.e., the Klamath River) without causing it not to meet State water quality standards.[44]

Pursuant to USEPA rules, the California's TMDL for the Klamath River must allocate the necessary reductions to one or more pollution sources, including nonpoint sources, in order to implement the State's applicable water quality standards.[45] *See* *Pronsolinoz v. Nastri*, 291 F.3d 1123, 1139 (9th Cir. 2002). Nonpoint sources of pollution are non-discrete sources, including, for example, sediment run-off from timber harvesting or agriculture. 291 F.3d at 1126. They must be part of the TMDL calculation. 291 F.3d at 1139, citing *Alaska Center for the Environment v. Browner*, 20 F. 3d 981, 985 (9th Circ. 1994) (holding that "Congress and the EPA have already determined that establishing TMDLs is an effective tool for achieving water quality standards in waters impacted by non-point source pollution.").

Furthermore, California is authorized to determine TMDLs also with respect to waterbodies that are affected mostly, if not, entirely by nonpoint source pollution. *Pronsolinoz v. Nastri*, 291 F.3d at 1139. In fact, USEPA has directed states, including California, to calculate TMDLs for waterbodies and watersheds where nonpoint source pollution arises from different land use activities upstream from a *dam*.[46] "Soil erosion has been determined to be the major source of suspended solids, nutrients, organic

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[44] *See* United States Environmental Protection Agency, *Clean Water Act Section 303(d): Impaired Waters and Total Maximum Daily Loads (TMDLs)*, available at: https://www.epa.gov/tmdl.

[45] *See* United States Environmental Protection Agency, *Impaired Waters and TMDLs – Overview of Identifying and Restoring Impaired Waters Under Section 303(d) of the CWA*, available at: https://www.epa.gov/tmdl/overview-identifying-and-restoring-impaired-waters-under-section-303d-cwa.

[46] *See* United States Environmental Protection Agency Office of Water, *National Management Measures to Control Nonpoint Source Pollution from Hydromodification*, EPA 841-B-07-002 (July 2007), at 7-46, available at: https://www.epa.gov/sites/production/files/2015-09/documents/hydromod_all_web.pdf. *See also Id*. ("The development of Total Maximum Daily Loads (TMDLs) in watersheds with impaired waterbodies is a way to identify all sources of pollution. TMDLs are planning documents that provide load allocations, for both point and nonpoint sources, and identify potential contributions of pollutants to an impaired waterbody. TMDLs often include the involvement of stakeholders throughout the watershed, in not only the development, but also with implementation of specific activities within the watershed. TMDL documents can provide a plan for addressing pollution sources throughout a watershed.").

wastes, pesticides, and sediment that combined form the most problematic form of NPS pollution."[47]

It is well-known that upstream agricultural and urban land use *can "contribute to contaminant and sediment loads [of dam] reservoirs," and that dam operations "can determine the fate of" pollutants accumulated in reservoir sediment, and "potentially downstream as water is released from the dam*." (emphasis added).[48] And, techniques, such as "selective withdrawal, can enable near-surface and below-surface withdrawals of warmer and cooler reservoir waters, respectively, to accommodate the temperature and water quality needs of fish populations in the summer and winter months."[49] However, these techniques offer no guarantee against downstream discharges of contaminated and polluted reservoir sediments potentially threatening human health and welfare.

USEPA has emphasized, for example, how dams act as barriers to the flow of water and to the materials the water transports, which can impact water quality both in the dam's impoundment/reservoir and downstream from the dam.[50] The longer the period of time waters and materials are retained in a dam reservoir and are prevented from flowing freely downstream, the more significantly the chemical and physical qualities of that retained water will change.[51] "Water held in a small basin behind a run-of-river dam may undergo minimal alteration," while "water stored for months or even years behind a large storage dam can undergo drastic changes that impact the downstream environment " (emphasis added) and population centers *when released*. [52]

According to USEPA, "[a] storage dam that impounds a large reservoir of water for an extended time period will cause *more extensive impacts to the physical and chemical characteristics of the water* than a smaller dam with little storage capacity."[53] "*The nature and severity of impacts will depend on the location in the river or stream, in relation to the upstream or downstream side of the dam, the storage time of the impounded water, and the operational practices at the dam*." (emphasis added).[54] Physical changes include changes in instream water velocities, timing and duration of flows, flow rates, sediment transport capacities, turbidity, temperature and dissolved gases. Chemical changes include changes in nutrients, alkalinity and pH, metals and other toxic pollutants, and organic matter. *And, physical and chemical changes can be interrelated*. "For example, changes in temperature may result in

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[47] *Id*., at 7-46.
[48] *Id*., at 4-1.
[49] See, e.g., U.S. Department of Interior, Bureau of Reclamation, *Hungry Horse Selective Withdrawal System Evaluation 2000-2003, Hungry Horse Project*, Montana Pacific Northwest Region, Hydraulic Laboratory Report HL-2006-06 (Sept. 2006), at pp. 5-6, available at: https://www.usbr.gov/research/projects/download_product.cfm?id=278.
[50] *See* United States Environmental Protection Agency Office of Water, *National Management Measures to Control Nonpoint Source Pollution from Hydromodification*, EPA 841-B-07-002 (July 2007), *supra* at 2-18.
[51] *Id*.
[52] *Id*., citing McCully, *Silenced Rivers: The Ecology and Politics of Large Dams*, (Zed Books, London 2001). *See also Id*. ("The nature and severity of impacts will depend on the location in the river or stream, in relation to the upstream or downstream side of the dam, the storage time of the impounded water, and the operational practices at the dam.").
[53] *See* United States Environmental Protection Agency Office of Water, *National Management Measures to Control Nonpoint Source Pollution from Hydromodification*, EPA 841-B-07-002 (July 2007), *supra* at 2-18.
[54] *Id*.

changes in dissolved oxygen levels or changes to pH may result in changes to nutrient dynamics and the solubility of metals."[55]

As USEPA has found, "[w]hen the stream flow behind a dam slows, the sediment carrying capacity of the water decreases and the suspend sediment settles onto the reservoir bottom. Any organic compounds, nutrients, and metals that are absorbed to the sediment also settle and can accumulate in the reservoir bottom."[56] The longer the holding time in the reservoir, and the more planktonic algal growth in a reservoir, the more likely periodic episodes of turbidity from upstream storm events carrying sediment rich stormwater will result, especially "if the sediment is predominantly very fine clay particles."[57] In addition, the greater the depth of a reservoir, the lower the volume of water that will be exposed to solar radiation and ambient temperatures, and the greater the likelihood of thermal stratification, with reservoir surface water layers bearing different temperatures, different water quality and biological processes, and different water density gradients.[58] Furthermore, the impoundment of accumulated upstream nutrients can cause a dam reservoir to become eutrophic and trigger algal and aquatic plant growth that consumes oxygen and eventually dies, leaving microbially decomposed material that depletes bottom waters of dissolved oxygen and produces potentially toxic concentrations of gases such as hydrogen sulfide.[59] Studies show that microbial decomposition can result in increased levels ammonia and hydrogen sulfide concentrations that affect the pH of reservoir waters. "Highly acidic (or highly alkaline) waters tend to convert insoluble metal sulfides to soluble forms, which can increase the concentration of toxic metals in reservoir waters."[60]

The key question, therefore, that must be answered for CWA purposes, is whether the pollutants and contaminants attributable to upriver nonpoint sources that have long flowed into and accumulated, aggregated and synergized in the reservoir sediments and/or water columns of the John C. Boyle, Copco 1, Copco 2 and Iron Gate Dams have incrementally impaired the water quality of the Klamath River. If the answer to this question is Yes, as it should be, then the States of Oregon and California should have properly characterized and included these dam-related impairments as a load allocation under CWA § 303(d)/40 CFR Part 130 in calculating the TMDL of the Klamath River, for purposes of ensuring that the release of pollutant-laden sediments from each dam's reservoir pursuant to the amended Klamath Hydropower Settlement Agreement ("KHSA") implementation would not adversely impact public health and welfare.

Oregon's integrated 2010 Total Maximum Daily Load (TMDL) and Water Quality Management Plan (WPMP) for the Upper Klamath and Lost River Subbasins reveals, consistent with CWA § 303(d) requirements, that the state had identified *inter alia* point sources and nonpoint sources and developed load allocations for nonpoint sources where the four PacifiCorp dams scheduled for removal are

[55] *Id*.
[56] *Id*., at 2-19.
[57] *Id*.
[58] *Id*.
[59] *Id*.
[60] *Id*., at 2-20.

located.[61] In addition, the integrated plan reveals that ODEQ and California's North Coast Regional Water Quality Control Board ("NCRWQCB") had cooperatively developed a TMDL that "adopt[ed] the Upper Klamath Lake phosphorus TMDL total phosphorus as a boundary condition for developing the Klamath River and lost River TMDLs."[62] ODEQ had intended for this TMDL to cover the Lost River and the Klamath Straits Drain, as well as, the Klamath River from Link River to the Pacific Ocean.[63]

In March 2010, California submitted to USEPA its 2010 Action Plan for the Klamath River[64] as a CWA § 303(d) amendment to the NCRWQCB's Water Quality Control Plan ("WQCP"). The Action Plan, which had aimed to establish the Klamath River Total Maximum Daily Loads (TMDLs) addressing temperature, dissolved oxygen,[65] nutrients,[66] and microcystin[67] impairments in the Klamath River, also referenced the Lower Lost River TMDLs that USEPA had previously established.[68] The 2010 Action Plan reflected USEPA's 2008 decision, in the face of litigation,[69] to reconsider its prior approval of California's omission of microcystin toxins as an additional cause of impairment of the Klamath River segment known as "Klamath River [hydrologic unit] HU, Middle [hydrologic area] HA, Oregon to Iron Gate" from the state's 2006 CWA § 303(d) list submission.[70]

The NCRWQCB's 2010 integrated TMDL/WQMP plan, furthermore, indicated that Oregon and California had worked cooperatively and aligned with "USEPA and its contractor Tetra Tech, Inc. to develop a uniform water quality model of the basin and conduct joint analyses to ensure compatible

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[61] *See* State of Oregon Department of Environmental Quality, *Upper Klamath and Lost River Subbasins Total Maximum Daily Load (TMDL) and Water Quality Management Plan (WPMP)* (Dec. 2010), at Executive Summary p. iii, available at: https://www.oregon.gov/deq/FilterDocs/KlamathLostTMDL2010.pdf.

[62] *Id*.

[63] *Id*.

[64] *See* California North Coast Regional Water Quality Control Board, *Action Plan for the Klamath River Total Maximum Daily Loads Addressing Temperature, Dissolved Oxygen, Nutrient, and Microcystin Impairments in the Klamath River in California and Lost River Implementation Plan* (March 2010), at p. 4-1.00, available at: https://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/klamath_river/100927/03_BasinPlanLanugage_Klamath_Lost.pdf.

[65] The Action Plan noted how, "[i]n 1996, the Klamath River mainstem [had been] listed [under CWA § 303(d)] as impaired for organic enrichment/low dissolved oxygen (DO) from Iron Gate Reservoir to the Scott River." *Id*.

[66] The Action Plan also noted how, "[i]n 1998, the Klamath River watershed [had been] listed [under CWA § 303(d)] for nutrient and temperature impairment from Iron Gate Reservoir to the Scott River, and the Klamath River mainstem was listed for organic enrichment/low dissolved oxygen in the reaches upstream of Iron Gate Reservoir and downstream of the Scott River." *Id*.

[67] The Action Plan, furthermore, noted how "Iron Gate and Copco Reservoirs and the intervening reach of the Klamath River [had been] listed for the blue-green algae toxin microcystin impairment in 2006." *Id*.

[68] *Id*.

[69] *See* United States Environmental Protection Agency Staff Report, *Reconsideration of California's 2006 Section 303(d) List Omission of Microcystin Toxin Listings for three Klamath River Segments and Determination to Add Microcystin Toxins Listing for Klamath River Hydrologic Unit (HU), Middle HA Hydrologic Area (HA), Oregon to Iron Gate* (March 13, 2008), at p. 3, available at: https://www.epa.gov/sites/production/files/2015-09/documents/klamath-swrcb303d-final.pdf.

[70] *See Id.,* at: Cover Letter, p. 1 ("Based on this review, EPA has concluded that one Klamath River segment is impaired due to the presence of elevated concentrations of microcystin toxins, specifically the Oregon to Iron Gate segment which includes the Copco and Iron Gate reservoirs.").

TMDLs," with each state "establish[ing] independently the TMDLs for those portions of the basin within their respective jurisdiction."[71] This information appears to have been consistent with the Memoranda of Agreements that ODEQ and NCRWQCB had signed with USEPA Regions 9 and 10 in 2008 and 2010, respectively, to develop[72] and implement[73] the Klamath River/Lost River TMDL.

In November 2010, USEPA subsequently approved the NCRWQCB's amended WQCP, in part,[74] and clarified the scope of two Klamath River segments properly included in California's CWA § 303(d) (TMDL) list because of impairments due to sediments – the segments spanning from Scott River to Trinity River, and from Iron Gate Dam to Scott River.[75] USEPA, however, did not fully agree with how California had calculated the TMDLs for the Klamath River to address the temperature, dissolved oxygen, nutrients, and microcystin impairments identified. *Principally, it disagreed with the state's categorization of these impairments as a TMDL load allocation*.[76]

According to USEPA, "'the incremental impairment from a dam' occurs because river waters containing pollutants (usually nutrients) are impounded, and the resulting change in physical conditions (velocity, depth, etc.) can create conditions in the reservoir that lead to violations or increased violation of water quality standards in the reservoir."[77] USEPA also admitted that "States around the country have taken different approaches to characterizing these incremental impairments from dams" which the agency had approved. As an example, USEPA cited how the State of Washington's Spokane River Dissolved Oxygen (DO) TMDL, which USEPA had approved, "first identified the incremental impairment from a dam and then assigned that incremental impairment to the dam operator as a 'responsibility' that would be implemented *under the CWA 401 certification process*."[78] USEPA then noted the complexity of calculating the extent of the Washington dam's impairment of the Spokane River's water quality.

> The State first simulated the ―natural‖ DO condition of the river by leaving the dam in place and assuming no other sources of pollution; this approach was used to represent the current critical condition (i.e., the dam is there, and there are no plans to remove it). Then the incremental

[71] *See* State of Oregon Department of Environmental Quality, *Upper Klamath and Lost River Subbasins Total Maximum Daily Load (TMDL) and Water Quality Management Plan (WPMP)* (Dec. 2010), *supra* at Executive Summary p. iii.
[72] *See* Memorandum of Agreement, *Klamath River/Lost River TMDL Development* (April 2008), available at: https://www.oregon.gov/deq/FilterDocs/kLostMOA200804.pdf.
[73] *See* Memorandum of Agreement, *Klamath River/Lost River TMDL Development* (June 2009), available at: https://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/klamath_river/100927/06_KlamathMOA.pdf.
[74] *See* United States Environmental Protection Agency Region IX, *Review of California's 2008-2010 Section 303(d) List* (Nov. 12, 2010), available at: https://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/303d/pdf/101115/USEPA_Approval_Letter.pdf.
[75] *Id*., at p. 6, Table 1.
[76] *See* U.S. Environmental Protection Agency, *EPA Region 9 Review of the TMDLs for the Klamath River in California Addressing Nutrients, Temperature, Organic Enrichment/Low Dissolved Oxygen* (Dec. 2010), at 2, available at: https://www.waterboards.ca.gov/northcoast/water_issues/programs/tmdls/klamath_river/101229/Klamath_TMDL_Final_checklist.pdf.
[77] *Id*., at 20.
[78] *Id*.

> impairment from the dam was calculated as the difference between the current critical condition DO conditions in the reservoir and the impairments that would occur in the reservoir when phosphorus concentrations entering the lake are at minimal levels of human impact, as represented by EPA's ecoregional criterion.[79]

USEPA expressed its disagreement with California's taking of a different approach in calculating its TMDL, asserting that California incorrectly "included the incremental impairments from the Klamath River dams in its load allocation to the dam owner" - PacifiCorp.

USEPA's disagreement with California's approach, however, is based on its thinly veiled *belief* that the scope of a State's list of "impaired" or "threatened" waterbodies need not be the same as its obligation to do TMDLs. USEPA's position boils down to a previously withdrawn 1999 proposed regulation wherein it disingenuously reasons how it "sees great value in listing waterbodies impaired or threatened by both pollutants and pollution" (emphasis added) pursuant to CWA § 303(d)(1)(A), while requiring states to address only waterbodies "impaired" or "threatened" by *pollutants* under CWA § 303(d)(1)(C).[80] USEPA's logic, however, is laid bare in its explanation of why the upstream nonpoint source pollutants that have deposited themselves in the reservoirs of each of the four PacifiCorp dams for decades should not be considered a 'load' or 'wasteload' for TMDL purposes.

> EPA believes that the incremental impairments from a dam, as discussed above, are not properly characterized as a 'load allocation' under CWA Section 303(d) or its implementing regulations at 40 CFR Part 130. Under CWA Section 303(d)(1)(C), a state is to develop TMDLs for 'pollutants.' *EPA does not believe it is appropriate to categorize the incremental impairments from a dam of the kind described in the Final TMDL Report for the Klamath River as a 'load' or 'wasteload' allocation because the dam is not contributing impairment-causing 'pollutants'* as defined in CWA Section 502(6).[81]

The slyness of USEPA's position becomes quite apparent when this explanation is compared to how Washington State's TMDL calculation had been reached. Clearly, Washington State had calculated the incremental impairment of the Spokane River attributable to nonpoint source pollutants settling in the dam reservoir "*by leaving the dam in place*" (emphasis added).[82] USEPA also had ceded federal jurisdiction to FERC under the auspices of the CWA §401 water quality certification process (i.e., hydroelectric generation-related environmental matters) incident to the dam owner's application for

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[79] *Id*., at n. 4.
[80] *Id*., at n. 5, citing Environmental Protection Agency, *Proposed Revisions to the Water Quality Planning and Management Regulation – Proposed Rule*, 64 Fed. Reg. 46012, 46022 (Aug. 23, 1999), available at: https://www.govinfo.gov/content/pkg/FR-1999-08-23/pdf/99-21416.pdf.
[81] *See* U.S. Environmental Protection Agency, *EPA Region 9 Review of the TMDLs for the Klamath River in California Addressing Nutrients, Temperature, Organic Enrichment/Low Dissolved Oxygen* (Dec. 2010), at 20.
[82] *Id*., at 21.

relicensure. Furthermore, USEPA left to the State of Washington the decision regarding whether to act on the FERC-licensed dam owner's application for a water quality certificate within a reasonable time period in order to address the nonpoint source pollution issue, or to waive that right and thereby cede jurisdiction to FERC.[83]

By analogy, in the case of the Klamath River Dams, USEPA had taken the position that, there can be no load-contributing pollutants at dam reservoirs that will be/have been removed as "the anticipated endpoint" of the KHSA/Amended KHSA process.[84] Therefore, it had decided it should cede jurisdiction to FERC under the auspices of the CWA §401 water quality certification process (i.e., hydroelectric generation-related environmental matters) incident to PacifiCorp's application for license transfer to the Klamath River Renewal Corporation KRRC. USEPA also had decided to leave to the State of California the decision regarding whether to act on KRRC's prospective water quality certificate application to address water quality protection upon removal. Presumably, California recognizes that if it and KRRC were to engage in repeated withdrawal and refiling of applications for water quality certifications, as PacifiCorp had previously done, and thereby failed to provide an expeditious state decision, FERC *could* interpret those actions as being contrary to the public interest and to the spirit of the Clean Water Act, and thus, as a "waiver" by the State of its CWA §401 authority to require such a certificate.[85] This would result in FERC reasserting its authority to authorize the proposed activity upon license transfer.

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[83] *See Constitution Pipeline Company, LLC*, 162 FERC ¶ 61,014 (Jan. 11, 2018), at n. 7, available at: https://www.ferc.gov/CalendarFiles/20180111122739-CP18-5-000.pdf ("Section 401 prohibits a federal licensing or permitting agency from authorizing any construction or operation activity that may result in a discharge into navigable waters unless the applicant for the federal license or permit obtains a certification (*or waiver thereof*) from the state where the discharge will originate that the discharge will comply with applicable water quality standards." (emphasis added).). *See also Id.*, at n. 33 ("*Waiver of the Water Quality Certification Requirements of Section 401(a)(1) of the Clean Water Act*, Order No. 464, 52 Fed. Reg. 5446, 5447-48 (Feb. 23, 1987), FERC Stats. & Regs. ¶ 30,730 (1987) (initially proposing that certification would be deemed waived if no action is taken on a certification request by 90 days after the public notice of the acceptance of the license application or one year from the date the certifying agency receives the certification request, whichever came first, but ultimately retained the full one-year waiver period because it best served competing interests).").

[84] *See* U.S. Environmental Protection Agency, *EPA Region 9 Review of the TMDLs for the Klamath River in California Addressing Nutrients, Temperature, Organic Enrichment/Low Dissolved Oxygen* (Dec. 2010), at 21. ("Specifically, on the Klamath River, **we note the ongoing Klamath Hydropower Settlement Agreement (KHSA) process, the anticipated endpoint of which is the removal of four of the Klamath River dams**. *In the event that the KHSA process does not result in the removal of the dams*, the States of California and Oregon still have the Section 401 Certification process and state regulatory mechanisms available for the regulation of the incremental impairments from the dams.") (emphasis added).

[85] *See Constitution Pipeline Company, LLC*, 162 FERC ¶ 61,014 (Jan. 11, 2018), *supra* at para. 23, and n. 50, citing *PacifiCorp*, 149 FERC ¶ 61,038, at PP 18-20 (2014), available at: https://www.ferc.gov/whats-new/comm-meet/2014/101614/H-3.pdf (holding that "in licensing proceedings before it, the Commission has the obligation to determine whether a state has complied with the procedures required by the Clean Water Act, including whether a state has waived certification. […] We continue to be concerned that states and licensees that engage in repeated withdrawal and refiling of applications for water quality certification are acting, in many cases, contrary to the public interest by delaying the issuance of new licenses that better meet current-day conditions than those issued many decades ago, and that these entities are clearly violating the spirit of the Clean Water Act by failing to provide reasonably expeditious state decisions; however, notwithstanding that concern, we do not conclude that they have violated the letter of that statute."); *Central Vermont Public Service Corporation*, 113 FERC ¶ 61,167, at P 16 (2005) "(noting that the process of repeatedly filing and withdrawing water quality certification applications is a 'scheme developed by [the state agency] and other parties, and [is] neither suggested, nor approved of, by the Commission').").

In both cases, USEPA conveniently stepped aside and ceded jurisdiction to FERC and the State, when arguably it should have retained federal jurisdiction under CWA § 303(d) to ensure the protection of the public and the environment. The problem is that, in the present case, **Klamath River dam removal will pose a genuine threat to human health and welfare which USEPA cannot ignore**.

Consequently, USEPA conditioned its December 2010 approval of California's proposed TMDLs upon the NCRWQCB's agreement to characterize and treat the incremental impairments from the four Klamath River dams "as something other than a TMDL load allocation."[86] "Conditioned on this clarification of the characterization of the incremental impairments from dams, EPA concludes that the State Board's submittal meets the requirements of CWA Section 303 and the underlying regulations at 40 CFR Part 130."[87]

In light of USEPA's refusal to treat nonpoint source pollutants and contaminants accumulated, aggregated and synergized in the four Klamath River dam reservoir sediments and water columns as a separate point source of pollution, it also is likely that the agency had not considered any discharge from the four Klamath River dams as a "stormwater" discharge into navigable waters requiring a National Pollutant Discharge Elimination System (NPDES) permit under CWA § 311 and accompanying regulations.[88]

In conclusion, without proper notice and comment required by the Administrative Procedure Act, USEPA effectively reinterpreted/changed the CWA § 303(d)/40 CFR Part 130 rules for calculating TMDLs as applied to nonpoint source dam-related impairments to water quality. It also compelled California and Oregon to calculate their jointly developed Klamath River basin TMDLs for temperature, dissolved oxygen, nutrients, and microcystin impairments consistent with that interpretation to ensure they did not reflect the incremental nonpoint source impairments arising from the John C. Boyle, Copco 1, Copco 2 and Iron Gate Dams upon planned dam removal. USEPA compelled this behavior, by otherwise refusing to approve these states' CWA § 303(d) submissions. USEPA, thereafter, in its comments approving the Interior Department Bureau of Reclamation's Draft[89] and Final[90] Environmental Impact Statements/Reports for Dam Removal, expressed biased support for

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[86] *See* U.S. Environmental Protection Agency, *EPA Region 9 Review of the TMDLs for the Klamath River in California Addressing Nutrients, Temperature, Organic Enrichment/Low Dissolved Oxygen* (Dec. 2010), at 21.

[87] *Id*.

[88] *See Los Angeles County Flood Control District v. National Resource Defense Council*, 568 U.S. ___, 133 S.Ct. 710 (2013), available at: https://www.supremecourt.gov/opinions/12pdf/11-338_kifl.pdf (holding under the CWA that a "discharge of pollutants" does not occur when polluted water flows from one portion of a river into a lower portion of the same river," citing *South Florida Water Management District v. Miccosukee Tribe*, 541 U.S. 95 (2004), holding that the transfer of polluted water between two parts of the same water body does not constitute a "discharge of pollutants" under the CWA.).

[89] *See* United States Environmental Protection Agency Region IX, *Review of Draft Environmental Impact Statement /Environmental Impact Report (EIS/EIR) for Klamath Facilities Removal, Klamath County*, Oregon and Siskiyou County, California (Dec. 29, 2011), available at: https://archive.epa.gov/region9/nepa/web/pdf/klamath-facilities-removal_deis_12-2011.pdf.

[90] *See* United States Environmental Protection Agency Region IX, *Review of Final Environmental Impact Statement /Environmental Impact Report (EIS/EIR) for Klamath Facilities Removal, Klamath County, Oregon and Siskiyou County,*

dam removal, without regard to the public health and welfare impacts the release of NPS pollutants and contaminants accumulated in dam reservoir sediments and water columns to the Klamath River would engender upon dam removal. USEPA also granted Interior such approval notwithstanding its "concerns regarding potential impacts to wetlands and the short-term effects on fisheries and water quality from dam deconstruction," because it "believe[d] that those concerns [could] be addressed through the implementation of mitigation measures."[91] USEPA, furthermore, supported the Department of Interior's assessment of the environmental benefits to be realized from the KHSA [and Amended KHSA] process[92] following dam removal even though those results were uncertain at best.[93]

V. USEPA Failed to Exercise its Primary CERCLA Jurisdiction Over the Presence of the Virtually Unexamined and Unreported Decades-Old Contaminants in the Sediments of the Four Klamath River Dam Reservoir Bottoms

Since at least 2006,[94] PacifiCorp, the current owner of the four FERC-licensed Klamath River dams the former Interior Secretary had designated for removal pursuant to the Klamath Hydroelectric Settlement

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California (June 14, 2013), available at: https://archive.epa.gov/region9/nepa/web/pdf/2013-06-14-klamath-facilities-removal-feis.pdf.

[91] *See* United States Environmental Protection Agency Region IX, *Review of Draft Environmental Impact Statement /Environmental Impact Report (EIS/EIR) for Klamath Facilities Removal, Klamath County*, Oregon and Siskiyou County, California (Dec. 29, 2011), *supra* at p. 2.

[92] *See* Water Quality Sub Team for the Secretarial Determination Regarding Potential Removal of the Lower Four Dams on the Klamath River, *Final Assessment of Long Term Water Quality Changes for the Klamath River Basin Resulting from KHSA, KBRA, and TMDL and NPS Reduction Programs* (Aug. 18, 2011), *supra* at p. 1 ("The primary purpose of this assessment is to discern the relative impacts of the Proposed Action as compared with the No Action alternative, including how these actions may interact with existing and proposed Total Maximum Daily Load (TMDL) implementation efforts and other ongoing water quality related programs in the Klamath Basin. The assessment represents the most comprehensive consideration to date of potential water quality related actions under KHSA and KBRA that would either directly or indirectly affect water quality in the Klamath Basin.").

[93] *Id*., at p. 2 ("In contrast [to the No Action Alternative], consideration of the Proposed Action Alternative includes removal of four dams as well as potential restoration projects associated with KHSA and KBRA; these collectively provide greater opportunities for water quality improvements that, together with TMDL implementation projects, would represent the most effective means to bring about significant and expeditious improvements toward meeting water quality standards and supporting fisheries by the end of the analysis period […]. Under the Action Alternative, KHSA and KBRA actions could result in notable water quality improvements. The smallest relative improvements in nutrient concentrations are projected for the tributaries feeding into Upper Klamath Lake; while small, the potential reductions there would help improve water quality conditions in downstream reaches. In contrast, the potential is high for water quality improvements in Upper Klamath Lake, Link River, and Keno Reservoir, where water quality impairments present significant stress to fish populations. However, until KBRA projects (including size, location, etc.) are selected, implemented, and evaluated, *the uncertainty around the magnitude and pace of water quality improvements are largely unknown*. In the Klamath Hydroelectric Project (KHP) reach, dam removal would produce significant and rapid improvements – particularly during the 'critical period' - for temperature, algal biomass, microcystin, and DO. In the KHP reach, as well as in the Klamath River below Iron Gate Dam, nutrient concentrations are expected to improve over time; however the magnitude and pace of these improvements are uncertain. Improvement to water quality is also anticipated below the Scott River to the estuary, *though to a lesser degree. Uncertainties related to implementation of KBRA and KHSA affect this assessment of projects identified under the Action Alternative*") (emphasis added).

[94] *See* Shannon & Wilson, Inc., *Upland Contaminant Source Study, Segment of Klamath River, Oregon and California*, report prepared for Gathard Engineering Consulting, Project no. 21-1-11192-001 (Aug. 2006) and Shannon & Wilson, Inc., *Sediment Sampling, Geotechnical Testing, and Data Review Report, Segment of Klamath River, Oregon and California*,

Agreement process, has known about the presence of nonpoint source ("NPS") hazardous substances and pollutants and contaminants attributable to various decades-long upstream Oregon-based industrial activities, which have settled, accumulated and become stored in the sediments at the reservoir bottoms and water columns of each said dam over many decades. However, PacifiCorp has apparently failed to submit the required CERCLA notification to the former and current EPA Administrators to apprise them of such substances at these sites, even though a number of these substances, including heavy metals (such as arsenic and nickel, as well as, chromium, mercury and zinc[95] and inorganic chemicals (such as dieldrin, dioxin, DDT and pentachlorophenol) appeared on the Clean Water Act and CERCLA lists of hazardous substances and would have required further EPA study.[96]

The facts reveal that samples of reservoir bottom sediments had been taken from these locations/sites during 2004-2005 and, again, during 2009-2011, as the 2011 DOI Draft and 2012 Final Environmental

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report prepared for Gathard Engineering Consulting, Project no. 21-1-12195-001 (Sept. 2006), cited in U.S. Department of Interior Bureau of Reclamation, *Sediment Chemistry Investigation: Sampling, Analysis, and Quality Assurance Findings for Klamath River Reservoirs and Estuary, October 2009 - January 2010*, In Support of the Secretarial Determination on Klamath River Dam Removal and Basin Restoration, Klamath River, Oregon and California (May 2011), at pp. 5, 21-22, 31, Appendix C – pp. 9-10, 12 available at: https://klamathrestoration.gov/sites/klamathrestoration.gov/files/Klamath%20Sediment%20Chemistry%20Report_050411_bookmarked.pdf. *See also* Shannon & Wilson, Inc., *Preliminary Review of 2006 Analytical Testing Data From Sediment Sampling Conducted at Iron Gate, Copco 1 and JC Boyle Reservoirs, Klamath River, Oregon and California* (Contract No. 21-1-12195-001 (Sept. 22, 2006), available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/records/region_1/2010/ref3663.pdf.

[95] *See* U.S. Department of Interior Bureau of Reclamation, *Sediment Chemistry Investigation: Sampling, Analysis, and Quality Assurance Findings for Klamath River Reservoirs and Estuary, October 2009 - January 2010*, In Support of the Secretarial Determination on Klamath River Dam Removal and Basin Restoration, Klamath River, Oregon and California (May 2011), *supra* at p. 48 ("The percent recoveries for QA sample CDH-W-CPN were unacceptably high for chromium, mercury, and zinc. The percent recovery for QA sample CDH-W-CPT **was unacceptably high for mercury**. These QA samples were submitted for reanalysis. **The reanalyzed results confirmed the original results**. Therefore, the original chromium, mercury, and zinc results for CDH-W-CPN were accepted as valid and the original mercury result for CDH-W-CPT was accepted as valid; **there were no qualifications for accuracy applied to the environmental samples that were analyzed with these accuracy check samples**.") (emphasis added). *Id*. *See also* Leslie Lollich and Malcolm Terence, *Scoping Meeting for California Water Quality Permit*, Two Rivers Tribune, Vol. 22, Issue 5 (Feb. 2, 2016), available at: http://www.tworiverstribune.com/2016/03/residents-voice-concerns-about-klamath-river-dams/.

[96] *See* 40 C.F.R. § 302.4, Table 302.4 - List of Hazardous Substances and Reportable Quantities, available at: http://www.ecfr.gov/cgi-bin/text-idx?SID=c17ee69c73a3c0af003e20d42983f960&mc=true&node=pt40.28.302&rgn=div5#se40.28.302_14. *See also* United States Environmental Protection Agency Office of Solid Waste and Emergency Response, *List of Lists - Consolidated List of Chemicals Subject to the Emergency Planning and Community RightTo-Know Act (EPCRA), Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Section 112(r) of the Clean Air Act*, EPA 550-B-15-001 (March 2015), available at: https://www.epa.gov/sites/production/files/2015-03/documents/list_of_lists.pdf; *See also* U.S. Department of the Interior and California Department of Fish and Game, *Klamath Facilities Removal Public Draft Environmental Impact Statement/Environmental Impact Report*, State Clearinghouse # 2010062060 (Sept. 2011), at Section 3.2.3.8.2, pp. 253-254, available at: https://klamathrestoration.gov/sites/klamathrestoration.gov/files/KlamathFacilitiesRemoval_EISEIR_09222011.pdf; U.S. Department of the Interior and California Department of Fish and Game, *Klamath Facilities Removal Final Environmental Impact Statement/Environmental Impact Report*, Vol. 1, State Clearinghouse # 2010062060 (Dec. 2012), at Sec. 3.2.3.8.2, pp. 312-31, available at: https://klamathrestoration.gov/sites/klamathrestoration.gov/files/Additonal%20Files%20/1/4/Volume%20I_FEIS.pdf.

Impact Statements' ("DEIS" and "FEIS") discussion of sediment contaminants disclosed.[97] PacifiCorp, therefore, knew or should have known, or should have at least *suspected* that some of these substances had been released when it discharged reservoir waters from the gates of its facilities. Arguably, EPA became aware of these toxic sediments only because it had participated in Interior Department Klamath Technical Management Team preliminary efforts to evaluate reservoir bottom sediments samples taken from each of the four dams, and had found that there were then "no current public health concerns from direct human exposure to reservoir sediments."[98]

In other words, it is arguable that PacifiCorp knowingly failed to notify the USEPA Administrator of the possibility (probability) of decades of hazardous substances stored (accumulated/aggregated) in the reservoir bottoms of John C. Boyle, Copco 1, Copco 2 and Iron Gate dams.[99] And at least one PacifiCorp consultant had previously identified the potential for CERCLA liability in connection with dam removal, and the need to consider the use of a CERLA § 122 administrative order as a possible risk mitigation tool.[100] It is unknown whether USEPA had ever quietly pursued the negotiation of a settlement agreement to address remedial actions PacifiCorp would need to take that also could be

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[97] *See* U.S. Department of the Interior and California Department of Fish and Game, *Klamath Facilities Removal Public Draft Environmental Impact Statement/Environmental Impact Report*, State Clearinghouse # 2010062060 (Sept. 2011), *supra* at Section 3.2.3.8.2, pp. 253-254; *See also* U.S. Department of the Interior and California Department of Fish and Game, *Klamath Facilities Removal Final Environmental Impact Statement/Environmental Impact Report*, Vol. 1, State Clearinghouse # 2010062060 (Dec. 2012), *supra* at Sec. 3.2.3.8.2, pp. 312-31.

[98] *See* U.S. Department of Interior Fish and Wildlife Service and U.S. Environmental Protection Agency, *Sediment Data from Klamath River Reservoirs Available - Preliminary Results Suggest Human Health is Not at Risk Due to Contact with Sediment*, Klamath Settlement Process Secretarial Determination, Press Release (Aug. 12, 2010), available at: https://klamathrestoration.gov/sites/klamathrestoration.gov/files/home/NR.sediments.8.12.FINAL.pdf ("announc[ing] preliminary results of reservoir bottom sediment sampling. The results of the tests indicate human health is not at risk due to contact with the sediment and confirm the findings of previous reports regarding the low-level presence of chemicals in the sediment behind the dams including, PCBs and dioxins. […] 'Based on our initial screening of the data, these levels indicate **no current public health concerns from direct exposure to reservoir sediments**,' said Alexis Strauss, Director of the Water Division in EPA Region 9. '**A more thorough evaluation of these data, including human health risk**s, will be conducted as part of the Environmental Impact Statement/Environmental Impact Report on the issue of Klamath River dam removal.'") (emphasis added). *See also* U.S. Department of Interior, *Summary of Klamath Secretarial Determination Preliminary Dioxin Findings*, Klamath Settlement Process Secretarial Determination, Press Release (Aug. 12, 2010), available at: https://klamathrestoration.gov/sites/klamathrestoration.gov/files/Keep-Me-Informed/RiverRes/Preliminary%20Dioxin%20TEQ%20Calculations.pdf ("Based on an initial screening of the data, dioxin appears to be present at levels above the most protective of the various screening levels for sediment disposal, and in the two upstream reservoirs (JC Boyle and Copco 1) it is slightly above available National and western United States background values. These dioxin levels, however, **indicate no current public health concerns from direct human exposure to reservoir sediments**. A more thorough evaluation of Klamath Reservoir sediments will be completed as part of an Environmental Impact Statement/Environmental Impact Report for the Secretarial Determination on Klamath Dam removal.") (emphasis added).

[99] CERCLA § 103(c); 42 U.S.C. § 9603(c).

[100] *See* Camp Dresser & McKee Inc. (CDM), *Evaluation and Determination of Potential Liability Associated with the Decommissioning and Removal of four Hydroelectric Dams on the Klamath River By Any Agent*, prepared for U.S. Department of the Interior Bureau of Reclamation (July 18, 2008), at p. 2-75, available at: http://www.klamathbasincrisis.org/settlement/documents/Klamath_Liability_Determination_CDM%20Report_July_2008_1%20(3).pdf.

entered as an enforceable consent judgment.[101] CERCLA likely applies in this case, even though there is no record that USEPA has yet added these four PacifiCorp-owned and operated Klamath River dams to the National Priorities List (NPL), commonly known as "Superfund."[102]

The Obama administration USEPA Administrator had been well aware that removal of the four PacifiCorp-owned and operated Klamath River dams pursuant to the Klamath Hydroelectric Agreement (Amended KHSA) process, and consequent release of nonpoint source pollutants, contaminants and hazardous substances which have accumulated and become stored in the bottom sediments of the reservoirs of these dams would pose a substantial threat to human health and welfare. CERCLA requires the USEPA Administrator to ensure that U.S. Department of Health and Human Services' Agency for Toxic Substances and Disease Registry (ATSDR")[103] performed assessments of the health risks associated with such NPS pollutants, contaminants and hazardous substances, taking into account the potential migration of any hazardous substance or pollutant or contaminant through such surface water to downstream sources of drinking water. However, the administrative record does not reflect that USEPA or ATSDR has yet conducted any such health-related risk assessment. In fact, the draft and final versions of the Interior Secretary's environmental impact statements ("DEIS" and "FEIS"), which were intended to satisfy only the requirements of the National Environmental Policy Act ("NEPA"), clearly indicated otherwise.

Although "[a]s part of the Klamath Dam Removal Secretarial Determination studies, a sediment evaluation [had been] undertaken during 2009–2011 to evaluate potential environmental and human health impacts of the downstream release of sediment deposits currently stored behind the dams under the Proposed Action [dam removal],"[104] "[…] special evaluations […] such as risk assessments [had…] not [been] utilized for this [the Secretarial Determination sediment] evaluation." (emphasis added).[105]

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[101] CERCLA §122(a)-(b) and (g)(4); 42 U.S.C. §9622.

[102] *See* Texas Department of State Health Services and U.S. Department of Health and Human Services Agency for Toxic Substances and Disease Registry, *Public Health Assessment Final Release, Donna Reservoir and Canal System Donna, Hidalgo County, Texas, EPA Facility ID: TX0000605363* (Nov. 24, 2010), available at: https://www.atsdr.cdc.gov/hac/pha/donnareservoir122010/donnareservoirphafinal11242010.pdf. *See also* United States Environmental Protection Agency, *EPA Superfund Program: MILLTOWN RESERVOIR SEDIMENTS, MILLTOWN, MT*, available at: https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0800445; United States Environmental Protection Agency, *Superfund - National Priorities List (NPL) Sites - by State*, available at: https://www.epa.gov/superfund/national-priorities-list-npl-sites-state#CA.

[103] *See* 40 C.F.R. § 300.4(a); § 300.175(8)(i) ("[…] Within the Public Health Service, the primary response to a hazardous materials emergency comes from Agency for Toxic Substances and Disease Registry (ATSDR) and the Centers for Disease Control (CDC). […] CDC takes the lead during petroleum releases regulated under the CWA and OPA while ATSDR takes the lead during chemical releases under CERCLA.").

[104] *See* U.S. Department of the Interior and California Department of Fish and Game, *Klamath Facilities Removal Public Draft Environmental Impact Statement/Environmental Impact Report*, State Clearinghouse # 2010062060 (Sept. 2011), *supra* at Sec. 3.2.3.8.2, p. 253. *See also* U.S. Department of the Interior and California Department of Fish and Game, *Klamath Facilities Removal Final Environmental Impact Statement/Environmental Impact Report*, Vol. 1, State Clearinghouse # 2010062060 (Dec. 2012), *supra* at Sec. 3.2.3.8.2, pp. 312-31.

[105] *See* U.S. Department of the Interior and California Department of Fish and Game, *Klamath Facilities Removal Public Draft Environmental Impact Statement/Environmental Impact Report*, State Clearinghouse # 2010062060 (Sept. 2011), *supra* at Sec. 3.2.4.1.7, p. 263. *See also* U.S. Department of the Interior and California Department of Fish and Game,

When samples were found to exceed human health screening levels, the DOI response was to rely upon Stillwater and Gathard studies claiming the risk would be minimized once the dams were removed because the chemicals were highly volatile and would evaporate or otherwise dissipate rapidly upon exposure to the air.[106]

The Obama administration's former USEPA Administrator also had failed, like the current administration's former USEPA Administrator, to conduct assessments of the indirect risks to human health posed by those hazardous substances known to have "accumulated in invertebrate tissues (i.e., acenaphthene, arsenic, benzo(a)pyrene, DDT/DDE, endosulfan I, endosulfan II, endosulfan sulfate, fluoranthene, hexachlorobenzene, lead, mercury, phenanthrene, pyrene, total PBDEs, total PCBs)" (e.g., crustaceans) that humans could potentially consume.[107] The DEIS and FEIS also clearly stated that, "fish tissue samples […] collected in Copco 1 and Iron Gate Reservoirs and analyzed for total mercury […]" *exceeded federal and state criteria and guidelines*.[108]

USEPA likely did not conduct assessments of human health risks directly and indirectly tied to the chemicals of concern ("COCs"), hazardous substances, pollutants and/or contaminants contained in the dam reservoir bottom sediments because the methodologies, protocols and processes USEPA had previously utilized in its Integrated Risk Information System ("IRIS") to conduct risk assessments on hazardous substances such as dichlorodiphenyltrichloroethane ("DDT"), dieldrin and

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Klamath Facilities Removal Final Environmental Impact Statement/Environmental Impact Report, Vol. 1, State Clearinghouse # 2010062060 (Dec. 2012), *supra* at 3.2.4.1.7, p. 323.

[106] *See, e.g.*, Gathard Engineering Consulting, *Klamath River Dam and Sediment Investigation* (Nov. 2006), at pp. 1-2, available at: https://www.fws.gov/yreka/KRI/GECFinalReport.pdf. See also Gathard Engineering Consulting, *Klamath River Sediment Study* (Sept. 21, 2006), at 4-41, available at: https://www.klamathwaterquality.com/documents/CCC_KHP_Dams_Out_9_22_06.pdf.

[107] *See* U.S. Department of the Interior and California Department of Fish and Game, *Klamath Facilities Removal Public Draft Environmental Impact Statement/Environmental Impact Report*, State Clearinghouse # 2010062060 (Sept. 2011), *supra* at Sec. 3.2.3.8.3, p. 255, citing CDM and Stillwater Sciences, *Screening-Level Evaluation of Contaminants in Sediments from Three Reservoirs and the Estuary of the Klamath River, 2009-2011*, prepared for U.S. Department of the Interior (Sept. 2011), available at: https://klamathrestoration.gov/sites/klamathrestoration.gov/files/Klamath_Draft%20Sediment%20Interpretive%20Report%20Final.pdf. *See also* U.S. Department of the Interior and California Department of Fish and Game, *Klamath Facilities Removal Final Environmental Impact Statement/Environmental Impact Report*, Vol. 1, State Clearinghouse # 2010062060 (Dec. 2012), *supra* at Sec. 3.2.3.8.2, p. 313, citing CDM and Stillwater Sciences, *Screening-Level Evaluation of Contaminants in Sediments from Three Reservoirs and the Estuary of the Klamath River, 2009-2011*, prepared for U.S. Department of the Interior (Sept. 2011), *supra*.

[108] *See* U.S. Department of the Interior and California Department of Fish and Game, *Klamath Facilities Removal Public Draft Environmental Impact Statement/Environmental Impact Report*, State Clearinghouse # 2010062060 (Sept. 2011), *supra* at Sec. 3.2.8.3, p. 245. *See also* U.S. Department of the Interior and California Department of Fish and Game, *Klamath Facilities Removal Final Environmental Impact Statement/Environmental Impact Report*, Vol. 1, State Clearinghouse # 2010062060 (Dec. 2012), *supra* at Sec. 3.2.8.3, p. 314 ("**SWAMP data for Iron Gate and Copco reservoirs indicate mercury tissue concentrations above the USEPA criterion** of 300 ng/g methylmercury (for consumers of noncommercial freshwater fish); and greater than OEHHA public health guideline levels advisory tissue levels (Klasing and Brodberg 2008) for consumption for 3 and 2 servings per week (70 and 150 ng/g wet weight, respectively) and the fish contaminant goal (220 ng/g wet weight)."). (emphasis added).

pentachlorophenol[109] were then considered questionable, at best. Indeed, in 2011, the National Academy of Sciences had determined EPA's IRIS human and ecological toxicological risk assessment process had been seriously flawed and in need of substantial revision.[110]

In addition, that bore samples taken had been few in number for the total reservoirs' surface acreage and generally taken at relatively shallow depths, would seem to indicate the federal agencies intended to downplay the toxicity of the sediments containing chemicals included on the CWA and CERCLA hazardous substance lists. For example, as the Bureau of Reclamation explained, the 2009 Gathard Engineering Consulting study methods used

> to analyze the physical and chemical properties of the sediments [were] adequate and the number of samples collected seem[ed] reasonable for an appraisal-level analysis. Appraisal-level designs and cost estimates represent an early stage of project development based on available data, and are used to determine whether more detailed investigations of a potential project are justified. Reclamation does not use appraisal-level cost estimates to seek Congressional authorization. *Approximately 26 samples were collected in the reservoirs and none of these samples contained hazardous material based upon criteria established under the Puget Sound Dredged Disposal Analysis program*. The samples were spaced throughout the reservoirs in a reasonable manner, but *only one sample was collected at a depth greater than 10 feet of the sediment stored in the reservoir*. Considering the size of the impoundments and the costs of removal, the Team recommends collecting additional samples for feasibility design. There would be three reasons for collecting additional samples: 1) to verify the absence of hazardous material at all sediment depths, 2) to obtain physical sediment properties at all sediment depths, and 3) to improve the estimate of the stored sediment volume. *The Team believes that it is highly unlikely that hazardous materials exist in the reservoir sediment because with 26 samples collected there would have been at least some indication of contamination. However, this needs to be*

[109] *See* U.S. Environmental Protection Agency National Center for Environmental Assessment, *Integrated Risk Information System (IRIS) Chemical Assessment Summary – DDT* (3/31/1987), available at: https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0147_summary.pdf; U.S. Environmental Protection Agency National Center for Environmental Assessment, *Integrated Risk Information System (IRIS) Chemical Assessment Summary – Dieldrin* (09/07/1988), available at: https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0225_summary.pdf; U.S. Environmental Protection Agency, *Toxicological Review of Pentachlorophenol in support of the Integrated Risk Information System (IRIS)*, EPA/635/R-09/004F (2010) available at: https://cfpub.epa.gov/ncea/iris_drafts/recordisplay.cfm?deid=230890.

[110] *See* National Research Council, *Review of EPA's Integrated Risk Information System (IRIS) Process*, National Academies Press (2014), at 86-87, available at: https://www.nap.edu/catalog/18764/review-of-epas-integrated-risk-information-system-iris-process (finding that USEPA had use the "weight-of-evidence approach to integrate lines of evidence of various qualities into a single judgment for purposes of assessing identified toxicological hazards, and thus, possible, not actual risks, and had done so in scientifically unreliable manner).

verified at all sediment depths and for more locations within the reservoir.[111]

It is rather unfathomable that only 26 bore samples had been taken from the reservoir bottoms of the four dams three of which cover approximately 2,400 surface acres. And although the under-detection of COCs from the few reservoir composite samples was thereafter reported as possibly giving rise to biased results,[112] DOI (USGS)[113] and USEPA, nevertheless, found from the limited data on sediment quality behind the dams that the risk-based and effects-based values for dioxins did not exceed estimated regional background concentrations.[114] When samples were found to exceed human health screening levels, as in the case of microcystin growth in dam reservoirs, the DOI response was to claim the risk would be minimized once the dams were removed despite the presence of such toxic substances throughout the Klamath River.

The record does not reflect, furthermore, that the USEPA Administrator had conducted, as had been required, an assessment of permanent solutions and alternative treatment technologies, or resource recovery technologies that would result in a permanent and significant decrease in the toxicity, mobility, or volume of such hazardous substances, pollutants, and contaminants.[115] Moreover, the record does not reflect that the EPA Administrator had addressed the long-term effectiveness of various alternatives, taking specific account *inter alia* of the short- and long-term potential for adverse health effects from human exposure, and the potential threat to human health and the environment associated with excavation, transportation, and redisposal, or containment. Furthermore, the EPA Administrator failed to select a remedial action that is protective of human health as well as the environment.[116]

Lastly, the record does not reflect that the USEPA Administrator had assessed the human health risks associated with the contamination or potential contamination resulting from the release upon dam removal of the nonpoint source runoff of upstream-derived hazardous substances, pollutants and contaminants that had settled in the water columns of the four dam reservoirs, and consequently, in the

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[111] *See* U.S. Department of Interior Bureau of Reclamation, *Klamath River Dam Removals – Team Review of A/E Study, Klamath Hydroelectric Project FERC License No. 2082 Oregon-California* (Feb. 17, 2009), at 2-3, available at: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.689.7605&rep=rep1&type=pdf.

[112] *See* U.S. Department of Interior Bureau of Reclamation, *Sediment Chemistry Investigation: Sampling, Analysis, and Quality Assurance Findings for Klamath River Reservoirs and Estuary, October 2009 - January 2010*, In Support of the Secretarial Determination on Klamath River Dam Removal and Basin Restoration, Klamath River, Oregon and California (May 2011), *supra* at pp. 5, 12, 21, 31; 304 (for statements regarding pentachlorophenol); 398 and 401 (regarding Dieldrin).

[113] *See* U.S. Department of Interior U.S. Geological Survey, *Screening-Level Evaluation of Potential Toxicity Risks from Release of Sediments Behind Four Dams on the Klamath River, Oregon and California*, available at: http://www.rrnw.org/wp-content/uploads/11.3-Anderson.Klam_Reservoir_Sediments.pdf.

[114] *See* U.S. Department of Interior, *Summary of Klamath Secretarial Determination Preliminary Dioxin Findings*, Klamath Settlement Process Secretarial Determination, Press Release (Aug. 12, 2010), *supra;* United States Environmental Protection Agency Region IX, *Memorandum - Compilation and Discussion of Sediment Quality Values for Dioxin, and their Relevance to Potential Removal of Dams on the Klamath River*, Brian Ross (Jan. 13, 2010), available at: https://klamathrestoration.gov/sites/klamathrestoration.gov/files/EPA%20Klamath%20dioxin%20memo%201-13-10%20final.pdf.

[115] CERCLA §121(b)(1); 42 U.S.C. § 9621(b)(1).

[116] *Id*.

reservoir's surface waters used for recreation. In addition, the Obama administration USEPA Administrator had failed to assess the potentially severe human health risks associated with the release upon dam removal of toxic microcystin[117] occurring in these reservoirs which greatly exceeded recommended federal and state thresholds,[118] and which are acknowledged as also being currently present downriver of the dams[119] and as likely to be present following the dams' removal.[120]

VI. FERC Should Not Have Federal Jurisdiction Over Klamath River Dam Removal

A. USEPA Retained Primary Jurisdiction Over Dam Removal Under CWA and CERCLA:

[117] *See* United States Environmental Protection Agency Office of Water, *Drinking Water Health Advisory for the Cyanobacterial Microcystin Toxins*, EPA-820R15100 (June 15, 2015), at Executive Summary p. 1, available at: https://www.epa.gov/sites/production/files/2017-06/documents/microcystins-report-2015.pdf.

[118] *See* U.S. Department of the Interior and California Department of Fish and Game, *Klamath Facilities Removal Public Draft Environmental Impact Statement/Environmental Impact Report*, State Clearinghouse # 2010062060 (Sept. 2011), *supra* at Sec. 3.2.3.7, pp. 251-252. *See also* U.S. Department of the Interior and California Department of Fish and Game, *Klamath Facilities Removal Final Environmental Impact Statement/Environmental Impact Report*, Vol. 1, State Clearinghouse # 2010062060 (Dec. 2012), *supra* at Sec. , p. 311 ("High levels of microcystin also occur during summer months in Copco 1 and Iron Gate Reservoirs; peak measured concentrations exceeded the California State Water Resources Control Board (SWRCB)/Office of Environmental Health and Hazard Assessment (OEHHA) public health threshold of 8 µg/L (SWRCB et al. 2010) by over 1000 times in Copco 1 Reservoir during 2006–2009 and extremely high concentrations (1,000–73,000 µg/L) were measured during summer algal blooms in both Copco 1 and Iron Gate Reservoirs during 2009"), citing **(Watercourse Engineering 2011, see Appendix C for more detail)**. (emphasis added).

[119] *See* U.S. Department of the Interior and California Department of Fish and Game, *Klamath Facilities Removal Public Draft Environmental Impact Statement/Environmental Impact Report*, State Clearinghouse # 2010062060 (Sept. 2011), *supra* at Sec. 3.2.3.7, p. 252. *See also* U.S. Department of the Interior and California Department of Fish and Game, *Klamath Facilities Removal Final Environmental Impact Statement/Environmental Impact Report*, Vol. 1, State Clearinghouse # 2010062060 (Dec. 2012), *supra* at Sec. 3.2.3.7, p. 311 ("Throughout the Klamath River, high chlorophyll-a concentrations have been shown to correlate with the toxigenic cyanobacteria blooms where M. aeruginosa was present in high concentrations and sharp increases in microcystin levels above WHO numeric targets (Kann and Corum 2009) and SWRCB, California Department of Public Health, and OEHHA guidelines (SWRCB et al. 2010). Since 2007, high levels of microcystin have prompted the posting of public health advisories around the reservoirs and, during certain years, along the length of the Klamath River during summer months. In 2010, the KHP reservoirs and the entire river downstream from Iron Gate Dam (including the estuary) were posted to protect public health due to elevated cyanobacteria cell counts and cyanotoxin (i.e., microcystin) concentrations.").

[120] *See* Water Quality Sub Team for the Secretarial Determination Regarding Potential Removal of the Lower Four Dams on the Klamath River, *Final Assessment of Long Term Water Quality Changes for the Klamath River Basin Resulting from KHSA, KBRA, and TMDL and NPS Reduction Programs* (Aug. 18, 2011), at p.11, available at: https://klamathrestoration.gov/sites/klamathrestoration.gov/files/Final%20Klamath%20WQ%20Changes%20Analysis%20Approach_08_18_2011.pdf ("Implementation of the Proposed Action [dam removal] would be expected to reduce these cyanobacterial blooms in the Klamath Hydroelectric Reach and below due to a variety of factors. Of the many factors that may influence these blooms, the removal of the lacustrine (reservoir) environments behind the dams is likely to have the most pronounced influence. Removal of the reservoirs would eliminate optimal habitats for the growth and proliferation of toxigenic nuisance algal species such as Microcystis aeruginosa. *While algal (and toxins) produced in Upper Klamath Lake could still be transported into the Klamath Hydroelectric Reach and downstream at levels exceeding water quality objectives for Oregon and California, additional in situ production of the toxins would be significantly less likely to occur in the free-flowing river following dam removal*") (emphasis added).

The Obama administration USEPA likely recognized that the Federal Energy Regulatory Commission ("FERC") has exclusive authority, under the Federal Power Act ("FPA") (16 U.S.C. §§ 791-828c), to license all nonfederal hydropower projects located on navigable waters. "The hydropower dam relicensing process offers an opportunity to assess the balance between natural resources and the generation of electricity and to address some areas that are determined to be problematic. […] In conjunction with FPA licensing requirements, states and authorized tribes certify that discharges (including those that originate from dams) meet water quality standards under section 401 of the Clean Water Act (CWA)."[121]

On June 16, 2016, the FERC granted "PacifiCorp's May 6, 2016 motion to hold in abeyance the processing of the relicense application for the Klamath Hydroelectric Project No. 2082,"[122] consistent with the amended Klamath Hydroelectric Settlement Agreement ("KHSA") process.[123] In its ruling, FERC noted that, consistent with the amended KHSA process, "PacifiCorp and a new entity, the Klamath River Renewal Corporation (Renewal Corporation), will jointly file on or around July 1, 2016, an application to transfer the four developments to the Renewal Corporation."[124] In addition, the agency noted that "on or around July 1, 2016, the Renewal Corporation will file an application with the Commission to surrender and remove the four dams, and applications for water quality certifications under section 401 of the Clean Water Act for dam removal with the California State Water Resource Control Board (California Water Board) and Oregon Department of Environmental Quality (Oregon DEQ)."[125]

On June 24, 2016, "with the relicensing proceeding in abeyance,[126] and consistent with Section 6.5.2 of the amended KHSA," PacifiCorp filed with FERC a request to withdraw the prior November 10, 2015 applications for water quality certification it had filed with the California State Water Resources Control Board Oregon Department of Environmental Quality to ensure the California and Oregon portions of Project No. P-2082 were in compliance with CWA § 401 and the respective state requirements.[127] Tongue-in-cheek, PacifiCorp reserved the right to reactivate these applications if the circumstances changed, apparently emboldened that FERC had previously ruled that it would not conclude that repeated withdrawal and refiling of license applications violated the letter of the Clean Water Act.[128] As previously discussed, FERC would, even under these circumstances, retain

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[121] *See* United States Environmental Protection Agency Office of Water, *National Management Measures to Control Nonpoint Source Pollution from Hydromodification*, EPA 841-B-07-002 (July 2007), at p. 4-3, available at: https://www.epa.gov/sites/production/files/2015-09/documents/cover_frontmatter_web_0.pdf.

[122] *See* Federal Energy Regulatory Commission, *Pacificorps - Order Holding Relicensing Proceeding in Abeyance*, 155 FERC ¶ 61,271 (June 16, 2016), at p. 4, available at: http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14277547.

[123] *Id*., at para. 7.

[124] *Id*., at para. 6.

[125] *Id*.

[126] *See* PacifiCorp, *Order Holding Relicensing Proceeding in Abeyance*, 155 FERC ¶ 61,271 (June 16, 2016), available at: https://www.ferc.gov/whats-new/comm-meet/2016/061616/H-2.pdf.

[127] *See* PacifiCorp, *Withdrawal of Section 401 Water Quality Certification Applications in Oregon and California, for the Klamath Hydroelectric Project (FERC Project No. 2082)*, Docket No. P-2082-000, Submittal 20160624-5112 (June 24, 2016), available at: http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14283864.

[128] *Id*. *See also PacifiCorp*, 149 FERC ¶ 61,038, at PP 18-20 (Oct. 16 2014), available at: https://www.ferc.gov/whats-new/comm-meet/2014/101614/H-3.pdf (holding that "in licensing proceedings before it, the Commission has the obligation

jurisdiction over the transfer of the four PacifiCorp dam licenses to KRRC, and over KRRC's eventual dam license terminations and decommissions. However, as previously discussed, it is because of USEPA's shrewd maneuver during the last presidential administration that FERC has since retained jurisdiction over the dams.

On January 29, 2019, however, the U.S. Court of Appeals for the District of Columbia Circuit ruled the repeated withdrawal and resubmission of water quality certification requests pursuant to the CWA § 401 process that had been agreed upon between PacifiCorp and the States of California and Oregon did not toll each state's one-year waiver period, and thus, did not trigger new statutory periods of review. Thus, the Court found that FERC had acted arbitrarily and capriciously when it treated each PacifiCorp resubmission of an application over the course of a decade as an independent request subject to a new period of review. "Such an arrangement does not exploit a statutory loophole; it serves to circumvent a congressionally granted authority over the licensing, conditioning, and developing of a hydropower project." *Hoopa Valley Tribe v. Federal Energy Regulatory Commission*, No. 14-1271 (D.C. Cir. Jan. 25, 2019), slip op. at 11.[129] According to the Court, "Congress intended [CWA] Section 401 to curb a *state's* dalliance or unreasonable delay." Slip op at 12 citing 115 Cong. Rec. 9264 (1969). The Circuit Court's decision directs FERC "to proceed with its review of, and licensing determination for, the Klamath Hydroelectric Project" (slip op. at 14) (i.e., with the license transfers from PacifiCorp to KRRC), and ultimately, to KRRC's decommissioning of each dam's hydroelectric transmission, without regard for the risk to human health and welfare that the release of the accumulated toxins in the dam reservoir bottoms would create.

Notwithstanding this recent ruling, USEPA arguably should have jurisdiction over the dam removal process because of the four dam's demonstrated contribution to the impairment of the Klamath River. As the result of the decades-old aggregation of nonpoint source pollutants in each dam's reservoir bottom, the release of those accumulated toxic sediments upon dam removal seriously threatens public health and welfare, within the meaning of CWA § 303(d).

In *Clark Fork and Blackfoot, LLC*,[130] the FERC ruled that it no longer had jurisdiction over the 120-mile Milltown Project (dam) site located along the Clark Fork River in southwestern Montana where

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to determine whether a state has complied with the procedures required by the Clean Water Act, including whether a state has waived certification. […] We continue to be concerned that states and licensees that engage in repeated withdrawal and refiling of applications for water quality certification are acting, in many cases, contrary to the public interest by delaying the issuance of new licenses that better meet current-day conditions than those issued many decades ago, and that these entities are clearly violating the spirit of the Clean Water Act by failing to provide reasonably expeditious state decisions; however, notwithstanding that concern, we do not conclude that they have violated the letter of that statute.")

[129] *See* Sharon White and Michael Swiger, *D.C. Circuit Holds that States Cannot Use Section 401 Authority to Delay Hydropower Relicensing*, Van Ness Feldman, LLP (Jan. 28, 2019), available at: https://www.vnf.com/DC-Circuit-Holds-that-States-Cannot-Use-Section-401-Authority-to-Delay-Hydropower-Relicensing.

[130] *See Clark Fork and Blackfoot, LLC*, 110 FERC ¶ 61,024 (Jan. 19, 2005), available at: https://www.ferc.gov/whats-new/comm-meet/011905/H-1.pdf; 70 FR 3919 (Jan. 27, 2005), available at: https://www.gpo.gov/fdsys/pkg/FR-2005-01-27/pdf/05-1500.pdf *aff'd., Clark Fork and Blackfoot, LLC*, Order on Rehearing (May 6, 2005), available at: https://www.ferc.gov/whats-new/comm-meet/050405/H-4.pdf.

USEPA had designated it as a Superfund site within the meaning of CERCLA,[131] made its remedy selection upon adopting a final three-stage Record of Decision ("ROD"),[132] and the only actions to be undertaken under the proposed license amendment/USEPA ROD concerned the cessation of generation and the dismantling and complete removal of the project.[133] FERC explained that, under these circumstances, it was reasonable to conclude, consistent with CERCLA § 121(e)(1), that no license amendment tantamount to a "permit" would be necessary,[134] since all remedial and restorative actions to be undertaken pursuant to the ROD which USEPA would direct and implement, effectively "transferred […] complete regulatory control […] from the Commission to EPA."[135] According to FERC,

> There is therefore nothing remarkable about the constraint on our jurisdiction embodied in CERCLA section 121(e)(1). […] The cessation of generation and complete removal of the project by EPA under CERCLA transfers effective regulatory control over the entire project to EPA and leaves the Commission with nothing to regulate. The only authority we can exercise in these unique circumstances is the authority, pursuant to FPA section 6, to accept surrender of the project license. License surrender is not subject to the comprehensive development standard of section 10(a)(1), but to a broad 'public interest' standard, which is not the same thing. [fn] We continue to believe that the public interest is best served if all matters pertaining to decommissioning of the project and removal of the dam pursuant to EPA's remedy selection are addressed by EPA itself.[136]

In the present case, the amended KHSA process calls for the planned decommissioning and removal of the four Klamath River dams. In addition, PacifiCorp arguably should have, but failed, in violation of CERCLA, to notify USEPA of the presence of hazardous substances and chemicals of concern contained in the sediments and water columns of the dam reservoir bottoms that appear in the CERCLA "list of lists," in violation of CERCLA § 103(c). Furthermore, USEPA, knowing of the presence of such substances by virtue of its participation in the amended KHSA process, failed to undertake the type of thorough human health risk assessments of those substances that would have enabled it to

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[131] *See* 110 FERC ¶ 61,024, supra at paras. 1, 3.
[132] Id., at paras. 10-12.
[133] *Id*., at para. 16.
[134] *Id*., at paras. 14-16. *See also Clark Fork and Blackfoot, LLC*, Order on Rehearing (May 6, 2005), *supra* at para. 14 ("Our interpretation of section 121(e)(1) also comports, in the absence of any legislative history to the contrary, with a common sense interpretation of the word 'permit.' Black's Law Dictionary defines 'permit' to mean '[a] written license or warrant, issued by a person in authority, empowering the grantee to do some act not forbidden by law, but which is not allowable without such authority.' [fn] It similarly defines the term 'license' to include, e.g., '[p]ermission by some competent authority to do some act which, without such permission, would be illegal' [fn] and as a '[p]rivilege from state or sovereign.' [fn] A license issued under the FPA fits neatly into both definitions.").
[135] *See Clark Fork and Blackfoot, LLC*, 110 FERC ¶ 61,024 (Jan. 19, 2005), *supra* at para. 16.
[136] *Id*., at paras. 18-19.

determine whether to properly list the dam sites as falling under the Superfund law (CERCLA), in violation of CERCLA § 105(c)(2).

Arguably, neither the Interior Department nor FERC should have exercised or had active control and influence over the dismantling and complete removal of the Klamath River dams given the potentially adverse impacts on human health and welfare the removal of the four dams will have, considering the decades-old aggregation of nonpoint source pollutants and toxic contaminants now present in the four dams' reservoir bottoms. Consequently, based on the FERC's prior ruling in *Clark Fork and Blackfoot*, LLC, FERC's jurisdiction over the Klamath Hydroelectric Project should terminate once it orders the transfers of the four PacifiCorp licenses to KRRC. Thereafter, USEPA should properly retain jurisdiction over all subsequent activities involving the dams which the amended KHSA process anticipates will result in their decommissioning and removal. However, since the removal plan for these dams fail to include the development of an adequate plan of remediation and restoration as prescribed by CERCLA § 121(a) and § 121 (b)(1), since USEPA had failed to previously conduct a robust human health risk assessment consistent with the Clean Water Act and the Safe Drinking Water Act,[137] and since USEPA also had failed to ensure that the U.S. Interior Department had conducted a robust evaluation of the composition of the sediment bottoms of each dam's reservoir/impoundment bottom, USEPA must first conduct each such assessments before it can decide that dam removal is in the best interests of the public.

B. Congress Must Consent to and Ratify the Klamath Basin Agreements Before the Four Klamath River Hydroelectric Power Dams Can be Removed:

The authorization by the States of California and Oregon to remove the four Klamath River dams and their reservoirs, pursuant to the Klamath Basin agreements (i.e., the Amended KHSA process), violates Congress' authority under Article I, Section 8 (the Commerce Clause) and Article I, Section 10, Clause 3 (the Compact Clause) of the United States Constitution, and under relevant and applicable United States Supreme Court jurisprudence.

The federal government holds at least seven (7) paramount federal interests in the Klamath River that trump, subordinate and subjugate the rights of the States of California and Oregon to effectively reallocate Klamath River water and use rights among its citizens and the adjacent Indian nations by removing these dams and reservoir-impoundments, especially, in the interest of the privately-owned PacifiCorp, a Federal Energy Regulatory Commission licensee. These paramount federal interests include: 1) the federal navigation servitude; 2) the federal assurance of affordable power; 3) federal flood control; 4) the federal irrigation project operation and management; 5) the federal regulation of environmental protection and pollution control; 6) the federal protection of fish and wildlife; and 7) the federal trust obligation to protect tribal rights.

[137] *See* U.S. Department of Interior Bureau of Reclamation, *Hydrology, Hydraulics, and Sediment Transport Studies for the Secretary's Determination on Klamath River Dam Removal and Basin Restoration*, Technical Report No. SRH-2011-02 (April 2011), available at:

Furthermore, Congress' and the President's prior legally valid enactment of the Klamath River Basin Compact into federal law in 1957 reaffirmed these paramount federal interests, and further established Congress' primary jurisdiction over the disposition of the four (4) Klamath River hydroelectric power dams in question, pursuant to Article VI, Clause 2 (the Supremacy Clause) of the United States Constitution.

The Klamath Basin Restoration Agreement ("KBRA"), Klamath Hydroelectric Settlement Agreement ("KHSA"), Upper Klamath Basin Comprehensive Agreement ("UKBCA"), the Amended Klamath Hydroelectric Settlement Agreement ("Amended KHSA"), Klamath Power Facility Agreement ("KPFA"), and the prior Wyden-Merkley legislation (SA 3288) collectively address the same federal interests the Klamath River Basin Compact ("KBRC"), which Congress and the President enacted into law in 1957, addressed. Since these agreements would collectively amend the 1957 KRBC, either directly through changes to the KRBC text, or indirectly, through supplements to (protocols implementing) the KRBC text, such agreements and their effective changes to the KRBC, a federal-interstate compact, require the consent and ratification of Congress and the signature of the President to enact such changes into federal law.

The memorandum of law accompanying this submission, which was dispatched recently to various members of Congress explains in detail why Congress has primary interest in and primary jurisdiction over the disposition of the four Klamath River dams in question.