

## CHAPTER 2

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### State Water Board's Regulatory Responsibilities

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## 2.1 Role of State Water Board

Section 401 of the Clean Water Act (CWA) (33 U.S.C. § 1341) requires applicants for a federal license or permit that may result in a discharge into navigable waters to provide the federal licensing or permitting agency with certification that the activity to be licensed or permitted will be protective of federal and state water quality standards. In California, under Section 401 of the CWA, the State Water Resources Control Board (State Water Board) is the state agency with regulatory authority to issue or deny water quality certifications for hydroelectric projects licensed by the Federal Energy Regulatory Commission (FERC).

Pacific Gas and Electric Company's (PG&E's) license for its Upper North Fork Feather River Hydroelectric Project (UNFFR Project) expired on October 31, 2004, and PG&E has applied to FERC for renewal. PG&E must obtain a Section 401 water quality certification for the UNFFR Project from the State Water Board before FERC can issue a new license. The conditions of the water quality certification issued by the State Water Board will become mandatory conditions in the new FERC license.

As part of the water quality certification process, the State Water Board is responsible for reviewing projects to ensure compliance with relevant water quality control plans, in this case the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (Basin Plan) (Central Valley Regional Water Quality Control Board 2011).

## 2.2 Overview of Basin Plan

Section 303 of the CWA requires each state, with approval from the United States Environmental Protection Agency (USEPA), to adopt water quality standards applicable to all of its intrastate waters. In California, the state's water quality standards are identified in basin plans prepared by the nine Regional Water Quality Control Boards (Regional Water Boards) in compliance with the California Water Code (Wat. Code § 13240). The basin plans provide the basis for protecting water quality and include designations of beneficial uses to be protected, water quality objectives to protect those uses, and an implementation program to achieve the objectives. The North Fork Feather River is in the Sacramento River basin and is covered under the basin plan for the Sacramento and San Joaquin river basins, which encompass an area approximately one fourth the size of California. The current edition of the Basin Plan is the fourth edition, dated September 15, 1998, and last revised in October 2011, including subsequent amendments approved by the Central Valley Regional Water Board and the State Water Board (Central Valley Regional Water Quality Control Board 2011).

### 2.2.1 Water Quality Standards

The beneficial uses together with the water quality objectives contained in the Basin Plan and state and federal anti-degradation requirements constitute California's water quality standards.

These water quality standards are intended to provide water quality adequate to protect beneficial uses, including the protection and propagation of fish and wildlife and for recreation in and on the water. The water quality standards are also intended to address the use and value of public water supplies, such as for agricultural, industrial, and other purposes. Such standards serve the dual purposes of establishing the water quality goals for a specific water body and providing the regulatory basis for protecting these goals through the use of treatment controls and strategies.

## 2.2.2 Beneficial Uses

Beneficial uses are critical to water quality management in California. State law defines the beneficial uses of California's waters that may be protected against water quality degradation to include (and not be limited to) "domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Wat. Code § 13050(f)). The protection and enhancement of existing and potential beneficial uses are the primary goals of water quality planning.

The Basin Plan designates beneficial uses for two specific water bodies associated with the UNFFR Project: Lake Almanor; and North Fork Feather River. The designated beneficial uses for Lake Almanor and the North Fork Feather River are listed in Table 2-1. Collectively, these uses include water supply, power, recreation, warm and cold freshwater habitat, warm and cold spawning habitat, and wildlife habitat. These beneficial uses also apply to the North Fork Feather River's tributaries, including Butt Creek and Butt Valley reservoir.

**Table 2-1. Beneficial Uses of Lake Almanor and North Fork Feather River**

Beneficial Use	Description of Use from Basin Plan
<b>Lake Almanor (Hydrologic Unit No. 518.41)</b>	
Power (POW)	Uses of water for hydropower generation.
Recreation: Contact (REC-1)	Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.
Warm Freshwater Habitat (WARM)	Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
Cold Freshwater Habitat (COLD)	Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
Warm Spawning Habitat (SPWN) <sup>1</sup>	Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.
Wildlife Habitat (WILD)	Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

**Table 2-1. Beneficial Uses of Lake Almanor and North Fork Feather River**

Beneficial Use	Description of Use from Basin Plan
<b>North Fork Feather River (Hydrologic Unit No. 518.4)</b>	
Municipal and Domestic Supply (MUN)	Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.
Power (POW)	Uses of water for hydropower generation.
Recreation: Contact, Canoeing and Rafting (REC-1); Other Noncontact (REC-2)	Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible, and proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. Noncontact uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
Cold Freshwater Habitat (COLD)	Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
Cold Spawning Habitat (SPWN) <sup>2</sup>	Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.
Wildlife Habitat (WILD)	Uses of water that support terrestrial or wetland ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

<sup>1</sup> Striped bass, sturgeon, and shad are listed in Basin Plan; these species do not occur in Lake Almanor.

<sup>2</sup> Salmon and steelhead.

### 2.2.3 Water Quality Objectives

Each Regional Water Board is tasked with establishing water quality objectives for beneficial uses pursuant to the Porter-Cologne Water Quality Control Act (Act) (Wat. Code § 13241). The Act defines water quality objectives as "...the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area" (Wat. Code § 13050[h]). When establishing water quality objectives, the Regional Water Boards must consider the past, present, and future beneficial uses, environmental characteristics, economics, and water quality conditions that could reasonably be achieved through the coordinated control of all factors that affect water quality. Basin plans describe water quality objectives in numerical or narrative form, and achievement of the objectives depends on applying them to controllable water quality factors. In cases where narrative objectives have been formulated to protect beneficial uses, the State Water Board and Regional Water Boards have the discretion to interpret the narrative objective and the measures necessary to comply with the narrative objective.

The Basin Plan defines the water quality objectives applicable to the beneficial uses of Lake Almanor and the North Fork Feather River, which are identified in Table 2-2. In determining whether and under what conditions to issue a water quality certification for the UNFFR Project, the State Water Board must ensure compliance with these objectives.

**Table 2-2. Water Quality Objectives for Lake Almanor and North Fork Feather River**

<b>Beneficial Use<sup>1</sup></b>	<b>Constituent</b>	<b>Water Quality Objective</b>
<b>Numerical Objectives</b>		
Warm or Cold Freshwater Habitat <sup>2</sup> (Only Cold Freshwater Habitat Applies to North Fork Feather River)	Temperature	Natural water temperatures shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration does not adversely affect beneficial uses. At no time or place shall the temperature be increased more than 5 degrees Fahrenheit (°F) above the natural receiving water temperature.
Warm or Cold Freshwater Habitat (Only Cold Freshwater Habitat Applies to North Fork Feather River) and Spawning	Dissolved Oxygen (DO)	The monthly median of the mean daily DO concentration shall not fall below 85 percent of saturation in the main water mass, and the 95 percentile concentration shall not fall below 75 percent of saturation. The DO concentrations shall not be reduced below the following minimum levels at any time: <ul style="list-style-type: none"> <li>• Waters designated WARM 5.0 milligrams per liter (mg/l)</li> <li>• Waters designated COLD 7.0 mg/l</li> <li>• Waters designated SPWN 7.0 mg/l</li> </ul>
All Uses	pH	The pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5.
All Uses	Specific Conductance	Electrical conductivity (at 25 degrees Celsius (°C)) shall not exceed 150 micromhos/centimeter (90 percentile) in well-mixed waters.
Contact Recreation	Fecal Coliform	Based on a minimum of not less than five samples for any 30-day period, the fecal coliform concentration shall not exceed a geometric mean of 200/100 milliliter (ml), nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml.
Municipal and Domestic Supply (North Fork Feather River Only)	Chemical Constituents	At a minimum, water shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in Title 22 of the California Code of Regulations. At a minimum, water shall not contain lead in excess of 0.015 mg/l.
Municipal and Domestic Supply (North Fork Feather River Only)	Pesticides	Waters shall not contain concentrations of pesticides in excess of the MCLs set forth in California Code of Regulations, Title 22, Division 4, Chapter 15. Waters shall not contain concentrations of thiobencarb in excess of 1.0 micrograms per liter (µg/l).
Municipal and Domestic Supply (North Fork Feather River Only)	Radionuclides	At a minimum, waters shall not contain concentrations of radionuclides in excess of the MCLs specified in Table 4 (MCL Radioactivity) of Section 64443 of Title 22 of the California Code of Regulations.
<b>Narrative Objectives</b>		
All Uses	Biostimulatory Substances	Water shall not contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
All Uses	Coloration	Water shall be free of discoloration that causes nuisance or adversely affects beneficial uses.

**Table 2-2. Water Quality Objectives for Lake Almanor and North Fork Feather River**

<b>Beneficial Use<sup>1</sup></b>	<b>Constituent</b>	<b>Water Quality Objective</b>
All Uses	Floating Material	Water shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses.
All Uses	Oil and Grease	Waters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
All Uses	Sediment	The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
All Uses	Any Substance	Waters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
All Uses	Suspended Material	Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.
All Uses	Taste or Odor	Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.
All Uses	Toxic Substances	All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.
All Uses	Turbidity	<p>Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits:</p> <ul style="list-style-type: none"> <li>• When natural turbidity is less than 1 Nephelometric Turbidity Unit (NTU), controllable factors shall not cause downstream turbidity to exceed 2 NTUs.</li> <li>• When natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU.</li> <li>• When natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent.</li> <li>• When natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs.</li> <li>• When natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.</li> </ul> <p>In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected.</p>

<sup>1</sup> The listed beneficial use applies to both Lake Almanor and the North Fork Feather River unless otherwise noted.

<sup>2</sup> Any segments with both COLD and WARM beneficial use designations will be considered COLD waterbodies for the application of water quality objectives.

## 2.2.4 Controllable Factors

Achievement of the water quality objectives in the Basin Plan depends on the influences of controllable water quality factors on water quality and the extent to which these factors can be modified. The Basin Plan defines *controllable water quality factors* as “those actions, conditions, or circumstances resulting from human activities that may influence the quality of the waters of the State, that are subject to the authority of the State Water Board or the Regional Water Board, and that may be reasonably controlled” (Central Valley Regional Water Quality Control Board 2011). Controllable factors that alter flow regimes, such as dams and diversions, can negatively affect water quality and beneficial uses. In developing this EIR, the State Water Board evaluated temperature control measures that may be used to meet water quality objectives and protect beneficial uses. In issuing a water quality certification, the State Water Board must determine what factors related to the UNFFR Project may be reasonably controlled and stipulate in the certification conditions to control those factors to protect water quality standards.