

Proposal Reviews

#74: Assessing the Magnitude of and Developing a Management Program for Excessive Bioaccumulation of Organochlorine Pesticides and PCBs in Delta and Delta Tributary Fish

G. Fred Lee & Associates

Initial Selection Panel Review

Research and Restoration Technical Panel Review

Delta Regional Review

San Joaquin Regional Review

Sacramento Regional Review

External Scientific Review

#1

#2

#3

Prior Performance/Next Phase Funding

Environmental Compliance

Budget

Initial Selection Panel Review:

CALFED Bay-Delta 2002 ERP PSP Initial Selection Panel Review

Proposal Number: 74

Applicant Organization: G. Fred Lee & Associates

Proposal Title: Assessing the Magnitude of and Developing a Management Program for Excessive Bioaccumulation of Organochlorine Pesticides and PCBs in Delta and Delta Tributary Fish

Please provide an overall evaluation rating.

Explanation of Recommendation Categories: Fund

- **As Is** (a proposal recommended for funding as proposed)
- **In Part** (a proposal for which partial funding is recommended for selected project phases or components)
- **With Conditions** (a proposal for which funds are recommended if the applicant contractually agrees to meet the specified conditions)

Consider as Directed Action in Annual Workplan (a proposal addressing a high priority action that requires some revision followed by additional review prior to being recommended for funding)

Not Recommended (a proposal not currently recommended for funding-after revision may be considered in the future)

Note on "Amount":

For proposals recommended as Fund As Is, Fund In Part or Fund With Conditions, the dollar amount is the amount recommended by the Selection Panel.

For proposals recommended as Consider as Directed Action in Annual Workplan, the dollar amount is the amount requested by the applicant(s).

Fund	
As Is	-
In Part	-
With Conditions	-
Consider as Directed Action	-
Not Recommended	X

Amount: **\$0**

Conditions, if any, of approval (if there are no conditions, please put "None"):

None

Provide a brief explanation of your rating:

The proposed project focuses on human health effects as opposed to ecological effects. Further, the proposal generally lacks detail, the goals, objectives, hypotheses are not clearly stated, and the budget seemed excessive to reviewers. Most importantly perhaps, the project may not generate the data necessary for the SWRCB to develop a technical TMDL, which is the main objective of the project.

Research and Restoration Technical Panel Review:

CALFED Bay-Delta 2002 ERP PSP Research and Restoration Technical Panel Review Form

Proposal Number: 74

Applicant Organization: G. Fred Lee & Associates

Proposal Title: Assessing the Magnitude of and Developing a Management Program for Excessive Bioaccumulation of Organochlorine Pesticides and PCBs in Delta and Delta Tributary Fish

Review:

Please provide an overall evaluation summary rating:

Superior: outstanding in all respects;

Above Average: Quality proposal, medium or high regional value, and no significant administrative concerns;

Adequate: No serious deficiencies, no significant regional impediments, and no significant administrative concerns;

Not Recommended: Serious deficiencies, significant regional impediments or significant administrative concerns.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Superior	Overall, this is an ambitious proposal that intends to investigate excess bioaccumulation of organochlorine pesticides (OC) and PCBs in fish from the Delta and its tributaries. The proposal is focused on human health concerns and not on ecological effects, although the authors claim that this work is also important for the protection of aquatic and terrestrial wildlife (page 1, para 2). In general the proposal was lacking in the details required to thoroughly review its merits and intended goals.
-Above average	
X Adequate	
-Not recommended	

1. **Goals and Justification.** Does the proposal present a clear statement of goals, objectives and hypotheses? Does the proposal present a clear justification and conceptual model for the project?

1. Goals and Justification. Does the proposal present a clear statement of goals, objectives and hypotheses? Does the proposal present a clear justification and conceptual model for the project?

The goals, objectives and hypothesis were not clearly stated in this proposal. In fact, these were not formally mentioned in the proposal, making it difficult to determine the purpose. The objective appears to be to support the development of a technical TMDL for OCs; however, some of this work is already ongoing by the author and others. The conceptual model presented in Figure 1 appears to include the overall framework for OC management. It is unclear what information work done under this proposal will add.

2. **Likelihood of Success (Approach, Feasibility, Capabilities and Performance Measures).** Is the project likely to succeed based on the approach, feasibility and project team capabilities? Are the proposed performance measures adequate for measuring the project's success?

2. Likelihood of Success (Approach, Feasibility, Capabilities and Performance Measures). Is the project likely to succeed based on the approach, feasibility and project team capabilities? Are the proposed performance measures adequate for measuring the projects success?

This work seems rather limited. The chemical analyses will be performed on fish fillet, which may be useful for human health risk assessment, but not ecological receptors. The proposal is lacking in some details that would help evaluate its merits. It is likely that much more information than that proposed to be collected under this proposal would be needed to generate the technical TMDL.

3. **Outcomes and Products.** Will the project advance the state of scientific knowledge in general and/or make an important contribution to the state of knowledge of the Bay-Delta Watershed? For restoration proposals, is the project likely to contribute to ecosystem restoration or species recoveries in a significant way? Will the project produce products useful to decision-makers and scientists?

There are likely products of value. Bioaccumulation data, if derived correctly, could be quite useful for determining areas of concern.

4. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

This proposal appears to be quite expensive for the level of work proposed. Because this proposal is intertwined with other ongoing work, it is not clear what is being conducted here and elsewhere. Budget was severely criticized by external reviewer.

5. **Regional Review.** How did the regional panel(s) rank the proposal (High, Medium, Low)? Did the regional panel(s) identify significant benefits (regional priorities, linkages with other activities, local involvement) or impediments (local constraints, conflicts with other activities, lack of local involvement) to this proposal? What were they?

Generally ranked medium by regional panels.

6. **Administrative Review.** Were there significant concerns about the proposal with regard to the prior performance, environmental compliance and budget administrative reviews? What were they?

Prior performance under the directed action umbrella has not been satisfactory. Permitting issues are not addressed. Some budgetary deficiencies were noted.

Miscellaneous comments:

none

Delta Regional Review:

Proposal Number: 74

Proposal Title: Assessing the Magnitude of and Developing a Management Program for Excessive Bioaccumulation of Organochlorine Pesticides and PCBs in Delta and Delta Tributary Fish

Overall Ranking: -Low Medium -High

Provide a brief summary explanation of the committee's ranking:

Overall, the proposal seemed vague and we did not see how it fit in with current management schemes. Available data was not well summarized.

1. Is the project feasible based on local constraints?

Yes -No

How?

Project sampling timed properly for weather conditions. Rest of project is lab analysis and reporting.

2. Does the project pursue the restoration priorities applicable to the region as outlined in the PSP?

Yes -No

How?

OCl Pesticides are specifically listed as a water quality issue in the PSP (MR-5). The PSP calls for studies that increase knowledge about sources, effects, and trends associated with OCl. A management plan for OCl is specifically called for.

3. Is the project adequately linked with other restoration activities in the region, such as ongoing implementation projects and regional planning efforts?

Yes -No

How?

The project is linked through the PIs with current development of a technical TMDL for OCl in Central Valley fish. Also, the project intends to coordinate fish sampling with a similar proposal that will collect fish for Hg studies. The project will also tie in with the IEP database. Information will be shared with another proposed project studying unknown-caused toxicity in the Central Valley or Delta.

4. Does the project adequately involve local people and institutions?

Yes -No

How?

All PIs are local scientists. The PIs have working contact with the City of Stockton and the CVRWQCB through other projects. Both local entities will benefit from this project. No outreach program identified.

Other Comments:

None.

San Joaquin Regional Review:

Proposal Number: 74

Applicant Organization: G. Fred Lee & Associates

Proposal Title: Assessing the Magnitude of and Developing a Management Program for Excessive Bioaccumulation of Organochlorine Pesticides and PCBs in Delta and Delta Tributary Fish

Overall Ranking: Low -Medium -High

Provide a brief summary explanation of the committee's ranking:

The committee reviewed this proposal and ranked it as a low priority for the San Joaquin region. There were concerns about site specificity for sampling, sampling design, which species were to be sampled, and the technical aspects of the proposal.

1. Is the project feasible based on local constraints?

Yes -No

How?

Applicant will be conducting research that will not require Agency/Service permits (ESA 7/10) for listed species. There is no land acquisition or need for obtaining property easements or "access". Local governments and State agencies have been notified. Applicant has broadly described the San Joaquin River Watershed and its tributaries as an area for sampling.

2. Does the project pursue the restoration priorities applicable to the region as outlined in the PSP?

Yes -No

How?

Applicant states that the proposed project will address Multi-Regional Priorities and Action Areas, MR-4 (pesticides). Upon review, the project may address strategic ERP goal #6: Water and Sediment Quality and San Joaquin Region SJ-5 (pesticides and other contaminants) although applicant did not specifically state this.

3. Is the project adequately linked with other restoration activities in the region, such as ongoing implementation projects and regional planning efforts?

Yes -No

How?

Applicant states that the project will be linked to overall CALFED and CVRWQCB goals for aquatic system toxicant reductions in sediments and organisms. Intended to be linked to a few Mercury studies that are ongoing or proposed in the current PSP.

4. Does the project adequately involve local people and institutions?

-Yes XNo

How?

Project has limited contacts with other groups and studies in the multi-regional and regional area as described in the proposal. Little involvement of local groups, stakeholders, and academic institutions for the San Joaquin Region.

Other Comments:

Reviewers had concern with the sampling design, lack of definition to the species to be sampled, and the lack of site specificity for sampling, particularly to within the San Joaquin region.

Sacramento Regional Review:

Proposal Number: 74

Applicant Organization: G. Fred Lee & Associates

Proposal Title: Assessing the Magnitude of and Developing a Management Program for Excessive Bioaccumulation of Organochlorine Pesticides and PCBs in Delta and Delta Tributary Fish

Overall Ranking: -Low Medium -High

Provide a brief summary explanation of the committee's ranking:

Additional information on the principal sources of OCI's would be useful, however, remediation will be difficult (given that most of the chemicals are already banned) and direct benefits of this study to the CALFED ERP program will require much time and more information.

1. Is the project feasible based on local constraints?

Yes -No

How?

Study would use standard, accepted protocols for analysis of OCIs in water, sediment and tissue.

2. Does the project pursue the restoration priorities applicable to the region as outlined in the PSP?

Yes -No

How?

PSP Sac Region Restoration Priority #7 with regard to control of pesticides and other toxicants.

3. Is the project adequately linked with other restoration activities in the region, such as ongoing implementation projects and regional planning efforts?

Yes -No

How?

Appears to be linked to Regional Board efforts to develop a TMDL for elevated OCI's in Bay/Delta fish.

4. Does the project adequately involve local people and institutions?

Yes -No

How?

This monitoring/assessment proposal would not require major involvement of local communities or other institutions but would require a certain level of collaboration with programs such as the SRCA and the SRWP Strategy to Address Unknown Sources of Toxicity.

Other Comments:

Some question regarding the feasibility of remediation or control efforts. If OCI's are now banned and we are seeing environmental residuals from past use, could it be that this is a problem that we will have to live with until it, over time, goes away? Apparently this TMDL will deal with issues like how to deal with dredge spoils and where are the OCI hot spots that could be partially addressed by more aggressive erosion control.

External Scientific: #1

Research and Restoration External Scientific Review Form

Proposal Number: 74

Applicant Organization: G. Fred Lee & Associates

Proposal Title: **Assessing the Magnitude of and Developing a Management Program for Excessive Bioaccumulation of Organochlorine Pesticides and PCBs in Delta and Delta Tributary Fish**

Conflict of Interest Statements:

I have no financial interest in this proposal.

Correct

Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

none

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Excellent	These are the types of proposals that give consultants a bad name. I work both within an academic setting and with state regulators, so I have a pretty good feel for both types of proposals. This effort falls far short.
-Good	
XPoor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

This proposal is very poorly written and, therefore, difficult to constructively review. This reviewer is baffled how such a budget could be prepared.

The goal of this study is to assist the state regulatory agency to develop and refine the TMDL for organochlorine pesticides and PCBs in the San Joaquin/Sacramento River Delta. The regulatory agencies are required by law to do this work, and there are ample pass-through funds from the U.S. EPA to collect the necessary data. Even assuming that this type of work was appropriate for CALFED funding, the experimental design of this proposal is very weak and this project will not significantly improve the management of organochlorines.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

The only justification offered for this proposed study is that organochlorines bioaccumulate and we don't know the relative magnitude of present-day sources. The conceptual model (Figure 1) is bizarre at best, and certainly at odds with USEPA TMDL guidance. The purpose of a technical TMDL is NOT to generate another project! The two objectives of the proposed work (Define OCs in sediment and soil sources and Define areas in which fish have excessive OCs) are core to the original 303(d) listing. To imply that these steps are only done after the TMDL is completed is not correct.

It is true that our understanding of how organochlorines move from soils and sediments into fish is inadequate for managing the bioaccumulation problems. A well-designed field investigation of the underlying processes would greatly reduce the uncertainty. This proposal does not describe any of these processes, nor does it lay out a coherent plan to conduct a scientific investigation.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

The approach is two-fold (1) to sample sediments and soils and use bioaccumulation to determine whether they contain appreciable levels of OCs, and (2) to fill in gaps in the states fish tissue monitoring program. Neither activity can be considered scientific research, and both should be done by the state regulatory agency. No novel methodologies or approaches will be developed. While the first objective might yield some interesting monitoring data, the experimental design is so vague (how many sites?, how are they chosen?, how will the bioaccumulation results be modeled) that it is difficult to tell. The second objective is very straightforward collecting additional fish samples for the monitoring program. It would be far more cost effective to augment the state agencies monitoring budget.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

Both objectives are feasible, but for reasons discussed below could be achieved for much less expense by the responsible agencies.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

The description of performance measures in the proposal does not make sense and suggests that the author has not thought through the experimental design. ...the performance of this project will be the development of information on the sources of OCs.... Developing information is NOT a measure of performance. Assessing the quality of the information is critical.

This reviewer was stunned to read that \$70,000 is requested so that the PI can organize an external peer review of this project. Setting aside the grossly inflated budget request, it is clearly unacceptable to have a PI organize the review of their own work.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

No products of value are likely from this project.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

I can only judge the applicants based on the current proposal, as the results of recent past projects appear to be in reports to agencies. This proposal lacks the scientific specificity required for funding.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

At the core, there will be 50 sediments/soils tested for bioaccumulation and toxicity and 82 fish samples analyzed for organochlorines. The total requested budget is \$763,972, with about one half dedicated for laboratory tests and analytical work. Approximately \$151,000/year is requested for the PIs salaries and benefits. Matching funds take the form of the PI waiving one half of his normal \$250/hour billing rate, making do with only \$125/hour. I understand full well that overhead is included in this hourly rate, but I seriously doubt that any state or federal agency is paying the PI \$250/hour for a research project. \$65,600 is requested to collect fish samples from 41 sites (1,600/site!). On top of all, \$70,000 is requested to hire a peer review committee!

In my 20 years of reviewing proposals, I have never seen such an outrageous budget.

Miscellaneous comments:

External Scientific: #2

Research and Restoration External Scientific Review Form

Proposal Number: 74

Applicant Organization: G. Fred Lee & Associates

Proposal Title: **Assessing the Magnitude of and Developing a Management Program for Excessive Bioaccumulation of Organochlorine Pesticides and PCBs in Delta and Delta Tributary Fish**

Conflict of Interest Statements:

I have no financial interest in this proposal.

Correct

Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

None

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Excellent	Overall, this is a very ambitious proposal that intends to investigate excess bioaccumulation of organochlorine pesticides (OC) and PCBs in fish from the Delta and its tributaries. The entire proposal is focused on human health concerns and not on any ecological effects, although the authors claim that this work is also important for the protection of aquatic and terrestrial wildlife (page 1, para 2). In general I found the proposal lacking in the details required to adequately review its merits and intended goals.
<input checked="" type="checkbox"/> Good	
-Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

The goals, objectives and hypothesis were not clearly stated in this proposal. In fact, none of these were formally mentioned in the proposal, making it difficult to determine the purpose.

Rating--fair

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

The objective appears to be the development of a technical TMDL for OCs; however, some of this work is already ongoing by the author and others. The conceptual model presented in Figure 1 appears to include the overall framework for OC management. It is unclear what information any work done under this proposal will add.

Rating--very good

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

This work seems rather limited. The chemical analyses will be performed on fish fillet, which may be useful for human health risk assessment, but not ecological receptors. There is some bioaccumulation and toxicity testing, although this work is being performed with just one species for each type of testing. Several fish samples are being taken per year; however, it is not clear how fish will be grouped per site. If done properly, this information may be quite useful to decision makers.

Rating--good

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

The proposal is lacking in some details that would help evaluate its merits. I would suspect that much more information than that proposed to be collected under this proposal would be needed to generate the technical TMDL.

Rating--good

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

Yes, although there is not enough detail to gauge quantification. It was stated that this project will develop information on sources of OCs that lead to excessive bioaccumulation; however, it is unlikely that this work will be able to delineate sources (e.g., prey versus water).

Rating--good

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

There are likely products of value. Bioaccumulation data, if derived correctly, could be quite useful for determining areas of concern.

Rating--very good

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

The applicants appear to be qualified to conduct such work.

Rating--very good

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

This proposal appears to be quite expensive for the level of work proposed. Because this proposal is intertwined with other ongoing work, it is not clear what is being conducted here and elsewhere.

Rating--good

Miscellaneous comments:

If, as the authors claim, this work will also be useful for ecological receptors then a slightly different approach may be needed. For example, it was stated that fish tissue concentrations will be determined from the "edible" portion. The edible portion was not defined, but is usually meant to be the muscle fillet. If one of the goals is to determine if excessive bioaccumulation is harming the fish or predators, then whole body concentrations are more appropriate. Also, the definition of "excessive bioaccumulation", which is never defined in this proposal but cited as (EPA 1997) would be variable, depending on the receptor (human, fish, bird) and the intended level of protection. It should also be noted that some ethnic groups will consume more than the fillet, so an analysis of the just the fillet would be limited in assessing risk for all types of consumers. Many of these people are in the subsistence group mentioned on page 4.

One big assumption in this proposal is that these legacy pesticides, which have not been used for years, are still being moved around in significant quantities in runoff events in agricultural areas. The main goal is to find those areas where runoffs are contributing to sediment loads and control them with a TMDL. It may be that fish in many of these areas are accumulating OCs from bedded sediment that has been in place for years. If so, the TMDL would be ineffective and other routes of remediation would be necessary.

As stated in the Executive Summary "The proposed OCI project will provide needed information on the nature and extent of excessive bioaccumulation of organochlorine pesticides and PCBs in Delta and Delta tributary fish, define the sources of OCs in stormwater runoff and irrigation water discharges, and define the role of waterbody sediments in contributing to the excessive OCs in Delta fish tissue." Based on the proposal, there is very little detail on how these goals will be accomplished. For example, tissue concentrations will be measured in 50 fish samples (based on the table on page 21), but the species of fish is not mentioned or how the sampling will be allocated per site. On page 11 it states that fish will be collected from 30 or 40 sites; however, no details are provided on how many fish will be collected from each site and how the average concentration for each site will be determined.

Specific Comments.

Page 4. There is no definition of the sites to be investigated. On page 4 it states that "certain insufficiently investigated waterbodies". How will these be determined and why weren't they selected before funding?

Page 7. It was stated that one of the important components in the focus on assessing bioavailable forms of OCs. This proposal has allocated resources for bioaccumulation testing for only one invertebrate. While this one species may be a good representative of the infaunal community, several other species should be examined if one is to generalize about the bioavailability of OCs from sediment. Another question to address is the role that oligochaete worms play as a food source for fish consumed by humans. For example, salmonids are known to not eat annelids.

Because the main thrust of this proposal is bioaccumulation in fish and human consumption, the role the toxicity testing of sediment with the amphipod *Hyaella* is not clear. A few questions come to mind. 1. How would the results of sediment toxicity tests be used in the OC management framework? What support is there for using only this one species to assess sediment contamination from OCs? Why would we assume that this one invertebrate is sensitive to OCs?

Page 9 last para. "The proposed CALFED OCI bioaccumulation studies will consist of two major components. One of these will be to determine the locations of sediments and soils within the Central Valley that contain potentially significant sources of bioaccumulatable OCs." Because this watershed is very large, it is not clear how only 50 sediment and 50 fish samples (150 if funded 3 years) can be adequate to determine the locations of OCs at concentrations that would be of concern. Details on the sampling design are needed to ascertain if the specified geographic area is being sampled in an efficient manner and that the data obtained will be useful for mapping sediment concentration gradients. Also, it is not clear if the sediment and fish samples will be collected concurrently. It is not clear how the invertebrate toxicity and bioaccumulation testing will be used. Is there a plan to perform trophic modeling with these data, or is the goal simply to conclude that OCs are bioavailable if they occur in the tissues of the polychaete?

Based on the cost per sample, congener data is expected for the PCB analyses. This proposal doesn't mention any plan to analyze tissues for PCB congeners; however, that information would be expected because the main goal is protection of human health. Given this assumption, there is no mention of how the congener data would be used to determine if a site is producing "excessive bioaccumulation". Will TEQs be generated?

The inclusion of selenium in this proposal seems out of place. It was stated that samples would be analyzed for selenium, but no justification or rationale for its inclusion was given and the intended use of the data was not addressed.

External Scientific: #3

Research and Restoration External Scientific Review Form

Proposal Number: 74

Applicant Organization: G. Fred Lee & Associates

Proposal Title: **Assessing the Magnitude of and Developing a Management Program for Excessive Bioaccumulation of Organochlorine Pesticides and PCBs in Delta and Delta Tributary Fish**

Conflict of Interest Statements:

I have no financial interest in this proposal.

Correct

Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

None

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Excellent	This is overall a good and solid research project. It will provide detailed information on sediment and tissue levels of a group of priority contaminants and has particular relevance with regard to human health risks associated with fish consumption.
XGood	
-Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

The goal of this project is to provide information on the nature and extent of excessive bioaccumulation of organochlorine pesticides and PCBs (OCIs) in Delta and Delta tributary fish, define the sources of OCIs in stormwater runoff and irrigation water discharges, and define the role of waterbody sediments in contributing to the excessive OCIs in Delta fish tissue. The goals are both clearly stated and internally consistent. The project is important in the context of human health issues in that levels of these chemicals in fish tissue in the study area are high enough to pose a cancer risk for fish consumers.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

The study is related to ongoing development of maximum daily loadings (TMDLs) for OCIs, a project with which the present PI is also involved. The present project is justified on the basis that it will allow expansion of the TMDLs and will aid in the development of an implementation plan and a basin plan amendment to control OCI bioaccumulation.

The project basically provides detailed information on levels of OCIs in fish tissue and sediment in different sampling areas and plans to identify current sources of OCI input. The conceptual model is clear.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

The approach consists of two main activities. The first involves bioaccumulation and toxicity studies of field-collected sediment. The second involves analysis of edible fish tissue for OCIs. The approach seems generally well designed and is basically an expansion of an ongoing pilot study in Smith Canal. The techniques for bioaccumulation/toxicity and tissue residues are standard methods. The primary output of the project will not be 'novel' information per se, but rather a more detailed picture of the sources and levels of OCIs in selected water bodies of concern. The information should be very useful to decision makers for prioritizing sites for clean-up.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

As the methods are fairly standard, the approach is feasible. The scale of the project covers approximately 50 sediment samples per year (not stated whether this means 50 sites or fewer sites with replicate samples per site). During the first year it is proposed to analyze residues in two species of fish from 30-40 sites. The likelihood of success is high in terms of generating additional useful information on sediment and tissue contamination of OCIs. The extent to which these analyses will lead to a better understanding of how OCIs are bound to sediments and thereby rendered unavailable is questionable.

In addition to the OCI analyses, it is planned to analyze selected fish samples for dioxins, furans and selenium. This latter aspect of the project does not seem well integrated with the remainder of the project.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

The primary performance measure is development of information on the sources of OCIs from terrestrial soils and aquatic sediments that lead to bioaccumulation in fish. There is no detail provided as to how the performance measures will be quantified.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

Yes, the detailed sediment and fish tissue residue data are likely to be interpretable and of value for developing management priorities.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

The applicants, and in particular the PI, are well experienced in this field and have a proven track record for conducting this kind of work. All of the infrastructure and support appears to be necessary.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

Although the project is for 3 years, a detailed budget is only provided for the first year. Though it is mentioned that a similar size budget can be expected for years 2 and 3. For the first year of the project the expenses are suitably detailed and as far as I can tell appear to be justified. Thus the estimated total budget for the project would be around \$2,291,916.

Miscellaneous comments:

It is planned to conduct complementary studies of sediment toxicity using *Hyalella* for all sediments that are tested for bioaccumulation. However, it is stated with respect to the pilot study in Smith Canal that OCIs are not expected to be present at concentrations toxic to *Hyalella* but that if toxicity is found, follow-up studies will be performed to determine if benthic organism assemblages are altered/degraded. Depending on how many sediments were found to be toxic, this could substantially alter the costs of the project.

Prior Performance/Next Phase Funding:

New Proposal Number: 74

New Proposal Title: Assessing the Magnitude of and Developing a Management Program for Excessive Bioaccumulation of Organochlorine Pesticides and PCBs in Delta and Delta Tributary Fish

1. Prior CALFED project numbers, titles, and programs: *(list only projects for which you are the contract manager)*

01-N61-01 SJR Low-DO Directed Action Project, Directed Action, Ecosystem Restoration

2. Prior CVPIA project numbers, titles, and programs: *(list only projects for which you are the contract manager)*

N/A

3. Have negotiations about contracts or contract amendments with this applicant proceeded smoothly, without persistent difficulties related to standard contract terms and conditions?

Yes -No -N/A

If no, please explain any difficulties:

4. Are the status, progress, and accomplishments of the applicant's current CALFED or CVPIA project(s) accurately stated?

Yes -No -N/A

If no, please explain any inaccuracies:

5. Is the applicant's progress towards these project(s)' milestones and outcomes to date satisfactory?

-Yes No -N/A

If no, please explain deficiencies:

The component projects of this Directed Action have been late in submitting deliverables, directly affecting Applicant's ability to submit required deliverables on time.

6. Is the applicant's reporting, records keeping, and financial management of these projects satisfactory?

Yes -No -N/A

If no, please explain deficiencies:

7. Will the project(s) be ready for next phase funding in 2002, based on its current progress and expenditure rates?

-Yes -No -N/A

If no, please explain:

Not a next phase.

Other Comments:

Environmental Compliance:

Proposal Number: 74

Applicant Organization: G. Fred Lee & Associates

Proposal Title: Assessing the Magnitude of and Developing a Management Program for Excessive Bioaccumulation of Organochlorine Pesticides and PCBs in Delta and Delta Tributary Fish

1. Are the legal or regulatory issues that affect the proposal identified adequately in the proposal?

-Yes No

If no, please explain:

Fish collection methods and species to be sampled are not clear. If sport fish are to be used, then collection must be done either according to license requirements and limitations or a Scientific Collecting Permit must be obtained.

If any sampling methods might result in the take of a state-listed species, a 2081 permit will be required; if any methods have the potential to take a federally-listed species, FESA compliance will be required.

Applicant should clarify whether any of the above permits will be required.

2. Does the project's timeline and budget reflect adequate planning to address legal and regulatory issues that affect the proposal?

-Yes No

If no, please explain:

Budget detail does not indicate whether funds are available for permitting.

3. Do the legal and regulatory issues that affect the proposal significantly impair the project's feasibility?

-Yes No

If yes, please explain:

If necessary permits are obtained, this project is feasible.

Other Comments:

Budget:

Proposal Number: 74

Applicant Organization: G. Fred Lee & Associates

Proposal Title: Assessing the Magnitude of and Developing a Management Program for Excessive Bioaccumulation of Organochlorine Pesticides and PCBs in Delta and Delta Tributary Fish

1. Does the proposal include a detailed budget for each year of requested support?

-Yes No

If no, please explain:

Applicant has estimated a 1 year budget that is anticipated to be the same for year 2 and 3.

2. Does the proposal include a detailed budget for each task identified?

Yes -No

If no, please explain:

3. Does the proposal clearly state the type of expenses encompassed in indirect rates or overhead costs?

-Yes No

If no, please explain:

OH component rate expenses are not disclosed. OH is computed as part of the salary rate.

4. Are appropriate project management costs clearly identified?

Yes -No

If no, please explain:

5. Do the total funds requested (Form I, Question 17A) equal the combined total annual costs in the budget summary?

-Yes No

If no, please explain (for example, are costs to be reimbursed by cost share funds included in the budget summary).

Applicant is requesting 3 years of funding, however, they have only estimated costs for 1 year.

6. Does the budget justification adequately explain major expenses?

Yes -No

If no, please explain:

7. Are there other budget issues that warrant consideration?

Yes -No

If yes, please explain:

Verify applicant's intent to request 1 versus 3 years of project funding.

Other Comments: