Los Angeles Region Contaminated Sediments Task Force
Sediments Threshold Subcommittee, August 7, 2001

Attendees: David Moore(MEC), Tom Johnson, (POLB), Leo Rebele (Hart Crowser), Phil Hogan (URS), Michael Lyons (RWQCB), Paul Johansen (POLA), Cynthia M. Erickson (URS), Nick Buhbe (AMEC), Barry Synder (AMEC), Steve Cappellino (Anchor), Kathy Anderson (Corps), Steve Bay (SCCWRP), Steven John (EPA).

Agenda:

(1) Database update (Bay) – part 1, hardcopy data input of approximately 80% of highest priority studies will be completed by the end of August. A progress report is being prepared and will be distributed by Steve Bay. Navy's Long Beach data (electronic and hard formats) has been received by EVS; additional effort will be necessary before the data are ready for inclusion in the database. Electronic data update – EVS to receive Western EMAP data the week of August 6; metadata for Bight '98 still being documented, data will go to EVS in a couple of weeks.

Grainsize data from the database will be available for the treatment pilot projects (as per request from Anchor).

Documenting the database – EVS will prepare recommendations and a proposal for documenting the database; anticipate this might occur at the end of August/first of September when EVS presents the database to the sediment subcommittee.

Three issues involving the database were identified as requiring additional coordination between the subcommittee and EVS: (1) the merging of non-dredging data versus maintaining separate data tables during the integration process; (2) preparation of a data structure diagram; (3) decision on database maintenance and administration. A workgroup (P.Johansen, S.Bay, K.Anderson) will hold a conference call with EVS (P.Myers) to discuss these issues.

(2) Discussion of the objectives of the SQG project and a decision framework (the following was provided as a handout at the meeting and has been revised to reflect the discussions).

Sediment Screening Value Development Project
Introduction

Regional and national sediment quality guidelines (SQGs) for the interpretation of sediment chemistry data have been established or proposed by multiple agencies. These guidelines include empirical approaches such as the effects range median/low (NOAA), probable effects concentration/threshold effects concentration (McDonald *et al*.), and apparent effects threshold (Washington Dept. of Ecology) as well as theoretical approaches based on equilibrium partitioning models (USEPA). Limited information is available that describes the accuracy of different SQG types for predicting sediment toxicity or benthic community degradation in southern California. There is also no guidance for the use of SQGs in the region. Instead, the

selection and use of these guidelines locally is determined on a project-specific basis, resulting in the inconsistent use and interpretation of guidelines for the evaluation of dredged material for disposal, interpretation of sediment assessment data, and establishment of sediment cleanup levels.

The Los Angeles Contaminated Sediments Task Force (CSTF) has initiated an effort to examine the performance of SQGs in southern California and to develop guidance for their use. The objective of this project is to develop guidance for the use of SQGs in evaluating sediments for disposal as regulated by the Clean Water Act (section 404). This guidance is intended to apply to unconfined or confined aquatic disposal in bays or harbors and use of the material for beach replenishment. This guidance does not apply to ocean disposal of sediments (e.g. at the LA2 or LA3 sites) or to the evaluation of human health impacts related to pathogens.

This project will utilize an electronic database of local sediment quality information that is currently under development. Analyses of the database will be conducted to select or derive two sets of SQGs for use in screening sediment chemistry data as shown in Figure 1. One set of screening values (Level I SQG) will define dredged material of low concern for which no additional testing (i.e., Tier III biological testing) is necessary in order to qualify the material for unconfined disposal. Level II SQGs will represent contaminated dredged material that would likely fail additional (biological) testing or result in adverse impacts to the benthic community and is therefore likely unsuitable for disposal in aquatic environments. The results of this study will be used help develop a long-term strategy for the management of contaminated sediments in the Los Angeles area.

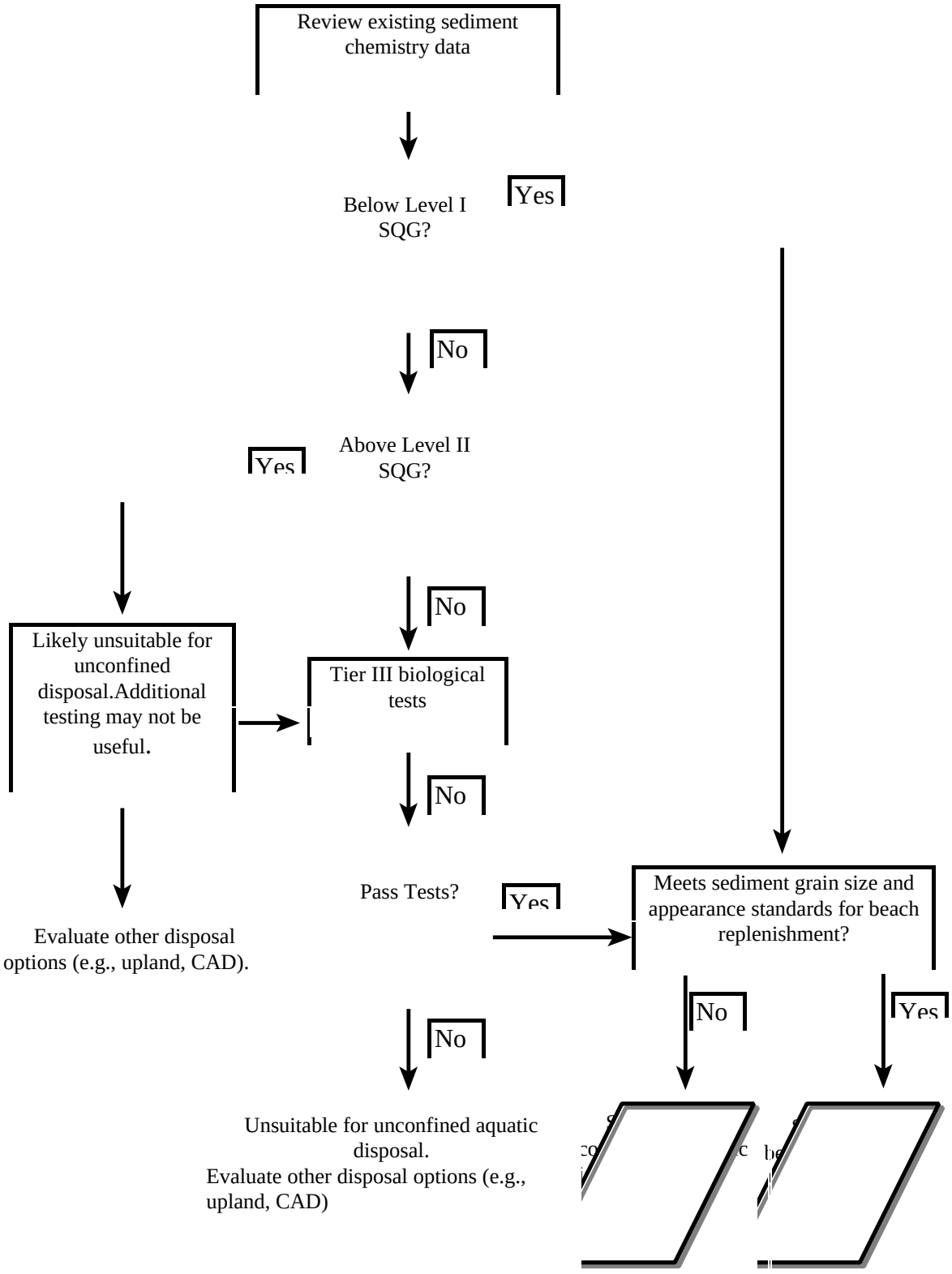

Figure 1. Decision framework for the evaluation of dredged sediments for disposal.

Project Description

The proposed project consists of five phases, as described below.

Phase 1. Review of candidate SQGs.

Selected national and regional SQGs will be summarized and compared. The summary will include: NOAA ERM/ERL, Florida PEL/TEL, Puget Sound AET, benthic screening level concentration (SLC), equilibrium partitioning criteria (EqP), and consensus effects concentrations (PEC/TEC). The CSTF, in collaboration with the contractor conducting this phase, will select a subset of candidate SQGs for evaluation under Phase 2. This subset may also include combined SQGs that are based on the combination of multiple types of guidelines (eg. mean of AET, ERM, and EqP).

Phase 2. Assess reliability and sensitivity of existing SQGs

The CSTF sediment quality database will be used to evaluate the ability of the candidate SQGs to predict the occurrence of sediment toxicity and benthic community degradation. The frequency of false positives and false negatives will be determined.

Phase 3. Calculate and evaluate regional versions of SQGs

Regional versions of existing SQGs (e.g. ERMs, AETs) will be calculated and evaluated using the CSTF sediment quality database. The performance of the regional guidelines will be compared to that of the original values, which were developed using data from different areas.

Phase 4. Derive and evaluate new SQGs using updated and alternate methods

Several alternate or modified methods will be used to derive SQGs using the CSTF database. Methods will be selected that have promise for improving the accuracy, ecological relevance, and/or interpretability of the values. The performance of these SQGs will be compared to those that were evaluated in phases 2 and 3. These approaches may include, but are not limited to the following:

Logistic regression modeling approach based on Field et al.

Tissue residue approach.

National Sediment Inventory approach for bioaccumulative chemicals:

Alternative SQG quotient approach based on Fairey et al.

Phase 5. Conduct lab studies to verify results

Laboratory studies using spiked sediments may be conducted in order to investigate unusual results from phases 2-3. These tests would likely be used to investigate outlier values, cases where there is a large discrepancy between regional and existing SQG values. Work on this phase will not be planned until the preliminary results of phases 3 and 4 of this project are available. At that time, the CSTF will determine the need and schedule for verification studies.

Phase 6. Recommendations and reporting.

A technical report summarizing the results of all phases of the project will be produced. This report will include a recommendations section that identifies SQGs that best meet the objectives of this project. The report will also provide guidance and/or sample calculations that describe the analysis of sediment quality data using the recommended SQGs.

Schedule

Phases 1-4 are expected to begin in August 2001 and end in February 2002. Phase 5 studies will be conducted (if necessary) in 2002. Phase 6 will be completed by July 2002.

(3) Next Sediments Threshold Subcommittee meeting: September 12, 2001 at the Port of Los Angeles Conference Center.