Subject: SIER Comments
Date: Sunday, May 1, 2011 2:44:15 PM PT
From: Randol Thrasher
To: dfgsuctiondredge@dfg.ca.gov

Mark Stopher
California Department of Fish and Game
601 Locust Street
Redding, CA 96001

Dear Sir,

Please consider my following comments regarding the SEIR and Proposed Regulations for suction dredge mining in California:

Your stated reasons for regulation changes, specifically the season changes, were species protection. That reasoning is flawed in many ways: (1) there is no documented harm caused by suction dredging, to the listed species (only speculation) (2) many of the streams effected by the season changes in Mariposa and Tuolumne Counties are intermittent or seasonal and therefore cannot be habitat for either the frogs or the minnows you cite. Opening them for dredging as late in the year as you have is the same as making them Class A, as the will be dry most years. These streams should in fact should be Class H, since they are not habitat for ANY of your "spices of concern" (salmon, yellow legged frogs, hardhead minnow)

I take strong exception to the entire SIER and subsequent regulation changes on the following grounds: The 1994 regulations were adopted after a valid environmental study that included direct observation of dredging operations. There have been no studies that show the conclusions of the original EIR to be invalid only a few papers published that speculate as to possible harm. You ignored research submitted that did not fit your "agenda" and quoted the papers that speculated harm because the did fit your "agenda"

No documented harm has been done by any dredger following the 1994 regulations and they should be reinstated.

Randol Thrasher
132 E Clinton Ave.
Atwater, CA 95301-4537

1 May 2011

California Department of Fish and Game
Attn: Mark Stopher
Suction Dredge Program Draft SEIR Comments
601 Locust Street
Redding, CA 96001

Subj.: Comments on the Draft SEIR

To: Mark Stopher

Enclosed are my comments for inclusion with the final SEIR.

Regards,

Joseph J Waldhaus
132 Shady Lane
Antioch, CA 94509

Encl: (1) Comments on Draft SEIR

cc: file

California Department of Fish and Game (CDF&G) Draft SEIR comments re Suction Dredging

1. Page ES-1, lines 25, 33, and 34. You state that suction dredging occurs, then turn an about face and write that suction dredge mining is prohibited. This is contradictory. Why can't you fix this so it's plainly understandable. and not contradictory?

2.Page ES-3, lines 25 thru 34, and lines 37 thru 39. The former lines refer to another court order, but the latter does not address how this order will be complied with by the Program. Elucidate! What's to prevent that latter court order from being used to continue to prohibit suction dredge mining?

3. Page ES-6, lines 19 thru 34. This appears to be undue harrassment. You, the CDF&G, do not require every licensed fisherman or hunter to provide that amount of detail, why is it required that a dredger do it? This is unreasonable, why should I want to broadcast to everyone where I'm going to go look for gold? Doesn't that just put a target on my back, or chest, for whomever wants to rob me?

4. Page ES-6, line 26. 4000 is way too few. You should at least have some ratio to the amount of water length to the number of permits issued. Your own quota on hunting tags has more sense than this wild number. Maybe you could plagerize their system. Realize this number should also be figured considering the price of gold, the higher the price, the more people will want to look for it. Be more realistic, 4000 ain't nearly enuf.

5. Page ES-8, lines 12 thru 14. Your counterparts in fishing just removed the requirement to have your fishing license displayed while fishing. It would be reasonable for the dredger to have the permit in the vicinity of his/her ops.

6. Page ES-15, line 25 and associated paragraphs. Based on the Court Order cited on Page ES-3,lines 25 thru 34, prohibiting the issuance of any new suction dredge permits under the previous regulations, this alternative is contrary to an existing court order, why is it even considered? Was more space and time needed to be wasted on an alternative which was already unacceptable? What are you thinking?

7. Page 1-3, lines 5,6,7. "...impacts that may be occurring..."With SB670 in effect, there is no dredging, thus no impacts. Your logic eludes me. "...new significant and substatially more severe environmental impacts..." what is the possibility and probability for each of these? Explain in concrete specifics what constitutes significant and substatially, how is it measured? How do lines 15 and 16 contradict these referenced? It appears para 1.4.3, lines 34, 35, 36 seem to better state "impacts that may occur" vice what is stated here.

8. Page 1-10, Other related activities. Has anyone on the SEIR or CDF&G review folks done any dredging? If not, why not? Would a person with some dredging experience be better able to address the potential ramifications of dredging? It just seems all too easy for the contractor and CDF&G people to sit back and make rules about dredging when you don't have any experience to confuse the facts. What have you done to do this SEIR professionally? with integrity?

9. Page 1-14, para 1.7, What was analysis criteria, measurable data, used to determine "no impact", "less than significant"' "significant or partially significant"? Who determines what's "beneficial", or "detrimental" to the environment? What is being measured? These should be factual,

not opinions. Are you using facts? or Opinions? When the facts change do you change your mind?

10. Page 2-1, lines 11 thru 14, what proof is there that suction dredging done prior to 2009 was deleterious to fish?

11. Page 2-5, lines 5,6,7,8. Why did you alter the precedent set and cited here, as "protecting specific fish species....during... species' spawning..."? By the way, I also disagree with your fish definition, I accept the simple fin fish definition, that's all.

12. Page 2-12, line 1, 4000 permits is too few. With the number of rivers, and streams, and their lengths of flow, a few miles, No? A more rational number of permits based on linear mileage of water would be appropriate. How many dredgers can fit in any one river or stream would depend on its length and width, and maybe depth? why not use these parameters? Or could you not suggest anything more logical, rational, practical?

13. Page 3-1, line 6, "...dredgers..." excuse me, but that ain't necessarily so! How about "prospectors and miners"? to me this smacks of a negative bias towards dredgers. I'd bet dollars to donuts that most of the folks who came here for a gold rush had little to no experience, much less dredging! Can't you be a little more subtle in your subterfuge? Would this poor choice come from your esteemed contractors? Where's the real history? Or was it forgot due to the distance from school? Did anybody proof this prior to sending it out? Okay, I get it now, you want your review to be done by everyone else, sly, not.

14. Page 3-3, Figure3-1, If it is not beyond your capability, how about making this chart relevant by overlaying the price of gold for the years covered? It seems the price of gold makes certain means of mining profitable or not. So the inclusion of its price would give everyone something to which they can relate, money.

After Page 3-4, Figure 3-2. What type of dredge is shown here, a jet flare, or crash box? what is the difference in their operations? Should one type be outlawed?

15. Page 3-5, lines 40 41. CDF&G could have validated the info by going next door, so to speak, Oregon allows suction dredging. What an embarassment!

16. Page 3-14, lines 19 thru 21, Just to note, and more garbage and crappy camps have been observed during this suction dredge moratorium. So they are not all created by dredgers, as seems implied by the verbiage.

17. Page 4.1-4, lines 13 thru 21, What has been the increase in the delta(s) after dredging vice after the spring thaw? How many dredgers would it take to equal the spring thaw? What about the comparison with natural run-off? Turbidity, movement of rocks and boulders in the stream? What would constitute "significant" with respect to dredging, and spring thaws?

18. Page 4.1-9, lines 25 thru39, Dams break and fail to hold water, in our earthquake state, what will be the effects of this in comparison to suction dredging? Or when there's an overflow of the dams.like on the Feather River, in Feb 86 and Jan 97?

19. Page 4.1-11, Table 4.1-1, This table is very misleading. the use of "maybe" leaves much to the imagination, more to the point is, "it depends". Like on what's the probability 10%, 50%, or 80%? What's the size of the dredge compared to the size and flow of the river, or stream? It's really too bad

you folks did not make the professional effort needed to be more accurate.

20. Page 4.1-15, lines 41 thru 44. What is the location of these "persistent pits" with respect to upstream dams? I understand the Consumnes is one river without a dam, whereas these mentioned all have dams, controlling and regulating the downstream flow. Doesn't a controlled flow affect the likelihood and life of a "persistent pit"? Why was this not addressed?

21. Page 4.2-19, lines 13 thru 24. What was being researched by this USGS? How is it relevant to suction dredging? Aren't suction dredgers looking for gold, not for mercury hot spots? Don't suction dredgers avoid mercury hot spots? dosn't this hot spot attempt at mercury recovery belie the actions trying to be accomplished by this USGS research? Doesn't the use of this skew the results of normal dredging? If not, why not?

22. Page 4.2-26, lines 25 thru 27. Were these "observed" camps solely of suction dredgers? how about any campers? This is for here and throughout this document. How many times are there other folks besides dredgers out in the field making the mess, leaving garbage. Over the past couple years, going to the LDMA camp at Italian Bar, I've seen piles of tires, mattresses, and camp garbage left along side the road, and in camp grounds, and there's no dredging going on there. We're all just slobs, don't try to single out dredgers.

23. Page 4.2-32, line 25, Exactly what Highbanking activity is prohibited? wet-to-wet, dry-to-dry?

24. Page 4.2-35, line 2 thru 4. "...it it possible..." just about anything is possible, what's the probability of occurrence? What data do you have to support this? If there's no data, why not? What good is this anyhow?

25. Page 4.2-35, line 11 and line 13. "...so it is unknown...are representative....", "...However, it is expected..." seems counterintuitive. Why not do some more sampling to confirm the "expectations"? This appears reckless, capricious, and arbitrary to state these expectations after "unknown". You're doing a fine job at single point extrapolation!

Lines, 17 and 18. Since Hg's density (13) is less than Au (19), wouldn't flooding flush more Hg than Au from these places? If not, how do you figure that?

26. Page 4.2-36, lines 3 thru 5. How does Pit 2:BC sediment "...appears to be undisturbed..."? and why was not an attempt made to quantitatively date the sediment? How would you be doing that? In general, between the end of hydraulicing and the start of dam construction on the Sierra Nevada rivers, what was the number and frequency of watershed loading event occurrences that would flush Hg out of said streams and rivers of the Sierra Nevada? Wouldn't this have something to do with how much Hg is still being found and recovered from the rivers? Why don't you address this?

27. Page 4.2-37, lines 2 thru 18. Why is a dredge being used to remove mercury from a hot spot? That is not what a dredge was built for, was it? Wasn't a dredge built to recover gold? I'm not saying it can't be dual purpose, but it does not seem reasonable to castigate a machine and process, and processors for not doing something like removing mercury, when that's not their purpose. I wonder who's genius struck here? Will you fess up? Re the calculations, results for Pit 2, if the area is more contaminated than the first shouldn't a different calculation be done, or is this one size fits all? Address here and elsewhere, like page 4.2-33, lines 22 thru 24. It seems to me that these conditions are three dimensional at least, so the calculations should be covering that, at a minimum,

you guys make it seem linear, which ain't the case, don't cha know? Sounds like you are trying to develop a mechanism for Hg removal, from the hot spots, thus, cleaning them up of contamination, too bad your science hasn't helped you figure it out yet, other than eliminating the dredge as a solution to the Hg cleanup problem.

28. Page 4.2-53, lines 18, 19, and 36. So what you're saying is that humans are not following the advisories, and are eating contaminated fish, eh? for your conclusion on lines 36 and 37, I disagree with it as written, prefer the impact "may" be potentially significant.

Lines 42 thru 46. this "identify" should be field work, not some jackwagon sitting at a desk looking over paperwork. Get some folks in the water and identify the hotspots. Then get them cleaned up, don't you know it's deleterious to fish!

29. Page 4.2-55, lines 41, 42. Revise so this sentence completes a thought. Now it reads,".....these metals include either includes a "water-effect ratio"..." So what does it include besides a "water-effect ratio"? Fix this.

30. Page 4.2-56, table 4.2-6, with the suction dredge removing certain amounts of "concentrates" vice "discharging" everything into its plume, what amount of Hg and/or trace metals were "captured" in the concentrates and what amounts were "discharged"? Was this measured? If not why not. And if so, why not publish it? Assumptions and estimates are not good science, why is this typical of your publication here? Where are the facts? where is the data?

31. Page 4.2-58,lines 41 thru 44, what are you trying to do here? Why not state that these hot spots have to be cleaned up? Sure it's beyond the scope of your thoughts, but leaving the hotspots is deletrious to fish. Aren't you are trying to protect fish? Wouldn't cleaning up the hotspots protect the fish? Oh yeah, then as a byproduct of the cleanup the areas would be open to dredging, is this what you want to prevent too?

32. Page 4.5-12, lines 16, 17, 24, 25. first you state,"... it is unknown...." then you conclude, "for this reason, impacts...are considered potentially significant." How can an unknown be realistically considered "potentially significant"? Why is this circular, bogus, logic being accepted? Seems very Rumsfeldish, do you know what you know, do you know what you don't know? Do you know the difference? What proof is there of any of this, Why not show the proof?

33. Page 4.7-1, line 8, I beg to differ with you re "sound is mechanical energy..." I admit to a limited education that taught two types of energy, potential and kinetic, and machines produce mechanical sounds, all sounds are not mechanical. As a sound maker, I am not mechanical! Can't you come up with anything better? This should be changed.

line 24, similarly, "...a receiving mechanism," change to "receiver", wouldn't that simplify and provide clarity? or isn't that your objective?

34. Page 4.7-2, Table 4.7-1. The title is misleading, rather than "Noise" this should be "sound". Based on your previous definition of noise, these sources are "sounds", not "noise". For just you though, I can concur that whisper and conversation is a noise, but that's the exception, not the rule.

35. Page 4.7-8, Table 4.7-5, this table is from 1971, my gracious, that's forty years ago! Are you trying to tell me that there have been no improvements, no advancements in noise dampening, to mufflers, and engines in the past four decades? What are the sound levels now? Why can't you measure them, then put it in your table? or, is all this just blowing smoke? Any and all conclusions from using this out of date table need to be re-addressed with current data. Your Executive Summary

states, you are going to ensure this SEIR considers existing technological capabilities, not 40 years old. Get current!

36. Page 4.7-9, line 29. is that table relevantly accurate? line 35, Can you explain why or why not, considering the suction dredge activity as Industrail, (M-1) or (M-2), the permissible Noise Levels (dBA) are 75 and 80, and within the permissible limit?

37. Page 4.7-12, lines 9, 10.Here's a suggestion, give the hiker earplugs, or go to a Wilderness Area.

38. Page 4.8-5, lines 9 thru 12, Are you saying that "gold prospecting" is not a potential recreation activity in a state park? This whole SEIR regards suction dredging, give a bone - at least mention "prospecting" as a potential recreational activity.

39. Page 4.8-8, lines 7,8. Why is the National Sporting Goods Association abbreviated NGSA?

40. Page 4.8-11, line 6. This criteria for analysis entirely appears subjective. What data do you have to consider this relevant?

41. Page 6-8, lines 2 thru 17. I am not convinced, you have failed to show this is "deleterious to fish." where's the data, what are the facts, don't apply conjecture, and opinion? Too many dredgers rely on this for their livelihood, don't say it's just "recreational", that's bologna no matter how you slice it.

42. Appendix G, DRAFT Feb25 2010 PAC MTG Summary, page 4, last sentence, here and throughout, don't write about fruit, PLUM, write about the dredge discharge, PLUME!! Who's doing your spell check? Anybody with a notion ? Or, are there more fruits to be sampled?

43. Appendix H, there are many speculative assumptions used, therefore the conclusions are more suspect and not particularly reliable. The last sentence on page 6 appears to put this whole SEIR into a nutshell with this explanation.

44. Appendix I, page 2, Biological Setting, Wildlife Considerations, Albeit here are several rare and endangered species listed, none are the yellow-leg frog. Why? What gives? how does this critter get consideration? What qualifications are needed for this frog to make the CDF&G's species of Special Concern? Is this all Yellow-leg frogs, Sierra Nevada, Foothill, and Sierra Madre?

45. Appendix J, page 21, "Isopod" is listed twice. Is this the same animal? if so, why list it twice, if not, what's the difference? And how is a non-expert to know what it is?

Overall, reading through this Draft SEIR was a chore, but as a prospector, a little guy, not represented by my elected officials, it seems this response is my only recourse. It has been cathartic, and hence enjoyable. I await to see the results of this.

In general, I am sorely disappointed in this CDF&G draft. There appears to me to be a cover up, a charade, a smoke and mirrors drama being played to the edification of who knows. I am concerned this effort of making comments will be for naught. I saw and heard at the Sacramento Hearing that the CDF&G, and their hired help/hinderance, disregarded the honest and sincere input from the miners during the PAC. So, I can only believe until proven wrong, it will be more of the same CDF&G nonesense. Mostly this derives from my concept of American justice, namely, a person is innocent until proven guilty. This farce on the contrary is derived from the precept that dredging injures unless proven otherwise.

On the bright side, You all can pat yourself on the back for a magnificent, highly sophisticated ruse. Am concerned there's more at stake here than just dredging, this seems to be the tip of the iceberg re mineral rights

Mark Stopher
California Department of Fish and Game
Suction Dredge Program Draft SEIR Comments
601 Locust Street
Redding, CA 96001

Please take notice that I am the owner of the My Point Exactly claim, located on Elk Creek in Siskiyou County (Bureau of Land Management CAMC # 293278). I have reviewed your proposed regulations for suction dredging, which appear to forbid any and all suction dredge mining on my claim. Because suction dredging is the only practical method of mining the valuable underwater gold deposits on this claim, you are proposing to forbid all mining on my claim.

This is a violation of federal law forbidding material interference with my federally-protected mineral rights, and also constitutes an unconstitutional taking of my private property without just compensation.

I urge you to reconsider your proposed regulations. This area had strong fish runs for decades during and after hydraulic and other large scale mining, and there is no credible case whatsoever for harm to fish from small-scale suction dredging operations. A single fisherman with a good day on the river causes more damage to fish than all the suction dredge miners put together, and you allow the fishing. Focusing environmental regulation on an activity like suction dredging, which actually improves fish habitat, discredits your regulatory role generally.

If you do not reconsider, and allow me to mine my claim, you may rest assured that I and other miners will hold you accountable in the courts for your outrageously unlawful and arbitrary decisions.

Sincerely,

Dan Bergen

Mark Stopher
California Department of Fish and Game
Suction Dredge Program Draft SEIR Comments
601 Locust Street
Redding, CA 96001

Please take notice that I am the owner of the Magic Bar claim, located on Dutch Creek in Trinity County (Bureau of Land Management CAMC # 294346). I have reviewed your proposed regulations for suction dredging, which appear to forbid any and all suction dredge mining on my claim. Because suction dredging is the only practical method of mining the valuable underwater gold deposits on this claim, you are proposing to forbid all mining on my claim.

This is a violation of federal law forbidding material interference with my federally-protected mineral rights, and also constitutes an unconstitutional taking of my private property without just compensation.

I urge you to reconsider your proposed regulations. This area had strong fish runs for decades during and after hydraulic and other large scale mining, and there is no credible case whatsoever for harm to fish from small-scale suction dredging operations. A single fisherman with a good day on the river causes more damage to fish than all the suction dredge miners put together, and you allow the fishing. Focusing environmental regulation on an activity like suction dredging, which actually improves fish habitat, discredits your regulatory role generally.

If you do not reconsider, and allow me to mine my claim, you may rest assured that I and other miners will hold you accountable in the courts for your outrageously unlawful and arbitrary decisions.

Sincerely,

Don Bova
Box 5598
Shasta Lake CA. 96089

Mark Stopher
California Department of Fish and Game
Suction Dredge Program Draft SEIR Comments
601 Locust Street
Redding, CA 96001

Please take notice that I am the owner of the Magic Bar claim, located on Dutch Creek in Trinity County (Bureau of Land Management CAMC # 294346). I have reviewed your proposed regulations for suction dredging, which appear to forbid any and all suction dredge mining on my claim. Because suction dredging is the only practical method of mining the valuable underwater gold deposits on this claim, you are proposing to forbid all mining on my claim.

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If you do not reconsider, and allow me to mine my claim, you may rest assured that I and other miners will hold you accountable in the courts for your outrageously unlawful and arbitrary decisions.

Sincerely,

Linda L Bova
PO Box 5598
Shasta Lake CA 96089

SUCTION DREDGE PERMITTING PROGRAM
Draft Supplemental EIR - Comment Form

Name: JOHN CALLAHAN

Mailing Address: P.O. Box 1596 Big Bear City, Calif. 92314

Telephone No. (optional): 909-585-3892

Email (optional):

Comments/Issues:

In Regards To Winching Boulders, The Winching And Moving of Boulders Has Miniscule impact on the Environment. To Request An on Site Inspection is Counter Productive Simply By Putting Unnecessary Demand on Fish & Game, Who along with other Agencies is Experiencing Severe Budget Restraints.

More Focus Should Be Put on Educating Dredgers of Proper Disposal And Reclamation of Foreign Material in the River. Including But Not Limited to Lead, Steel, Iron, Mercury Etc. Having Winching Equipment on the Dridge Site Also Has a Very Important Safety Factor. Thank You For Your Consideration.

Please use additional sheets if necessary.

SUBMIT WRITTEN COMMENTS (POSTMARKED BY APRIL 29, 2011) TO:

Mail: Mark Stopher
California Department of Fish and Game
601 Locust Street
Redding, CA 96001

Email: dfgsuctiondredge@dfg.ca.gov **Fax:** (530) 225-2391

Website: www.dfg.ca.gov/suctiondredge

Questions? Please call us at (530) 225-2275

May 2nd 2011

To: Department of Fish and Game for California

I live on the S.F. Consumnes River East of River Pines (map attached). The river runs right through the middle of our property which sits on Amador and El Dorado County.

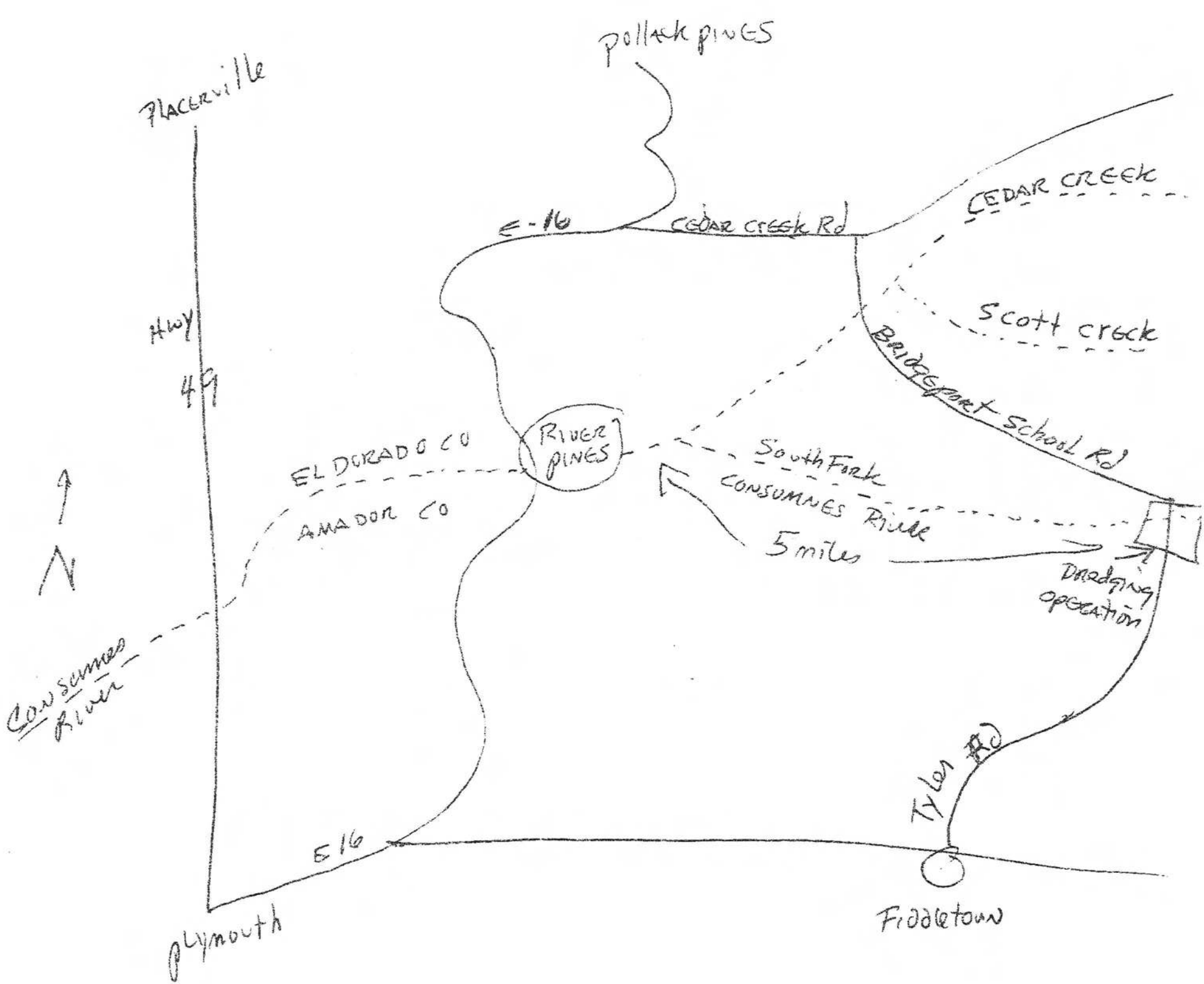
The S. Fork of the Consumnes River is a very small watershed that frequently runs dry in August on low water years. During average and high water years it becomes a little more then a trickle during the summer months with less then a cubic foot of water per second. (Easy to prove with a one ft. by one ft. by one ft. container).

Suction dredging muddies the waters severely for all those downstream from the dredging. Such small flows get high turbidity levels that last all day and takes until the next morning to run clear again before the dredging begins anew. We do not oppose hobbyists who like gold panning but dredging on a small river like this ruins it for everyone else downstream and damages the rights of others who like to commune with nature instead of exploiting it.

I implore Fish and Game on behalf of those like me and my neighbors who are affected by this to ban dredging on the S. Fork Consumnes East of River Pines due to low summer flows that destroy the quality of life for those who enjoy the river as it is.

Thank you for your consideration

Harry Cowan
Box 212
Mount Aukum, Ca. 95656


Pollack pines
Placerville
Cedar creek
E-16
Cedar creek Rd
Hwy
49
Scott creek
Bridgeport School Rd
River pines
El Dorado Co
South Fork
Consumnes River
Amador Co
5 miles
Dredging operation
Consumnes River
Tyler Rd
E16
Plymouth
Fiddletown

May 2, 2011

California Department of Fish and Game
1701 Nimbus Road
Rancho Cordova, CA 95670

Re: Comments on Suction Dredging

To Whom It May Concern:

I am a landowner of property along the South Fork of the Consumnes River.

The South Fork has a diversion upstream, and therefore has very low flows in the summertime. When people upstream do suction dredging in this tiny watershed, it immediately turns this crystal clear river into a muddy mess which takes hours to clear. It can't be good for the fish, and it certainly is not good for my enjoyment of my private swimming hole.

I note that excess turbidity is not allowed in the draft EIR. However, the exact level of turbidity is not defined, nor is the recourse I as a property owner may take to both inform Fish and Game of violations and hold Fish and Game accountable to my rights as a landowner. When I have complained before to Fish and Game about excess turbidity, they have simply told me, "That's what dredging does."

I have also complained to California Department of Fish and Game before when a logging company completely drained this river dry. Despite photographs of the illegal action, despite laying out the proven violations of their own regulations in detail, Fish and Game completely ignored my complaint. They also continue to this day to refuse to make Sierra Pacific adhere to water drafting reporting standards which are required by law. (Water Resources, however, did step up to stop Sierra Pacific from drafting at an illegal location.) Still, upstream water drafting is supposed to be recorded and transparent to the public, but Fish and Game refuses to enforce the legal rules.

There are also issues with noise. The draft EIR says dredgers must comply with county and city noise ordinances. However, many counties have no ordinances in place. I suggest that specific decibel guidelines that are friendly to neighbors be laid out, along with specific means to enforce those rules.

I note that Fish and Game has also told me that they are not accountable to taxpayers, as they are funded by hunting and fishing licenses and dredging permits. It seems that the California Department of Fish and Game has an inherent conflict of interest here. If they work to protect fish or game or non exploitative private property interests, they lose funding. Only if they exploit resources can they keep their jobs.

Perhaps it's time to rework how this agency is funded so they have no bias in their decision making.

I strongly oppose suction dredging, especially on this tiny watershed.

Sincerely,

Susan Wilson Cowan
18125 Tyler Road
Fiddletown, CA 95629
209-245-6702

cc: State Senator Ted Gaines
Assemblymember Alyson Huber
Water Resources Control Board
Governor Jerry Brown

Mark Stopher
California Department of Fish and Game
Suction Dredge Program Draft SEIR Comments
601 Locust Street
Redding, CA 96001

Please take notice that I am the owner of the Cooky N Mine claim, located on Humbug Creek in Siskiyou County (Bureau of Land Management CAMC # 282369). I have reviewed your proposed regulations for suction dredging, which appear to forbid any and all suction dredge mining on my claim. Because suction dredging is the only practical method of mining the valuable underwater gold deposits on this claim, you are proposing to forbid all mining on my claim.

This is a violation of federal law forbidding material interference with my federally-protected mineral rights, and also constitutes an unconstitutional taking of my private property without just compensation.

I urge you to reconsider your proposed regulations. This area had strong fish runs for decades during and after hydraulic and other large scale mining, and there is no credible case whatsoever for harm to fish from small-scale suction dredging operations. A single fisherman with a good day on the river causes more damage to fish than all the suction dredge miners put together, and you allow the fishing. Focusing environmental regulation on an activity like suction dredging, which actually improves fish habitat, discredits your regulatory role generally.

If you do not reconsider, and allow me to mine my claim, you may rest assured that I and other miners will hold you accountable in the courts for your outrageously unlawful and arbitrary decisions.

Sincerely,

Del R. Hawkins
Saw Mill Ranch
P.O. Box 446
Noel MO 64854-0446
Telephone 1-417-475-3959

COUNTY OF INYO, STATE OF CALIFORNIA
KAMMI FOOTE, CLERK-RECORDER, REGISTRAR OF VOTERS
Telephone: (760) 873-8481, (760) 878-0223, (760) 876-5559, (800) 447-4696 P. O. Drawer F, Independence, CA 93526
168 N. Edwards St., Independence, CA

Proof of Posting

I certify that the attached Notice of Availability for the California Department of Fish and Game for DFG Suction Dredge Permitting Program SEIR NOA (SCH#2005-09-2070) was posted at the Inyo County Courthouse, 168 North Edwards Street, Independence, California from March 7, 2011until May 1, 2011.

Dated: May 2, 2011

Michele Hartshorn, Deputy Clerk

Notice of Availability of a Draft Subsequent Environmental Impact Report for the Suction Dredge Permitting Program (SCH #2009112005)

NOTICE IS HEREBY GIVEN that a Draft Subsequent Environmental Impact Report (Draft SEIR) has been prepared by the California Department of Fish and Game (CDFG) for the Proposed Program described below, and is available for public review. The Draft SEIR addresses the potential environmental effects that could result from implementation of this Program. CDFG invites comments on the adequacy and completeness of the environmental analyses and mitigation measures described in the Draft SEIR. Note that pursuant to Fish and Game Code Section 711.4, CDFG is exempt from the environmental filing fee collected by County Clerks on behalf of CDFG.

PROJECT LOCATION: The scope of the Proposed Program is statewide. Suction dredging occurs in rivers, streams and lakes throughout the state of California where gold is present, and CDFG's draft suction dredge regulations identify areas throughout the state that would be open or closed to suction dredging. Most dredging takes place in streams draining the Sierra Nevada, Klamath Mountains, and San Gabriel Mountains. Suction dredging may also occur to a lesser extent in other parts of the state. Because suction dredging may occur throughout the state, it is possible that the activity could occur in a hazardous waste site or listed toxic site.

PROJECT DESCRIPTION AND ENVIRONMENTAL REVIEW: The Proposed Program, as analyzed in this Draft SEIR, is the issuance of permits and suction dredge activities conducted in compliance with these permits, consistent with CDFG's proposed amendments to the existing regulations governing suction dredge mining in California. The environmental assessment of the Program was developed in parallel with amendments to the previous regulations governing suction dredge mining throughout California. To most accurately reflect the environmental effects of the Program, the DSEIR includes an assessment of the suction dredge activities as well as the proposed amendments to the previous regulations.

The Draft SEIR evaluates the potential environmental impacts of the Proposed Program and four alternatives: a No Program Alternative (continuation of the existing moratorium); a 1994 Regulations Alternative (continuation of previous regulations in effect prior to the 2008 moratorium); a Water Quality Alternative (which would include additional Program restrictions for water bodies listed as impaired pursuant to the Clean Water Act Section 303(d) for sediment and mercury); and a Reduced Intensity Alternative (which would include greater restrictions on permit issuance and methods of operation to reduce the intensity of environmental effects).

The analysis found that significant environmental effects could occur as a result of the Proposed Program (and several of the Program alternatives), specifically in the areas of water quality and toxicology, noise, and cultural resources. However, as CDFG does not have the jurisdictional authority to mitigate impacts to these resources, such impacts have been identified as significant and unavoidable.

DFG Suction Dredge Permitting Program SEIR NOA (SCH#2005-09-2070)

PUBLIC REVIEW: The Draft SEIR and supporting documents are available on the CDFG Program website (http://www.dfg.ca.gov/suctiondredge) and upon request at 530-225-2275. Copies of the Draft SEIR are available to review at the following county libraries and CDFG offices:

- 601 Locust Street, Redding
- 1701 Nimbus Road, Suite A, Rancho Cordova
- 1807 13th Street, Suite 104, Office of Communications, Sacramento
- 7329 Silverado Trail, Napa
- 1234 E. Shaw Avenue, Fresno
- 4949 Viewridge Avenue, San Diego
- 4665 Lampson Avenue, Suite J, Los Alamitos
- 3602 Inland Empire Blvd, Suite C-220, Ontario
- 20 Lower Ragsdale Drive, Suite 100, Monterey
- County libraries (please see web page listed above for list of County libraries)

PUBLIC COMMENT: Written comments should be received during the public review period which begins on February 28, 2011 and ends at 5 p.m. on April 29, 2011. Comments must be postmarked or received by April 29, 2011. Please mail, email, or hand deliver comments to CDFG at: Suction Dredge Program Draft SEIR Comments, Department of Fish and Game, 601 Locust Street, Redding, CA 96001, Written comments may also be submitted by email: dfgsuctiondredge@dfg.ca.gov (Please include the subject line: Suction Dredge Program Draft SEIR Comments) or by going to the Program website at (http://www.dfg.ca.gov/suctiondredge). All comments received including names and addresses, will become part of the official public record.

PUBLIC HEARINGS: All interested persons are encouraged to attend the public hearings to present written and/or verbal comments. Five hearings will be held at the following locations and times:

Santa Clarita: Wednesday, March 23, 2011 at 5 p.m. at the Residence Inn by Marriott, 25320 The Old Road, Santa Clarita, CA 91381

Fresno: Thursday, March 24, 2011 at 5 p.m. at the CA Retired Teachers Association, 3930 East Saginaw Way, Fresno, CA 93726

Sacramento: Tuesday, March 29, 2011 at 5 p.m. at Cal EPA Headquarters Building, Byron Sher Room, 1001 – I Street, Sacramento, CA 95812

Yreka: Wednesday, March 30, 2011 at 5 p.m. at the Yreka Community Center, 810 North Oregon Street, Yreka, CA 96097

Redding: Thursday, March 31, 2011 at 5 p.m. at Shasta Senior Nutrition Program, 100 Mercy Oaks Drive, Redding, CA 96003

If you require reasonable accommodation or require this notice or the DSEIR in an alternate format, please contact the Suction Dredge Program at (530) 225-2275, or the California Relay (Telephone) Service for the deaf or hearing-impaired from TDD phones at 1-800-735-2929 or 711.

Mark Stopher
California Department of Fish and Game
Suction Dredge Program Draft SEIR Comments
601 Locust Street
Redding, CA 96001

Please take notice that I am the owner of the Long Gold Cartt claim, located on Canyon Creek in Siskiyou County (Bureau of Land Management CAMC # 295562). I have reviewed your proposed regulations for suction dredging, which appear to forbid any and all suction dredge mining on my claim. Because suction dredging is the only practical method of mining the valuable underwater gold deposits on this claim, you are proposing to forbid all mining on my claim.

This is a violation of federal law forbidding material interference with my federally-protected mineral rights, and also constitutes an unconstitutional taking of my private property without just compensation.

I urge you to reconsider your proposed regulations. This area had strong fish runs for decades during and after hydraulic and other large scale mining, and there is no credible case whatsoever for harm to fish from small-scale suction dredging operations. A single fisherman with a good day on the river causes more damage to fish than all the suction dredge miners put together, and you allow the fishing. Focusing environmental regulation on an activity like suction dredging, which actually improves fish habitat, discredits your regulatory role generally.

If you do not reconsider, and allow me to mine my claim, you may rest assured that I and other miners will hold you accountable in the courts for your outrageously unlawful and arbitrary decisions.

Sincerely,

Shawn Kehnu
964 Garcia Rd
Santa Barbara CA 93103

Mark Stopher
California Department of Fish and Game
Suction Dredge Program Draft SEIR Comments
601 Locust Street
Redding, CA 96001

Please take notice that I am the owner of the Long Gold Carpet claim, located on Canyon Creek in Siskiyou County (Bureau of Land Management CAMC # 295376Z). I have reviewed your proposed regulations for suction dredging, which appear to forbid any and all suction dredge mining on my claim. Because suction dredging is the only practical method of mining the valuable underwater gold deposits on this claim, you are proposing to forbid all mining on my claim.

This is a violation of federal law forbidding material interference with my federally-protected mineral rights, and also constitutes an unconstitutional taking of my private property without just compensation.

I urge you to reconsider your proposed regulations. This area had strong fish runs for decades during and after hydraulic and other large scale mining, and there is no credible case whatsoever for harm to fish from small-scale suction dredging operations. A single fisherman with a good day on the river causes more damage to fish than all the suction dredge miners put together, and you allow the fishing. Focusing environmental regulation on an activity like suction dredging, which actually improves fish habitat, discredits your regulatory role generally.

If you do not reconsider, and allow me to mine my claim, you may rest assured that I and other miners will hold you accountable in the courts for your outrageously unlawful and arbitrary decisions.

Sincerely,

Tommy M. Kilmer
964 Stanislaus Rd.
Santa Barbara, Ca. 93103

050211_Madden

James Madden
2361 Rosewood dr
San Bruno, Ca.
94066

Here is what I find wrong with Charlie Alpers study.
The Effects of Sediment and Mercury Mobilization in the South Yuba River and Humbug Creek Confluence Area, Nevada County, California: Concentrations, Speciation, and Environmental Fate–Part 1: Field Characterization

About me:
I am a retired engineer, inventor and a gold miner.
I have been a gold miner since 1965. During this time I have purchased and invented many recovery and mineral separation devices.

I called charly and talked to him about his report and also talked to him at the Sacramento DSEIR meeting

.I told him that he failed to take into consideration Newtons laws in his study and he needed to introduce motion into the tank. A stagnant holding pond will stay murky for a lengthy time. He said that laws of motion were insignificant and that sheer forces in the stream would keep the material suspended for extended periods of time.

What Charlie failed to take into consideration is this, for sheer forces to come into play the stream would have to be flowing quite fast as it does in during winter storms. This flow rate would be far to dangerous for a person to dredge in.

Charlie said that all of his findings were based on science. I could not determine where he got the science part. My biologist friend said that in order for a proof of fact to be true one must perform at least 3 tests along with three control tests and the outcome must be the same otherwise the testing is invalid and no firm conclusions can be made.

All of this "well it MIGHT or MAYBE it could under certain conditions" are invalid conclusions.

Charlie's study:

Primarily every aspect of his study utilizing the 300 gallon tank is invalid and without merit.

He also failed to follow required protocol in his testing. If you run a test once and come to a conclusion this conclusion is invalid until you have repeated the same test at least three times and have duplicated the results.

Let's break down and analyze Charles findings.

The tank:
As Charlie told me the three hundred gallon tank had three hoses but he did not know their functions he guessed that one was used to suck up material and another to return water to the pit but did not know what the third hose was for. As a "scientist" one must be familiar with the tools he/she is utilizing. If you do not know what the functionality is you cannot come to valid conclusions.

I have very good working knowledge of how such a system works. Around ten years ago I conceived designed and built a portable system that would be used in both streams and on dry land to remove the contents of crevices and hold them for later processing. My invention was a great success and I marketed it.

There is a direct correlation between the test tank and my invention as they both remove material from one location, store most of the larger material and heavier particles in the container and discharge the finer particulate matter back into the pit or pond. In both devices this constant circulation will increase the volume of very fine particulates both in the tank and in the pond.

As for as Charlie's test is concerned, the particulate matter both inside the tank and in the pit or holding pond increases proportionately based on the time in use and the makeup of the material. In a normal situation you would clear away any surface material which would include sand course gravel and clay and work only the richer deeper material. If working dry land crevices this activity also gives you a recirculation pit and you reuse the same water.

NOTE:
According to my sources that were present at the test, they were asked specifically to vacuum up quantities of clay material in areas that a normal gold miner would not even consider working. The reasons for this are Clay is sticky and gold will adhere to it and remove it from the sluice box. This is another reason that Charlie's testing was invalid, it is not an indicator of dredging. Gold miners do not want to work clay as it will cause loss of gold.

Over time the pit will become a soupy concentrated mixture of fine particulate material. This is exactly what the 300 gallon tank contained. The mixture was probably a two hundred to 1000 to one ratio of particulates containing organic and non organic material.

After the hoses are removed the holding pond with the suspended particulates will remain in suspension for an extend period of time as there is **very little vibrations to cause the micron particles to strike each other and the resulting motions increase the settling rate.**

- This is not a scientific representation of dredging or any other aspect of mining.
- Charlie violated the rules and misrepresented the data.
- No chemical testing was done to validate the claim of mercury or methyl mercury. (Per Charlie Alpers on the phone)
- Other than a visual inspection no determination if what was present was mercury amalgamated with precious metals or selenium which would render the material inert and of no danger to the eco system.
- There were no references made that they eliminated carbon or biocarbon present in the test samples to determine how much of the reported the mercury was locked up in an Ionic bond with the carbon. This information came from my friend who is a marine biologist who has spent years studying the San Francisco Bay and Delta sedimentary cores). You must eliminate these or your test results are skewed.
- Only one test was preformed. No effort was made to duplicate the tests and prove scientific fact.
- As gold miners we would never put any material represented in Charlie paper into a water way.

Next his findings that the fine particulates remained in suspension for 40 hours are far from reality. In Charlies own words the tank was filled with recirculated water and particulate material. It was allowed to sit in the tank and sampled over a period of 40 hours.

What is wrong with this scenario is it is **not a test preformed under conditions replicating the natural dynamics of nature or physics.**

In Charlie's study there was no motion added to the tank and because of this the particulates remained in suspension for a longer time than they would have under natural conditions. Remember Newton's laws of motion.

When a storm moves material or one dredges or utilizes any other form of gravity separation in the active waterway there are dynamic forces that come into play. Water flow coupled with gravity, rocks, boulders, gravel and other obstacles in the streambed including charred wood (biocarbon) have a great influence on any objects entering the waterway.

As the particulate material (rocks, gravel, sand, and silt) moves downstream the material stratifies. Part of this process is fueled by the motion of the rocks setting up minute vibrations and under currents in the flow. The larger size objects also create eddies and riffles in the water flow and the smaller particles gets caught in these slow water pockets and the vibrations help them to fall out of the active water flow in between the open spaces in the larger material. The smaller material continues to drop and eventually ends up at the base of the pile. All of this activity aids in the settling and causes a more rapid settling rate.

In simple words, every rock stick or obstruction in the stream creates an obstruction to the down stream flow of material and has a physical affect on the particulates.

According to Charlie these forces do not come into play but sheering forces keep the particulates suspended. This is what I chided Charlie on at the meeting. Sheering forces may come into play during a heavy river flow as what happens during a storm where there the waterway is high and fast. We do not dredge in waterways under these conditions it is unsafe. When we dredge the sheering effects that Charlie claims causes particulate matter suspension is not present.

According to Joseph Green SWRCB paper **the particulate matter in the dredge plume returns to ambient stream levels 200 ft downstream from the output of the dredge.**

In Charlie Alpers scenario the water becomes totally stagnant and there is no interaction between any of the particles and this allows them to remain suspended for a longer period. What happened in the 300 gallon tank is the larger particles fell to the bottom dragging some of the smaller particles with it. Once the larger particles became fixed at the bottom, motion in Charlie Alpers tank ceased any remaining particulates will remain in suspension for an extended time.

This can be proven in a laboratory test utilizing two sealed glass or Plexiglas containers.

Preparations: Two quarts of sand gravel and silt.
Screen material to 1/8" 20 mesh and 30 mesh.
Divide each size into the two containers and fill remaining void with water and seal.

Place both containers in a vibrating machine such as a paint mixer then mix both for the same amount of time.

Set up: Container #1 will be set on a firm surface and be allowed to sit motionless.
Container #2 will be put on a vibrating surface with sufficient frequency to vibate the material.

A light will be shined through the cylinders onto a backdrop and at various intervals a light meter will measure the ambient light passing through each cylinder.

Reactions: The vibrations cause the particles to bump together (Newton's laws of motion). This sudden acceleration has more effect on the minute heavier particles such as precious metals and mercury even that which is bound in clay bump into each other and causes them to move more quickly to the bottom.

Testing: A core sample will be taken in both containers. Size, chemical and tests for amalgamated and free mercury will be taken at levels in the core. The easiest way would be to freeze and core the contents in the cylinder.

The data produced by this test will clearly show that the cylinder #2 undergoing vibrating motion will settle faster than cylinder #1.

The heavier particles should be in the lower levels in cylinder #2 proving that vibration and **not stagnation is the key element that was left out in Charlie Alpers study.**

Vibration of the material is exactly what happens in a streambed where all the particulate matter is being acted upon by the forces of gravity and stream flow.

One could also build a 300 ft long sluice box set at the same angle as the stream. The box would be filled with a layer of a variety of materials representing a cross section of stream bed.

Water would be introduced at the head of the box at the same flow rate as the stream. At 10 feet below the head of the sluiceway a controlled input box will be places that will add streambed material including fine particulate matter into the box. Sampling would be taken at intervals down the length of the remaining 290 feet of the sluice.

Note only material present in an actual stream will be allowed for this testing. NO dry land or dry pit material will be used as this will not represent actual dredging activities.

There are also two more issues that I have with his study regarding to the mercury.

Charlie Alpers claim of suspended mercury, he failed to fully investigate this aspect. He claimed that Millions of pounds of mercury (Hg) were deposited in the river and stream channels of the Sierra Nevada from placer and hard-rock mining operations in the late 1800s and early 1900s.
According to

A Practical Treatise on Hydraulic Mining in California
Author: Bowie, Aug. J. (Augustus Jesse)
Note: New York: D. Van Nostrand, 1885

A majority of the mercury lost in the process of hydraulic mining was due to the nature of the sluice boxes. The early sluice boxes were wooden blocks stacked vertically in the sluice box in between the blocks mercury was poured. Precious metals were wetted by the mercury and absorbed eventually the mercury changed from a fluid and started to become stiff and brittle.

Even the beginning student in chemistry or metallurgy who has studied mercury knows that a cubic inch of pure Hg will expand in volume as gold or other metals are absorbed. The eventual expansion stops at a point where the mercury turns into a solid amalgam and no more mercury can be added.

As the mercury became pregnant with gold it expanded between the blocks, portions of it extruded over and large ton size boulders coming from the hydraulic operation smashed down on the blocks crushing the semi brittle mercury thus causing a flouring and washed out of the sluice. Mercury also escaped between cracks in the sluice box, this mercury was also laden with various amounts of precious metals.

Note: Having read the treatise and from experimenting with mercury over 40 years I can confidently fill in the data regarding why mercury floured in this early process.

So the real culprits and to worldwide mercury problems comes directly from your own USGS reports. Coal burning and especially coal burning in China which vents tons of mercury into the atmosphere every year. This mercury according to my marine biologist friend can stay suspended in the atmosphere for years where it eventually precipitates out.

In another USGS study it is reported that Selenium is abundant in California. Selenium forms an inseparable bond with mercury.

If you look at your USGS website you will see that methyl mercury has to have specific conditions present in order to form. These conditions do not occur in the areas where we dredge.

Finally Dredging recovers 98 % of the mecury that passes through our dredges. This is a proven fact based on multiple usgs and epa studies.

I had the chance to talk to Charlie at the recent DFG meeting in Sacramento

As the old proverb said you cannot make a silk purse out of a sow's ear. Charlie Alpers study confirms that. More science and not guesswork should have been applied to his study.

James Madden
2361 Rosewood drive
San Bruno, Ca.
94066
650 589 8081

Subject: Comments on mercury analysis in DSEIR

Date: Monday, May 2, 2011 7:40:14 AM PT

From: Eric Maksymyk

To: dfgsuctiondredge@dfg.ca.gov

Please find attached my analysis of the mercury studies in the DSEIR. As the DSEIR finds that mercury is "Significant and Unavoidable" I would like to respond with an analysis that proves this finding is incorrect. The DSEIR should be changed to show that the effects from mercury related to suction dredging are "Less than Significant."

V/R

Eric

California Department of Fish and Game
Mr. Mark Stopher
601 Locust Street
Redding, CA 96001

2 May 2011

Dear Mr. Stopher;

This letter and attached analysis are in response to Chapter 4.2 of the DSEIR and the finding of "Significant and Unavoidable" in regards to the impact of mercury. I disagree with the finding based on the presented data and the referenced reports and in the attached analysis I show the actual impact of mercury re-mobilization from suction dredging. I show that in all cases and all realistic scenarios that suction dredging has a less than significant impact and I request that the results in the DSEIR be re-evaluated and the finding be changed to "Less than Significant." Further, I show in the analysis that no number of dredges or combination of dredgers and nozzle sizes could possibly impact the environment.

The referenced studies the DSEIR is based on do not support the conclusions. A detailed analytical review of the two most cited studies reveal serious errors in data collection and analysis as well as the conclusions reached by the authors. My attached comments show why CDFG's conclusions regarding Mercury are unsupported by the evidence and why the status of this section should be changed to "Less than Significant." My attached analysis of the data explains why mercury re-suspension is an invalid argument for limiting permits to 4,000 and limiting the dredge nozzle size to 4".

CDFG is obligated under CEQA (15384(a)) to consider the “whole record” before making a determination that a project may have a significant impact…… *“Whether a fair argument can be made that the project may have a significant effect on the environment is to be determined by examining the whole record before the lead agency”.*

To prepare this analysis I used the criteria of significance established in the DSEIR and the findings from the DSEIR. I then used the same source data as the DSEIR, the only two available government reports, and came to significantly different conclusions than the DSEIR reached which are based in fact and substantiated by the data.

Conclusions Proven in this Analysis of the DSEIR

- **Mercury – Impact WQ-4 should be "Less than Significant" even under the existing program**
- The analysis and conclusions of the DSEIR in regards to mercury emissions are incorrect
- No realistic number of dredgers could ever reach the natural load of the S. Yuba River
- Natural forces move mercury both during storm events and during normal flows (Fleck 2010 and Humphreys 2005)
- The levels of MeHg in biota are not proven to be the result of dredging (Fleck 2010)
- Suction dredges are not proven to "flour" mercury (Humphreys 2005)

I have attached my analysis of the effects of mercury to this letter that substantiates my conclusions. The flaws in the DSEIR analysis and the underlying studies of mercury would likely not withstand the scrutiny of peer review for either the construct of the experiment, the collection of the data or the analysis of the data.

Respectfully submitted,

ERIC MAKSYMYK

ANALYSIS OF THE EFFECTS OF MERCURY

The analysis of data presented and referenced in the DSEIR indicates that suction dredges have a positive and beneficial contribution to mercury removal at no cost to the Government.

Bias in analysis and the selective use of data in the DSEIR, results in incorrect conclusions about the impacts of suction dredging.

CDFG has stated they do not have the regulatory authority to limit mercury. While CDFG may not have regulatory authority in regards to the emissions from a dredge, when they are not deleterious to fish – it appears through the proposed program the mercury conclusions are providing the foundation for the crafting of the new regulations so I will highlight inconsistencies between the proposed program rules and the data and analysis relative to the limitation on the number of dredge permits and the restriction of nozzle size.

MERCURY – Impact WQ-4 (Significant and Unavoidable)

Based on the data the finding should be "Less than Significant" under the existing program.

Criteria for Significant as defined in the DSEIR (page 4.2-24)

(1) Increase levels of any priority pollutant or other regulated water quality parameter in a water body such that the water body **would be expected to exceed state or federal numeric** or narrative water quality criteria or other relevant effect thresholds identified for this assessment by frequency, magnitude, and geographic extent that would result in adverse effects on one or more beneficial uses.

FINDINGS – All the data provided in the actual dredge test reports proves that a suction dredge, under no realistic scenario could violate **ANY** Federal or State water quality thresholds.

(2) Result in **substantial, long-term** degradation of existing water quality that would cause substantial adverse effects to one or more beneficial uses of a water body.

FINDINGS – No evidence in the analysis of long term degradation – the opposite is shown. The long term effect of suction dredging is a reduction in mercury and a net benefit in water quality.

(3) Increase levels of any bio-accumulative pollutant in a water body by frequency and magnitude such that body burdens in populations of aquatic organisms **would be expected to measurably increase**, thereby substantially increasing the health risks to wildlife (including fish) or humans consuming these organisms.

RESULTS – The reports do not provide a linkage between increased MeHg levels and suction dredging.

The Humphreys Study – Beneficial Impact of Suction Dredging

A study was conducted in 2003 with a published paper in 2005 to determine the efficiency of an unmodified gold dredge in removing mercury from the watershed. This study is cited on page 4.2-36 of the DSEIR. Humphrey's came to the conclusion that a standard 4" suction dredge of a less efficient design (known to dredgers as a crash box versus a flare jet) is 98% efficient at capturing mercury. However, the conclusions he then presents and which the DSEIR uses, without considering the stunning efficiency of a gold dredge (surpasses any other known method of removing mercury from water bodies) appear biased and are shown here to be incorrect.

Efficiency graphs based on the Humphreys study [Humphreys 2005].

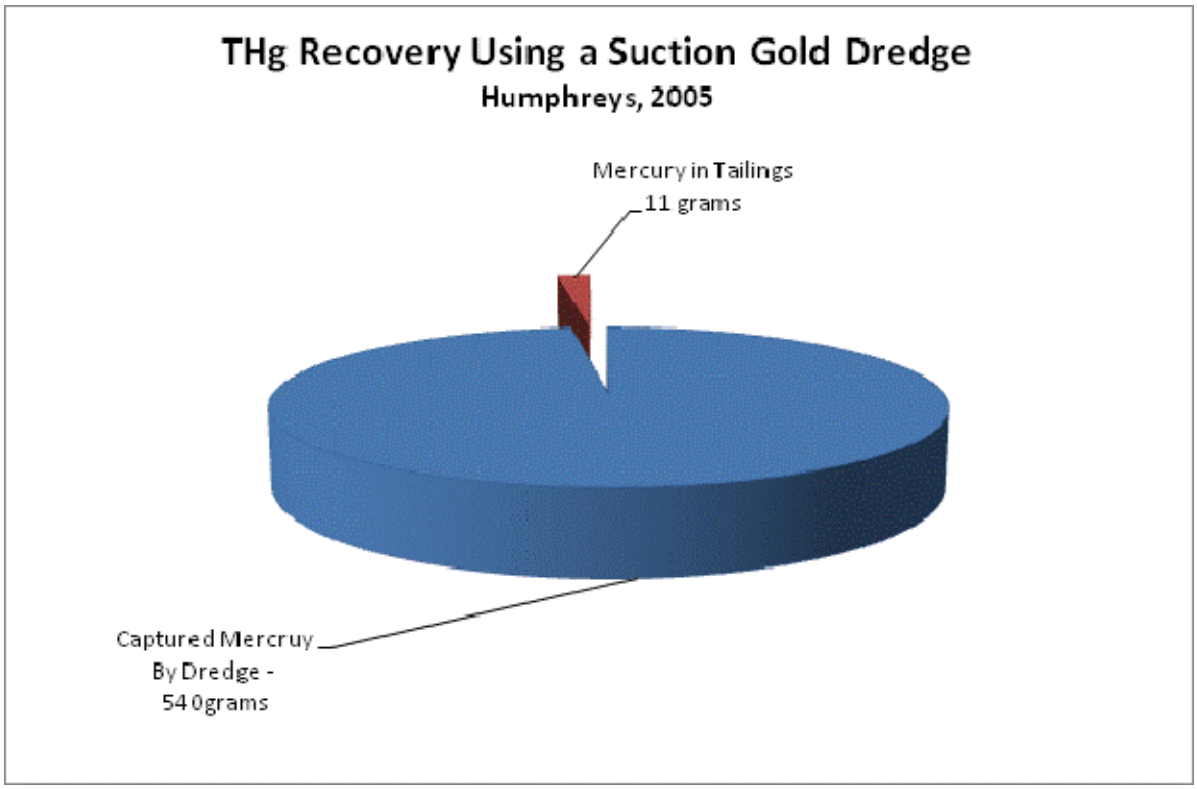


Figure 1. Humphreys Measured Hg

Figure 1 is based on the data provided by Humphreys. In the study he states that 540 grams of mercury were recovered **(removal of a priority pollutant – not increase).** This graph and the underlying data present a remarkable picture of the ability of suction dredgers to recover mercury.

However, Humphrey's conclusions are just the opposite:

- A suction dredge loses too much mercury
- A suction dredge provides mercury levels in the water that exceed California standards
- A government program is required to remove mercury
- Floured mercury is created by the dredge

(1) Suction dredge loses too much mercury – this statement is surprising given the dredge had an efficiency rate of 98%. This rate is higher than any known process for stream Hg recovery.

The source data from Humphreys is provided below:

MERCURY CAPTURE RATES FROM HUMPHREYS STUDY			
Humphreys Sample	THg in mg/kg	THg from dredge test	Calculated Hg levels
		in grams	in mg/k
Source Material	1170	551	0.093389831
Dredge Capture	1550	540	0.348387097
Tailings	240	11	0.045833333

Table 1. Hg Rates from Humphreys Study

Humphreys measured in two different ways. First he took a sample of 63.5 kg and sent it off for measurement; the material was screened down to concentrates and measured. The following day he measured mercury amounts captured by the dredge and mercury found in the tailings.

Humphrey's measurements showed the dredge captured 98% of the mercury and the in-stream dredge test compared favorably with the measured samples. The difference from the sample to the measured was about 32% different due to a concerted effort to seek out mercury and dredge it (not what suction dredgers do by the way). From the calculations in Table 1 we can see that the Hg levels in the tailings are a mere .04mg/kg – well below the hazard threshold for California hazardous wastes while taking into account the dredge recovered 98% of the mercury present in the source material.

Interestingly the DSEIR does not mention the effectiveness of the dredge; rather it focuses on flouring of the mercury while not mentioning that a gold dredge recovered 1/2 kg of mercury from the water. The DSEIR mentions the Humphreys study but then goes on to hypothesize on the flouring of mercury which is not proven in the study..."*Flouring...which **may** affect transformation*...". [DSEIR p.4.2-36]. Humphreys study **proved** that the mercury was floured **prior to dredging and after dredging and** the dredge actually recovered 98% of the mercury that was floured.

It appears that Humphreys is basing his conclusion on the measured Hg levels in the suspended sediment. The measurements taken do not reflect the actual output from a gold dredge. On September 15th, 2003 Humphreys took a 63.5kg sample from the sediment and screened this sediment down to 30

mesh (.6mm) and smaller sizes. The laboratory took this concentrated sample and measured the suspension rates from a concentrated sample and determined the suspended sediment concentration was 298 ppm. It is incorrect to concentrate 63.5kg of material down to a fraction (2%) of the material, mix this material with standing water and draw a conclusion on the output from a dredge. It does not reflect the way a dredge operates, it ignores the concentrating and retention ability of the dredge (captures 98%) and it ignores the processes of the river in stream flow to prevent particle accumulation. The measurement of 298 ppm is later referenced in the DSEIR to show the output from a dredge, but this number does not in any way reflect the output from the dredge. Fleck (2010) found the Hg in the suspended sediment from an actual running dredge was below measurement detection levels.

(2) Suction Dredges Would Violate California Hazardous Waste Standards

"*Mercury concentrations in the waste and suspended sediment are over an order of magnitude higher than the minimum concentration necessary to classify as a California Hazardous waste (20mg/kg). " [Humphrey's 2005 – Results].*

Let's evaluate that statement based on Humphrey's data. Humphrey's dredged 5,900 kg of material so the calculations would be:

Material Moved in Kg	CA Limit in mg/kg	Humphreys Source Material in grams (Total Hg)	Tailings THg in mg	mg/kg rate in THg mg/kg	mg/kg rate required to Exceed Threshold	in source mtl in mg/kg %	Input THg in mg to Exceed Threshold	Output Material in THg mg/kg
6000	120000	570.00	11,400.00	1.90	20.0	11,526	6,704,082	134,082
4000	80000	380.00	7,600.00	1.90	20.0	11,526	4,469,388	89,388
2000	40000	190.00	3,800.00	1.90	20.0	11,526	2,234,694	44,694
1000	20000	95.00	1,900.00	1.90	20.0	11,526	1,117,347	22,347
500	10000	47.50	950.00	1.90	20.0	11,526	558,673	11,173
250	5000	23.75	475.00	1.90	20.0	11,526	279,337	5,587
10	200	0.95	19.00	1.90	20.0	11,526	11,173	223
5	100	0.48	9.50	1.90	20.0	11,526	5,587	112
1	20	0.10	1.90	1.90	20.0	11,526	1,117	22

Table 2. Increases in Input Material THg Required to Violate CA Hazardous Waste

Table 2 shows when correctly comparing the amount of mercury in the tailings to the total amount of material process (a mg to kg comparison) the **mercury content is only 1.9mg/kg**. This figure is only 10% of the California standard which allows up to 20 mg/kg. To exceed the threshold you would need over 6kg of mercury present in 6,000kg of material. It is improbable that a suction dredger would ever encounter a mercury pool of that magnitude – even Humphrey's dredging in a spot with visible liquid mercury could only achieve less than 10% of that amount in the source material.

The suction dredge used in the Humphreys study was 90% below the hazardous waste threshold.

Table 3 provides the rate of mercury in the tailings given Humphrey's 98% efficiency rate.

MERCURY CAPTURE RATES FROM HUMPHREYS STUDY			
Humphreys Sample	THg in mg/kg	THg from dredge test in grams	Calculated Hg levels in mg/k
Source Material	1170	551	93.39
Dredge Capture	1550	540	91.53
Tailings	240	11	1.86
THg in Tailings Compares to California Haz Waste Threshold			9%

Table 3. Mercury Discharge Rate vs. Threshold

Humphreys conclusion is based on the amount of concentrates and not the 5,900 kg of material moved. Table 3 shows that the emissions from a dredge were not ten times as high as the California standard for hazardous materials, but were in fact 90% below the allowable contaminant per Kg of material entering back into the river. Additionally, California water standards allow for averaging over a 30 day period ***– it is not even remotely possible that the standard would be exceeded by a dredge***.

Graph displaying the results from the Humphreys test and the amount of material moved relative to the California threshold for hazardous waste.

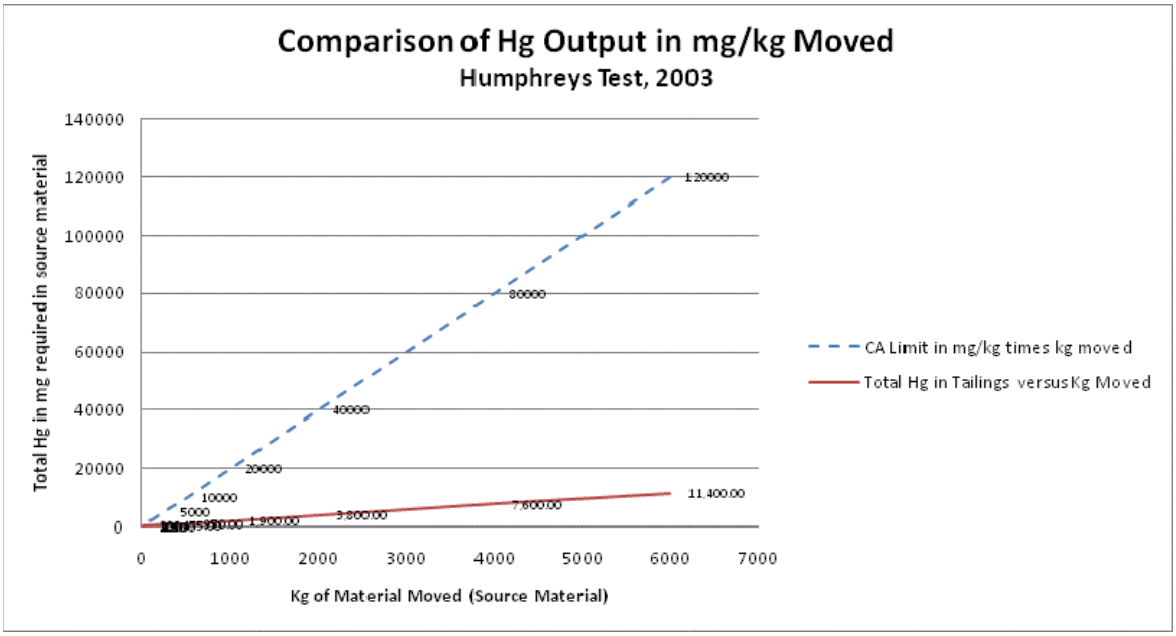


Figure 2. Comparison of Hg in Dredge Tailings to California Haz Waste Standard

(3) A government program is required

"It might be possible to design a shore-based recovery system for the Coloma hotspot and recover mercury annually. Such a system would need to minimize mercury loss. Recovery equipment would need to be held in storage during nonuse and operated by trained staff. Proper permits (e.g., in stream alteration, and, mercury disposal or recycling) would be needed. Such a project is more complex and costly in time, money, and commitment than previously considered projects." [Humphreys 2005 – Conclusions].

Suction dredgers have been recovering mercury with a 98% efficiency rate for over 40 years for free so it is incomprehensible how such a conclusion could be reached. The literature does not cite a single instance of a gold dredger being affected by mercury.

(4) Floured mercury is created by the dredge

While Humphreys mentions that a dredge may flour mercury – he also states that almost all the Hg in the test sample (pre-dredging) was in the 30 mesh (<.6mm) fraction. This shows that the efficiency test sample contained nearly all floured mercury prior to dredging. A remarkable statement in light of the DSEIRs conclusion that suction dredging may flour mercury. It is clear that mercury is floured prior to dredging ***and the suction dredge recovered 98% of the floured mercury***. Humphreys measured and proved that nearly ***all the mercury was floured prior to dredging.***

This key point is lost in the DSEIR. The DSEIR only accepts the position that it **may** be true while discounting the position that it may be false. Again, this is not consistent with the CEQA requirement to analyze the facts. Accepting only the "possible" while discounting the "probable" shows bias in the DSEIR towards a target goal of proving dredging is harmful.

DSEIR Statement, page 4.2-36, line 19-21; "...suction dredging has been observed to result in the "flouring" of Hg droplets...Humphreys, 2005; Silva, 1986."

(1) Actual Statement from Humphreys Report – *" Visual inspection of size fractions showed that almost* ***all the liquid mercury rested in the fraction that passed a 30-mesh sieve (0.6mm)****."* Speaking to the sample material that was not dredged but collected on September 15, 2003.

(2) Actual Statement from the Humphrey's Report now speaking to the tailings material (passed through the dredge – *" During the test, the USFS team captured sediment lost off the sluice in a catch basin for later analysis. Small mercury droplets and fine, barely discernable droplets (i.e., floured mercury) were characteristic of these samples."* Speaking to the material collected after dredging on September 16, 2003.

The post dredging test found exactly the same as the source material – extremely small droplets of mercury that passed through 30 mesh proving no difference in the source material and the tailings material in regards to flouring. It is shown that the dredge was not responsible for flouring the mercury.

One problem with the DSEIR and the referenced reports is the lack of perspective. It is interesting to see just what 30 mesh screen is and the size of a particle that would pass through this screen. Figure 3 provides a picture of 30 mesh screen.

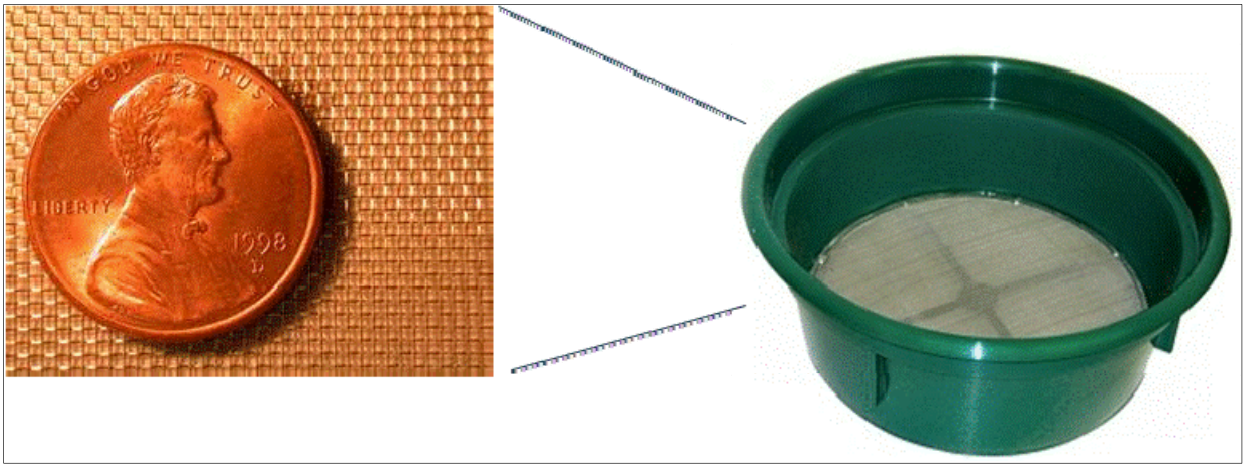


Figure 3. 30 mesh Screen

30 mesh screen results in a particle that would be the eye of Lincoln on the penny. If the input material with mercury was < 30 mesh then what defines floured mercury? What is the scientific standard to determine floured mercury? Secondly, if almost all the source mercury passed through the 30 mesh screen and the dredge caught 98% of this material isn't this direct evidence that a dredge is not producing floured mercury, but is actually capturing and concentrating it?

Where does the DSEIR form the basis for "suction dredging has been observed to flour mercury"? The Humphrey's report **does not say the dredge caused the flouring of the mercury**. The two statements above prove the mercury was in floured form prior to dredging as well as after dredging. The fact the dredge concentrated and removed so much floured mercury is the point the DSEIR should have reported – but didn't. But what is floured mercury? We seem to focus on it, and the possibility of a dredge creating it, but from the above picture of a 30 mesh screen I can't imagine smaller drops of mercury "discernable by the eye."

The second reference "Silva, 1986" that the DSEIR cites is an interesting selection. Here is the actual statement in the Silva report [See Reference – California Department of Conservation, Placer Gold Recovery Techniques, 1986] **– *" agitated mercury has a tendency to form very small droplets, known as "flouring." Floured mercury does not effectively collect gold particles and may escape the recovery system."***

The context in which Silva presents the data refers to industrial recovery techniques and the lead to the paragraph of this cite recommends the use of mercury to amalgamate gold (in 1986 an official publication of the State of California presented this as a method to increase gold recovery), the paragraph states ***" Mercury can be introduced to free gold in a number of ways. It can be placed in the riffles of sluices, dry washers, and similar devices to aid concentration of fine gold." [Silva, 1986].***

Is Silva an appropriate cite or expert source on mercury? The entire publication does not make a single reference to portable suction dredges but rather it discusses drag line dredges, interesting that it would be used as a cite for the potential flouring of mercury from a suction dredge. Should we accept Silva's thoughts on flouring, or should we accept Silva's thoughts on placing mercury into our riffles to capture gold? The DSEIR chose the former while discarding the latter and ignoring that Silva didn't once

mention suction dredges in the publication yet somehow this is cited as an "expert source" as required by CEQA?

DSEIR, page 4.2-36 lines 26-27, *"Furthermore it is not clear from the study whether Hg droplets were floured prior to being dredged or were floured as a result of dredging."* See above comments on the Humphrey report that states nearly all the mercury in the sample prior to dredging passed through a 30 mesh screen and the same for after. It certainly appears to me it was both floured before AND after.

DSEIR, page 4.2-36, lines 28-32, ***"Consequently, it is unlikely that suction dredges would recover either floured mercury in sediment dredged, or mercury floured by the suction and turbulence of the dredge."*** This is an extreme leap of logic. This conclusion can't be based on fact. Clearly the **ONLY** report to have studied this determined that **ALL** mercury in the incoming gravel **WAS** floured, the dredge recovered 98% of the floured mercury. This is completely unsupported by fact and the facts show exactly the opposite. What is the definition of flouring – wouldn't passing through a 30 mesh screen achieve that threshold?

Neither the Humphreys report nor the Fleck report which the DSEIR mercury discussion is based on evaluated the particle dimensions of the existing mercury prior to being dredged to after being dredged. **Flouring by a suction dredge is conjecture and should be discarded lacking proof.**

Re-circulating Tank Experiment [Fleck page 56]

The re-circulating tank experiment conducted by Dr. Alpers is key to the later assumptions and analysis used in developing mercury emissions and THg for TSS in the DSEIR. If the data the results were derived from are flawed then all of the resulting analysis must be discarded. An analysis of the Alpers study shows clear flaws in using this data as any kind of an estimation of the amount of particulated mercury that would be emitted from a dredge – these flaws include:

- Using a dredge suction system without a sluice box which captures heavy material
- Recycling suspended mercury through the impeller of the pump (not how a dredge operates)
- Re-circulating the contaminated water back onto the bedrock ensured the mercury was fragmented and the source material was equally contaminated (normalized the material)
- Using a calm, still water collection device (no current) to simulate a river, then repeatedly re-fragmenting the mercury into smaller and smaller particles by running it through the pump impeller, then testing the tank sediments as if they were common dredge tailings and concluding this would simulate a running river with a flow of 2,000 cfs

In this experiment (Fleck et al) Dr. Alpers used concentrated material from the bedrock that was collected using a suction dredge pump and hose – not a dredge. Figure 4 below shows the setup used to collect the sample:

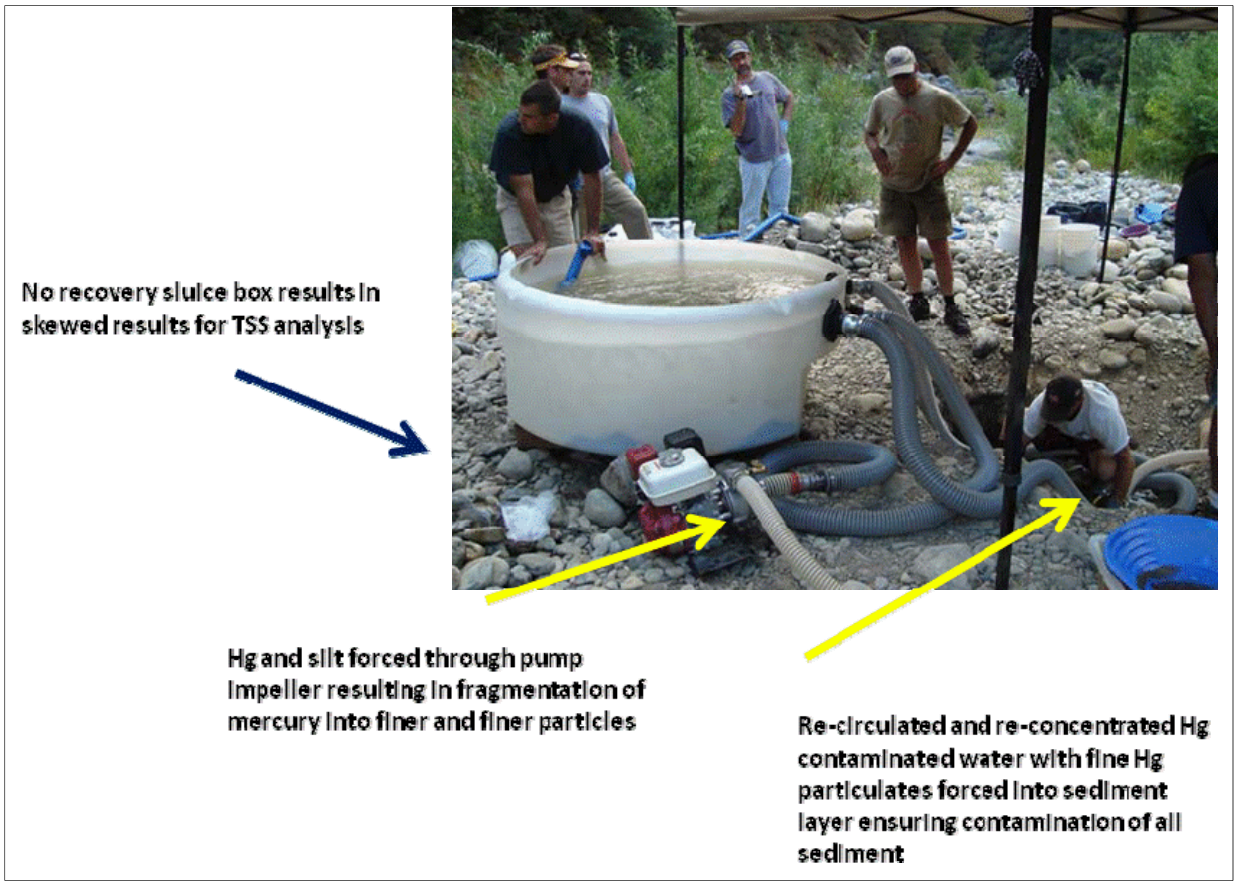


Figure 4. Experiment Setup for Alper's Re-circulating Test

Recommendations

(1) The DSEIR should reference the dredge mercury capture rate of 98% proven by Humphrey's and confirmed in the Fleck tests and use this rate in calculating mercury impacts.

(2) Both studies (Humphreys and Fleck) use flawed approaches to determine the suspended sediment mercury content, and both measurements should be discarded. The only actual measurement found trace amounts of mercury (Fleck 2007) orders of magnitude below the stated THg(ss) rates.

(3) The use of Dr. Alper's data should be discarded based on not representing actual suction dredge operation which was the intended purpose. Humphreys found that 98% of mercury was removed and additionally the circulation of mercury through the impeller of the pump does not represent how mercury is recovered and creates fragmentation rates that are not realistic. Any reference or analysis based on the Alper's results should be discarded from the DSEIR.

(4) A government program should be established to receive mercury from gold dredgers in convenient locations throughout mining country. The capability should include an on-the spot retorting capability to separate the amalgam. Such a program would be far cheaper than the program contemplated by Humphreys and would provide miners free retorting.

CEQA Pg 226
15384. SUBSTANTIAL EVIDENCE

*(a) "Substantial evidence" as used in these guidelines means enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions may be reached... **Argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly erroneous or inaccurate**, or evidence of social or economic impacts which do not contribute to or are not caused by physical impacts on the environment does not constitute substantial evidence."*

It is inappropriate in light of the CEQA requirements to only evaluate the data in scientific reports that is negative while completely ignoring the evidence in the same reports that would lead to an opposite conclusion. An example of this cherry picking of data is provided above in the Alpers analysis. As represented the analysis was intended to depict the mercury emissions from a dredge under operating conditions while not replicating operating conditions in the least. The DSEIR uses this analysis as the basis for far reaching conclusions unsubstantiated by fact.

In the same Fleck report, the DSEIR ignores the results of the actual test of the 3" suction dredge in 2007 under normal conditions dredging a hole in the same vicinity as the hand dug pits 1 and 2. Other than the Humphreys effort this was the only evaluated dredge test in the literature. Two actual dredge tests and the DSEIR fails to mention the results – yet it finds sufficient data in other parts of the same reports to reach conclusions about actual dredging – while ignoring the conflicting data of the two actual dredge tests that used real equipment under real scenarios in the exact same hot spots.

Actual Dredge Test Results from 2007 3" Dredge Test [Fleck 2010]

"Dredging appeared to have no major effect on pMeHg concentrations in the South Yuba River during the dredge operations. Concentrations of pMeHg in environmental samples were approximately twice those in the field blanks (table 4) ..." [Fleck]

Figure 5 provides the results from the 3" dredge test. These results are stunning, yet the DSEIR doesn't mention that measured MeHg was zero in 3 hours of dredging. No Hg(II)r was produced and the fine THg was equal to the field blanks. The total Hg measured in nanongrams was less than 1 part per trillion.

The DSEIR and the Fleck report both state that the report would cover the effectiveness of using a suction dredge to recover mercury from the streambeds – but they don't. For over 40 years now suction dredgers have been recovering mercury for free so the question of the effectiveness of the dredge is a valid research topic relative to the creation of the regulations.

The results of the two actual dredge tests cited in the DSEIR provide highly positive results for the effectiveness of suction dredges and the extremely small amount of mercury released compared to the mercury recovered. Yet the DSEIR doesn't consider this in making a determination of "Significant and Unavoidable." This is clearly incorrect.

Site	Collection Date	Time relative to start of dredging (hours)	THg_{SS} (ng/g)	pTHg (ng/L)	fTHg (ng/L)	$MeHg_{SS}$ (ng/g)	pMeHg (ng/L)	fMeHg (ng/L)	$Hg(II)_{R\text{-}SS}$ (ng/g)	% $MeHg_{SS}$	% $Hg(II)_{R\text{-}SS}$	TSS (mg/L)
Field blank	11-Oct-07	-1	<MDL	<MDL	0.67	nd	nd	<MDL	<MDL	nd	nd	0.1
Field blank	12-Oct-07	24	<MDL	<MDL	0.38	nd	nd	<MDL	<MDL	nd	nd	0.0
SYR-MP	11-Oct-07	1.5	421	0.84	nd	nd	nd	0.015	<MDL	nd	nd	3.0
SYR-MP	11-Oct-07	3	440	0.48	0.57	5.2	0.012	0.021	<MDL	1.2	nd	2.1
SYR-MP	12-Oct-07	24	670	0.17	nd	nd	nd	0.041	<MDL	nd	nd	0.5
SYR-EP	11-Oct-07	-1	717	0.43	0.53	14.2	<MDL	<MDL	<MDL	2.0	nd	1.0
SYR-EP	11-Oct-07	1	338	0.54	0.47	8.4	<MDL	0.012	<MDL	2.5	nd	1.5
SYR-EP	11-Oct-07	3	510	0.68	0.53	5.9	<MDL	0.011	<MDL	1.2	nd	1.6
SYR-EP	12-Oct-07	24	410	0.20	1.08	13.3	<MDL	0.008	<MDL	3.2	nd	0.8

Figure 5. Results of 3" Dredge Test by Fleck et al 2007

Some important results from the Fleck test notably absent in the DSEIR:

- Particulate MeHg – not detectable
- MeHg – increased by 14 trillionths of a gram (14.2 ng/g)
- fTHg – decreased (.53 ng/l to .47 ng/l) after 1 hour of dredging – this indicates measurements in the threshold range of the detector have a degree of variability in measurement accuracy
- Hg(II)r – not detectable with a sensitivity of .40 ng/l

To further examine the flaws in the data and analysis you have to dig deeper into the actual results and the bias inherent in the results that created a wildly inaccurate portrayal of the cumulative effects of dredging.

FLAWS IN ANALYSIS

This section provides my analysis of the data presented by Fleck, reported by the DSEIR that results in a finding that very few suction dredgers would create sufficient mercury to equal the entire watershed load. To evaluate this finding required considerable time spent looking at the reported numbers. What I found was clear bias by selective analysis of data that favored the finding of "Significant" while avoiding other data that showed it was "Less than Significant."

First we'll look at the reporting of the results from the 3" dredge test. The report creates an impossible situation as the amount of mercury in the concentrates exceeds the amount of mercury that should have been in the input (heads material). A few of the problems encountered in evaluating the results of the test included no measurements of kg moved, cubic meters moved and the inaccurate measurements of Hg in the sampling. This makes it extremely difficult to estimate the THg in the material and validate the numbers.

To begin we need to estimate the total amount of material moved and multiply the point samples across the total kg moved. The estimate of material moved, using the Keene production rates (unmodified) is in Table 4. The material in concentrates is estimated from amount a 3" dredge should capture during the time period.

Estimate of Material Possibly Dredged - Fleck 3" Dredge Test

	Kg/Hr Hr 0-1 kg/hr	Hr 1-2 kg/hr	Total Dredged in kg
3" Dredge	67	160	227
Concentrates			25

Table 4. Estimate of Material Moved

Now that we have an estimate of the material moved we need the point samples to estimate the amount of mercury present in the source, tailings and concentrate based on the reported sampling. This is provided in Table 5.

Sampling of Material from 3" Dredge Test			
	Size	THg (ng/g)	THg (ng/kg)
Source Gravel	<1.0mm	22.9	22900
Source Gravel	.063 to 1.0mm	55.8	55800
Tailings	<1.0mm	15.9	15900
Tailings	.063 to 1.0mm	18.6	18600
Concentrate	<1.0mm	137	137000
Concentrate	.063 to 1.0mm	4570	4570000
Concentrate	.0003 to .063mm	14300	14300000

Table 5. Measured Hg in the 3" Dredge Test

Next we need to multiply the amount of mercury in the point estimates times the total amount moved to derive the total mercury amounts present in each of the samples.

Estimated Total Mercury Present in Sample Material from 3" Dredge Test					
	THg (ng/kg)	x kg moved	THg in mtl (ng)	THg in (ug)	THg (mg)
Source Gravel	78,700	227	17,864,900	17,865	17.86
Tailings	34,500	227	7,831,500	7,832	7.83
Concentrate	19,007,000	25	475,175,000	475,175	475.18

Table 6. Estimate of Total Hg Present in Material By Sample

Based on the point estimates the total Hg as measured in mg is 17.8mg in the source material, the tailings estimate is 7.8mg and the measured amount in the concentrates is 475mg. These numbers reflect the total amount of mercury that should have been present if the sampling was correct. This is shown graphically in Figure 6.

Figure 6 reflects the calculations for how much mercury as a minimum must have been in the source material to result in the quantity of mercury found in the concentrates. Based on Humphrey's estimates for dredge mercury capture rates the numbers actually work out very well. The estimate for 2% in the tailings equals approximately 9 grams while the point estimate for the tailings was 7.8 grams. The Fleck test confirmed the results from Humphreys – a suction dredge captures 98% of the mercury, releases only 2% back into the tailings and at no point is the mg/kg exceeding the thresholds for hazardous waste.

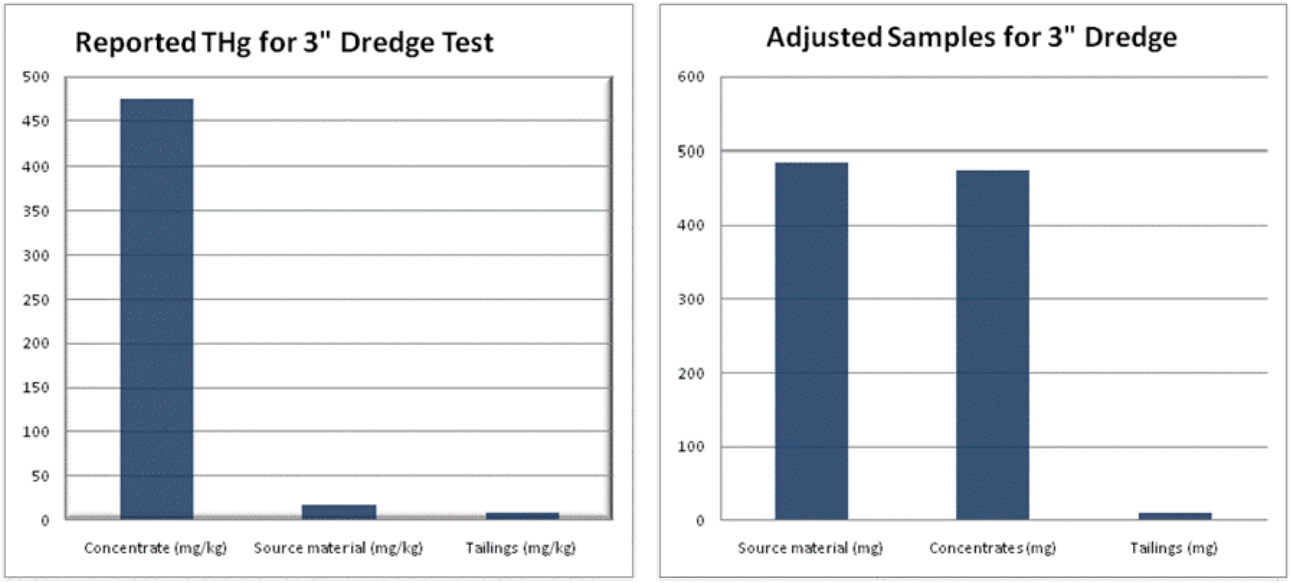


Figure 6. Fleck Reported Results for THg in 3" Dredge Test

The above graph compares the estimate provided in the report for source material mercury with the graph on the right which estimates the minimum amount of source mercury that must have been present. Fleck states the incoming material and the outgoing mercury had the same levels of mercury, but as shown above this scenario is impossible – the dredge ended up with far more mercury than was possible using the point estimates.

The only two actual dredge tests demonstrate the extraordinary ability of a dredge to capture mercury while limiting the emissions from the dredge to less than 10% of the California Hazardous Material Threshold levels.

Fleck takes the information above and states that "differences between heads and tails was minor..." Fleck, 2010 page 41). It doesn't look minor. The 3" dredge test confirms the Humphrey's data using a second, independent test in another mercury hotspot. Fleck used a 20 mesh screen to screen the sediment both prior to dredging, during dredging and for the concentrates providing confirmation that mercury interspersed with river gravel is typically floured.

Figure 7 provides the source material used to create the above tables and graphs.

Table 5. Mercury concentrations in sediment samples collected during the October 2007 dredge test, South Yuba River. All concentrations are on a dry weight basis.

[hr, hour; THg, total mercury; MeHg, methylmercury; $Hg(II)_R$, reactive mercury (II); %, percent; ng/g, nanogram per gram (or part per billion); <, less than; MDL, method detection limit; mm, millimeter]

Sediment type	Size fraction	Percent of total sediment in size fraction (%)	Time (hr)	THg (ng/g)	MeHg (ng/g)	Percent MeHg (%)	$Hg(II)_R$ (ng/g)	Percent $Hg(II)_R$ (%)
Heads	< 1.0 mm	1.14	0-1	22.9	< MDL	< MDL	1.55	6.75
Heads	< 1.0 mm	12.33	1-2	55.8	< MDL	< MDL	1.18	2.12
Heads	< 1.0 mm	2.17	2-3	13.9	< MDL	< MDL	0.34	2.43
Heads	0.063 to 1.0 mm	1.25	0-1	124	< MDL	< MDL	1.95	1.58
Heads	0.063 to 1.0 mm	12.22	1-2	46.5	< MDL	< MDL	1.01	2.18
Heads	0.063 to 1.0 mm	2.12	2-3	36.6	< MDL	< MDL	0.41	1.12
Tails	< 1.0 mm	32.56	0-1	15.9	< MDL	< MDL	0.79	4.96
Tails	< 1.0 mm	10.76	1-2	18.6	< MDL	< MDL	0.66	3.54
Tails	< 1.0 mm	9.12	2-3	37.1	< MDL	< MDL	0.58	1.55
Tails	0.063 to 1.0 mm	32.75	0-1	83.0	< MDL	< MDL	0.51	0.61
Tails	0.063 to 1.0 mm	10.58	1-2	25.1	< MDL	< MDL	1.35	5.37
Tails	0.063 to 1.0 mm	9.06	2-3	78.2	< MDL	< MDL	0.33	0.42
Concentrate	< 1.0 mm[1]	95.42	0-2	137	0.022	0.016	1.16	0.84
Concentrate	< 1.0 mm[1]	95.35	2-3	211	nd	nd	1.24	0.59
Concentrate	0.063 to 1.0 mm[1]	95.65	0-2	4,570	< MDL	< MDL	0.93	0.02
Concentrate	0.063 to 1.0 mm[1]	95.70	2-3	10,300	nd	nd	1.66	0.02
Concentrate	0.0003 to 0.063 mm[1]	0.23	0-2	14,300	1.1	0.008	83.2	0.58
Concentrate	0.0003 to 0.063 mm[1]	0.36	2-3	3,210	0.92	0.029	28.3	0.88

[1] Concentrate samples pre-sieved through 20-mesh screen.

Figure 7 – Fleck Results of 3" Dredge Test

As proved by Fleck the mercury is **not being methylated** – measured levels were zero (Fleck Table 4, page 40 and above). The measured Hg(II)r levels in ng/g were lower – across the board than the measured Hg(II)r levels in the incoming gravel. From Fleck's data it is **strongly** indicative that a suction dredge is both highly efficient at removing mercury and is providing no MeHg or Hg(II)r into the environment. It is striking that the DSEIR reaches just the opposite conclusion but not surprising as the DSEIR used large portions of the Fleck report to derive its conclusions. Notably absent is any mention that a dredge is removing 98% of the mercury from the environment (for free and without a government program) and that testing has shown extraordinarily small levels of Hg(II)r and no levels of MeHg.

The only conclusion you can reach is the DSEIR is intentionally avoiding the topic of how much mercury a dredge captures. As shown in Figure 7 above the measured MeHg downstream from the dredge was zero, but again this isn't mentioned in the DSEIR.

Recommendations

The mercury analysis included in the DSEIR is too limited and flawed to be used as a basis to conclude suction dredging results as "Significant and Unavoidable" impacts. The mercury study should be discarded from the DSEIR and simply replaced with a comment that says there is insufficient scientific information at this time to conclude suction dredging creates negative impacts. Further the evidence should be peer reviewed by both qualified personnel from the dredging community as well as government personnel prior to being released. I ask that CDFG consider the impact of releasing this type of flawed data based on such limited analysis that contains so many serious errors and omissions of important data relative to the conclusions. The conclusion reached in the DSEIR of "Significant and Unavoidable" is not supported by the facts.

EXAMPLES OF FLAWS IN THE ANALYSIS

The DSEIR uses the Humphreys 2005 paper to provide a mercury discharge rate of 298 ppm but fails to mention the dredge was purposely recovering liquid (elemental) mercury and the purpose of the study was to recover mercury – the operators were literally dredging mercury ***"Team members used special care to find and dredge large liquid mercury droplets as well as mercury-laden sediment from the site." [Humphreys Report, 2005***].

The Humphreys study measured the suspended mercury rate (discharge rate of 298ppm) by using a settling tank based on only the concentrated sediments sieved through a 30 mesh screen. It would be impossible for a dredge to discharge this amount of mercury. The 298ppm rate is based on discharging the concentrated material only – not the source material. It is incorrect to conclude based on sampling of the captured material, then putting the captured material into a still water tank that this would be the discharge rate from the dredge. The DSEIR seizes on this flawed data and then proceeds to construct an entire scenario that is based on theoretical leaps – not based on a real suction dredge.

As stated the bedrock contact layer in Pit #2 had high concentrations of mercury (Hg(II)r). In the DSEIR they state that the fine particles of pit #2 had 2-3 orders of magnitude more mercury mass than pit #1. The DSEIR then uses the data provided by Fleck to perform calculations for suspended mercury in regards to watershed loading rates. However, the Fleck study used a closed circuit test, not using a dredge with a sluice box and purposefully introduced the output from the bedrock material into a tank to study the effects of suspended particulates and mercury. It did not attempt to characterize what this effect would be in the real world. The DSEIR takes these results (no sluice box and standing water) and uses them to calculate THg loading. The DSEIR uses this material even though the Fleck test found no levels of Hg(II)r or MeHg were being output by the dredge with the sluice box.

The Fleck study found that in using the closed system test the suspended mercury tended to attach itself over time to the finer particles in higher and higher densities – this would indicate that the finer particles themselves would become denser and would precipitate out as they collected mercury from either the dredge or other sources. The Fleck report, being conducted in a closed tank, used a water body unaffected by movement which would indicate that the collection of mercury on the fine particles would not occur at these abnormally high rates during transport in the stream. All of the suspended particle analysis must be thrown out as the method used to create the fine particles included running contaminated water repeatedly through the impeller of a pump (not the way material is processed in a dredge), the material was likely run through the impeller over a thousand times according to witnesses of the test. ***The closed circuit test does not represent the results from an actual dredge test.***

MERCURY REMOBILIZATION

The issue of the release of mercury that would otherwise be "locked" in a sediment layer is used as an argument against suction dredging. The material from Pit 1 and 2 were collected by digging with a shovel and pick – not using a dredge so any measurements we use from these pits we must be cautious – none of the analysis provides a capture rate for the suction dredge [See Humphreys 2005].

The following section shows how completely different conclusions can be reached by using the exact same source data, but including the extraordinary ability of a dredge to capture mercury. For this analysis we will use Test Pit #2 from the Fleck study. The typical dredge hole is far wider at the top than the bottom, as Fleck reported it is 4x larger at the top than the bottom.

As Fleck and Humphreys found the majority of material in a dredge hole is >1mm – approximately 98% of material exceeds this size. During the Fleck study the team measured the amount of material in each layer and found the concentrated layer is about 2% of the total material moved. Taking into account the time required to move this material results in far different numbers than are provided in the DSEIR.

To consolidate the analysis I merged the Overburden layer and the First Contact Layer into one layer called Overburden. The DSEIR focuses on the particles sizes smaller than .063mm as they state these particles are most likely to be suspended.

In both referenced studies the conclusion are the same from the data presented suction dredges remove almost all of the mercury present (even floured mercury) and there is no reasonable scenario where a suction dredge would ever exceed the threshold for hazardous waste.

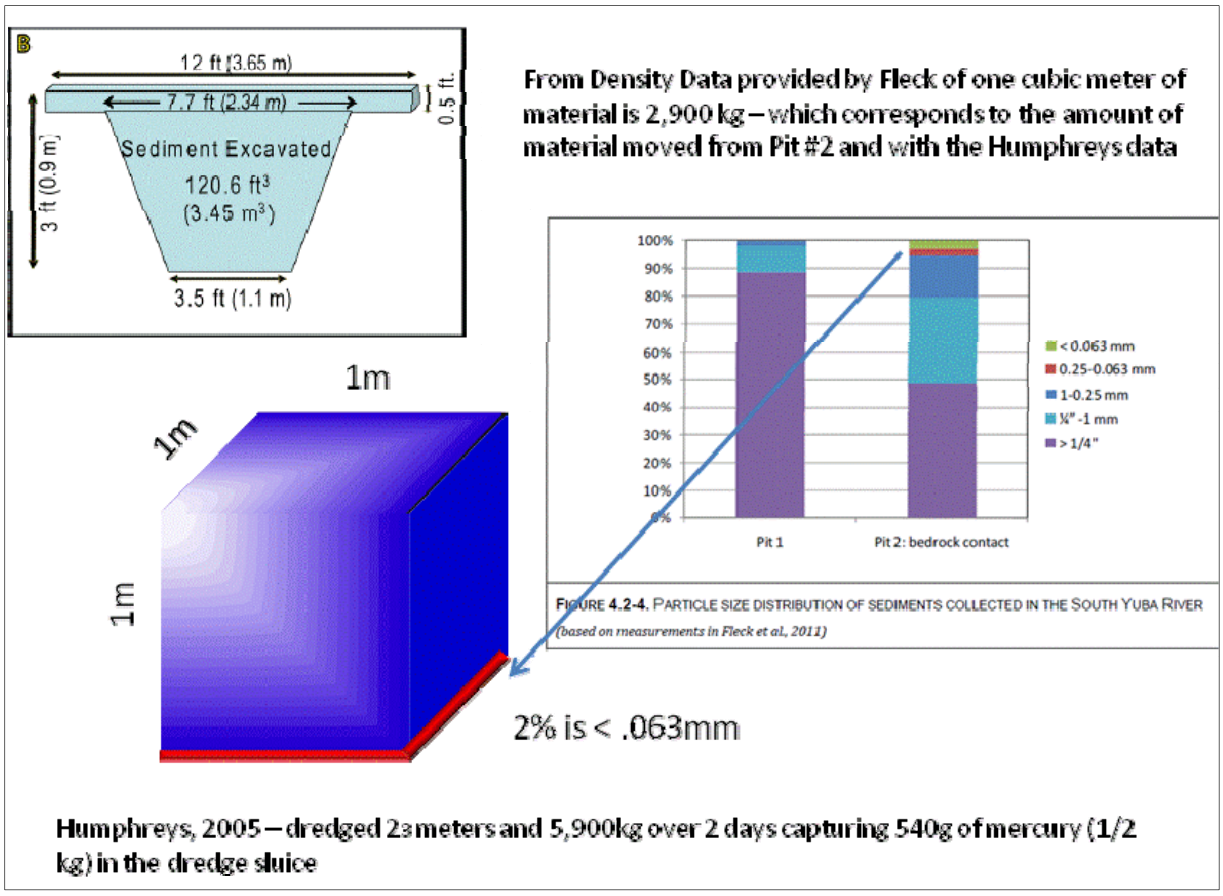


Figure 8. Construction of a Dredge Hole

The variables needed are the amount of fine particulates and the amount of time spent moving that material. As Fleck reports it is a fraction of the time, the DSEIR does not account for the fraction of time, but assumes that all material being moved is less than .063mm. To evaluate this we will deconstruct Fleck's test pit #2.

Figure 8 provides a graphical breakout of the material by layer from Pit #2. As expected there is far more material in the overburden layers than in the targeted layers.

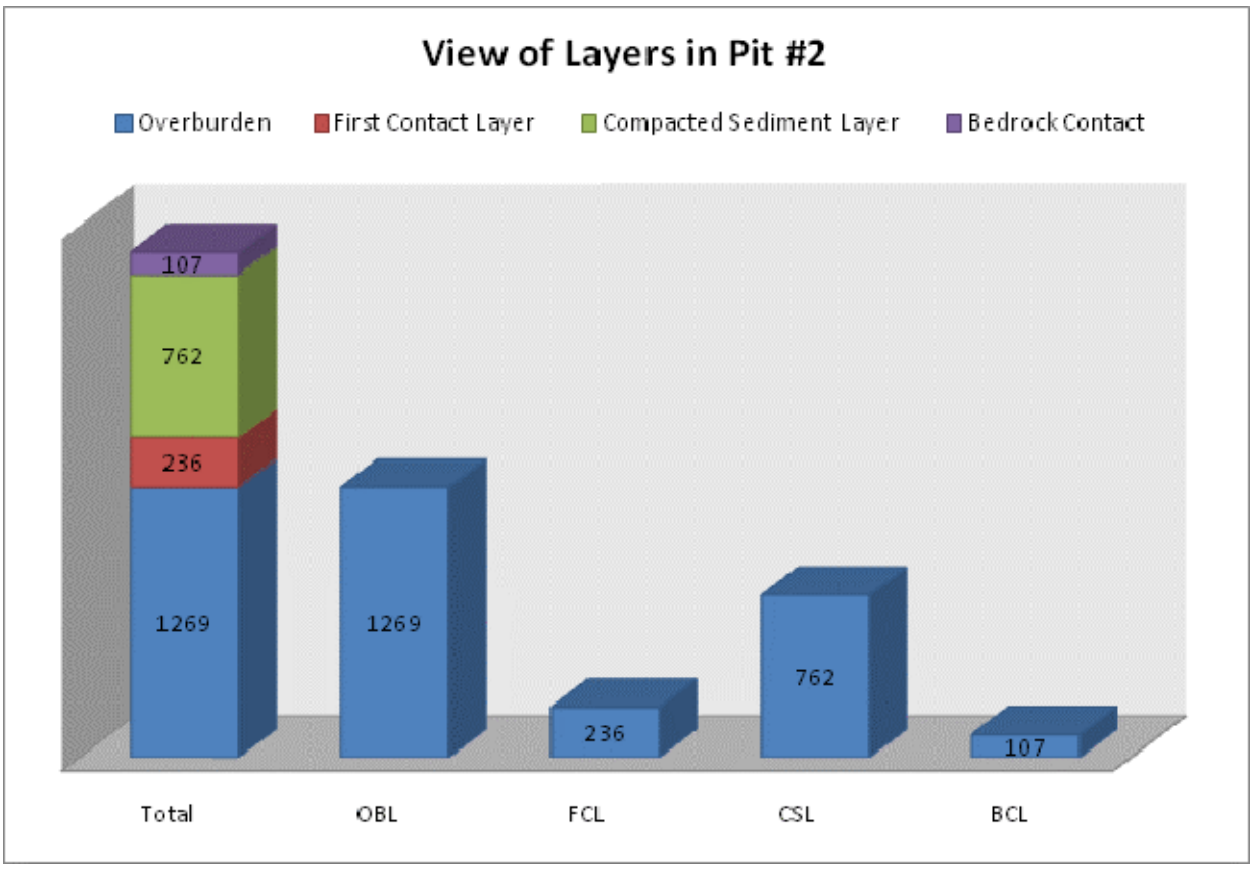


Figure 9. Composition of Test Pit #2

Figure 9 shows you have to move a lot of material to get to the bedrock zone. Moving this material takes time and to evaluate the release of mercury by suction dredges we have to estimate the material moved over time. Using the data provided by Keene Engineering for expected dredge material rates in different types of materials Table 7 is provided as a measure of time required to dredge each layer.

Layers	Amount of Material in Kg	% of Total	Keene Eng Reported Dredge Rates in kg/hr	Hours required to dredge
Overburden Layer (OBL)	1269	53%	112	11.33
First Contact Layer (FCL)	236	10%	128	1.84
Compacted Sediment Layer (CSL)	762	32%	266	2.86
Bedrock Contact Layer (BCL)	107	5%	290	0.37
Total Material From Pit #2	2374	100%		16.41

Table 7. Time Required to Dredge Pit #2 – If it was actually dredged

Graphically this is shown in Figure 10.

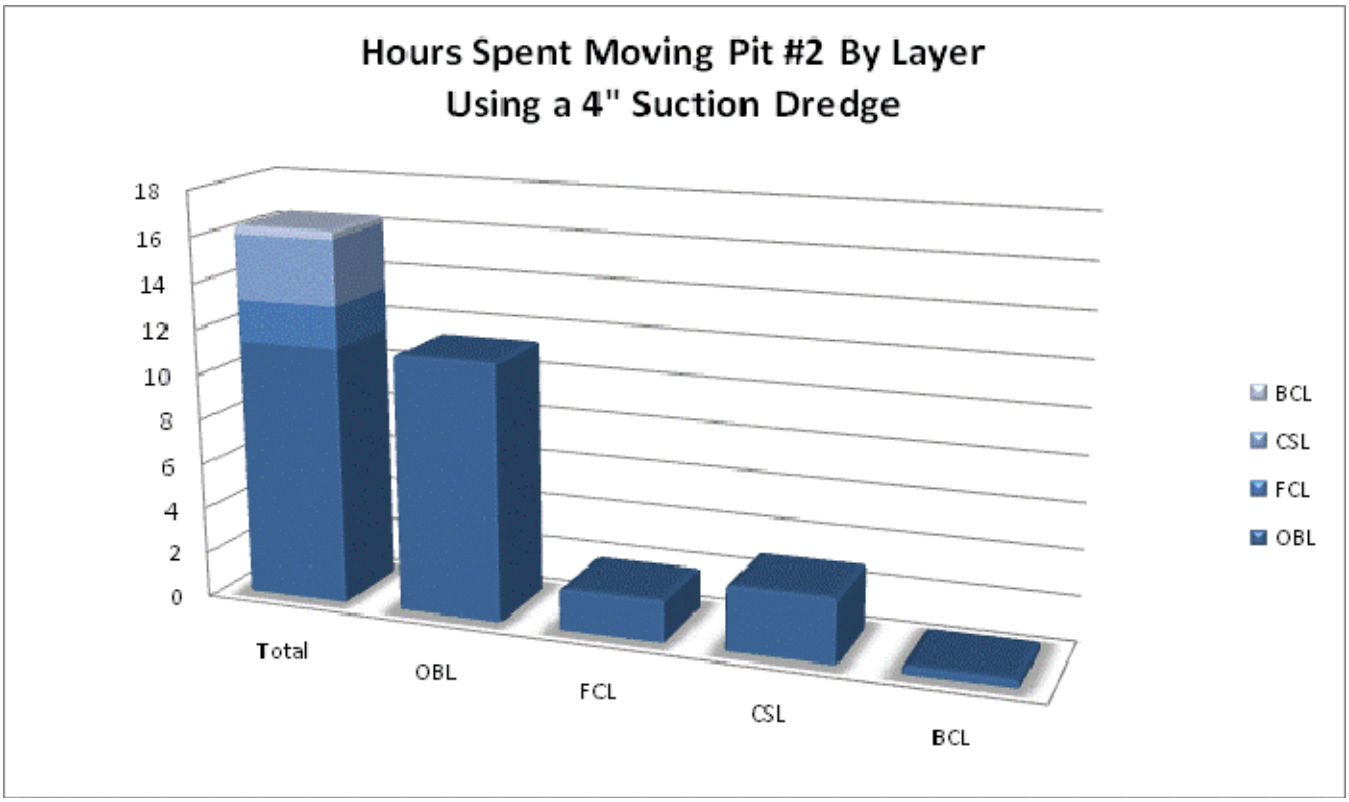


Figure 10. Time Spent Dredging Pit #2

The basis for the follow on discussion in this paper is provided in Figures 9-10 the time required to move the material. The DSEIR assumes that all material moved is <.063 but does not account for the total material or time required to reach that layer. As is clearly shown from the data provided from Fleck, and using the Keene provided dredge material movement rates (unmodified) the time spent moving material on the bedrock would be approximately 20 minutes out of 16 total hours spent dredging.

A second factor that any experienced dredger would confirm is the high percentage of holes that you just quit on before ever reaching the bedrock layer. Dave McCracken reports that the maximum depth reach of a 4" dredge is 4', the maximum of a 5" is 5' and so forth [Dave McCracken written comments to CDFG dated 10 April 2011]. I have found through experience this to be the case. Often you begin a hole without knowledge of the level of overburden on the bedrock (sample pit). I would assume that at least 30% of the holes I begin on – I abandon because they exceed the depth reach of my 4" dredge. In other words the time consumed to reach the pay layer exceeds the potential payoff because as shown above the amount of material is exponential, not linear. This quirk of gold dredging isn't accounted for in the

time studies by Fleck or considered in the DSEIR. The DSEIR assumes that all the material moved is <.063mm.

We need to deconstruct each layer of the Test Pit #2 (Fleck 2010) to determine how much total mercury was available for extraction. All measurements are based on point samples from the layers provided in the data. The Overburden Layers includes the OBL layer and the First Contact Layer measurements.

Overburden Layer Breakdown

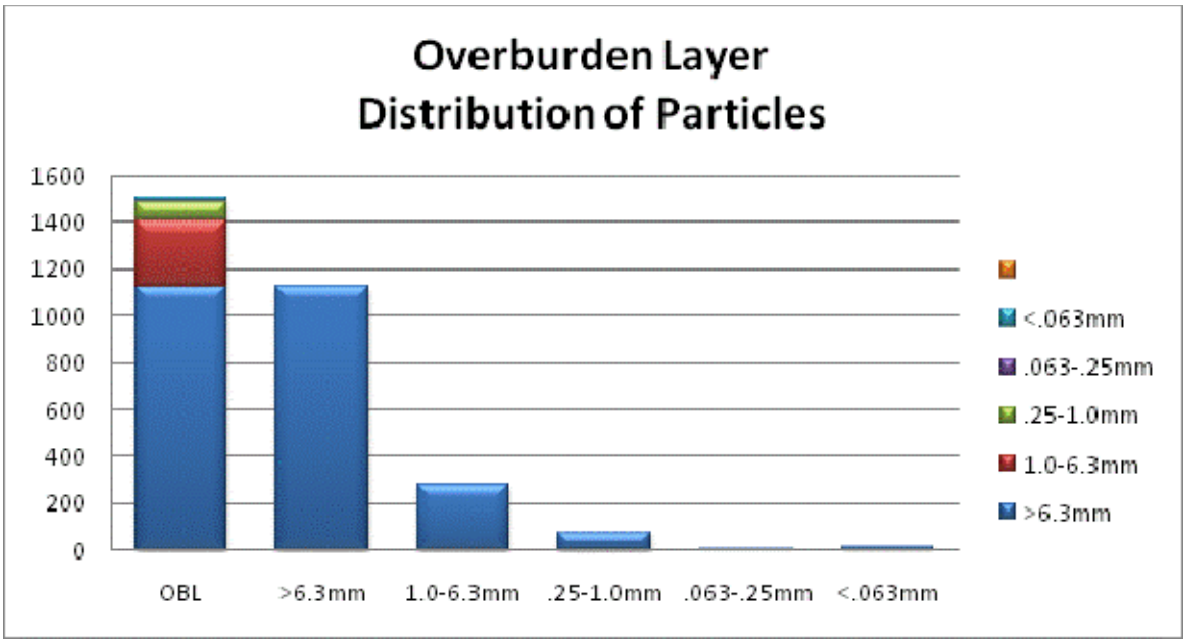


Figure 11. Distribution of Particles By Size in the Overburden

It took 13 hours to move the material in the Overburden Layer so the question becomes how much mercury did we mobilize? Table 8 provides the total mercury mobilized in this layer.

Overburden Layers - Analysis of THg Produced During Dredging

	Kg of Mtl	THg in ng/g	THg in mg/kg	THg in mg	Dredge Rate kg/hr	Time in hrs
>6.3mm	1127	0	0	0	112.00	10.1
1.0-6.3mm	277.4	0	0	0	128	2.2
.25-1.0mm	77.2	227	0.227	17.5244	266	0.3
.063-25mm	7.5	743	0.743	5.5725	290	0.026
<.063mm	16.1	1689	1.689	27.1929	290	0.056
Total	**1505.2**			**50.2898**		**12.6**

Table 8. Total Mercury From the Overburden Layer Based on Kg Moved

The total mercury in this layer is 50.29 mg with an average mercury level of .03 mg/kg far below the threshold for mercury set by the California Department of Toxic Substance Control (20mg/kg).

Important to this analysis, and the conclusions in the DSEIR is we have spent over 13 hours dredging the overburden layer; we've moved 1,505 kg of material but we've only moved 16kg of material less than .063mm. The time we spent dredging that material was 3 minutes out of 13 hours.

The conclusions from the DSEIR is based on the entire amount of material and entire amount of time was spent moving material < .063mm AND a mercury contamination rate equal to the concentrated material. Based on time required to move material to reach this material – it is impossible.

Compacted Sediment Layer Breakdown

The distribution of particles from the Compacted Sediment Layer is provided in Table 9.

Compacted Sediment Layer - Analysis of THg Produced During Dredging

	Kg of Mtl	THg in ng/g	THg in mg/kg	THg in mg	Dredge rate kg/hr	Time in hrs
>6.3mm	503	0	0	0	112.00	4.5
1.0-6.3mm	140.7	0	0	0	128	1.1
.25-1.0mm	85.8	455	0.455	39.039	266	0.3
.063-25mm	17	1630	1.63	27.71	290	0.059
<.063mm	15.5	10500	10.5	162.75	290	0.053
Total	**762**			**229.499**		**6.0**

Table 9. Mercury vs. Time for the Compacted Sediment Layer

After removing the overburden layers (13 hours of effort) we're finally in a layer that has a high density of material. Let's evaluate these findings against the threshold for hazardous waste. We have produced 229 mg of mercury the hourly rate for this would be 38mg per hour. Of the six hours spent dredging this layer we spent six minutes out of the total 6 hours of dredging time to move the material. How do we compare to the threshold limit for hazardous waste? Based on kg moved and THg recovered in mg we have a rate of **.3mg/kg again far below the threshold of 20mg per kg**.

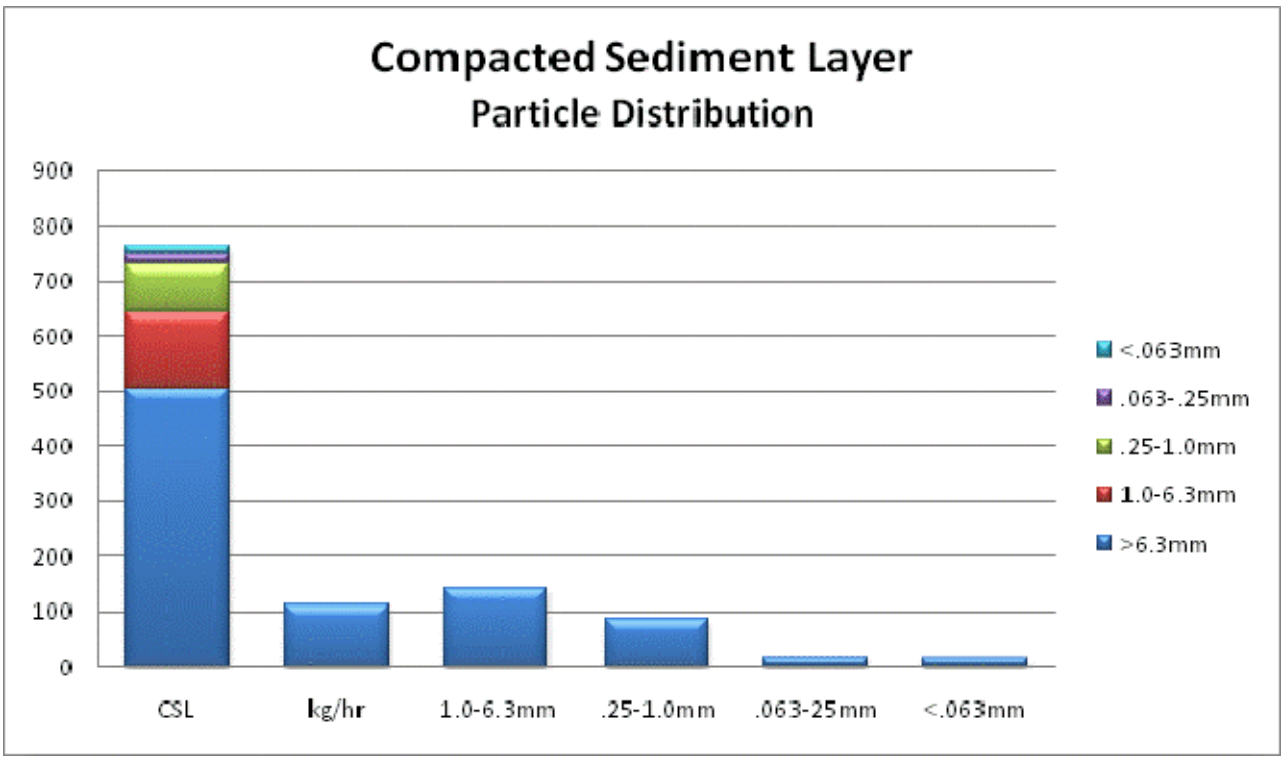


Figure 12. Compacted Sediment Layer Particle Distribution

Bedrock Contact Layer Breakdown

Bedrock Contact Layer						
	Kg of Mtl	THg in ng/g	THg in mg/kg	THg in mg	Dredge rate kg/hr	Time in hrs
>6.3mm	52	0	0	0	112.00	0.5
1.0-6.3mm	33	0	0	0	128	0.3
.25-1.0mm	16	515	0.515	8.24	266	0.1
.063-25mm	3	1150	1.15	3.45	290	0.010
<.063mm	3	11100	11.1	33.3	290	0.010
Total	**107**			**44.99**		**0.8**

Table 10. Mercury vs. Time for the Bedrock Contact Layer

After nearly 19 hours of dredging we have finally reached the layer the DSEIR bases its conclusions on – bedrock. In reaching this layer and cleaning it we have mobilized 45 mg of mercury. This equates to .42mg per kg moved – again far below the threshold. How long did we spend in the layers less than .25mm including the fine particulate less than .063mm? As shown in Table 10 the time required to move the material less than 1.0mm as a percentage of the total material was less than 1 minute.

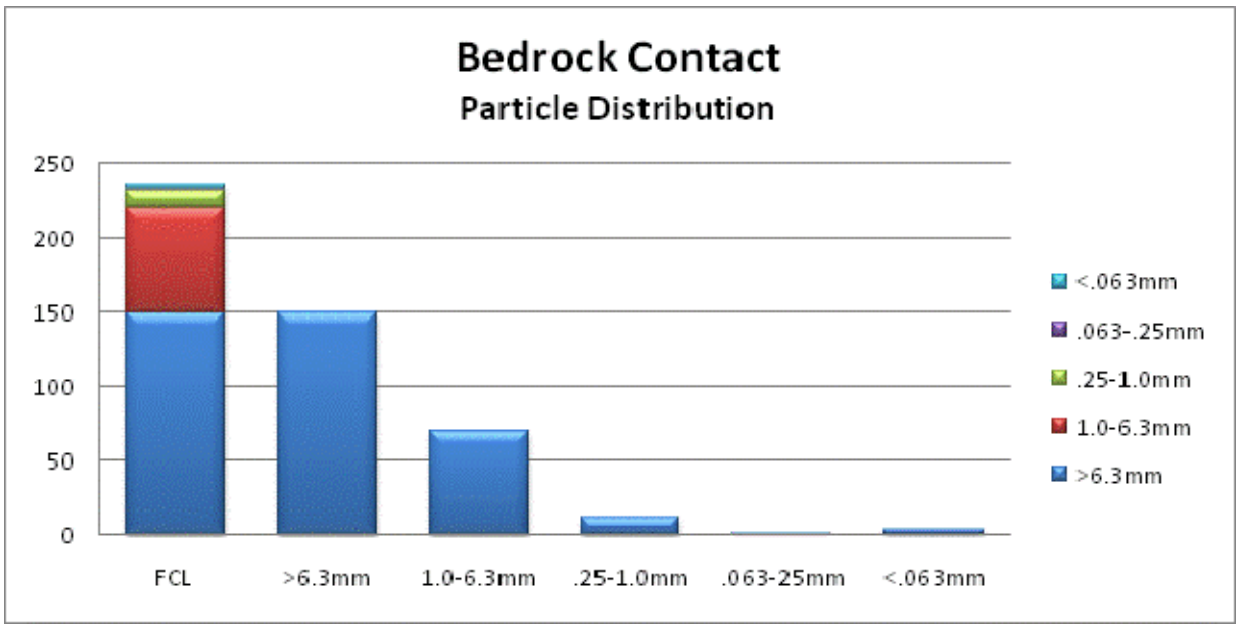


Figure 13. Bedrock Contact Layer Particle Distribution

Surprisingly, despite the DSEIRs alarmist writings we find that even in the lowest and densest material we still have only a fraction of the material that is less than .063mm. Of particular interest is this layer would require less than one hour of dredging time to completely recover all the material. The yield of total mercury from this layer is significantly less than the yield from the compacted sediment layer – likely this is due to the difference in material moved: 762 kg vs. 107 kg. If multiplied out the two yields would be relatively the same.

Of 19.4 hours dredging we spent less than ten minutes dredging material <.063mm. The DSEIR would have used the entire 19.4 hours and the entire amount as <.063mm to reach its conclusions. It's wrong.

From the Bedrock Contact Layer the DSEIR focuses on in attempting to prove the harmful potential of dredging we see yet again that the total mercury produced from this layer is 45mg with 107kg of material moved and a .42 mg/kg rate compared to the threshold of 20 mg/kg set by the State. These are remarkable numbers considering this study was done in a known mercury hotspot (Malakoff Diggin's mercury concentration).

Summary of Analysis of Mobilized Mercury

The above analysis was based on the data provided in the Fleck study and repeated in the DSEIR. The flawed data analysis provides the foundation for the argument in the DSEIR that dredges are remobilizing mercury at high rates and that a relatively limited number of dredgers could mobilize more mercury than the entire watershed natural rate. Based on the above breakout of layers in Pit #2 and the time required to move that material a more accurate estimate of mercury released can be provided.

The total mercury mobilized from all layers during our two days of dredging Pit #2 is less than one gram as shown below.

Total Mercury Mobilized in Pit #2		
Layer	>.063mm THg in mg	<.063mm THg in mg
Overburden	3.7711	1.8209
First Contact	2.777	4.65
Compacted Sediment	66.749	162.75
Bedrock Contact	11.69	33.3
Totals	**84.9871**	**202.5209**

Table 11. Total Mercury Recovered from Pit #2

Of the total mercury produced how much of this mercury would be released into the tailings versus being captured by the dredge. Using the 98% efficiency rate provided by Humphreys the following calculations estimate the mercury into the tailings –The release of mercury in the tailings and does not mean the mercury was suspended.

Estimates for Natural Loading Rate for the South Yuba River in Dry Year										
Layer	Input Gravels THg in mg	Dredge recovery rate = 98% in mg	THg in mg in tailings	Hours spent dredging	Natural Load S. Yuba in mg	Hg Production in mg/hr	Cumulative time required to reach level	Cumulative THg by level in mg	Adjusted mg/hr cumulative rate	Dredging hours required to reach natural load
OBL	5.592	5.480	0.112	11.33	800,000	0.0099	11.33	0.11	0.0099	81,046,903.74
FCL	7.427	7.278	0.149	1.84	800,000	0.0806	13.17	0.26	0.0198	40,476,556.24
CSL	229.499	224.909	4.590	2.86	800,000	1.6023	16.04	4.59	0.2862	2,795,440.29
BRC	44.99	44.090	0.900	0.37	800,000	2.4387	16.41	5.75	0.3505	2,282,751.69
Totals	**287.508**	**281.75784**	**5.75016**	**16.41**		**0.3505**	**16.41**	**5.75**	**0.3505**	**2,282,751.69**

Table 12. Time Required to Reach Natural Load of S. Yuba River

Table 12 provides the hours by layer, and the total hours for equal type pits to reach the natural load of the S. Yuba River. Taking into account the amount of Hg captured by the dredge and the variance in layers the number of dredging hours required to reach the natural load is 2.3 million hours. This is in sharp contrast to the chart provided in the DSEIR which is a direct extract from the Fleck report. It is clear that the authors of the DSEIR did not understand the source data. The source data is only referring to the amount of Hg in the silt and clay layers which constitutes only 2% of the total material in the pit. Secondly, the authors of the DSEIR ignored the findings from Humphreys which proved a dredge captures 98% of the mercury – including floured mercury.

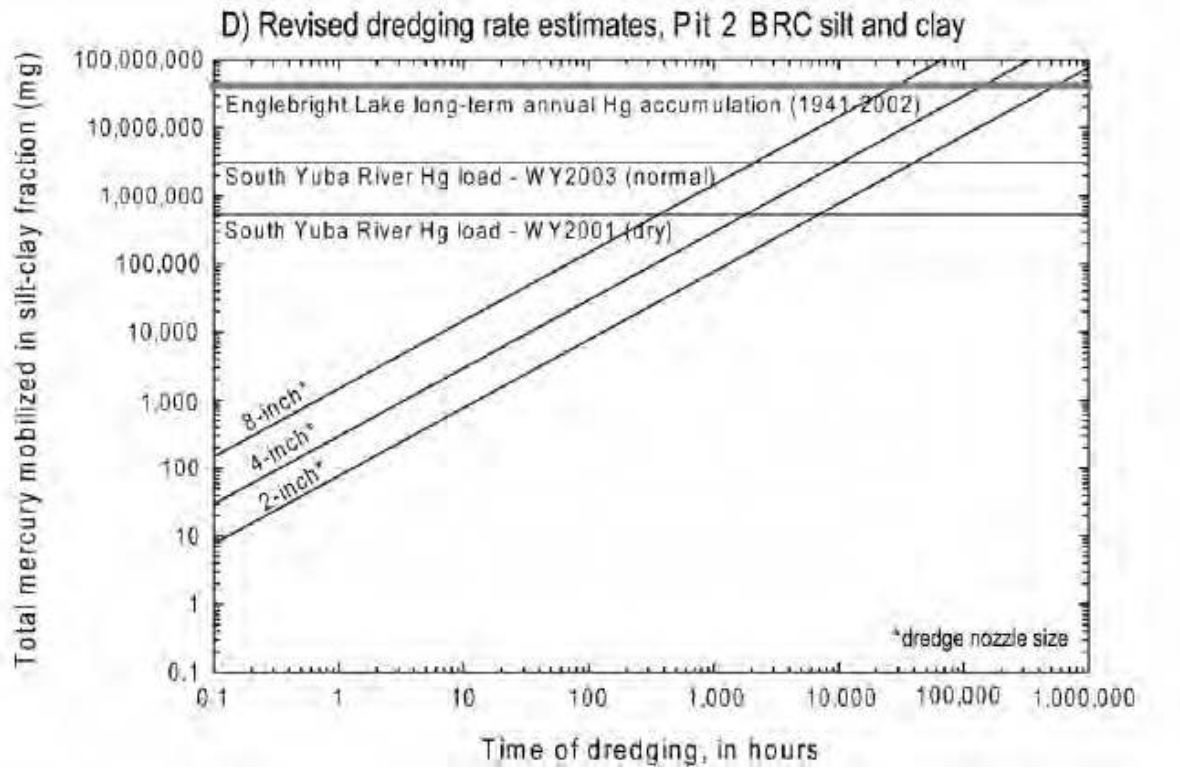


Figure 14. DSEIR Analysis of Dredge Hours Required

1,100 Hours or 2,800,000 hours – Who is Right?

To determine the accuracy of the DSEIR conclusions I used the same source data but accurately computed the amount of THg produced by a dredge as shown in the earlier section on mercury remobilization. Using the results and rates for the 4" dredge and the actual capture rates you get substantially different results.

The graph above shows approximately 1,100 hours of dredging would be required to produce the entire annual natural loading (in mg) of the S. Yuba Rivershed. This is ridiculous. A more accurate calculation, accounting for the fact that 95% of time is spent in accessing the compacted layers yields a total number of dredge hours of 2.8 million hours. The DSEIR does not account for the cumulative nature of hours spent dredging to reach the concentrated layers, it simply assumes that all output is less than .063mm. It appears the authors of the DSEIR did no independent quantitative analysis of the numbers but merely transcribed them from Fleck – and selectively transcribed the numbers that bolstered the position that dredging was harmful while ignoring the actual results.

A comparison of the two calculations is provided in Figure 15 below.

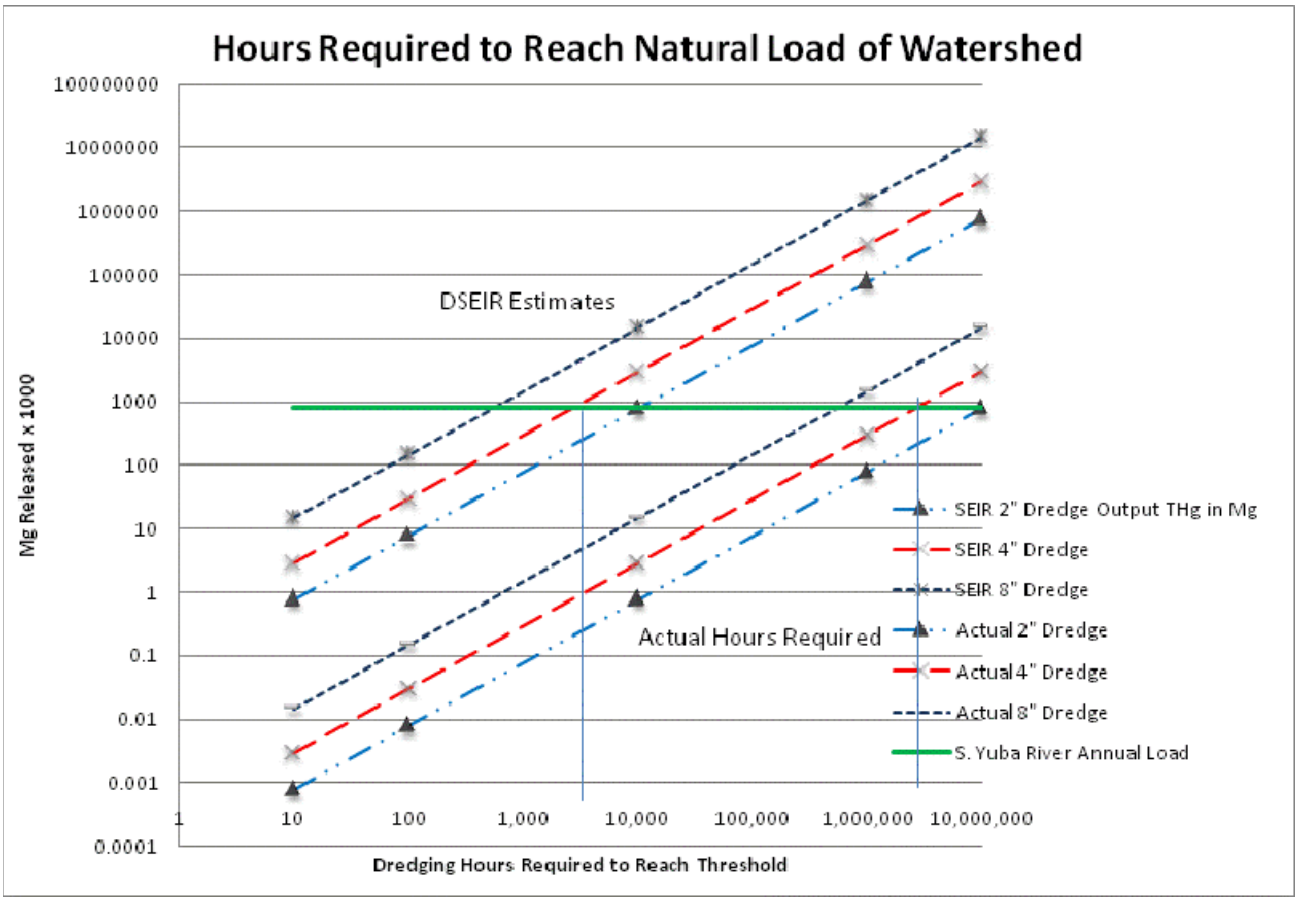


Figure 15. DSEIR Conclusions versus Actual Dredge Rates

Dredge Discharges as Reported By the DSEIR

The complete lack of analysis based on the variables of dredging is notably absent in the studies and the DSEIR. Again it appears the analysis was set up to deliberately show the harm from a dredge. To prove this point I will use the exact same numbers with the analysis shown above relative to dredge rates and material moved to demonstrate how far off the DSEIR numbers really are.

DSEIR, Figure 4.2-7 is shown below. This figure is important as it begins the discussion of how many dredgers would be required to produce the natural load for the watershed. Only using the figures for the 4" dredge we will use the same numbers to reach an alternate, but fact based conclusion.

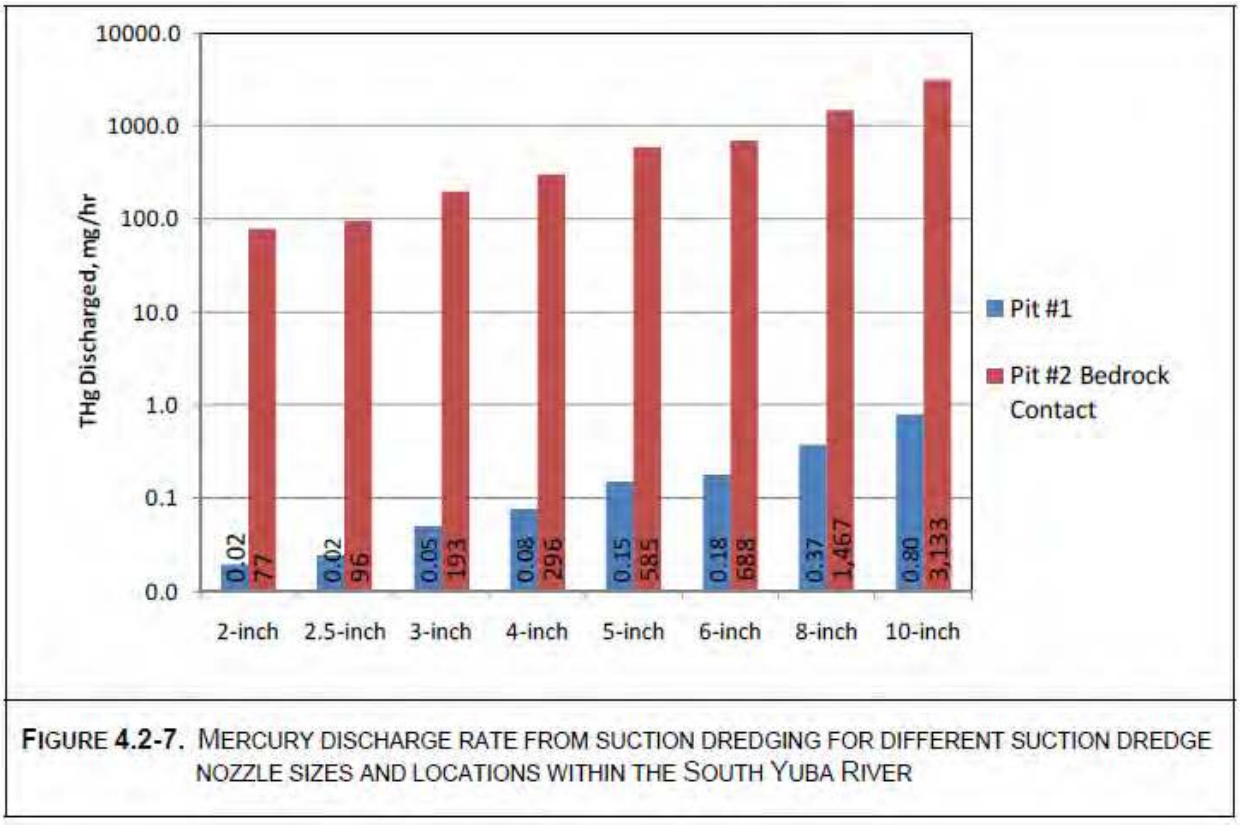


FIGURE 4.2-7. MERCURY DISCHARGE RATE FROM SUCTION DREDGING FOR DIFFERENT SUCTION DREDGE NOZZLE SIZES AND LOCATIONS WITHIN THE SOUTH YUBA RIVER

Figure 16. Chart from DSEIR estimating THg Discharge by Dredgers

To analyze the validity of this chart you must determine how it was built. Table 10c from the Fleck report was used to extract the cubic meters per hour and the sediment in kg/hr that a 4" dredge could move, then the DSEIR graphed the THg in mg/hr based on Table 10c based on a TSS Hg level provided by the flawed re-circulating tank experiment. The authors of the DSEIR did no independent analysis of the either the source or validity of the data, they merely transcribed it, and then performed calculations that supported their desired end state.

The DSEIR chart uses the concentrated sample mercury level as the output from the dredge and assumes that the entire time spent dredging is in this concentrated level. Both assumptions are wildly off the mark and distort the true output by orders of magnitude.

Table 10c gives the theoretical maximum amount of mercury that could have been moved assuming that a dredge is operating in only material less than .063mm. This is impossible as proved earlier. It took 19 hours of dredging time to reach the bedrock layer. To refute the chart in Figure 16 as provided in the DSEIR you simply need to look at the breakdown of the Bedrock Layer component of Pit #2 and derive time requirements based on the type of material moved. We can easily estimate the total time required to move the component of the layer in the .063mm range:

Bedrock Contact Layer	762 total kg			
Particle Distribution	Layer Distribution in kg	Dredge Rate in kg/hr	Time Rqd to dredge mtl in hours	Time Rqd to dredge mtl in minutes
>6.3mm	52	112	0.46429	27.86
1.0-6.3mm	33	128	0.25781	15.47
.25-1.0mm	16	266	0.06015	3.61
.063-25mm	3	290	0.01034	0.62
<.063mm	3	290	0.01034	0.62
Totals	107		0.80294	48.18

Table 13. Detailed Breakdown of Time Required to Move Material in the Bedrock Contact Layer

While the chart in ***the DSEIR estimates that a single dredger would produce 296 mg/hr*** of mercury you can see from the above that ***only 1.2 minutes were spent*** (after 16 hours of dredging) to move this material. It's an impossible and meaningless calculation provided by the DSEIR the equivalent of theoretically asking how long it would take for a dredge to travel to the moon. It can't happen. Under physical constraints of time required to move material to reach the bedrock layer and the amount of material moved it is impossible to ever achieve the rates provided in the DSEIR. Using Table 4.2-4 of the DSEIR we will examine the human health aspects of this event.

Comparison of SEIR Hg Released and Actual Hg Released Accounting for Material Moved						
11106 mg/L TSS mg/L		ug/kg ug/L Pit #2 BC	Time Spent in particles <.063	Released in ug/L	Dredge Efficiency 98%	Particles in tailings <.063mm
1		0.0111	0.01	0.00011	0.00011	0.00000
3		0.0333	0.01	0.00033	0.00033	0.00001
5		0.0555	0.01	0.00056	0.00054	0.00001
10		0.1111	0.01	0.00111	0.00109	0.00002
50		0.5553	0.01	0.00555	0.00544	0.00011
100		1.1106	0.01	0.01111	0.01088	0.00022
200		2.2212	0.01	0.02221	0.02177	0.00044
340		**3.7760**	**0.01**	**0.04098**	**0.04016**	**0.00082**
Human Health Criterion is .05 ug/L						

Table 14. Evaluation of Table 4.2-4 from DSEIR

The first 2 columns of Table 14 exactly match the table used in the DSEIR to show the ug/L rate of release from a suction dredge in Pit #2 (I used their assumption of 296mg/hr). However, as noted above the DSEIR assumes that all the time was moving particles less than .063mm AND assumes that all particles moved become suspended at the TSS suspension rate (false and poor assumption). As exhaustively shown in the previous section the time required to move the material that is less than .063mm is proven to be .01 hours. To derive a realistic number we have to account for only the fraction of time spent moving that material. To assume the entire dredging time is spent in particles less than

.063mm is complete fantasy – a dredgers fantasy for certain. Multiplying the numbers provided in the DSEIR by the fraction of time spent moving them provides an entirely different picture of THg mobilized per hour – several orders of magnitude lower and well below the human health criterion.

The DSEIR is deceptive in relating Table 4.2-4 to the California Human Health Criterion. The actual criterion is provided below in Figure 17. The DSEIR fails to mention that the measurement is a 30 day average. Even if you accept the DSEIR data you are still below the health criterion – even if you were dredging solid for 8 hours straight in material less than .063mm you would still average out well below the criterion. This is completely misleading and the selective use of the information does not meet the requirements under CEQA to provide all the facts.

California Toxics Rule (U.S. EPA)	Inland Surface Waters	Human Health (30-day average)	Drinking Water Sources (consumption of water and organisms)	0.05	
			Other Waters (aquatic organism consumption only)	0.051	

Figure 17. California Criteria for Mercury in Waters – Human Health Criterion

The DSEIR is wrong by several orders of magnitude and the presentation of the data shows a bias in the outcome as well as a lack of understanding of the cumulative nature of time required to reach the layer under study. It is impossible to achieve the numbers presented in the DSEIR. The actual numbers show no realistic number of dredgers could possible equal the load. Table 15 provides the calculations for the graph in Figure 15.

Hours Dredging to Mg of Hg Produced to Reach Natural Load						
				Time in hours		
Hours Spent Dredging	**0**	**10**	**100**	**10,000**	**1,000,000**	**10,000,000**
SEIR 2" Dredge Output THg in Mg	0	770	7,700	**770,000**	77,000,000	770,000,000
SEIR 4" Dredge Output THg in Mg	0	2,960	29,600	2,960,000	296,000,000	2,960,000,000
SEIR 8" Dredge Output THg in Mg	0	14,670	146,700	14,670,000	1,467,000,000	14,670,000,000
Actual 2"Dredge Output THg in Mg	0	0.77	7.70	770.00	77,000.00	**770,000.00**
Actual 4" Dredge Output THg in Mg	0	2.96	29.60	2,960.00	296,000.00	2,960,000.00
Actual 8" Dredge Output THg in Mg	0	14.67	146.70	14,670.00	1,467,000.00	14,670,000.00
S. Yuba River Natural Load THg in Mg	800,000	800,000	800,000	800,000	800,000	800,000

Table 15. Hours Required to Reach Natural Hg Load, S. Yuba River

SUMMARY

The preceding sections dispute the conclusions in the DSEIR and specifically dispute the finding of "Significant and Unavoidable." As shown from an accurate look at the data there are no feasible number of dredgers that could possible contribute sufficient mercury to exceed the natural load. Secondly, there is no situation in which a suction dredge will exceed the hazardous waste criteria set by

the state. It is impossible to achieve the rates the conclusions are based on in the DSEIR and the selective use and exclusion of data discredits both the source experiments and the resulting analysis.

Finally, the effectiveness of a dredge in capturing mercury- both floured and not floured is not discussed. A 98% capture rate must be applied to all discussions relative to the mercury mobilized by a suction dredge.

FLAWS IN THE ANALYSIS

- To reach the compacted layer requires a cumulative consideration of dredging time, you can't reach that layer without the effort to move the overburden – you must account for the time to reach the layer

- The analysis does not account for any type of dredge efficiency rate which according to Humphreys [a government scientist] the dredge Hg capture rate is 98%.

- You can't assume the particles less than .063mm from Pit #2 would have been equal to that collected through a dredge – the sifting process shown in Figure 18 [Fleck] would have resulted in the flouring of mercury that would probably have exceeded any flouring during dredging. The manual sorting and sifting itself would have floured the mercury to a greater extent than a dredge would have.

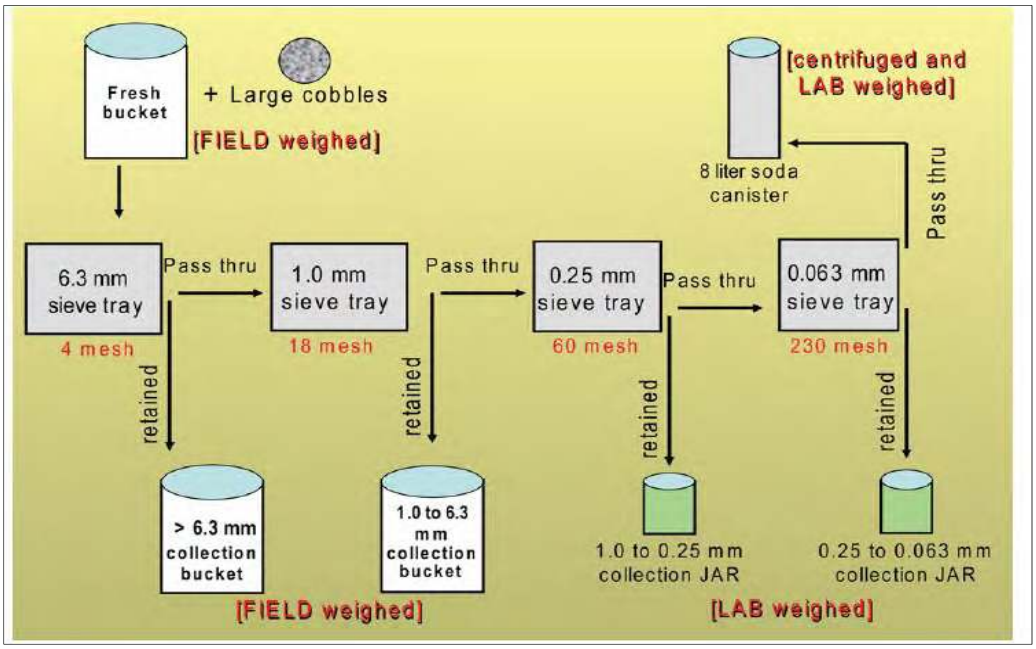


Figure 18. Sifting Process of Material Used to Classify Particles

CONCLUSIONS

The DSEIR conclusion states **1,100** dredging hours (4" dredge) would produce the entire natural load in the S. Yuba River. The actual hours (4" dredge) required would be **2,280,752** using the source data for the DSEIR.

Both of the above hours assume every dredger in the state is mining at the confluence of Humbug Creek and the Yuba River, an impossible dredge density, the comparison of current dredgers to effort required would be:

Dredgers Required to Reach Natural Load of the S. Yuba River					
	# Permits	Avg Days	Avg Hours/Day	Hrs per dredger	Total Hrs dredged in State
Statewide	3650	30	5.25	157.5	574,875
Hours Required to Reach Natural Load of S. Yuba River Watershed					**2,282,751.69**
Dredgers Required (permits) to reach natural load of S. Yuba River Watershed					**14,493.66**

Table 16. Dredgers Required to Reach Natural Load of the S. Yuba River Watershed

If we had 14,490 dredgers all dredging at the confluence of Humbug Creek and the S. Yuba River and all in material equal to test pit #2 we could produce the natural load of the Yuba River.

The Humphreys test shows that even the floured mercury is discharged with the sediment – it is not re-suspended as the DSEIR states and confirmed by Fleck in the dredge test. In the Humphreys test, and confirmed by the Fleck test - 98% of mercury was captured by the dredge and 2% was found in the sediment in the tailings of the dredge. It is extraordinarily unlikely and probably an immeasurable amount that is being converted to MeHg.

Methylized Mercury (MeHg) Analysis

The DSEIR attempts to provide a linkage between MeHg and suction dredging activities. The data and results do not support the DSEIR's conclusions.

The Fleck study [Fleck 2010] page 36 states ***"Dredging appeared to have no major effect on pMeHg concentrations in the South Yuba River during the dredge operations...Concentraions of fMeHg were all below the method detection limit (MDL) of .040 ng/L except for one sample..."***

Page 4.2-46 discussion of MeHg. Lines 28-30 "...*Recent studies indicate that following resuspension of South Yuba River sediments, both from Pit #1 and Pit #2: BC**, increased methylation was not observed** after deposition into South Yuba River receiving sediments..."*. This finding would be consistent with my calculations but it is not consistent with their assumptions of increased MeHg loading into both biota and the delta load. This is in light of the results from the 3" dredge test which showed a reduction in Hg(II)r from source material to tailings.

The above example indicates MeHg effects are non-existent from dredging. Additionally, the DSEIR allows for no evaporation of the mercury enroute to the Delta, while the California Water Quality Board found that up to 50% of MeHg is lost in transport due to evaporation:

*"Preliminary photodegradation study results for the Sacramento River near Rio Vista (Byington et al., 2005) **suggest that methylmercury loss from photodegradation may account for more than 50% of the unknown loss rate** illustrated in Figure 1." [California Environmental Protection Agency, Sacramento – San Joaquin Delta Estuary TMDL for Methylmercury Staff Report Draft , February 2008].*

Even if a suction dredge somehow contributed to MeHg in the river the analysis must include the photdegradation of the MeHg. The analysis does not account for this.

Effects of Dredging on Biota and Natural Rates of Hg

Finally we reach the crucial question in regards to the DSEIR and the proposed program – is dredging deleterious to fish? We have shown that the mercury mobilization rates from dredges, as measured in the output from the dredge sluice box are orders of magnitude less than the DSEIR claims. Actual field measurements of an operating dredge [Fleck and Humphreys] confirm that the release of Hg, Hg(II)r and MeHg are insignificant. We have additionally shown that the releases from a suction dredge are always below the established rates for Hazardous wastes. So the question becomes the cumulative effect of dredgers on wildlife.

An accurate measure of this impact is the sampling of biota as conducted during the Fleck study, unfortunately such a study in the field has so many variables it becomes impossible to determine the proximate cause, but it is fairly easy to demonstrate that the river itself contributes far more mercury than all of the dredgers could possibly contribute.

The MeHg study and analysis in the DSEIR, while likely accurately measuring the MeHg in tissue of various insects are incorrect in a number of ways.

We'll start with fish.

Page 4.2-47 reports that Rainbow Trout measured Hg levels were .17ppm versus the national average of .11ppm, however the DSEIR report is misleading as the averages provided by the US EPA provide wide bands of averages. To select only the lowest amount is deceptive and tends to skew the readers opinion of the issue. After 40 years of dredging it appears the real impacts on fish species are quite low. If the effects on re-suspension were as drastic as the report claims we would expect to see much higher levels.

Table 2-1
Range of Average Mercury Concentrations (ppm) for Major Fish Species in the U.S. in 36 States and DC, 1990-1995

Carp	0.061 -0.250	White sucker	0.042 - 0.456
Channel catfish	0.010 - 0.890	Largemouth bass	0.101 - 1.369
Smallmouth bass	0.094 - 0.766	Walleye	0.040 - 1.383
Brown trout	0.037 - 0.418	Northern pike	0.084 - 0.531

Figure 19. US EPA Ranges of Average Mercury Concentration

For perspective we need to understand that in rivers where gold dredging is taking place the measured MeHg levels are almost without exception within the ranges of measured levels across the United States as provided by the US EPA table in Figure 19. It's important to note that the single biggest contributor of MeHg to the environment is power plants (approximately 70%). The prevailing winds and rain patterns deposit the MeHg in the Sierras. There is no verifiable link to dredging in the DSEIR table.

The above table is compared to the DSEIR provided table:

TABLE 4.2-3. WATER BODIES IN CALIFORNIA WHERE OEHHA CONSUMPTION ADVISORIES HAVE BEEN ISSUED FOR MERCURY IN ASSOCIATION WITH HISTORIC GOLD MINING

Water Body	Species with Highest Mean Tissue Concentration (n >= 6)	Highest Species Mean Tissue Concentration (mg/kg, wet weight)[1]	N [2]	Region
Lower Feather River	Striped Bass	1.27	6	5
Englebright Lake	Bass	0.45	56	5
Camp Far West Reservoir	Largemouth and Spotted Bass	0.85	38	5
Lake Combie	Largemouth Bass	0.9	19	5
Rollins Reservoir	Channel Catfish	0.36	13	5
Lower American River	Largemouth Bass	0.81	48	5
Lake Natoma	Channel Catfish	1.474	11	5
Lake Folsom	Spotted Bass	0.71	16	5
Cosumnes River	Crappie	1.38	11	5
Lower Mokelumne River	Pikeminnow	0.82	11	5
Lower Sacramento River and North Delta	Smallmouth Bass	0.86	13	5
Central and South Delta	Largemouth Bass	0.3	369	5
Trinity River Watershed	Largemouth Bass	0.55	24	1

Figure 20. Table 4.2-3 from the DSEIR for Mercury Concentrations

As mg/kg is the same as ppm no conversion is necessary. Comparing only largemouth bass you can see that they are within the ranges for the U.S. including areas where gold mining is not taking place. Table 4.2-3 may be interesting, but it is deceptive to use this table as a premise that gold mining is causing these levels of MeHg. The table also provides only the "highest mean concentration."

The DSEIR references the Fleck analysis of larval MeHg levels during 2007 and 2008. The statement on differences in MeHg levels is based on no differences between the water years except for dredging being banned in 2008. Let's take a closer look at this conclusion and test the validity of a two variable hypothesis where the two variables are suction dredges and flood events – can we only look at these two variables and determine a conclusion? Let's see.

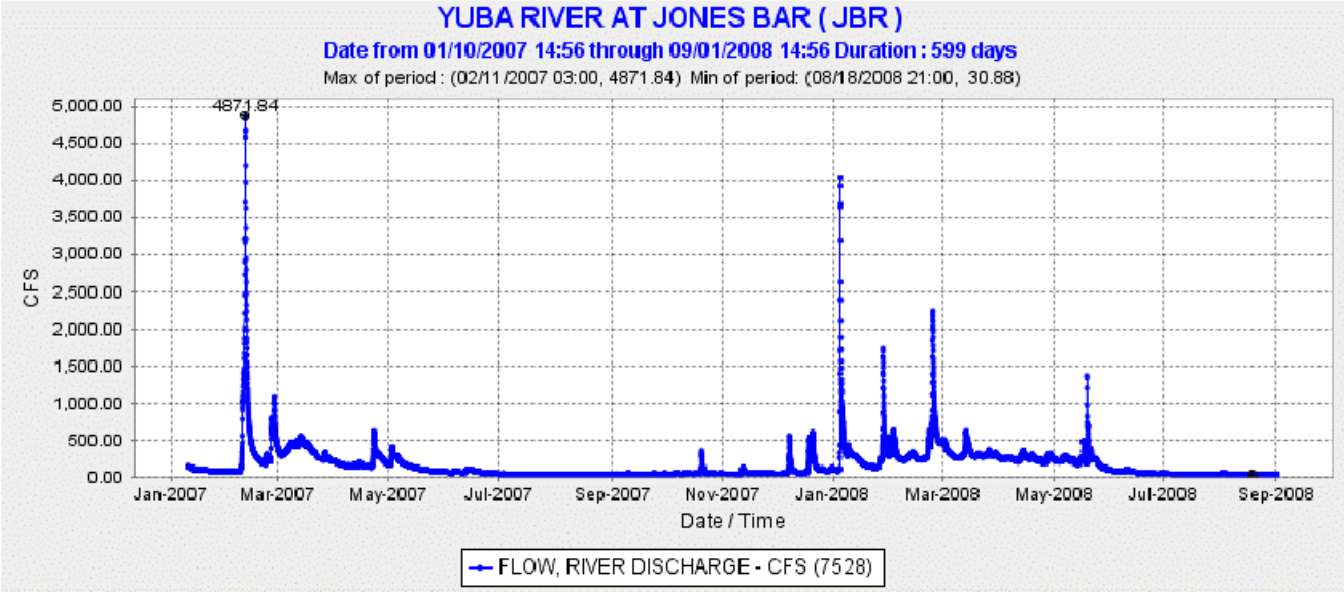


Figure 21. Water Years 2007 and 2008 at Jones Bar Measuring Station

When conducting a study it seems somewhat unscientific to simply say qualitatively that the two water years were the same. The above chart shows the water years were not the same. Water year 2007 had a spring flood event that was 20% higher than the spring flood event in 2008, surprisingly almost the same difference as measured in MeHg.

Differences are summarized in Table 17.

Measurements from 2007 to 2008 of MeHg in Biota					
	Average 2007	DEVSQ	Average 2008	DEVSQ	% Difference in MeHg yr to yr
Water Strider	148.6	18017.0	85.7	3919.0	0.42
Dragonfly	61.5	4219.0	30.3	886.0	0.51
Cadissfly	27.6	435.0	20.0	294.0	0.28
Stonefly	68.2	2179.0	48.9	2486.0	0.28
River Flood (cms)	4871		4000		0.18

Table 17. Decreases in MeHg from 2007 to 2008

The source data for Table 17 is provided in the Fleck Report. Fleck does not provide the detailed source data – only the average MeHg for a certain number of collected species. It is difficult to determine, lacking precise data if the differences are meaningful or if they are attributable to sampling locations or time of the year. The square of the deviations presents yet another problem – there is a high variability about the mean of the samples collected but there seems to be consistently higher variability in the 2007 data than the 2008 data. It's truly hard to make sense of this data and I would need to examine

the source data to make some type of conclusion. The only meaningful conclusion one can make of this data is there was a much higher variance in measured MeHg in 2007 than was found in 2008 and the differences, statistically, can't discount the effect of the spring flood.

The spring flood events as shown in Figure 21 provide yet another variable: the timing of the floods. While above we looked at differences in MeHg compared to the samples from year to year we can see the timing of the floods – which would discharge mercury are different. In 2007 the flood event occurred on 11 February while in 2008 the event occurred on 4 January. This is significant when you compare it to the timing of hatches in the Sierra Nevada. Overlaying the spring flood events with the hatches presents yet another variable not considered.

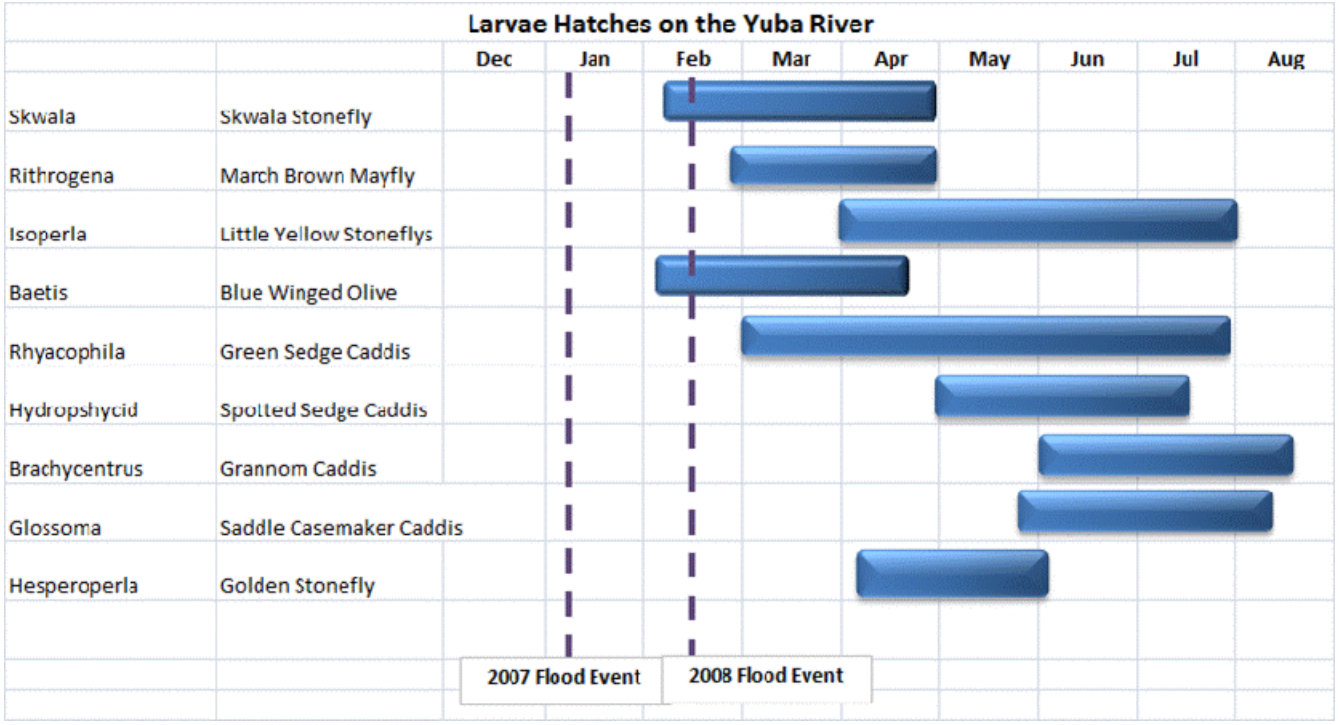


Figure 22. Spring Hatch Events

The timing of floods and the impact of MeHg on larvae needs to consider the timing of the hatches to make sense of the MeHg results. In this case the February flood occurred during a major hatch and just prior to the start of most hatches. The January flood would have had no impact on any hatches. Hatches are a difficult subject as they will be relative to elevation, but the point is the timing of the hatch is important in respect to flood events. Different sub-species will hatch at different times and the age difference of the larvae can show considerable variance. It's just too simple to compare year to year and conclude the only variable that changed was the presence of suction dredges.

Flood Event Contribution to Hg Loading

The impact of flood events is discounted in the DSEIR. During the Fleck study they measured the THg release from Humbug Creek and the South Yuba River so we can do analysis using that data. While the Fleck report labels the event a "storm event" from the chart below I think we can agree it was a flood event, especially in relation to the water data presented for 2007 and 2008.

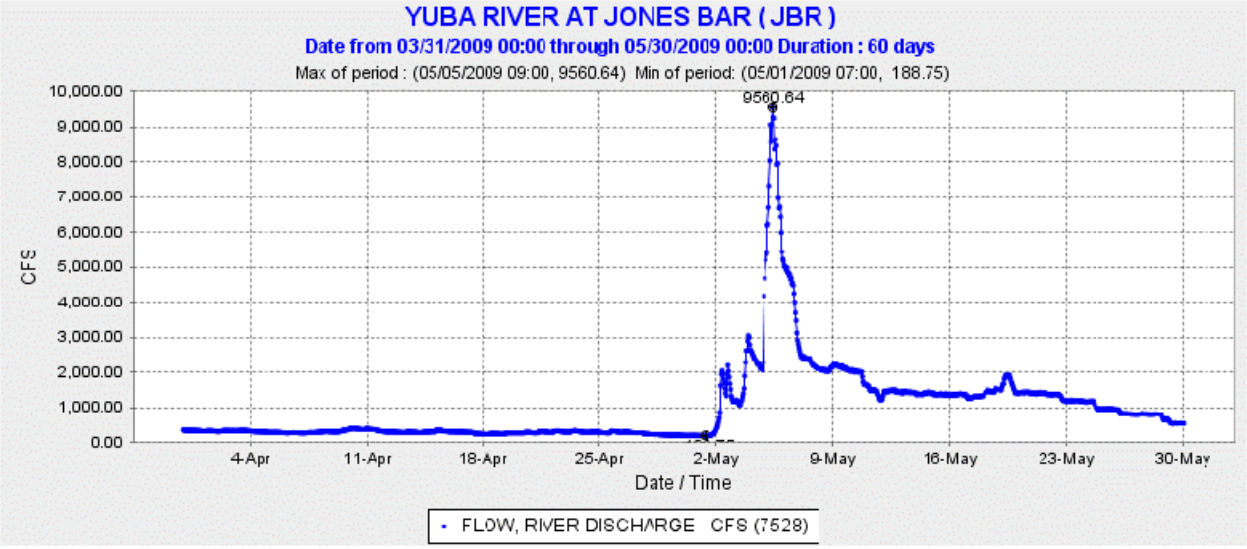


Figure 23. Graph of Flood Event for 5 May 2009

Interestingly 2009 was an active water year, in addition to the chart above the other flood events for that year are shown below.

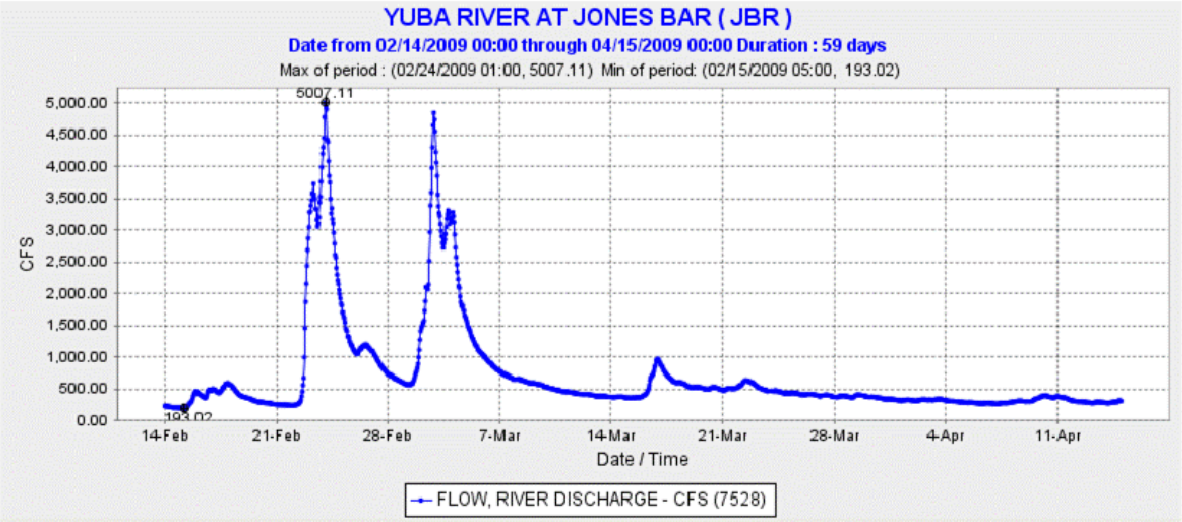


Figure 24. Flood Events for 2009

The size and timing of the floods in 2009 appear to coincide with the hatches. I would speculate that 2009 measured MeHg levels will be higher than 2007 and the variance amongst collected specimens will be tighter.

There are no water measurements for volume of flow for Humbug Creek but the Fleck study collected point samples (unknown how many, time of day, flow rate at the specific point or flow rate of Humbug Creek). However, given all these variables that weren't collected it's still of value that they collected Hg samples from the river at flood stage. To estimate Humbug Creek I used 500cfs – about 5% of the flow of the S. Yuba River during the flood event – likely this is low.

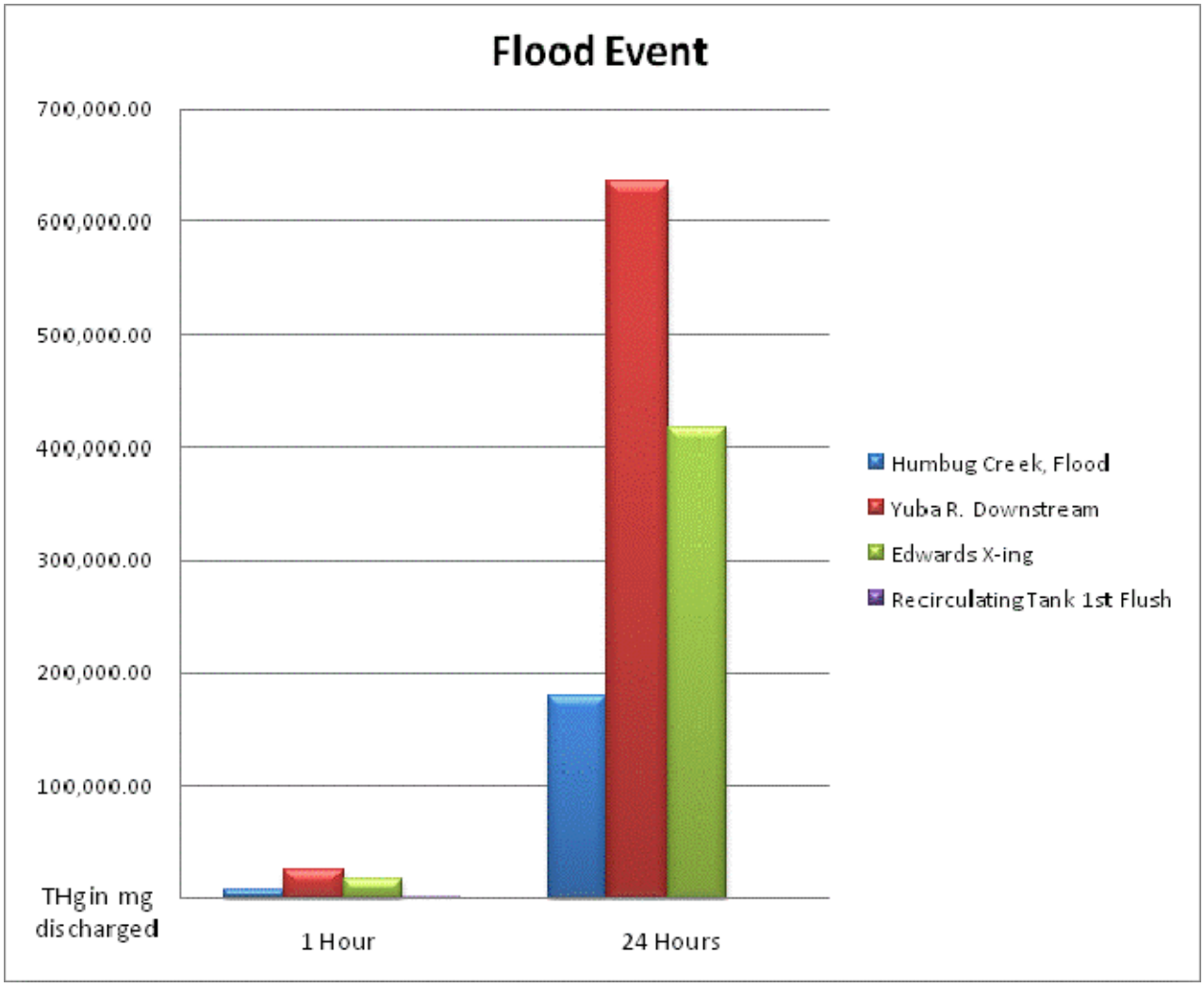


Figure 25. May 5th Flood Event

Conspicuously absent from the DSEIR is any analysis of the flood event reported by Fleck. Samples were collected of the 5 May 2009 event and analyzed for mercury content. The peak of the flood was near 0800 on 5 May. Given travel time to the site it is likely that samples were taken after 1200,

approximately 1,000 cfs below the peak. It is commendable that they took these samples. The resulting analysis in comparison to the dredge output, and the output from the recirculating tank experiment is shown in Figure 25 above.

The estimation of the recirculating tank experiment is provided above assuming the flow output of the dredge over one hour with the contamination levels measured in the tank. The output from the tank is a mere fraction of what is output naturally. As mentioned earlier to output that amount of material from the <.063 material would require an exponential increase in time required. It's impossible to do but is provided as a comparison to the natural event. The summary calculations used in the graph are provided in Table 18.

	1 Hour Event in mg/hr	24 Hour Event in mg/hr
Humbug Creek Storm Event	7566	181585
Yuba River, downstream, Flood	26488	635701
Edwards Crossing	17373	416964
Recirculating Tank first Flush	85	NA

Table 18. Hg Produced through Natural Storm Event on 5 May 2009

The full calculations are provided in Table 19.

STORM EVENT CALCULATIONS								
	TSS mg/l	TSS g/l	liters to make 1 gram	THg ng/g	THg ng/l	Peak Flow m3/s	Peak Flow liters/second	THg ng/l second
Humbug Creek Storm Event	135	0.13500	7.41	556	75.06	28.0	28,000	2,101,680.00
Yuba River, downstream, Flood	75	0.07500	13.33	362	27.15	271	271,000	7,357,650.00
Edwards Crossing	42	0.04200	23.81	424	17.81	271	271,000	4,825,968.00
Recirculating Tank first Flush	95	0.09500	10.53	407	38.67	0.608	608	23,508.32
Note 1: TSS and THg measurements are provided by Fleck								
Note 2: Added the values collected for less than .063 and .0003 to .063mm from source data for total								
Note 3: Maximum material possible to move by dredge is 8 cubic yards (6.08 cubic meters) which represents 10% of volume								
Note 4: To achieve water volume of dredge multiplied 6.08 cubic meters /								
Note 5: Peak flow measured at JBR for 5 May was 9580 cfs which equals 271.27 cubic meters								

Table 19. Storm Event Calculations

As opposed to the conclusions reached in the DSEIR – a single storm event indicates that one flood can produce the entire natural watershed load for the year. Again, this isn't mentioned, I would think it would be relevant. The only conclusion you can reach from this data is our time would be better spent limiting the number of storm events to one every 1.5 years than we would limiting the number of dredgers to 4,000.

Finally, the DSEIR makes the unsubstantiated claim that on page 4.2-52, lines 8-10, ***"Suction dredging operators may target deep sediments [i.e. those too deep to be available to scour under winter flows], and thus mobilize sediment that may not be mobilized by typical winter high flow events."***

This statement is not substantiated anywhere in the literature and disregards the "storm" event of May 5th that showed the single natural load of the watershed is produced in 24 hours. Secondly, the DSEIR disregards the Humphrey finding that mercury actually moves during low flow events***. "Post dredge test inspections show that during low flow periods (200cfs) sediment does not travel over the bedrock hump. But post dredge test inspections also showed that mercury had re-deposited on the bedrock that had been dredged clean." [Humphreys 2005].***

Anyone who has ever played with mercury as a kid knows that mercury, as a liquid metal and being nearly as dense as gold, will travel by gravity and will fragment and recollect. It is completely false to believe that mercury is not constantly reacting to the forces of gravity in a stream, regardless of flow events. Mercury moves during all stages of the river. Dredges remove this mercury prior to its remobilization.

RECOMMMENDATIONS:

Eliminate the mercury studies and analysis from the final DSEIR based on limited data and analysis of an exceptionally complex topic requiring considerable additional study that incorporates a much higher variable consideration.

Evaluate the ability of a "flare jet" dredge to recover mercury – it is likely higher than the 98% reported by Humphrey's as a flare jet reduces the flow of water into the header box which should result in less flouring.

The proposed program limitation of permits to 4,000 is not based on evidence, scientific studies or facts. All data and analysis shows no reasonable number of dredgers could approach natural loading of the rivers – continue with the current (1994) program with no limits on permits or nozzle sizes.

There is no basis to limit either the nozzle size or the number of permits based on mercury analysis.

Future studies should structure their experiments more carefully and the analysis of the data should be accomplished without bias.

LIST OF REFERENCES

1. Humphreys et al, 2005 "Mercury Losses and Recovery during a suction dredge test in the South Fork of the American River."

2. Fleck, et al, 2010, USGS Report 2010-1325A, "The effects of sediment and mercury mobilization in the South Yuba River and Humbug Creek Confluence Area, Nevada County California."

3. Mercury Report, August 2002, California Department of Toxic Substance Control

4. Silva, Michael, Placer Gold Recovery Methods, Special Publication 87, California Department of Conservation, Division of Mines and Geology, 1986

5. California Environmental Protection Agency, Sacramento – San Joaquin Delta Estuary TMDL for Methylmercury, Staff Report Draft, February 2008

SUCTION DREDGE PERMITTING PROGRAM
Draft Subsequent Environmental Impact Report (DSEIR)
Comment Form

Name: Sam Manganello

Mailing Address: PO Box 7462 Citrus Heights CA 95621

Telephone No. (optional): 916-721-7559

Email (optional): psman@quiknet.com

Comments/Issues:

We spend alot of time around Sonora area. In one of the creeks there are 180 cattle grazing on forest land. As the water levels go down in the creek the water changes. 5 years ago there were trout in the creek. The cow pee & poo get really bad as the water goes down. There has been an increase of Pot being grown in the area. The numbers of plants found by law can attest to this. Would like to see the miners not be punished because of the poisons the growers dump into the waters. Please consider these things in the Stanislaus National Forest area where we are seeing this.

Thank You Sam

Please use additional sheets if necessary.

SUBMIT WRITTEN COMMENTS (POSTMARKED BY 05/10/11) TO:

Mail: Mark Stopher
California Department of Fish and Game
601 Locust Street
Redding, CA 96001

Email: dfgsuctiondredge@dfg.ca.gov

Fax: (530) 225-2391

Questions? Please call us at (530) 225-2275 • More information: www.dfg.ca.gov/suctiondredge

5-2-11

JIM MOIR
93 CASCADE RD.
W. HENRIETTA, NY
14586

MARK STOPHER
ENVIRONMENTAL PROGRAM MANAGER
CALIFORNIA DEPT. OF FISH AND GAME
601 LOCUST ST.
REDDING, CA, 96001

DEAR MR. STOPHER

I AM IN FAVOR OF KEEPING 1994 DREDGE REGS. THEY SEEM TO WORK WELL. I AM SEEING GOOD REPORTS FROM CDFG ABOUT STRONG SALMON RUNS.

I ALSO BELIEVE THE SACRAMENTO RIVER SHOULD BE OPEN TO DREDGING.

SINCERELY

Jim Moir

Mark Stopher
California Department of Fish and Game
601 Locust Street
Redding, CA 96001
Fax: (530) 225-2391 E-mail: dfgsuctiondredge@dfg.ca.gov

Dear Sir,

Please consider my following comments regarding the SEIR and Proposed Regulations for suction dredge mining in California:

SEIR Baseline is wrong: I take strong exception to the Department using an arbitrary and misleading baseline within the SEIR in an underhanded attempt to make the impacts from suction dredging appear greater than they really are, and in an attempt to marginalize the serious economic and social impacts to Americans which would result from your proposed regulations. You should use a proper baseline that is based upon existing dredge and small business activity under the 1994 regulations during the season before the moratorium was imposed.

Mercury is not a problem: Your SEIR relies unreasonably upon the unfounded conclusions of Charles Alpers' who has allowed his personal political agenda get in the way of real science. The SEIR does not give enough weight to the discovery by Rick Humphries Report of California Water Resources Control Board that normal gold dredges are effective at recovering at least 98% of the mercury from the bottom of California's waterways.

The SEIR does not acknowledge, based upon your own survey results, that suction dredgers have been removing over 7,000 ounces of mercury or more every year under the 1994 regulations from California's waterways. That amounts to 98,000 ounces during the 14 years we operated under the 1994 regulations! Adoption of the SEIR position would be fundamentally unreasonable in a context where the mercury is inevitably migrating downstream to areas where it is believed to be potentially harmful.

Since California State agencies are doing nothing to remove mercury from California's active waterways, it is grossly irresponsible to point the finger at suction dredgers who are the only ones that are removing the mercury, at no cost to the taxpayers!

Rather than reduce the amount of mercury which we are removing from the ecosystem, the responsible approach for State agencies would be to create a collection system in California which rewards dredge-miners for collecting and turning in mercury.

Identification requirement: The proposed regulations should allow visitors from other countries to use a foreign passport or driver's license as identification so they can apply for nonresident suction dredge permits. Otherwise, California will be discouraging the many visitors which we already receive that like to do their gold prospecting here.

DFG should not limit the number of suction dredging permits: There is no evidence presented in the SEIR that 14 years of dredging under the 1994 regulations ever harmed a single fish, much less threatened the viability of an entire species. What if I want to operate a dredge in some part of California where there would not be a deleterious impact? A limit on permits may prohibit me or someone else from using a suction dredge without a viable reason.

Allowing additional dredge permits after site inspection: In the event that DFG decides to impose (reasonable) limits in a blanket statewide permit program that will allow for most suction dredgers, I do not believe DFG has the authority to declare a wholesale prohibition to dredge mining in the other vast areas which exist on the public lands that would not be covered by the blanket permit. DFG has a site inspection mechanism allowing you to consider more individualized impacts in areas, and during time periods, when and where dredging would not be allowed in a statewide program.

Onsite inspections should be immediately signed off when approved: There should not be a delay in signing off on a site inspection in cases where DFG officials cannot identify a deleterious impact. There should be a time limit in the regulations in which the application will be approved or disapproved. Due process should be allowed if I desire to appeal an application which has been disapproved.

Prior existing rights on permit acquisition: There must be an allowance for prior existing rights on a limited permit program. Otherwise, dredge-miners who have already invested in property and equipment could potentially lose our prior existing right to work our mining claims or other mining opportunities (belonging to an association that provides access to mining property).

Statewide permits, if limited, should be transferable: Permits should be transferable if there is going to be a limit on the number allowed under a statewide program. Otherwise, miners will make the substantial investment into developing a viable mine and then not be able to transfer ownership to someone new who will be able to dredge it, therefore losing some or most of the value.

DFG should not further-limit the size of dredges under the statewide permitting program: I do not believe that DFG has the authority to step onto the public lands and impose a permit restriction upon the productive capacity of my dredge without also coming up with specific reasons why existing capacities under the 1994 regulations are creating a deleterious impact upon fish. Please leave nozzle restriction sizes as they were in the 1994 regulations.
The regulations should also allow a wear tolerance factor on nozzle restrictor rings. I suggest 3/8 of an inch (diameter) is reasonable.

Allowing larger-sized nozzles after site inspection: If a dredger wants to operate a dredge having a larger nozzle than is allowed under a statewide permitting scheme, the Department should allow the activity as long as no deleterious impact can be determined though a site inspection.

DFG should not further-limit the places where dredging is allowed: This proposal is just supported by your "precautionary approach." Except for those areas where you can demonstrate that a deleterious impact has been created under the existing regulations, please leave our seasons as they have been since 1994.

Gold miners should be afforded due process, and should be allowed to proceed in areas which are not allowed under a statewide permit, as long as a site inspection cannot turn up evidence of a deleterious impact.

Reduction of our existing dredging seasons is unreasonable: I do not see that the SEIR contains evidence of a deleterious impact upon fish to support the reduction of existing dredging seasons that are in the 1994 regulations. This proposal is only supported by your "precautionary approach." Except for those time periods where you can demonstrate that a deleterious impact has been created under the existing regulations, you leave our seasons as they have been since 1994.

The proposed 3-foot rule is unreasonable: The SEIR has not presented any real evidence that dredging within three feet of the streambank has ever harmed a single fish. This prohibition would prevent beginners, non-swimmers or children from starting closer to the shore where water is shallower and more safe. Prohibiting dredging within three feet of the edge of the river will eliminate a significant portion of the operational value (perhaps even all of it) on some dredging properties.

It would be more productive to provide better language describing what the "bank" is in relation to dredge mining. For example, is there a "bank" in relationship to a gravel bar out in the waterway that is partially out of the water? What about a bar alongside the waterway that is submerged during the spring, but emerges more and more out of the water as the dry season evolves? Existing language is not clear enough. The proper answer is to clear that up, rather than impose an additional buffer zone which reduces our mining opportunities.

Suction dredge regulations should not impose the requirement of Section 1600 Agreements: Fish & Game Section 5600 already allows a site inspection mechanism for the Department to determine if a dredging program is deleterious to fish. Therefore, also imposing a Section 1600 requirement upon dredgers who wish to mine at a time or location that is otherwise closed, or to use larger nozzle than is allowed under a statewide permit, when there is little or no chance the dredge project will create a substantial impact upon the bed or bank of the waterway, would be an unreasonable imposition upon dredge-miners. Nobody else in California is required to pursue a Section 1600 permit until their activity rises to the level of requiring one. It should not be any different for suction dredgers.

This also applies to the use of power winches, which provide the only safe and efficient means of progressing when some rocks are too heavy to move by hand, or they cannot be rolled over other rocks that are in the way. You should not impose a 1600 Agreement requirement upon a gold dredger unless the surface disturbance rises to the level which triggers Section 1600 of the Fish & Game Code.

Imposition of the 3/32-inch intake requirement on pumps is unreasonable: The 1994 regulations already prohibit dredge operation at times when fish may be too small to swim away from pump intakes as they are already being manufactured.

Most dredges today are being produced using 3/16th inch or 15/64th inch holes for the pump intakes. To avoid conflict, you should adopt something larger than the two hole sizes which are already being used on most dredges in California.

Allowance of permit locations must be more broad: Since existing regulations already set the times and places where dredging is not deleterious to fish, I do not see any practical reason to force dredge-miners to inform DFG exactly where they are dredging – and then hold them to the location unless the permit is amended.

Since I intend to prospect, I will not know the exact locations where I will be dredging at the time I apply for my permit. You should broaden the location requirement in your permit application to naming the waterways where I intend to work. This will allow me some flexibility to move around in search of gold without having to make an expensive trip to the closest Department license sales office to amend my permit.

The proposed dredge marking system is not workable: There is no practical way of attaching a sign to a small dredge! What does this have to do with preventing a deleterious impact upon fish?

If you must have an identification number on my dredge, you should eliminate the requirement of 3-inch number and allow the numbers to be marked either on the pontoons or the sluice box, but only if it is possible to do so. This would allow smaller numbers in the case of smaller dredges.

Fuel should be allowed within 100 feet of the waterway if kept within a water-tight container or a boat: I question your authority on placing any requirement upon suction dredgers in this matter, other than to prohibit the spillage of fuel. Millions of boaters all over California are allowed to keep fuel safely in their boats. Your proposed regualtions would prohibit suction dredgers from doing the very same thing!

There are plenty of effective ways to prevent fuel from leaking into the waterway without making a dredge-miner hike 100 feet up the embankment. At the very least, fuel can be placed inside of a boat, or inside a sealed catch tub of some kind up on the embankment to prevent leakage. These catch tubs are already routinely part of a dredge program to assist with cleanup of concentrates.

Disturbance of mussel beds: It is unreasonable to propose that every suction dredger must now do a survey before dredging to make certain that there is no place within 30 feet downriver where more than 40 muscles per square yard exist before dropping tailings! Some rivers are so inundated with muscles; this imposition would amount to a suction dredge prohibition in a large part of the waterway! And why, since there are so many? How does the protection of mussels from dredge-miners conform to the language of Section 5653? Please drop this silly mussel idea from final regulations.

Returning the site to the pre-mining grade to the greatest extent possible: Since it is impossible to move tailings and rocks upstream against a swift current, the requirement to fill in our holes and level off our tailings is unrealistic.

Ample evidence shows that salmon are less likely to place their redds in a heaped tailing pile, than they are on a pre-mining grade which is inundated with unstable gravel; so your proposal will actually create more harm than good! The dredge holes which I leave behind create cool water refuges where salmon and other fish hold up during the warm summer months. My piled cobbles create protected habitat where fingerlings can hide from predators. It would be better for the fish if we just allow Mother Nature to settle things out in the next storm event.

Dredge mining between one half hour after sunrise to sunset: Your authority is limited to preventing a deleterious impact upon fish. Please drop this from proposed regulations and leave this particular concern to local authorities where it belongs.

Thank you very much for giving careful consideration to my comments and suggestions!

Sincerely,

Charles Pankey P.O. Box 2621 Lapine, Or. 97739 May 2, 2011

Name and Address Date

PS. Please except this letter as my own words and thoughts.

Mark Stopher EIR Suction Dredging Comments

The 1994 dredging regulations without change would be preferable.

PERMITS

Set aside the number of required permits for the claimholders or a reasonable time for them to obtain them. It is very improtant as a claim holder for me to obtain one.
It is preferable that no numerical limit be imposed.

NEW RIVER

I ask that New River in Trinity County be allowed a 6" intake at the nozzle (old regs were an 8" nozzle).

TAILING PILES

Leveling of tailing piles should not be required. New River (Trinity Co) during a normal winter will return to pre-dredging aesthetics. Leaves and woody debris fill dredging areas with subsequent sand, cobbles and small boulders. This fill from higher water flow forms an ideal habitat for aquatic worms and other aquatic life. Unless I have marked these areas, it is hard to determine previous dredging operations (I have observed the aquatic life when I have gone into a previously dredged area).
One beneficial aspect on New River was an area I dredged that the following year was designated a potential spawning area - it was not a spawning area until after I dredged it.

NOISE & AESTHETICS

These should not be an issue. There are plenty of zone "A" areas and miles of Rivers unused by dredgers as well as many thousands of acres of wilderness for the people that don't like dredging to go to.

WATER LEVEL

Dredging current water levels is preferable to an arbitrary three feet. Rather it should read no dredging within three feet of frog eggs.
Fishermen complaining about dredger holes is hard to believe as rivers go from shallow to natural holes on their own. They need to pay attention to natural as well as man made.

Charles Picard
4775 Goodwater Ave
Redding CA 96002
530 222 3102

Mark Stopher
California Department of Fish and Game
Suction Dredge Program Draft SEIR Comments
601 Locust Street
Redding, CA 96001

Please take notice that I am the owner of the Magic Bar claim, located on Dutch Creek in Trinity County (Bureau of Land Management CAMC # 294346). I have reviewed your proposed regulations for suction dredging, which appear to forbid any and all suction dredge mining on my claim. Because suction dredging is the only practical method of mining the valuable underwater gold deposits on this claim, you are proposing to forbid all mining on my claim.

This is a violation of federal law forbidding material interference with my federally-protected mineral rights, and also constitutes an unconstitutional taking of my private property without just compensation.

I urge you to reconsider your proposed regulations. This area had strong fish runs for decades during and after hydraulic and other large scale mining, and there is no credible case whatsoever for harm to fish from small-scale suction dredging operations. A single fisherman with a good day on the river causes more damage to fish than all the suction dredge miners put together, and you allow the fishing. Focusing environmental regulation on an activity like suction dredging, which actually improves fish habitat, discredits your regulatory role generally.

If you do not reconsider, and allow me to mine my claim, you may rest assured that I and other miners will hold you accountable in the courts for your outrageously unlawful and arbitrary decisions.

Sincerely,

Dorothy M. Pippin

Mark Stopher
California Department of Fish and Game
Suction Dredge Program Draft SEIR Comments
601 Locust Street
Redding, CA 96001

Please take notice that I am the owner of the Magic Box claim, located on Dutch Creek in Trinity County (Bureau of Land Management CAMC # 294346). I have reviewed your proposed regulations for suction dredging, which appear to forbid any and all suction dredge mining on my claim. Because suction dredging is the only practical method of mining the valuable underwater gold deposits on this claim, you are proposing to forbid all mining on my claim.

This is a violation of federal law forbidding material interference with my federally-protected mineral rights, and also constitutes an unconstitutional taking of my private property without just compensation.

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Sincerely,

Highland Pippin
19902 Little Acres
Redding Ca. 96003

Michael Elsohn Ross P.O. Box 295, El Portal, CA 95318

May 2, 2011

John McCammon
California Department of Fish and Game
1416 Ninth Street, Room 1207
Sacramento, CA 95814

Dear John,

It's been quite a long time since we celebrated New Years together at Art and Phyllis' house in El Portal. I'm writing to you regarding my concern for the health of the Merced River if suction dredging for gold is once again permitted in California rivers and streams. At a time when we are struggling to protect endangered fish, bird, amphibian, and aquatic mammal populations it would be catastrophic to once again allow this harmful practice.

In Mariposa County river dependent sports, such as white water kayaking and rafting, fishing, and swimming would be impacted by not only the physical presence of dredgers and their equipment, but the detrimental effect they have on aquatic invertebrates which are the basis of the river and stream ecosystems and high water quality which is a basis of recreational activities.

"The potential significant effects on the environment from suction dredging include impact to: (a) benthic (bottom dwelling) invertebrate communities, (b) fish and fish eggs, (c) other aquatic or riparian dependent plant and animal species, (d) channel morphology which includes the bed, bank, channel and flow of streams and rivers, (e) water quality, and (f) riparian habitat adjacent to streams and rivers." According to a report of the Xerces Society

I was recently in Bangladesh where there is one of the largest confluences of river systems on the planet and one of the most degraded in terms of water quality. It was heartbreaking to see the turbid murky waters that the Bangladeshi people have to drink and bathe in. We cannot afford to sacrifice the high quality of our water, the health of aquatic ecosystems, and jobs related to the recreational resources of our rivers for the operation of suction dredges.

I urge you to continue the ban of suction dredging in California.

Sincerely,

Michael E Ross

SUCTION DREDGE PERMITTING PROGRAM
Draft Supplemental EIR - Comment Form

Name: PAUL J. SPRENKLE
Mailing Address: 2182 AUSTIN AVE.
CLOVIS, CA. 93611
Telephone No. (optional):
Email (optional): SPRENKLE38@COMCAST.NET

Comments/Issues:

DEAR MARK, YOU KNOW AS WELL AS I DO THAT DREDGING DOES NOT HARM FISH OR ANY OTHER AQUATIC SPECIES.

I DREDGED THE MERCED RIVER FROM 1963 UNTIL BLM CLOSED IT. TO THIS DAY THE RIVER IS THE SAME AS IT WAS FORTY YEARS AGO.

I CAN PROVE THAT DREDGING DOES NOT HARM FISH, AND YOU HAVE NOT PROVED THAT IT DOES.

I THINK THAT THE FISH AND GAME, BLM, AND THE FORESTAY ARE PART OF THE ENVIRONMENTAL GROUP THAT WANTS TO CLOSE THE RIVERS, MOUNTAINS AND THE DESERT TO THE AMERICAN PEOPLE.

THANK YOU

Paul J. Sprenkle

Please use additional sheets if necessary.

SUBMIT WRITTEN COMMENTS (POSTMARKED BY APRIL 29, 2011) TO:

Mail: Mark Stopher
California Department of Fish and Game
601 Locust Street
Redding, CA 96001

Email: dfgsuctiondredge@dfg.ca.gov **Fax:** (530) 225-2391

Website: www.dfg.ca.gov/suctiondredge

Questions? Please call us at (530) 225-2275

Suction Dredge Permitting Program

Comments

Turbidity

Any reasonable person who has observed a river, creek or stream during a flood or high water event that can last for months at a time could not possibly believe that the flume coming off the back of a dredge could be in anyway deleterious to fish. If turbid water harmed fish there wouldn't be any fish. The flume off the dredge which your own study shows it clears up in a short distance may appear turbid when compared to the clear water on a nice summer day. In reality the flume is quite clear when compared to a flood event.
Any fisherman knows that fish seek out and hide in the cloudy areas of the waterway. There is nothing in the flume coming off the back of the dredge that is harmful and not already in the waterway.

Mercury

Making statements that the mercury in the waterways is from old time mining activities and not including the fact that mercury is there naturally taints the public's views on modern day mining. Such a one sided erroneous statement coming from a government source adds credibility and ammunition to those that oppose dredging. Many people believe this misinformation and think that dredgers are currently contaminating the waterways with mercury. Although some of the mercury is from the old timers it is a very small percentage since most mercury in the waterways is natural. Rivers all over the world with no history of mining contain mercury. In fact Salmon is not even high in mercury compared to many ocean fish that never enter the waterways. Most everything in the ocean came from the rivers. Salt in the water and sand on the beaches including mercury came down the rivers and into the ocean. The threat of mercury being disturbed and reintroduced into the waterways by dredging to any extent that could be construed in any way as harmful is impossible. The material disturbed by dredging collectively when compared to the total bottom area and volume of water is so small it can't even be measured. Even water quality experts use the phrase "Dilution is the solution to pollution"

Blanket regulations

The new proposed regulations appeared to be based on a blanket one size fits all policy. It's my impression that its justification is taking the largest dredge and putting it on the smallest waterway. This is not reality or even practical. Know one takes an eight inch dredge into a small stream. Yet the new regulations seem to be based on that this is common place. People working small streams are using small dredges. Words used in your study such as; can, may and could applies to this. Someone may or can or could take a large dredge into a small stream but they don't. It is just not practical and basing the regulation on the assumption that someone may is an injustice.

Yards per hour

Dredge manufactures rate their dredges capability in cubic yards per hour. These figures are highly inflated and not in real world conditions. Even if their figures were correct they are based on dredging sand with no rocks. In reality when dredging most of the time and effort is spent moving rocks by hand and not sucking up material. The material picked up by the dredge is only the small sand and gravel in between the rocks and boulders. Most dredgers may move the amount of material the size of a Jacuzzi in an entire season. Even a commercial eight inch dredge may move the material the size of a backyard swimming pool in an entire season.

Limited entry dredge permits

Previous permit holder should have priority over someone new. Dredgers have made substantial investments in time and money and many cases major lifestyle changes. Many have left established careers and have relocated to facilitate their dredging careers.

Scale of impact

The scale is so small and the impact so negligible that it really can't be measured accurately. The yardage of material dredged compared the total area of river bottom is less than one hundredth of one percent at best. The Klamath River probably has the most activity. During peak season you may see twenty dredges in the 200 miles between interstate 5 and the ocean. Most of those dredges are tied up and not being used except on weekends or a few hours a day. Most dredges are small and the material processed minimal. Many of the dredgers are retired and consider dredging as camping with a purpose. There are a few larger dredges but these are the exception. The impact of a dredge is self limiting due to its extreme physical exertion required to operate. The number of permits issued sound like a lot but only a fraction are actually being used. The permit holders that are able to get out and dredge have lives and jobs and are only able to dredge during their vacation. Between travel time, setting up, breaking it down and travel home again they are lucky to get two weeks in the water. For many this is their family vacation and even though they would love to spend their whole vacation time dredging much of the time is spent doing family things. This is why when you drive the length of the river, the few dredges you do see are tied up and idle. Again, camping with a purpose.

The forests are beautiful and pristine and I understand the concern to keep it that way. Keep in mind that mining has been going on since the original 49ers with tens of thousands of miners working and living in the forests. Yet the forests are still beautiful and pristine. Why would anyone believe that a handful of dredgers could possibly change this even if they tried. Dredgers are environmentalists, that is why they are there. They aren't evil capitalists with big machinery tearing up the forests like the opposition wants people to think. These are people camping and enjoying nature with their little dredges moving a few rocks around. They add nothing and take nothing away. Mother Nature clears up any evidence that they were even there.

Salmon

The 94 regulation closed off areas during the critical months. Even if dredging was allowed during the period when salmon redds are present the effect would be so miniscule that it could not even be measured. There are literally millions upon millions of square feet of river bottom. The square footage equivalent to a bedroom disturbed by a few dredgers over the whole season could not possibly have any affect whatsoever on the Salmon runs.

The real reason for the moratorium

This moratorium is over a dispute with a few members of the Karuk tribe and the New 49er's mining club. The Karuk's are being used by the environmentalists and the new 49er's website is their ammunition.

The New 49er's website is a marketing tool with the purpose of inspiring people to join the club. The club has rules. One rule in particular regarding the density of dredgers per mile of river is being distorted and used against the dredgers by the opposition. The purpose of this rule is to avoid any possible disputes among club members. People have a tendency to set up near someone already there thinking that this must be a good area

.

The opposition implies that this rule is in place because there are so many dredgers in the river that they are literally lined up dredge to dredge up and down the river. The website has photos and videos showing several dredges close together which is more ammunition used by the opposition. These are photos of the group dredging projects which were 5 day programs teaching people how to dredge. Most of the people in these projects can't even dive and collectively may equal one experienced dredger. A few of the people would join the club but most would realize that dredging is more physically demanding than what they imagined and never dredge again. These group dredging projects have been discontinued several years ago. The New 49er's is a fine organization with strictly enforced rules for members using club properties. When it comes to enforcement they error on the side of caution.

Another item on the website that is being used by the opposition is the number of club members. Although members would like to get out there and prospect most rarely ever do. This is quite obvious to anyone who would take the time to go there and see for themselves. There are only a handful of people on the river. The few that are there are concentrated up river of Happy Camp. Down river of Happy Camp is discouraged due to the intimidation by the handful of Karuk's causing trouble. Most of the Karuk's are fine people just like anyone else and many are miners. Take a river rafting trip or even drive Highway 96 which runs the length of the Klamath. It is unlikely that you will see even one miner on the river.

Regulation changes

Even your own research does not justify more restricted regulations. This should be based on facts. Political correctness or compromise for the sake of harmony does not justify more restrictions. The opposition can generate unlimited funds. Money talks but right is right. The politicians will favor the group that can benefit them the most. You have a responsibility and we are depending on you to tell the truth using facts and reality. Not can, could or may. Let the record speak for itself. Moving a few rocks and gravel is nothing more than what happens naturally. Why should dredgers, that do no harm, and with no evidence of harming a single fish be singled out and blamed for poor Salmon runs. Fishermen sport and commercial that kill fish by the hundreds of thousand are not being blamed. I'm not advocating blaming the fishermen. I am a fisherman as well. The fishing groups that pile on top of the dredgers along with the opposition don't have the sense to realize that they are next. The extreme environmentalist certainly don't want fishing either. It's one group at a time. Considering that one hundredth of one percent of the river bottoms has been disturbed by dredging it is impossible that dredging could have any negative effect on the Salmon or any other fish. In addition the previous regulations prevented dredging during the months when Redds are present. There is so much misinformation and assumption generated by the opposition using their unlimited funding. The dredgers can't compete with that and should not have to. The facts and record speak for themselves. We are supposed to be a nation of laws and what is right. We cannot have two wolves and a lamb voting on what they are going to have for dinner.

Respectfully,

Gary Standefer
744 Bennett Ave.
Ventura, CA 93003

805 377-3163
hydrotech@verizon.net