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**UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF CALIFORNIA**

<p>CENTER FOR ENVIRONMENTAL SCIENCE, ACCURACY & RELIABILITY, a California public interest organization</p> <p style="text-align: center;">Plaintiff,</p> <p style="text-align: center;">v.</p> <p>MARK W. COWIN, In his Official Capacity As Director Of CALIFORNIA DEPARTMENT OF WATER RESOURCES; SALLY JEWELL, Secretary, U.S. Department of the Interior, in her official capacity; DAN ASHE, Director, U.S. Fish and Wildlife Service, in his official capacity; and UNITED STATES FISH AND WILDLIFE SERVICE;</p> <p style="text-align: center;">Defendants.</p>	<p>Case No.</p> <p>DECLARATION OF DR. ROB ROY RAMEY II</p>
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I, DR. ROB ROY RAMEY II, declare:

1. I am a Science Advisor to the Plaintiff, Center for Environmental
Science, Accuracy and Reliability (CESAR). I have personal knowledge of the

1 facts stated herein and, if called upon to do so, could and would testify to the
2 following.

3 2. I earned my Bachelor's degree in Biology and Natural History from
4 the University of California Santa Cruz, my Master's degree in Wildlife Ecology
5 from Yale University, and my Ph.D. in Ecology and Evolutionary Biology from
6 Cornell University. My postdoctoral experience includes research at the University
7 of Colorado, Boulder, and the Center for Reproduction of Endangered Species at
8 the San Diego Zoo.

9 3. I have direct experience working with species that were critically
10 endangered but subsequently brought back from the brink of extinction, or that
11 have fully recovered. My work with endangered species began in 1980 when there
12 were only a dozen or so known peregrine falcon nests known in the State of
13 California. At that time, we were retrieving eggs from wild nests for captive
14 incubation because the eggshells were dangerously thinned due to residual DDT
15 and DDE contamination. That species recovered as a result of those and other
16 intensive efforts, and was delisted in 1989. When I began my fieldwork on
17 California condors in 1983, that species was critically endangered, with only 27
18 individuals left in the wild. Intensive efforts to curb mortality from lead
19 contamination and other causes, establish a captive breeding population, and
20 reestablish the wild population, have led to a total population of 420 California
21 condors today.

22 4. I have served as a Curator of Vertebrate Zoology at the Denver
23 Museum of Nature & Science, after which I served as a consulting Science
24 Advisor to the Office of the Assistant Secretary of Fish and Wildlife and Parks at
25 the Department of Interior. In 2007, I founded Wildlife Science International,
26 Inc., and began consulting full time on scientific issues involving the Endangered
27 Species Act. In 2009, I also became CESAR's Science Advisor. I am a member of
28 the International Union for the Conservation of Nature (IUCN). In 2009, serving

1 as a science advisor to CESAR, I aided in the selection and organization of an
2 independent scientific review panel made up of quantitative fisheries biologists to
3 examine the research and the data underlying those studies on the Delta smelt and
4 their decline.

5 5. I have an active research program and regularly publish the results of
6 research in peer-reviewed journals. In 2012, my co-authors and I published the
7 scientific paper, *Primary factors associated with the decline of delta smelt*
8 (*Hypomesus transpacificus*), in the San Francisco Bay-Delta Estuary: 1972-2006.
9 That paper was published in the peer-reviewed journal, *Reviews in Fisheries*
10 *Science*.

11 6. I am familiar with the proposal of Respondent Department of Water
12 Resources (“Department”) to install a rock damn across a channel of the Delta at
13 West False River. I have read the Department’s description of the project and
14 reviewed the relevant maps delineating the location of the proposed dam. I also
15 have reviewed the following official documents: (a) the Department’s Request for
16 Emergency Procedures and Modified ESA Consultation for the 2015 Drought
17 Emergency Barrier Project (the “Project”); (b) the US Army Corps of Engineers
18 section 404 permit for the Project; (c) the California State Water Resources
19 Control Board section 401 permit for the Project; (d) the California Department of
20 Fish & Wildlife incidental take permit for the Project; (e) the California
21 Department of Fish & Wildlife Streambed Alteration Agreement for the Project;
22 (f) the Department’s April 15, 2015 Press Release about the Project; (g) the
23 Department’s Opposition to the Petitioner’s Ex Parte Application.

24 7. I have researched and am familiar with the life history of the Delta
25 smelt and causes of endangerment. I have downloaded and examined the most
26 recent, 2015 data on Delta smelt numbers and distribution. I am familiar with its
27 designated critical habitat.

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1 8. Based on my academic and professional background in biology and
2 ecology, including as they pertain to the Delta smelt and other critically
3 endangered species, and based on my review of the facts of the Department's
4 proposed dam project at West False River, and recent data on distribution and
5 number of Delta smelt, it is my professional opinion that the Delta smelt's habitat
6 will be adversely affected by the project.

7 9. Based on plausible cause and effect mechanisms, the barrier being
8 constructed by the Department at the West False River could have the following
9 effects: salinity reduction upstream (east) of the barrier, entrapment of smelt and
10 salinity increase downstream of the barrier, turbidity increase and direct mortality
11 near the dam site during the long construction/deconstruction process, and
12 temperature rise upstream of the barrier (which can kill the juveniles and adults).
13 These facts are also acknowledged by the State Department of Fish and Wildlife in
14 their incidental take statement.

15 10. Clearly, any of the above could reasonably result in an adverse
16 modification of delta smelt habitat, especially since the temporal extent of the
17 drought is unknown. Because of the way that Kodiak trawl data are collected (a
18 surface trawl only, and where the boat can go safely, typically mid-channel), one
19 cannot be sure that all of the smelt are precisely where they were caught during a
20 survey, and therefore, take of smelt is likely.

21 11. Given the current low results of population surveys, the species is
22 clearly already in danger of extinction. Any take of this miniscule population,
23 raises the specter of extinction.

24 12. The 2015 survey data clearly show that the project site and affected
25 area has very recent documented delta smelt occurrence, both upstream and
26 downstream of the proposed West False River dam. The first and second Kodiak
27 Trawl Surveys reported Delta smelt identified from Station 809, which is
28 approximately one mile downstream and WSW of the proposed West False River

1 dam site, and Station 902 which is approximately one mile south Frank's Tract
2 and 5.5 miles ESE of the proposed dam.

3 13. Below, I provide the data on the 2015 Spring Kodiak Trawl Surveys
4 for Delta smelt:

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- 6 a. Survey 1, January 12-15, 2015: 21 smelt (7 males, 13 females, 1
7 undetermined), including 4 at Station # 809
- 8 b. Survey 2, February 9-12, 2015: 72 smelt (32 males, 40 females),
9 including 10 at Station # 809, and 1 female at Station # 902
- 10 c. Survey 3, March 9-12, 2015: 6 smelt (2 males, 4 females)
- 11 d. Survey 4, April 6-9, 2015: 1 smelt (1 male)
- 12 e. Survey 5 May 4-7, 2015: 8 smelt (1 male, 4 females, 3
13 undetermined)

14 14. No contingency plans are in place should levees weaken and fail on
15 either side of the West False River, requiring more drastic, remedial action. No
16 soil compaction studies or analysis were provided to determine the probability of
17 failure. I see no mention in the documents that I reviewed of a contingency plan
18 should flooding occur prior to dam removal.

19 15. Monitoring proposed by the State is designed for the sake of
20 compliance with the Clean Water Act but not for the survival of the Delta smelt.
21 The Department's monitoring program of appears to be deliberately designed to
22 ignore measurable adverse effects on the remaining Delta smelt population.

23 16. Ammonium concentrations in the Bay-delta are now typically higher
24 than levels found to inhibit production of diatoms, which are preyed upon by
25 Eurytemora and Pseudodiaptomus, both of which are food species of critical
26 importance to Delta smelt (Dugdale 2007). Despite the importance of ammonium
27 in Delta smelt habitat, I see no effort by the Department to determine the effect of
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1 an altered flow regime on ammonium or its cascading effect on the Delta smelt
2 food chain.

3 17. As discussed in our 2012 scientific paper (*Primary Factors, supra*),
4 water temperature can directly affect delta smelt survival directly by regulating the
5 rate of metabolic processes of the smelt and indirectly, through its effects on
6 species in the food web that they rely on. The effects of variation in water
7 temperature, as well as other environmentally important parameters can be
8 estimated, which is something that the Department has failed to do. For example,
9 we reported that, “Higher water temperatures can also be lethal to delta smelt in
10 summer and early fall (Bennett 2005). Bennett (2005) reported optimum
11 temperatures for egg survival (16° C) in March-May and juvenile growth (17° C)
12 in April-July. We estimated the number of degree-days of deviation from these
13 optimums. We also estimated average water temperature in April-June as a general
14 measure of its effect on larvae and juveniles, and average temperature in July as a
15 general measure of effect on juveniles in summer. Highest water temperatures can
16 occur from July into September, so we estimated maximum two-week average
17 water temperatures over that period as a measure of lethal temperature effects.
18 Continuous (hourly) water temperature data are available beginning in the mid- to
19 late-1990s at 11 stations in portions of the estuary that are occupied by Delta smelt
20 (California Data Exchange Center, <http://cdec.water.ca.gov>).”

21 18. According to the Department’s own Incidental Take Permit,
22 “Migrating fish can use the adjacent San Joaquin River, Fisherman’s Cut or Dutch
23 Slough and their access will not be restricted.” However, a 2007 DWR Technical
24 Memorandum titled, *Hydrodynamic and Water Quality Modeling for Franks Tract*
25 *Project Alternatives*, reported a very different scenario—i.e., that tidal flows and
26 channel velocities surrounding Franks Tract would be greatly altered, with a three-
27 to five-fold increase if the West False River were closed. Despite the obvious
28 importance of knowing these parameters in advance of the project to assess the

1 project's impact on the Delta smelt's ability to migrate and survive, I found no
2 evidence of modeling by the Department to predict similar effects of the proposed
3 False River Dam during severe drought conditions.

4 19. The construction of the West False River dam is estimated to take 30
5 to 60 days, and removal another 45 to 60 days. In other words, construction and
6 removal could require approximately four months of continuous construction
7 activity, even if everything goes right. This construction would also occur at a
8 time when the Delta smelt is at greatest risk from water temperature changes.
9 However, the Department provides no analysis, monitoring, or contingency plan
10 for this obviously important parameter to the Delta smelt's continued survival.

11 20. Despite admitting great uncertainty in the soil layers and stability of
12 levees along the False River, the Department proposes to do geologic exploration
13 after construction of the dam, in 2015 or 2016, rather than before construction.
14 This is completely backwards because it defers any risk assessment of catastrophic
15 failure, redesign, additional construction, and evaluation of adverse modification a
16 species critical habitat until after the dam is built. The Department's approach
17 puts the State's most imperiled species at inestimable risk.

18 21. Not one of the Project Environmental Commitments involves any
19 monitoring or being prepared to mitigate any one of most basic parameters of
20 critical importance to Delta smelt survival: temperature, salinity, ammonium,
21 turbidity, or channel flow and velocity. Nor is there is an analysis of cumulative
22 effects on the Delta smelt.

23 22. One does do not bulldoze 95,000 cubic yards of rock and drive
24 pilings into the middle of the Delta smelt's final habitat, even more reduced due to
25 extreme drought, just as one would not have built a housing development upon
26 foraging grounds of the California Condor when they were at their lowest
27 population level.

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1 23. Construction must be stopped until effects are more fully known,
2 thereby avoiding potentially catastrophic consequences and a massive investment
3 in conservation down the drain from a single mistake or oversight. The Delta
4 smelt is not endangered; it is critically endangered. Therefore, it is unthinkable
5 that the effects of the proposed project on Delta smelt have not yet been more
6 thoroughly evaluated.

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8 I declare under penalty of perjury, under the laws of the State of California,
9 that the foregoing is true and correct, and that I executed this declaration on June
10 9, 2015, in Nederland, Colorado.

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– /s/ Rob R. Ramey
DR. ROB ROY RAMEY II