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SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF ALAMEDA

LEEON HILLMAN; CRAIG TUCKER; DAVID BITTS; et al., Plaintiffs, v. CALIFORNIA DEPARTMENT OF FISH AND GAME; DONALD KOCH; and, DOES 1-100, inclusive, Defendants.	CASE NO. RG09 434444 **DECLARATION OF CLAUDIA J. WISE IN OPPOSITION TO MOTION FOR PRELIMINARY INJUNCTION** **Hearing:** Date: June 9, 2009 Time: 9:00 a.m. Judge: Hon. Frank Roesch Dept: 31 Trial Date: None Set Action Filed: February 5, 2009

I, CLAUDIA J. WISE, declare:

1. I have recently retired after 32 years of civil service with the United States Environmental Protection Agency as a Physical Scientist/Chemist. I have been a member of many scientific projects over the years starting my federal career in the Fish Toxicology arena and ending it with the Salmon Restoration division. I have worked on projects ranging from urban fish populations and fish avoidance testing to eelgrass habitat and global climate change. I have been and remain a strong proponent of protecting the environment. My Curriculum Vitae is attached to this Declaration.

2. I have been involved in temperature surveys on the Klamath River in California in regards to suction dredge activity and existing conditions of refugia. We have found specified natural refugia to be no better in many cases to that of dredge made refugia. I am currently, involved in preliminary planning to evaluate the effects of dredging on mercury.

3. I have studied a plethora of peer reviewed papers too numerous to list here regarding effects of suction dredging on the environment. Most have come to the same conclusion of insignificant or de minimus environmental impact that is local and temporary in its effect on the streams inhabitants.

4. It appears that although there are many peer reviewed journal articles written that support this conclusion giving the proof already at hand that the dredging community is not significantly harming the environment or the fish this issue is re-surfacing in this Court. My experience regarding suction dredge mining is that the fish are very happy to feed from the dredged spoils presented to them and rest in the dredge holes left much like in natural refugia. I have never seen or heard of any harm that has come to any fish present during suction dredging activities. California Fish and Game currently have rules and regulations that do regulate dredging out of situations that would be harmful to fish, such as, spawning seasons.

5. Suction dredges are being used by government agencies to remediate stream conditions in some cases. According to the National Oceanic and Atmospheric Administration (2006) ("NOAA"), Duck Creek, a surface water body in Alaska, is impaired by urban runoff from non-point source pollutants including, heavy metals, hydrocarbons, iron flocs and excess nutrients. This small coastal stream originates from a spring that drains runoff from Mendanhall Valley, a relatively high residential and business area. Historically there were runs of nearly 10,000 chum salmon

and Coho runs of about 500 fish in Duck Creek. Currently the chum run is extinct and the Coho run consists of only 20 fish. Restoration at Duck Creek involves the development and implementation of bioremediation methods to restore water quality and anadromous fish habitat in impaired streams. NOAA scientists attempted to correct the degraded conditions by using high-pressure jet pumps and suction dredges to remove fine sediment from the streambed.

6. I have spent much time over the last 4 years studying mercury effects on the environment in relation to suction dredging activity. Specifically, there was concern expressed regarding a paper published by the California Water Board's Water Quality Division (Humphreys, 2005) ("Board"). This paper discussed mercury losses and recovery during small-scale suction dredging.

7. The suction dredge community could provide the state with a source of help that is willing to do what they do best. Prospect for GOLD! In the event that suction dredge miners run across a hot spot of mercury, the miners would be willing to hand it over to a collection facility if such a facility existed. The Board's Water Quality Division report (Humphreys, 2005) idea of paying the miner's for their efforts would help

facilitate this plan. The cost would be much less than what is presently being spent on remediation activity that is less effective.

8. The Water Board has spent a lot of time and money on mercury remediation projects with limited success though in 2001 EPA, Region 9 located in San Francisco, California did collect mercury from miners very effectively. Collections of mercury are currently happening in Oregon and Washington through the states respective Division's of Ecology and with even greater success at miner's rallies.

9. During the first EPA, Region 9 mercury "milk run" in 2000 agency personnel were able to collect 230 pounds of mercury from miners. The total amount of mercury collected was equivalent to the mercury load in 47 years worth of wastewater discharge from the city of Sacramento's sewage treatment plant or the mercury in a million mercury thermometers. (US EPA, 2001.)

10. Over the past four years, the Resources Coalition and other small-scale miners associations in Washington have turned in 127 pounds of mercury and eight pounds of lead for safe disposal with the help from the Washington Department of Ecology. Ecology staff attended miners' rallies in Oroville and

Monroe, explaining the state's program for proper disposal of lead and mercury. (ENS) 2007

11. The mining community of today is, in my opinion, the only group that is in a position with the technology to help out at a very economical price to the public. Any residual mercury remaining after dredging a location is that much less to worry about in our nations waterways.

12. In reviewing Humphrey's (2005) comments regarding possible problems associated with collecting mercury via suction dredging methods, It is right to look to the suction dredge community for help locating hotspots and removing mercury from the river systems. In my opinion the data provided in the report by Humphrey's (2005) did not demonstrate any clear conclusions that would prohibit the State from allowing this activity. On the contrary, in the discussion of results it was stated that a suction dredge in the American River was able to collect 98 percent of the measured mercury processed through the dredge. The results may have been higher if the investigators had been using a dredge with the modern jet flare design. Even 98 percent is a huge plus for the environment and it would be irresponsible to not allow mercury to be removed from the rivers and streams whenever it is found.

13. In Humphreys report (2005), the author expressed concern for the loss of a small portion (2%) of the mercury from the back end of the sluice box. In the conclusions it was stated that the amount lost constituted a concentration more than ten times higher than that needed to classify it as hazardous waste. Yet 98 percent of the mercury was now secured and the process did not add any mercury to the system that was not already present. The small fraction lost, because of its density, would relocate back onto the river floor buried in the sediment close to where it was removed while dredging.

14. Mercury is continuously moved every winter in high storm events. Since the cessation of hydraulic mining, accumulated sediment from hydraulic placer mining has been transported to the Sacramento-San Joaquin Delta and San Francisco Bay by sustained remobilization (James, 1991). Providing a program to collect mercury from miners would aid the Water Board's mission of reducing mercury contamination in the deltas and bays where mercury methylation is a large concern.

15. Mercury can become floured. Alpers (2005) described this as, "gravel and cobbles that entered the sluice at high velocity caused the mercury to flour, or break into tiny particles. Flouring was aggravated by agitation, exposure of

mercury to air, and other chemical reactions". In this case he was referring to a hydraulic mining sluice that contained materials that were roaring down a mountainside and fed by giant water cannons (monitors) that were used to breakup the gold bearing deposits.

16. In the test described by Humphreys (2005) a small portion of floured mercury was collected in the sediments as they escaped the sluice box. This mercury whether floured before it entered the sluice box or not would still be in elemental form. Regardless of surface area it would be no less toxic then the other 98 percent suggested should be left in place.

17. Aside from grossly polluted environments, mercury is normally a problem only where the rate of natural formation of methyl mercury from inorganic mercury is greater than the reverse reaction. Methyl mercury is the only form of mercury that accumulates appreciably in macroinvertebrates and fish. Environments that are known to favor the production of methyl mercury include certain types of wetlands, dilute low-pH lakes in the Northeast and North central United States, parts of the Florida Everglades, newly flooded reservoirs, and coastal

wetlands, particularly along the Gulf of Mexico, Atlantic Ocean, and San Francisco Bay (USGS 2000).

18. If not collected the mercury is guaranteed to end up farther down stream, and eventually in the delta or the bay, where methylation is a real environmental problem.

19. In my opinion it would be a highly irresponsible management practice to leave a large portion of mercury in the rivers and streams because of unrealistic concerns for the lesser amount moving only a short distance away from an operating dredge. Most likely if floured the movement of fine mercury would extend no farther than 50-feet off the end of the sluice box. That would relate to the distance a turbidity plume might extend downstream from a small-scale suction dredge.

20. However, if the mercury was left in place the next storm event would surely move it downstream closer to, and eventually into, the bay and delta. In fact, according to Humphrey's study in 2005 mercury was seen moving down stream and re-deposited on bedrock already dredge cleaned. The important fact here is mercury was flowing down stream in a suction dredge free zone during lower river flows than take place under high winter river conditions.

21. It is unclear from reading the Humphrey's report whether, or not, the floured mercury was already present in the river sediments. If one were to study the picture in the report that showed the results of panning materials from a nearby creek it does appear that was the case. Because the study was conducted in a seriously contaminated area it is impossible to determine what portion of flouring of mercury was caused by the crash box design of the suction dredge in use. If indeed the crash box caused the flouring then using a more modern jet fare type suction dredge should improve mercury recovery.

22. More study is required to see if reducing the amount of floured mercury would be enhanced by utilizing the modern jet flare style suction dredge. The jet flare which is widely in use today, in the suction dredge mining community, is the best equipment available for collecting fine gold and because of this design and the density of mercury 13.53 grams per cubic centimeter (g/cm3) it would be more effective in collecting mercury particles with little disturbance that would result in further breaking the mercury particles down.

23. It is most important to reduce the total amount of mercury in the streams and rivers and its transport downstream

into the bays and deltas. This is defined as a part of Total Maximum Daily Load ("TMDL") goals.

24. We know for certain that mercury is transported downstream throughout the winter season during high water events. Therefore, anytime there is the possibility for the removal of mercury by miners it should be undertaken and supported.

25. In my opinion suction dredge mining is beneficial to the rivers and streams in California.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed this 15th day of May, 2009 at Albany, Oregon.

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CLAUDIA J. WISE

LITERATURE CITED

Alpers, C.N., Hunerlach, M.P., May., J.T., and Hothem, R.L., 2005, Mercury contamination from historical gold mining in California: U.S. Geological Survey Fact Sheet2005-3014, 6p. http://pubs.*water*.usgs.gov/fs2005-3014

Humphreys, R., 2005, Losses and Recovery During a Suction Dredge Test in the South Fork of the American River. Staff Report, State Water Resources Control Board, Division of Water Quality.

James, A.L., 1991, Incision and morphologic evolution of an alluvial channel recovering from hydraulic mining sediment: Geological Society of America Bulletin, v. 103, p. 723-736.

Miners Remove Gold Rush Mercury from Washington Streams, Environment News Service (ENS) 2007 http://www.ens-newswire.com/ens/sep2007/2007-09-18-096.asp

NOAA, 2006. Duck Creek Water Quality and Anadromous Fish Habitat Restoration. http://www.photolib.noaa.gov/ habrest/crp_duc.html

USEPA, 2001. Mercury Recovery from Recreational Gold Miners. http://www.epa.gov/region09/cross_pr/innovations/merrec.html

USGS, 2000. Mercury in the Environment, USGS Fact Sheet 146-00 (October 2000) Environments Where Methyl mercury is a Problem.