~~17 July 2015~~ 18 January 2019

~~Ms. Carolyn Bragg~~ Mr. Todd Dooley
U.S. Bureau of Reclamation
7794 Folsom Dam Road
Folsom, CA 95630-1799

**AMENDED CLEAN WATER ACT ~~§~~ SECTION 401 TECHNICALLY CONDITIONED WATER QUALITY CERTIFICATION FOR DISCHARGE OF DREDGED AND/OR FILL MATERIALS FOR THE NIMBUS DAM RADIAL GATE MAINTENANCE PROJECT (WDID#5A34CR00635A1), FOLSOM, SACRAMENTO COUNTY**

This Order responds to the 6 November 2018 request for an amendment of the Nimbus Dam Radial Gate Maintenance Project Section 401 Technically Conditioned Water Quality Certification (WDID No. 5A34CR00635). The original Water Quality Certification (Certification) was issued on 17 July 2015. The original Certification is amended in underline/strikeout format.

**ACTION:**

1. ☐ Order for Standard Certification
2. ■ Order for Technically-conditioned Certification
3. ☐ Order for Denial of Certification

**WATER QUALITY CERTIFICATION STANDARD CONDITIONS:**

1. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to §13330 of the California Water Code and §3867 of Title 23 of the California Code of Regulations (23 CCR).

2. This certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

3. The validity of any non-denial certification action shall be conditioned upon total payment of the full fee required under 23 CCR §3833, unless otherwise stated in writing by the certifying agency.

4. Certification is valid for the duration of the described project. U.S. Bureau of Reclamation shall notify the Central Valley Water Board in writing within 7 days of project completion.

**ADDITIONAL TECHNICALLY CONDITIONED CERTIFICATION CONDITIONS:**

In addition to the four standard conditions, U.S. Bureau of Reclamation shall satisfy the following:

1. U.S. Bureau of Reclamation shall notify the Central Valley Water Board in writing 7 days in advance of the start of any in-water activities.

2. Except for activities permitted by the U.S. Army Corps under §404 of the Clean Water Act, soil, silt, or other organic materials shall not be placed where such materials could pass into surface water or surface water drainage courses.

3. All areas disturbed by project activities shall be protected from washout or erosion.

4. U.S. Bureau of Reclamation shall maintain a copy of this Certification and supporting documentation (Project Information Sheet) at the Project site during construction for review by site personnel and agencies. All personnel (employees, contractors, and subcontractors) performing work on the proposed project shall be adequately informed and trained regarding the conditions of this Certification.

5. An effective combination of erosion and sediment control Best Management Practices (BMPs) must be implemented and adequately working during all phases of construction.

6. All temporarily affected areas will be restored to pre-construction contours and conditions upon completion of construction activities.

7. U.S. Bureau of Reclamation shall perform surface water sampling: 1) When performing any in-water work; 2) In the event that project activities result in any materials reaching surface waters or; 3) When any activities result in the creation of a visible plume in surface waters. The following monitoring shall be conducted immediately upstream out of the influence of the project and 300 feet downstream of the active work area. Sampling results shall be submitted to this office within two weeks of initiation of sampling and every two weeks thereafter. The sampling frequency may be modified for certain projects with written permission from the Central Valley Water Board.

| Parameter | Unit | Type of Sample | Frequency of Sample |
|---|---|---|---|
| Turbidity | NTU | Grab | Every 4 hours during in water work |
| Settleable Material | ml/l | Grab | Same as above. |
| Visible construction related pollutants | Observations | Visible Inspections | Continuous throughout the construction period |

8. Activities shall not cause turbidity increases in surface water to exceed:

   (a) where natural turbidity is less than 1 Nephelometric Turbidity Units (NTUs), controllable factors shall not cause downstream turbidity to exceed 2 NTU;
   (b) where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU;
   (c) where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;
   (d) where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs;
   (e) where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

   Except that these limits will be eased during in-water working periods to allow a turbidity increase of 15 NTU over background turbidity as measured in surface waters 300 feet downstream from the working area. In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected. Averaging periods may only be assessed by prior permission of the Central Valley Water Board.

9. Activities shall not cause settleable matter to exceed 0.1 ml/l in surface waters as measured in surface waters 300 feet downstream from the project.

10. The discharge of petroleum products or other excavated materials to surface water is prohibited. Activities shall not cause visible oil, grease, or foam in the work area or downstream. U.S. Bureau of Reclamation shall notify the Central Valley Water Board immediately of any spill of petroleum products or other organic or earthen materials.

11. U.S. Bureau of Reclamation shall notify the Central Valley Water Board immediately if the above criteria for turbidity, settleable matter, oil/grease, or foam are exceeded.

12. U.S. Bureau of Reclamation shall comply with all Department of Fish and Wildlife 1600 requirements for the project.

13. U.S. Bureau of Reclamation must obtain coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board for any project disturbing an area of 1 acre or greater.

14. The Conditions in this water quality certification are based on the information in the attached "Project Information." If the information in the attached Project Information is modified or the project changes, this water quality certification is no longer valid until amended by the Central Valley Water Board.

15. In the event of any violation or threatened violation of the conditions of this Order, the violation or threatened violation shall be subject to any remedies, penalties, process, or sanctions as provided for under State law and section 401 (d) of the federal Clean Water Act. The applicability of any State law authorizing remedies, penalties, process, or

sanctions for the violation or threatened violation constitutes a limitation necessary to ensure compliance into this Order.

a. If U.S. Bureau of Reclamation or a duly authorized representative of the project fails or refuses to furnish technical or monitoring reports, as required under this Order, or falsifies any information provided in the monitoring reports, the applicant is subject to civil monetary liabilities, for each day of violation, or criminal liability.

b. In response to a suspected violation of any condition of this Order, the Central Valley Water Board may require U.S. Bureau of Reclamation to furnish, under penalty of perjury, any technical or monitoring reports the Central Valley Water Board deems appropriate, provided that the burden, including cost of the reports, shall be in reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

c. U.S. Bureau of Reclamation shall allow the staff(s) of the Central Valley Water Board, or an authorized representative(s), upon the presentation of credentials and other documents, as may be required by law, to enter the project premises for inspection, including taking photographs and securing copies of project-related records, for the purpose of assuring compliance with this certification and determining the ecological success of the project.

16. Staff of the Central Valley Water Board has prepared total maximum daily load (TMDL) allocations that, once approved, would limit methylmercury in storm water discharges to the Sacramento-San Joaquin Delta. The Central Valley Water Board has scheduled these proposed allocations to be considered for adoption. When the Central Valley Water Board adopts the TMDL and once approved by the Environmental Protection Agency, the discharge of methylmercury may be limited from the proposed project. The purpose of this condition is to provide notice to U.S. Bureau of Reclamation that methylmercury discharge limitations and monitoring requirements may apply to this project in the future and also to provide notice of the Central Valley Water Board's TMDL process and that elements of the planned construction may be subject to a TMDL allocation.

**ADDITIONAL STORM WATER QUALITY CONDITIONS:**

U.S. Bureau of Reclamation shall also satisfy the following additional storm water quality conditions:

1. During the construction phase, U.S. Bureau of Reclamation must employ strategies to minimize erosion and the introduction of pollutants into storm water runoff. These strategies must include the following:

   (a) the Storm Water Pollution Prevention Plan (SWPPP) must be prepared during the project planning and design phases and before construction;
   (b) an effective combination of erosion and sediment control Best Management Practices (BMPs) must be implemented and adequately working prior to the rainy season and during all phases of construction.

2. U.S. Bureau of Reclamation must minimize the short and long-term impacts on receiving water quality from the Nimbus Dam Radial Gate Maintenance Project by implementing the following post-construction storm water management practices:

   (a) minimize the amount of impervious surface;
   (b) reduce peak runoff flows;
   (c) provide treatment BMPs to reduce pollutants in runoff;
   (d) ensure existing waters of the State (e.g., wetlands, vernal pools, or creeks) are not used as pollutant source controls and/or treatment controls;
   (e) preserve and, where possible, create or restore areas that provide important water quality benefits, such as riparian corridors, wetlands, and buffer zones;
   (f) limit disturbances of natural water bodies and natural drainage systems caused by development (including development of roads, highways, and bridges);
   (g) use existing drainage master plans or studies to estimate increases in pollutant loads and flows resulting from projected future development and require incorporation of structural and non-structural BMPs to mitigate the projected pollutant load increases in surface water runoff;
   (h) identify and avoid development in areas that are particularly susceptible to erosion and sediment loss, or establish development guidance that protects areas from erosion/ sediment loss;
   (i) control post-development peak storm water run-off discharge rates and velocities to prevent or reduce downstream erosion, and to protect stream habitat.

3. U.S. Bureau of Reclamation must ensure that all development within the project provides verification of maintenance provisions for post-construction structural and treatment control BMPs. Verification shall include one or more of the following, as applicable:

   (a) the developer's signed statement accepting responsibility for maintenance until the maintenance responsibility is legally transferred to another party; or
   (b) written conditions in the sales or lease agreement that require the recipient to assume responsibility for maintenance; or
   (c) written text in project conditions, covenants and restrictions for residential properties assigning maintenance responsibilities to a home owner's association, or other appropriate group, for maintenance of structural and treatment control BMPs; or
   (d) any other legally enforceable agreement that assigns responsibility for storm water BMP maintenance.

**REGIONAL WATER QUALITY CONTROL BOARD CONTACT PERSON:**

~~George D. Day, P.E~~ Lynn Coster, Senior Environmental Scientist, Redding Branch Office, 364 Knollcrest Drive, Suite 205, Redding, California 96002, (530) ~~224-4845~~ 224-2437

**WATER QUALITY CERTIFICATION:**

I hereby issue an Amended order certifying that any discharge from U.S. Bureau of Reclamation, Nimbus Dam Radial Gate Maintenance Project (WDID# 5A34CR00635A1) will comply with the applicable provisions of §301 ("Effluent Limitations"), §302 ("Water Quality Related Effluent Limitations"), §303 ("Water Quality Standards and Implementation Plans"),

§306 ("National Standards of Performance"), and §307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated under State Water Resources Control Board Water Quality Order No. 2003-0017 DWQ "Statewide General Waste Discharge Requirements For Dredged Or Fill Discharges That Have Received State Water Quality Certification (General WDRs)."

Except insofar as may be modified by any preceding conditions, all certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with U.S. Bureau of Reclamation's project description and the attached Project Information Sheet, and (b) compliance with all applicable requirements of the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, ~~Fourth~~ Fifth Edition, ~~revised October 2011~~ May 2018 (Basin Plan).

Any person aggrieved by this action may petition the State Water Quality Control Board to review the action in accordance with California Water Code § 13320 and California Code of Regulations, title 23, § 2050 and following. The State Water Quality Control Board must receive the petition by 5:00 p.m., 30 days after the date of this action, except that if the thirtieth day following the date of this action falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Quality Control Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

for

(for) ~~PAMELA C. CREEDON~~ PATRICK PULUPA
Executive Officer

Enclosure: Water Quality Order No. 2003-0017 DWQ

cc w/o enclosures: Ms. ~~Lisa Gibson~~ Kathy Norton, U.S. Army Corp of Engineers, Sacramento
Department of Fish and Wildlife, Region 2, Rancho Cordova
U.S. Fish and Wildlife Service, Sacramento
Mr. Bill Jennings, CALSPA, Stockton
~~Mr. Pete Bontadelli, Analytical Environmental Services, Sacramento~~

cc w/o enclosures by email: Sam Ziegler, U.S. EPA, Region 9, San Francisco
~~Mr. Bill Orme, SWRCB, Certification Unit, Sacramento~~
Elizabeth Payne, Water Quality Certification Program, SWRCB, Sacramento

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## PROJECT INFORMATION

**Application Date:** 12 May 2015

**Application Complete Date:** 5 June 2015

**Date of Amendment Request:** 6 November 2018

**Applicant:** U.S. Bureau of Reclamation, Attn: ~~Ms. Carolyn Bragg~~ Mr. Todd Dooley

**Project Name:** Nimbus Dam Radial Gate Maintenance Project

**Application Number:** WDID No. 5A34CR00635A1

**U.S. Army Corps File Number:** SPK-2015-00510

**Type of Project:** Waterway construction, radial gate repairs, sediment removal and disposal.

**Project Location:** Section 16, Township 09 North, Range 07 East, MDB&M.
Latitude: 38°38'08" and Longitude: -121°13'10"

**County:** Sacramento County

**Receiving Water(s) (hydrologic unit):** Natoma Lake, which is tributary to American River. Valley-American Hydrologic Unit-Lower American Hydrologic Area No. 519.21

**Water Body Type:** Lake

**Designated Beneficial Uses:** The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, ~~Fourth~~ Fifth Edition, ~~revised September 2009~~ May 2018 (Basin Plan) has designated beneficial uses for surface and ground waters within the region. Beneficial uses that could be impacted by the project include: Municipal and Domestic Water Supply (MUN); Agricultural Supply (AGR); Industrial Supply (IND), Hydropower Generation (POW); Groundwater Recharge, Water Contact Recreation (REC-1); Non-Contact Water Recreation (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); Spawning, Reproduction, and /or Early Development (SPWN); and Wildlife Habitat (WILD).

**Project Description (purpose/goal):** The Nimbus Dam Radial Gate Maintenance Project consists of construction activities within Lake Natoma. No work would occur within the American River downstream of the Nimbus ~~d~~Dam. Diver teams would be used to conduct sediment, debris, and structural surveys/inspections upstream of the dam; set and seal the bulkheads; assist in the removal of sediment and debris from the upstream side of the radial gates; assist with bulkhead inspections; and ensure adequate seating of the bulkhead to minimize leakage. The bulkhead assembly would only be installed in the bay currently undergoing maintenance and moved to the next gate or stored until the next gate is scheduled for maintenance. A Water Removal Plan has been prepared by the Contractor and approved by Reclamation to ensure radial gate work areas remain dewatered while maintenance activities are completed.

After the bulkhead has been installed, the radial gate would be opened to pressurize the bulkhead. Divers would plug any leaks around the bulkhead with wood pellets and/or other

environmentally friendly material to keep the bulkhead leakage to a minimum. A six-inch submersible pump would be placed inside the bulkhead on the downstream side of the bulkhead to initially lower the water below the gate sill area. A steel support frame would be erected to hold the six-inch pump and the PVC discharge piping. The support frame would extend vertically up the downstream side of the bulkhead and hook over the top of the bulkhead. The PVC discharge pipe would be attached to the support frame and discharged upstream of the bulkhead into Lake Natoma. Two 1.5-inch electric pumps equipped with on/off float systems would be installed on the downstream side of the bulkhead. The pump discharge hoses would be run from the pumps across the sill area and down the gate bay about 20 feet. These pumps would be used to maintain the water level so water won't pass over the spillway crest or under the scaffolding and containment areas. In the case of power outages, a portable generator would be used to operate the pumps. Spare pumps would be made readably available at the jobsite in the event of pump failure.

Upstream removal of sediment from four gateways would be required to allow proper placement and seating of the bulkhead. During the potential flood season (December I to April 15) of each year, the floating bulkhead would be stored in the reservoir at the North end of the dam and adequately secured in place. The bulkhead would be moored at the north abutment of the dam. An engineered mooring plan would be developed and followed consisting of using mooring ropes connected to deck cleats anchored to the abutment and deck cleats mounted to the bulkhead. After all gate maintenance activities have been completed, the bulkhead assembly, consisting of floating bulkhead caissons, pier braces, radial gate supports and links, and all related equipment, would be disassembled and stored in the newly constructed Bulkhead Storage Facility and would take approximately two-three days to complete. The Contractor would coordinate with the California State University, Sacramento (CSUS) Aquatic Center to ensure utilization of the boat ramp to transport the bulkhead assembly would not adversely impact ongoing activities at the center.

A total of 14 of the 18 radial gates at Nimbus Dam would undergo maintenance activities under the proposed project. Maintenance activities would be conducted on each of the 14 radial gates (Gates 1 through 12, 14, and 18) one at a time. No in-water work would occur on the downstream side of the dam. An engineered scaffolding system would be installed on the upstream and downstream faces of the gate, and along both gate arms (above the ordinary high water mark of the American River and Lake Natoma) to provide access to work areas. After installation of the bulkhead assembly, containment areas would be established using the engineered scaffolding on the upstream and downstream faces and along the downstream structural metalwork of gate. The gate faces would then be sandblasted utilizing special containment and disposal considerations due to high concentrations of lead and heavy metals.

With an approximate surface area of 2,800 square feet, it is estimated that it would take two weeks to remove the existing coatings from each gate. After the old coatings have been completely removed from the work area, a new coating would be applied to the upstream and downstream faces, and along the downstream (above the ordinary high water mark) structural metal work. A metal protection system (cathodic protection system) would be installed and tested to prevent erosion of the metal gates. Various maintenance activities would be conducted to remove the rusted and impaired components of the radial gates that are currently compromising the integrity of the gate mechanisms. These activities include replacement of seals, clamps, fasteners, and wire rope assemblies on each of the 14 radial gates. Warnings that were removed from the radial gates during sandblasting would be re-painted on the downstream faces of gates 2, 8, and 14. The warning light assemblies would be temporarily

disconnected as needed during repair/maintenance activities and reconnected at these gates as maintenance activities are completed at the gate. Various concrete repairs would be conducted at spot locations along the spillway chutes and below trunnion blocks at various gates above the ordinary high water mark to further ensure long-term operation of the Central Valley Project and associated operations at Nimbus Dam which serve as an afterbay structure for Folsom Dam to re-regulate flows of the American River for flood control, as a diversion dam to direct water into the Folsom South Canal, and as a forebay for the hydroelectric generation station. Underwater concrete repairs would be completed upstream of radial gate 6 to fill a void approximately 5' by 6' by 1.5' deep. The Contractor will utilize divers and a tremie pipe system to place underwater concrete. The underwater concrete mix will include an admixture specifically designed for underwater concrete to reduce washout of cement and fines.

Prior to sandblasting, coatings of the radial gates would be sampled for heavy metal content. Sampling would include soil and sediment background sampling for baseline results. Due to known lead levels within the radial gate coatings, the Contractor has developed a detailed Containment System Plan approved by Reclamation and signed/stamped by a registered professional engineer licensed in the State of California. In addition, a Lead and Heavy Metals Work Plan was developed with oversight from a Certified Industrial Hygienist in accordance with Occupational Safety and Health Administration Construction Industry Lead Standard 29 CFR 1926.62. The two plans would be implemented to prevent the release of coatings, metals, dusts, vapors and solvents during the disturbance, removal, and reapplication of coatings in accordance with Society of Protective Coatings (SSPC) Guide 6-97 to ensure compliance with applicable federal and state laws and regulations. The system would entail establishing six isolation zones utilizing the engineered scaffolding system and air impermeable material (such as poly sheeting).

Each chamber would be connected to an exhaust fan via flexible fabric ducting establishing negative pressure within the chamber. The, exhaust system would include a High Efficiency Particulate Air (HEPA) filter to ensure airborne lead laden dust does not escape the chamber. Signs and barriers would be installed at each entry point to prevent unauthorized personnel access. The containment would remain in place during all containing paint lead removal and debris clean-up activities until surfaces have been coated. The containment would be monitored during the blast cleaning both visually and through air monitoring conducted by the contractor. The contractor would conduct two daily inspections of the containment zone during sand blasting operations to ensure negative pressure is consistently established within the work zone. Inspections would be documented on Lead Jobsite Inspection and Mechanical Ventilation Evaluation Forms, which would be maintained on site during sand blasting operations. Air monitoring would include both personal air monitoring of works within the containment zone to assess personal exposures and area monitoring outside of the containment zone to assess for undetected leakage of the containment system. Area samples would be collected twice daily for the two weeks of the sand blasting operation and would be adjusted accordingly if additional sampling is required. If the containment area becomes visually compromised or air monitoring results indicate release of sand blasting debris, the blast operation would be shut down by the Contractor until the containment is modified or repaired and the escaped sand blast debris is cleaned up with oversight by a Certified Industrial Hygienist in accordance with SSPC 6-97.

HEPA vacuum equipped power tools for spot paint removal activities and air compressors and abrasive blast pots for removal of gate coatings would be utilized within the negatively pressured containment areas. The blast debris would be tested, and disposed of per a Waste Characterization, Handling, and Disposal Plan to be approved by Reclamation and

signed/stamped by a registered professional engineer licensed in the State of California that outlines the procedures for assessing the required disposal method for generated wastes. The blast debris would then be removed using a vacuum truck in accordance with all laws and regulations conducted by Safety-Kleen Systems, based in Sacramento, in accordance with the results of the sampling conducted under the Waste Characterization, Handling, and Disposal Plan. Disposal of the spent abrasives containing lead paint debris would be completed by Kleen Industrial Services, based in Danville, California, in accordance with all applicable laws, regulations, and permits. Post construction sampling will be conducted for heavy metals within the same areas as the pre-construction samples were collected. These samples will be compared to the baseline samples to assess environmental conditions after the paint removal activities have been completed at each gate.

A Bathymetric Survey would be conducted to verify the extent of dredging activities required to conduct the radial gate maintenance. The survey shall be completed before dredging commences on or around August 1, 201 5. Dredging shall be completed prior to November I, 201 5. The majority of dredging work would be located at Gate 18, where there is an accumulation of sediment, mostly fine and surficial debris primarily along the left side of the upstream bay. Additionally, at Gates 7, 8, and 9 there are cobbles in areas up to 2 feet in depth, particularly Gate 9, where the right 20-foot half-width of the upstream bay has cobble layers ranging from 18 inches to 2 feet in depth. Due to the type and small volume of sediment anticipated at these three gates, dredging by mechanical means, using a clamshell or other type equipment, may be sufficient. However, this would not exclude the use of hydraulic (suction) dredging or other methods at these three gates. Dredging is not expected to be necessary at each of the other 10 gates being repaired (Gates 1 through 6, 10 through 12, and 14), due to very small quantities of sediment anticipated to be present in the apron immediately upstream of these gates.

Based on the available data, fine sediments at gates l through 6, 10 through 12, and 14 ranges from two inches to six inches in depth, plus minor deposits of cobbles are located along the entirety of the dam and are less than two feet in depth. At these gates it is anticipated that either: (1) the bulkhead can penetrate by its own weight through the residual sediment and hence allow for proper seating, or (2) the residual sediment can be removed by assistance from dive crew personnel, either by hand or through use of divers' tools and equipment. Dredging is expected to start and continue for three-four weeks and no sediment removal would occur until the required permits are obtained. It is anticipated that dredging activities would result in a total of 500 cubic yards of dredged material.

Prior to commencing dredging operations, the Contractor would deploy a Type II HD turbidity curtain. The turbidity curtain sections would be bundled at the water's edge or even floated in a staging pattern in the water until all sections are connected. A tow bridle would be used to tow the assembled turbidity curtain into place. This method of towing would prevent damage to the curtain and connector. The tow bridle mates directly to the connector on the curtain and is secured with a toggle pin. The curtain would then be towed to the first location on the south upstream side of Gate 18 and placed in such a manner as to protect the intake for the Fish Hatchery that is located south of Gate 18. The curtain would be guided under the Fish Hatchery intake structure overhang and secured under the deck near the intake structure.

The curtained would be deployed in such a manner as to minimize the potential for disturbed sediment to inundate the Fish Hatchery intake structure. The northern portion of the turbidity curtain would be connected to the northern pier of Gate 17. This process would be repeated

during upstream dredging operations of Gates 7 through 9. The curtain would be deployed in a manner that ensures complete coverage of the turbidity areas of influence. Removal of the curtain after dredging operations are completed within the protected areas would take place in roughly the opposite process.

Using the access road across the dam, the Contractor would utilize a four-ton carry deck crane to lower and raise a four-inch Digester Hydraulic Submersible Pump with agitator (or equivalent); equipped with a secondary containment device to prevent any spills. Prior to operating the dredge pump the topside crew would ensure the turbidity curtains are in place and then attach all suction hoses, discharge hoses and test the system. The submersible pump will supply the necessary flow through high density polyethylene (HDPE) piping across the dam to the first set of three settling tanks (pre-treatment tanks). No chemical treatment will be performed during this phase.

Prior to dredging operations, a water treatment system would be staged and assembled in the parking lot southwest from the dam. Setting up in this portion of the parking lot would reduce impacts to recreationists utilizing the surrounding bike trails as the only other viable option would be to establish the treatment area within the northern staging area, northeast of the Dam. However, this option would require the use of the bike trail to access the treatment area requiring multiple truck trips per day along the bike trail impacting associated users. In addition, the parking lot is closer to the dredge area, reducing the risk of leakage along the pipeline conveyance route as well as the potential for clogging.

Dredged material from each gate would be conveyed via high-density polyethylene (HOPE) pipe along the surface of the dam to a shaker system for primary solids removal. Separated solids would be deposited directly off the shaker unit to 10-cubic yard roll off containers. Republic Services, based in Rancho Cordova, CA would provide and transport the containers to and from the jobsite to the landfill. L & D Landfill located at 8635 Fruitridge Road, Sacramento CA would be the licensed landfill that would accept the solids. Dredging operations are anticipated to generate approximately 50 of the 10-cubic yard roll off containers worth of solid debris.

The water generated from the shaker system would be collected in an agitation tank below the shaker. Separated water would be dosed with Floc-Clear Bio-polymer and transferred to a series of five 20,000-gallon tanks to settle remaining solids. Settled water would be polished through a sand filter for the removal of any remaining suspended sediments to reduce turbidity. The effluent water would be conveyed back to the river at the discharge area located on the upstream of the dam (Lake Natoma) in accordance with all permitted requirements and would not be discharged into the river below Nimbus Dam.

**Preliminary Water Quality Concerns:** Construction activities may impact surface waters with increased turbidity and settleable matter.

**Proposed Mitigation to Address Concerns:** U.S. Bureau of Reclamation will implement Best Management Practices (BMPs) to control sedimentation and erosion. All temporary affected areas will be restored to pre-construction contours and conditions upon completion of construction activities. U.S. Bureau of Reclamation will conduct turbidity and settleable matter testing during in-water work, stopping work if Basin Plan criteria are exceeded or are observed.

**Fill/Excavation Area** Project implementation will temporarily impact 235 cubic yards of lake.

**Dredge Volume:** 500 cubic yards of fine sediment.

**U.S. Army Corps of Engineers Permit Number:** Nationwide Permit #3 (Maintenance) & ~~#19 (Minor Dredging)~~ #16 (Return Water from Upland Contained Disposal Areas)

**Department of Fish and Wildlife Streambed Alteration Agreement:** Not Applicable

**Possible Listed Species:** Valley elderberry longhorn beetle (VELB), Central Valley steelhead, and fall/late-fall run Chinook salmon.

**Status of CEQA Compliance:** In conformance with the National Environmental Policy Act of 1969 (NEPA), the U.S. Bureau of Reclamation has prepared this Environmental Assessment.

**Compensatory Mitigation:** The Central Valley Water Board is not requesting compensatory mitigation.

**Application Fee Provided:** Not Applicable

**DISTRIBUTION LIST**

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