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## Central Valley Regional Water Quality Control Board

17 July 2015

Ms. Alexandra Aviles  
U.S. Bureau of Reclamation  
2800 Cottage Way, MP 152  
Sacramento, CA 95825

**CLEAN WATER ACT §401 TECHNICALLY CONDITIONED WATER QUALITY  
CERTIFICATION FOR DISCHARGE OF DREDGED AND/OR FILL MATERIALS FOR THE  
DELTA CROSS CHANNEL FALL-RUN CHINOOK SALMON MONITORING PROJECT  
(WDID#5A34CR00634), SACRAMENTO COUNTY**

**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.

<b>Parameter</b>	<b>Unit</b>	<b>Type of Sample</b>	<b>Frequency of Sample</b>
Turbidity	NTU	Grab	Every 4 hours during in water work
Settleable Material	m/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.

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

George D. Day, P.E., Redding Branch Office, 364 Knollcrest Drive, Suite 205, Redding, California 96002, (530) 224-4845

**WATER QUALITY CERTIFICATION:**

I hereby issue an order certifying that any discharge from U.S. Bureau of Reclamation, Delta Cross Channel Fall-Run Chinook Salmon Monitoring Project (WDID# 5A34CR00634) 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, Fourth Edition, revised October 2011 (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](http://www.waterboards.ca.gov/public_notices/petitions/water_quality) or will be provided upon request.

  
(for) PAMELA G. CREEDON  
Executive Officer

Enclosure: Water Quality Order No. 2003-0017 DWQ

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

cc w/o  
enclosures  
by email: U.S. EPA, Region 9, San Francisco  
Mr. Bill Orme, SWRCB, Certification Unit, Sacramento

## PROJECT INFORMATION

**Application Date:** 15 May 2015

**Application Complete Date:** 13 July 2015

**Applicant:** U.S. Bureau of Reclamation, Attn: Ms. Alexandra Aviles

**Project Name:** Delta Cross Channel Fall-Run Chinook Salmon Monitoring Project

**Application Number:** WDID No. 5A34CR00634

**Type of Project:** Upstream-migrating adult fall-run Chinook salmon monitoring.

**Project Location:** Section 01, Township 04 North, Range 04 East, MDB&M.  
Section 36, Township 05 North, Range 04 East, MDB&M.  
Section 02, Township 04 North, Range 04 East, MDB&M.  
Latitude: 38°13'41" and Longitude: -121°29'37"

**County:** Sacramento County

**Receiving Water(s) (hydrologic unit):** Sacramento River, Snodgrass Slough, Dead Horse Cut, North Mokelumne River, South Mokelumne River, and Mokelumne River. Sacramento Delta Hydrologic Unit-Hydrologic Area No. 510.00

**Water Body Type:** Streambed

**Designated Beneficial Uses:** The Water Quality Control Plan *for the Sacramento River and San Joaquin River*, Fourth Edition, revised September 2009, 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); Migration of Aquatic Organisms (MIGR); Spawning, Reproduction, and /or Early Development (SPWN); and Wildlife Habitat (WILD).

**Project Description (purpose/goal):** The Delta Cross Channel Fall-Run Chinook Salmon Monitoring Project consists of installing two temporary hydroacoustic Biosonic DTX split-beam systems and the associated upland support equipment, seven acoustic telemetry receivers, and a combination of fyke and trammel nets to be fished at four different sites, all at locations in the Sacramento River, Snodgrass Slough, Dead Horse Cut, and the North, South, and main Mokelumne rivers. The nets will be fished in four different locations at different times. These activities are not anticipated to impact water bodies or water quality as these monitoring devices and nets will be temporarily installed in channels, kept in place with concrete anchors that would not be keyed into the streambed. There will be no placement of fill, dredging, cofferdams, use of cast-in-place concrete, and no equipment operation in waters of the U.S. Devices will be deployed by hand and from a boat.

A seven-week monitoring study would occur between September 1 and November 6, 2015. The purpose of the project is to monitor the movement patterns of Mokelumne River origin, upstream

migrating adult fall-run Chinook salmon in the vicinity of the Delta Cross Channel. The collected data would also provide a baseline estimate for comparison of adult fall-run Chinook salmon movements before and after installation of an experimental low voltage, graduated electric fish barrier (e-barrier), proposed to be installed in 2016. The e-barrier would test the feasibility of minimizing movement of upstream-migrating, adult fall-run Chinook salmon from the Mokelumne River to the Sacramento River through the Delta Cross Channel.

To monitor passage of adult Chinook salmon, the Bureau of Reclamation's Technical Service Center (TSC) is proposing to employ two Bionics DTX split-beam acoustic systems. Units H1-a/b and H2-a/b will monitor the channels on both the east and west sides of Dead Horse Island, and will provide an estimate of the abundance of fish moving through each of the monitored locations over the duration of sampling. Each system consists of two primary components, both of which are non-invasive, including a surface unit with support equipment of control hardware and power supply, and a submerged transducer placed in the river channel. Each system has two transducers with attached rotators, one on each side of the channel facing across each other. The active sonar head and rotator assemblies will be mounted on aluminum tripods (1.0m x 1.0m x 1.0m) that rest on the substrate. Tripods are placed on the streambed at a depth to ensure they remain completely submerged during the lowest tide predicted for the study. Depending on channel slope tripods may be tied off to the shore to prevent movement. Ties typically consist of a cable or rope tied to the tripod, and around either a rock or small tree on the embankment. From the sonar head, the power data cable will run up to the surface units located in job boxes at a location on the embankment in close proximity to the in-water units.

Acoustic tracking will be employed to track individual salmon from lower reaches of the Mokelumne River. To monitor fish movements with acoustic telemetry, acoustic receivers (-308 mm long x 73 mm diameter) would be deployed in multiple locations throughout the study area. The small receivers will be secured, using heavy duty zip ties, to a rope, with one end of the rope attached to a small (approximately 30 lbs) anchor and the other end attached to a floatable buoy. The anchor will not be keyed into the streambed. To minimize disturbances from the public and to reduce impacts to boaters in the area, the buoys will be secured in a fashion to allow them to float approximately one meter below the surface at the lowest predicted water level. A quarter-sized temperature sensor will also be attached to an acoustic receiver anchor in Snodgrass Slough at Mokelumne River confluence, Dead Horse Cut at Mokelumne River confluence, and in the mainstem Mokelumne River.

A total of up to 100 adult fall-run Chinook salmon will be caught, measured, and tagged in the North and South Mokelumne rivers (50 individuals per channel) using two different types of nets: trammel nets and fyke nets. Use of fyke nets is a more preferred fishing method over gill or trammel nets because they have a reduced risk of injuring or stressing captured fish; however, parts of Snodgrass Slough and the North Mokelumne River are too deep to effectively fish fyke nets, and trammel nets would be used instead as they can accommodate deeper channels. Fish will be captured for two purposes to meet the primary objectives of data collection activities: (1) adult fall-run Chinook salmon will be sampled, using fyke and trammel nets, in the disclosed locations as a means to provide them with acoustic transmitters; (2) all fish moving through Dead Horse Cut and Snodgrass Slough will be sampled as a means to provide an estimate of the abundance of different species of fish as identified with the hydroacoustic equipment.

A trammel net usually consists of three parallel panels of netting suspended from a float line and

attached to a lead line. The inner panel contains smaller mesh than the outer two panels. When a fish swims into the net from either side, it passes through the outer large-mesh panel, hits the inner small-mesh panel and then out through the other outer large-mesh panel, creating a pocket or bag in which it will be captured. A trammel net that is no longer than 100-foot long by 6-foot wide will be fished in two different locations, one in the North Mokelumne River and the other upstream of the hydroacoustic stations in Snodgrass Slough. Trammel nets would be actively fished at regular intervals (a minimum of once weekly throughout the monitoring effort), for periods not exceeding the net soak times established for certain water conditions at the time of fishing.

Fish that encounter the trammel net are detected immediately by the fish biologists on-site as a result of disruption of floating buoys attached to the net, allowing rapid recovery and removal. Trammel nets will be designed and developed based on the head width of adult fall-run Chinook salmon in an effort to minimize extraneous entanglement and gilling of both target and non-target species. Target fish captured using this method at the downstream location in the Mokelumne River would be measured for length, have an acoustic transmitter inserted into their esophageal cavity, tagged with a Peterson Disc tag, and immediately returned to the river in close proximity to their point of capture. Only healthy, active target fish will be tagged. If captured fish show signs of stress, they will be maintained in small (~100-cm by 100-cm by 150-cm) net pens or transport containers flushed with clean oxygenated river water for recovery, and released in the same channel of capture within two hours of capture.

All fish captured using this same size net and method at the upstream location in Snodgrass Slough will be identified to species, measured for length, and immediately returned to the channel in close proximity to their point of capture. This activity will quantify species presence and ultimately apply percentage of each species to the hydroacoustic data set to determine the proportion of salmon sampled.

Two fyke nets would be fished at two different locations, one on the South Mokelumne River and the other upstream of the hydroacoustic stations on Dead Horse Cut. The fyke net is designed as a passive fishing method, which consists of two 8-foot long wings of mesh with a float-line at the top and lead-line at the bottom that can be angled to funnel the target fish into an 8-foot long cone-shaped netting bag with one-inch diameter mesh holes. The netting is wrapped around a series of 6 to 8-foot diameter hoops with two to three funnel-shaped "throats" that decrease in size as they lead to the cod-end of the netbag, preventing fish from swimming back out. In order to avoid crowding, the net would initially be checked every hour and then adjusted to greater lengths of time if the fish biologists determine that more fish could be caught without causing crowding. Target fish captured using this method in the North and South Mokelumne rivers would be measured for length, have an acoustic transmitter inserted into their esophageal cavity to be tracked by the acoustic receivers, tagged with a Peterson Disc tag, and immediately returned to the river in close proximity to their point of capture. Only healthy, active target fish will be tagged. If captured fish show signs of stress, they will be maintained in small (~100-cm by 100-cm by 150-cm) net pens or transport containers flushed with clean oxygenated river water for recovery, and released in the same channel of capture within two hours of capture.

All fish captured using this same method at the upstream location in Dead Horse Cut will be identified to species, measured for length, and immediately returned to the channel in close proximity to their point of capture. This activity will quantify species presence and ultimately apply percentage of each species to the hydroacoustic data set to determine the proportion of salmon sampled.

Regulatory warning buoys with the orange diamond hazard warning symbol will be installed at each monitoring device location to inform boaters and other recreationists of the in-water devices. These buoys will be held in place by a cable connected to a concrete weight anchor that will not require digging into the streambed. All devices will be transported to each site via maintenance truck or boat. Staging of the truck will occur on the existing levee roads. In-water deployment of the hydroacoustic systems and acoustic telemetry receivers will take place from boat either by hand or using a hand winch. These devices would be deployed in two days. At the end of the approximately seven-week monitoring period, all monitoring devices will be removed.

**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 0.26 acre/73 linear feet of un-vegetated streambed.

**Dredge Volume:** Not Applicable

**U.S. Army Corps of Engineers Permit Number:** Nationwide Permit #5 (Scientific Measurement Devices)

**Department of Fish and Wildlife Streambed Alteration Agreement:** Based on a determination reached by the Department of Fish and Wildlife a Streambed Alteration Agreement is not required because the project is outside of the jurisdiction of the Department.

**Possible Listed Species:** Sacramento River winter-run Chinook salmon, Central Valley steelhead, North American green sturgeon, valley elderberry longhorn beetle (VELB), delta smelt, and longfin smelt

**Status of CEQA Compliance:** Department of the Interior categorical exclusion: 43 CFR 46.210(e) Nondestructive data collection, inventory (including field, aerial, and satellite surveying and mapping), study, research, and monitoring activities.

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

**Application Fee Provided:** Not Applicable