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*Review
Draft*

MEETING MINUTES

Meeting Subject: Comments Resolution Meeting		Meeting Date: 03 June 1996 Meeting Time: 1000 BNI - Norwalk Conference Room 7W	
Attendees:			
<u>SWDIV</u>	<u>BNI</u>	<u>Agencies</u>	
Mike Radecki (RPM) Alan Lee Bill Fisher	Krish Kapur (PM) Ömer Kadaster (K) (CTOL) Randy Jordan Bong Kown Tom McDonnell (BC) Serge Baghdikian Sharon Ohannessian (K)	John Christopher, Cal-EPA/DTSC Alvaro Gutierrez, Cal-EPA/DTSC Mary Matta, NOAA Laurie Sullivan, NOAA Martin Hausladen, USEPA - Region 09 Karla Brasaemle, Weston (USEPA) Michael Martin, Cal-DFG Patricia Velez, Cal-DFG Jenny Decker, Cal-DFG Hugh Marley, RWQCB-LA Carol Roberts, USFWS	
	BC = Brown and Caldwell K = Kleinfelder	<u>Port of Long Beach</u> Bob Kanter	
copies to:			
Walter Sandza, SWDIV Chris Leadon, SWDIV Tony DiDomenico, SWDIV Anna Ulaszewski, LBNSY	Jim Moe, BNI John Kluesener, BNI Noriko Kawamoto, BNI	James Black, USEPA Allen Winans, Cal-EPA/DTSC Shirley Birosik - RWQCB-LA	

Mike Radecki, RPM, welcomed the attendees and called the meeting to order. The objective of the meeting was to provide the opportunity for the Agencies' to express their perspective on the Draft Remedial Investigation (RI) Report and the thoughts behind their written comments for the purposes of facilitating the resolution of comments.

Omer Kadaster provided a review of the major Agency comments:

1. Data Validity

- There may be discrepancies in qualifiers between the Navy's and the Agencies' data validation process; these discrepancies will need to be reconciled.
- Benthic community data validation was proposed.
- Alan Lee requested reports of the data validation results from the Agencies.
- Subjects to talk about regarding the data validity issue are benthic analysis and the data validation review by the Agencies.
- The Navy subcontractor (Laboratory Data Consultants [LDC]) originally provided a Level C validation on 90% of the data and a Level D validation on the remaining 10% of the data.
- Data should be validated by the Agencies using Level C and Level D methods applied to the same samples as done by the Navy subcontractor so that the Agency validation results can be directly comparable to LDC validation results.
- Weston was concerned about requesting additional information from the laboratory; SWDIV responded that the laboratory had ceased operations, however, access to the former director of Coast-to-Coast could be obtained.
- Weston commented that LDC appeared to not have answered some of the data validation questions because of a lack of original data from the laboratory.
- It was agreed by the Agencies that the validation process would be completed within 2 to 3 weeks from receipt of the data, which occurred Friday, 31 May 1996.

2. Reference Stations

- The issue of splitting up the reference stations and essentially assigning individual West Basin Stations to a reference station as proposed by Agencies, rather than the current strategy of keeping the reference stations as a single unit of n=7 should be discussed.

3. Adverse Effects

- A difference in opinion exists between the Navy and Agencies with respect to the definition of adverse effects.

4. Sediment Evaluation Zones (SEZs)

- Pros and cons of retaining the current SEZ strategy should be discussed.
- Should the concept be abandoned, or modified?

Each of the Agencies then provided an overall review of their comments, as well as their perspective of the Draft RI Report, beginning with John Christopher of California Department of Toxic Substances Control (DTSC):

- Overall, the Draft RI Report provided a complete and thorough analysis, however, Mr. Christopher stated that he may have a biased opinion because of his intense involvement with the project since its inception.
- The Draft RI Report provides sufficient data for the risk managers to make their decisions.
- Mr. Christopher pointed out a conflict in his comments on the Report: The general comments state that there appears to be no risk in the open water areas of the West Basin, while one of the specific comments states that there appears to be risk associated with the western portion of West Basin. The specific comment is the correct comment.
- Mr. Christopher knew from the beginning of the project that a cause-effect relationship would be difficult to determine. Toxicity should be the principal tool to identify ecological risk, with chemistry data to be used to link potential terrestrial discharges or sources and correlations with toxicity; benthic community data would not be of great use. The data developed in this RI is very useful.
- Mr. Christopher disagrees with the RI conclusion that sediments beneath the piers are not toxic; he was unsure about possible remediation efforts.

The California Department of Fish and Game (CDFG) perspective of the Draft RI Report was provided by Michael Martin (CDFG will submit the remainder of their written comments by 15 June 1996):

- CDFG is concerned with 7 areas of the report:
 - The no further action recommendation.
 - Reference station selection.

- Quality assurance/quality control (QA/QC) and lack of laboratory audits.
 - Use and applicability of historic chemical databases (e.g., how they were screened and the results of the screening).
 - Lack of CDFG involvement in the review of historical site-related documents.
 - The selected receptor species; CDFG is interested in all species of animals and their habitats.
 - Sampling stations selection, sampling design, and analyses performed.
- Mr. Martin believes that the CDFG comments are of similar subject matter as the other Agencies' comments.
 - Alvaro Gutierrez commented that the Agencies still need to resolve conflicts in comments amongst themselves.
 - M. Radecki stated that the Navy requested CDFG to attend Site 7 meetings from as far back as 1992-1993; CDFG must look at the Draft RI Report as it currently stands and move ahead. Some of CDFGs' concerns (especially the lack of involvement in historical reviews) may not lend themselves to a resolution.
 - Mr. Martin commented that the RI approach to defining "reference" was scientific but was without respect to the CERCLA definition in 43 CFR: a condition occurring without the presence of a release. The Bay Protection and Toxics Cleanup Program (BPTCP) reference stations are chosen primarily on the basis of chemistry, second on the basis of benthic community structure, and lastly on the basis of toxicity. CTO-026 appeared to have chosen reference stations primarily based on toxicity.
 - CDFG wants the site to be remediated to a level that protects the natural resources against injuries and damages.
 - CDFG wants natural resources and injuries assessment of West Basin; for the purposes of which a remedial design and evaluation of remedial alternatives, as well as an evaluation of what injuries have been incurred (as described under CFR43) should be conducted.
 - J. Christopher stated that a major conflict existed between the CDFG and other Agencies, and that is the depth of concern of the RI comments. It appears that CDFG wants to restart the entire program.
 - CDFG has questions regarding the validity of the data.
 - Alan Lee stated that it appears the major discrepancy CDFG has with the Draft RI Report concerns the CLEAN I work.
 - CDFG questioned the selection of endpoint species. Fish, and fish-eating birds are more sensitive than mammals. Using only mammals as endpoint species

underestimates risk. The goal of a RI is to remediate the site and restore it to pre-release conditions. Additional studies are warranted.

- CDFG has not yet reviewed Sections 3 through 7 of the Draft RI Report and therefore did not offer comments of these sections.
- M. Radecki stated that the goal of the RI process at the Long Beach Naval Complex is to allow for the transfer of property.
- A. Gutierrez asked that since the Port of Long Beach (POLB) is going to dredge inside the West Basin, will CDFGs position change? CDFG responded that it had no objection to dredging, the agency would want to know how much dredging and where. The issue with West Basin would remain one of restoration.
- CDFG was asked by POLB to define restoration. CDFG defined restoration as returning resources used to pre-release conditions. BNI responded that benthic communities recolonize within one year of dredging; would restoration still be an issue? CDFG replied that an interim lost use of the environment would be evaluated.
- CDFG stated that if dredging is conducted for business purposes no environmental injury assessments would be made; on the other hand if dredging is done for remediation purposes, then CDFG will also request environmental injury assessment.

The U.S. EPA Region IX perspective was provided by Martin Hausladen:

- Areas within West Basin will be dredged by POLB and the benthic community will be changed, therefore remediation is the restoration.
- EPA wants to review POLBs dredging plan. Some areas underneath piers will not be covered by POLB plans, therefore some areas within West Basin that are currently damaged should be addressed.
- There is no purpose in further studying the areas to be dredged by POLB; it is possible to further study the non-POLB affected areas.
- The issue has become a question of economics. The EPA does not want to hinder POLBs progress. EPA will accept the reality that POLB is going to dredge and therefore is not concerned about such affected areas of West Basin (i.e., the natural resources are going to disappear in such areas due to dredging, anyway). The EPA is interested in the areas that the POLB is not going to currently modify, and still has interest in those areas (e.g., are the data valid).
- The primary EPA concern is tributyltin and overall data validity.
- Bob Kanter then provided an overview of the POLB's short- and long-term goals for the West Basin and revealed that it will assume ownership of the Shipyard as well as the

Naval Station property. The piers on the Shipyard property will be removed. This leaves the piers on the Mole to remain in place for the present time. The POLB master plan requires landfilling the inner Mole area by the year 2000 - 2005.

- The permits will be in place by September 1998 for Shipyard pier removal. The Sea Launch project at Pier 16, the Maritime Administration project at Pier 15, and the Fuel Pier will remain functional until the year around 2005, when these piers will also be removed.
- POLB will dredge approximately 3.5 million cubic yards of sediments in 1997 and 1998. Marina will be removed by September 1997.
- J. Christopher commented that this is an RI followed by redevelopment instead of a Feasibility Study (FS).
- EPA asked the agencies to take into account the POLB plans just discussed.
- A. Gutierrez replied that remedial alternatives should be evaluated but that if an FS is prepared, the re-use deadline will not be met. The public should participate.
- CDFG commented that it was told to review the RI on its own merit, and did not take into consideration the POLBs re-use issues. Consensus was to complete the RI without considering re-use plans. The FS would include evaluation of re-use plans as potential remedial action alternatives.
- NOAA commented to B. Kanter that if POLB takes over the property, POLB will incur responsibility of all liabilities. B. Kanter replied that POLB/City of Long Beach owns the property anyway.
- CDFG stated that as the State trustee for natural resources, the bottom line of the RI is public acceptance; they would like to see the National Contingency Plan (NCP) alternatives option implemented.
- Agencies voiced preference that there should be a Feasibility Study.
- NOAA stated that the Navy and Agencies need to decide what needs to be done to close the CERCLA loop and then superimpose the POLB plans on top.
- J. Christopher stated that the RI cannot recommend anything, it can only identify areas of potential concern (AOCs).
- NOAA will not accept a "no further action" decision just because POLB is going to dredge; the Navy should still identify and analyze a range of remedial alternatives (i.e., FS).

- The Navy must have a record of decision (ROD) to close the CERCLA loop and property transfer.

Carol Roberts provided the USFWS perspective on the RI Report:

- The following concerns must be addressed within the RI:
 - Fish eating birds are of concern as endpoints, the least tern and pelican should be in the work plan, this was stated by USFWS from the beginning of the RI process.
 - USFWS disagrees with the comparison of toxicity "hits" to maximum contaminant concentrations with no "hits"; wanted more elaboration of toxicity effects associated with combinations of contaminants.
 - The draft Environmental Impact Statement (EIS) by POLB does not address sediment and refers to this RI, however, this RI does not adequately address the sediment issue, either.
 - Water column impacts due to dredging.
 - Bioassay data where dissolved oxygen (DO) levels fell below laboratory standard operating procedure (SOP) levels should be considered "no test" not "no hit".
 - Lack of bioaccumulation in a SEZ should be considered a data gap not a "non-hit" when using the evaluation matrix.
- Bill Fisher responded to the fish-eating bird issue by stating that the brown pelican was dropped off of the concern list and the least tern issue was also settled between the Navy and USFWS as a result of re-use meetings, where USFWS agreed there was no impact to pelicans and least tern.

Laurie Sullivan provided the NOAA perspective on the RI Report:

- The four issues identified at the opening of this meeting were well thought, and agreed by NOAA.
- NOAA does not agree with the no further action recommendation.
- Reference areas are not ideal; they are contaminated and should not be used, especially station 40010.
- Reference areas are not useful for interpretations of underneath pier conditions; the Navy should try to find a clean pier for use as a reference.
- There is, however, enough information to make a decision, even with the non-ideal reference station.
- Other issues of concern:

- Tributyltin (TBT) (including an inconsistency in TBT data between tables and text).
- Zinc in halibut tissue.
- Polyaromatic hydrocarbons (PAHs) and sulfides (PAHs and sulfides correlate with each other).
- Uncertainty should be addressed more comprehensively (e.g., uncertainties of statistical analyses, collection of samples under piers was done by different methods than at remaining parts of West Basin).
- The bivalve study was not done in some areas, which could lead to underestimating risk.
- The polychaete bioassay is not sensitive (NOAA did not agree to this bioassay from the beginning) and did not meet the DQOs, therefore the data should not be used for interpretation.
- The SEZs did not take into account biological factors.
- There was a correlation between zinc normalized to AVS and echinoderm survival.
- Pick SEZs on basis of biological factors and benthos.

A general discussion ensued concerning the direction of the meeting after lunch. M. Radecki stated that the original intent of the meeting was to go through each of the four main subject areas, however, it may be useful to discuss some of the project's history. The SEZ concept was still unclear to NOAA as written in the work plan (e.g., what was the thought process?). J. Christopher suggested discussing the reference stations first, since it was the easier of the topics; SEZs will be difficult.

M. Radecki stressed the necessity that the Agencies follow the same data validation procedures as the Navy subcontractor; if different guidelines are followed, the Agencies' review will certainly result in different results.

Randy Jordan stated that the guidance documents to use were the 1994 version of the EPA guidelines, a NEESA 1988 document, and a Martin Marietta document that defines validation Levels C and D. The guideline documents do not speak to validation of bioassay data, and Randy Jordan was not aware of any existing bioassay data validation guidelines. J. Christopher concurred. SWDIV will make arrangements with MEC to release the benthic samples for validation; CDFG asked for the benthic samples for purposes of conducting quality assurance evaluations. NOAA and CDFG requested electronic and hard copy versions of the Site 7 database.

Lunch Break

Weston requested the NEESA data validation guidance documents and received copies of them at this meeting.

O. Kadaster began the afternoon session with an overview of the project history. BNI began the project where CLEAN I ended. BNI produced a number of technical

memoranda that modified the original CLEAN I work plans at the request of the technical oversight agencies.

M. Radecki continued the historical discussion stating that the CLEAN I work plan involved Agency participation. It was completed in 1993, at which time the Navy understood the work plan to be Agency-approved. EPA (because of BRAC) and NOAA became involved after the CLEAN II CTO was awarded. The fish sampling and analysis plan (SAP) and risk assessment work plan (RAWP) were revised. After the Navy thought the work plan and revisions to the work plan were approved, BNI went into the field to collect samples. Some of the current Agency questions are related to the methodology and design of the RI. The RI was conducted based on cooperative review and discussions with the Agencies. For example, the Navy went through great effort with the Agencies concerning a decision on the collection of a proper fish species (the process took around 4 months).

J. Christopher commented that the Draft Site Investigation (SI) report (completed prior to EPA involvement) contains the data quality objectives (DQO) process: sediment was to be collected, chemistry and bioassays to be measured, contamination identified, and the nature and extent of such contamination defined.

The discussion then began to focus on the subject of reference stations. J. Christopher provided the historical background regarding the reference station selection process:

- Dr. Lyons of the Regional Water Quality Control Board (RWQCB) was recognized as the most knowledgeable of the original Site 7 team that chose the reference stations. The team originally pondered the use of a "pristine" reference; the Bolsa Chica area south of Long Beach was suggested, as Cynda Maxon of MEC Analytical Systems, Inc. was familiar with the area. However, after further review of the physical and biological characteristics of the Bolsa Chica site, and other BPTCP pristine reference areas, it was decided that such pristine reference sites were very different from areas inside the Mole or the San Pedro Bay breakwater, that no reasonable comparisons could be made between such sites.
- Dr. Lyons then attempted to find two reference areas inside the breakwater that would encompass the percent fines and TOC levels expected to be encountered inside the Mole and underneath the piers; BPTCP reference stations 40010 and 40018 were chosen. However, during sampling activities, some stations at the mouth of West Basin were found to have coarser grain size than reference stations 40010 and 40018, and therefore a third reference station, 40032, was chosen jointly with the agencies to encompass a more broad range of grain size and TOC.

A general discussion of the reference stations ensued amongst all meeting attendees:

- NOAA commented that selecting more than one reference site was very good.
- M. Martin (CDFG) stated that reference station selection method was good, but was concerned over the evaluation of the reference station data (e.g., chemistry, benthic

community). That is, data from the reference stations should have been analyzed first for appropriateness (using chemistry) prior to formally choosing stations for purposes of comparison to West Basin data. J. Christopher replied that for such a selection procedure to have occurred, the RI would have needed to be completed in phases, and the original scope of work did not include a phased RI. CDFG responded that reference stations were not properly selected, and that station 40010 was contaminated.

- BNI questioned what criteria or standard was CDFG using in classifying station 40010 as contaminated? M. Martin responded that TOC, grain size, chemistry, and benthic community structure are used by BPTCP to qualify stations as either contaminated or non-contaminated. Weston stated that stations 40010 and 40018 were impacted, but were curious as to where a non-impacted site with similar TOC, grain size, benthic community, and depth to the West Basin was to be found in southern California. John Christopher said that the notion of pristine reference stations was discussed, even sites at Dana Point, but preference was not to go that far away from West Basin. Without reference stations there would not be a RI. SWDIV agreed that the reference stations must be within the same geographical area as the West Basin.
- John Christopher stated that when selecting the reference stations, their location near the Long Beach Naval Complex was taken as a very important factor. CDFG responded that this premise may have been in error, releases from West Basin could travel to these reference stations and accumulate. In response to a question from BNI, CDFG did not elaborate on whether CDFG knew this for a fact. CDFG maintained the premise that data collected over the past years have changed the opinions of experts that reference stations 40010 and 40018 are not good choices as reference stations because they are contaminated.
- EPA responded that rules have changed, but the basis of conducting the RI was established years ago and cannot be changed. CDFG agreed, but stated that it was incumbent on SWDIV to do something. BNI suggested treating this issue as an uncertainty, CDFG agreed. NOAA stated that even though the reference stations show high variability, they should not be discarded.
- M. Martin stated that the Navy has three choices in defining reference conditions: 1) the reference sites as selected for this RI; 2) collect a subsurface sediment core, locate the depth at which there exists no anthropogenic input of xenobiotic chemicals, and use the chemistry results at such depth to compare with site-specific chemistry levels; and 3) develop toxicity-based chemistry values in the laboratory that protect the most sensitive endpoints of the most sensitive species.
- CDFG stated that reference stations 40010 and 40018 were chosen at the outset of the BPTCP and since then, data from such stations revealed that these sites were contaminated. BNI responded that the Navy will respond to this concern in the uncertainty write-up of the RI report. M. Martin accepted the response.

- BNI questioned CDFGs restoration goals. M. Martin responded that restoration goals do differ between harbors, industrial areas, etc. The trustees may decide that the harbor is to remain industrial. In such case, CDFG has a fund set aside to replace a similar habitat elsewhere.

The Agencies were asked by SWDIV to provide their perspective on the reference stations selected for comparison with West Basin data:

- NOAA agreed that the reference data can be salvaged.
- CDFG has some uncertainties concerning the selection of reference stations, which can be addressed in the uncertainty analysis section of the RI Report.
- EPA will go along with the consensus; pristine reference stations not practical, salvage existing reference data.
- USFWS supports CDFGs opinion that reference areas should be areas absent of a release but could not offer an alternative. However, the Site 7 reference provides salvageable information, possibly by correctly pooling the data.

The meeting attendees briefly discussed issues relating to TBT:

- Weston commented that the bioassay organisms used for this RI are insensitive to TBT, and that as a result, toxicity attributed to TBT would not be detected from the bioassays. M. Martin agreed, responding that molluscan species are most sensitive to TBT.
- BNI explained that the laboratory experienced a contamination problem with the Grignard reagent at the time of processing Site 7 tributyltin samples; this contamination problem does occur periodically with other laboratories across the country. The laboratory did make attempts to rerun the samples and pursued the purchase of Grignard reagent from other suppliers.
- NOAA commented that TBT did show up in tissue, and that EPA was in the process of developing a TBT tissue threshold level in the Puget Sound area. SWDIV might consider using such screening level for the interpretation of Site 7 tissue sample data.
- SWDIV responded that TBT was not found to be an issue at Site 7 by the RI process. To a question from SWDIV as to why the agencies insisted that there should be much higher TBT at West Basin than measured, the response was from 'historical information at ship repair yards.' TBT has not been found at significant concentrations on any of the other land-based installation restoration (IR) sites at the Naval Complex, or in sediment samples collected for the NPDES permit. TBT has not been found at significant concentrations in spent sandblast grit disposed of at the Naval Shipyard. Any sandblasting would have been performed in the dry docks, and thus any TBT associated with the spent grit would either have been swept up for land disposal, or would have blown away into the air. Weston suggested that TBT could have moved off West Basin.

- M. Martin questioned whether NPDES sediment sampling data are available since 1974. BNI responded that NPDES sediment sampling became a requirement with the 1993 renewed NPDES permit.

The meeting topic shifted to reference data usage:

- J. Christopher commented that station 40032 is very different physically from the other reference stations, and may have improperly influenced the results of statistical comparisons with West Basin data, and suggested that the RI Report show the effects of first removing station 40032, than station 40010. BNI responded that by doing so, some West Basin stations will be left without reference station coverage, and that reference patterns did not influence SEZ development. BNI has studied the effect of removing station 40032 from the reference station pool, and has found that the means of most chemical concentrations increase while the variance decreases.
- NOAA commented that the use of the 95% upper predictive limit (UPL) is not the standard method used for statistical comparisons of sediment chemistry data.
- J. Christopher requested that an explanation of the UPL be added to the Draft RI Report, since the t-statistic utilized in the equation already contains a correction for small sample size. BNI responded that the UPL provides a correction for multiple testing (repeat testing generates an error) similar to the Bonferroni t-test.
- NOAA and DTSC commented that in cases where the 95% upper confidence limit (UCL) or UPL exceeds the maximum value of the data set used to create the UCL or UPL, the maximum value should be used for comparison purposes (per Risk Assessment Guidance for Superfund [RAGS], the EPA human health risk assessment guidance document).
- J. Christopher commented that the bioassay response percentage values are not continuous, and therefore they cannot be used as a single point comparison to the 95% LPL. NOAA responded that percentages can be transformed via arcsine, etc., and that this had been accomplished prior to statistical testing of the data.
- NOAA questioned the purpose of the station-by-station comparisons, and suggested deleting from the RI Report if not used in the decision process. John Christopher reminded all that the station-by-station data were used to develop the isopleths in the Draft RI Report. NOAA was also confused by the 1-tailed 95% UPL reference data distribution discussion versus the 2-tailed reference 95% UPL used to compare against the West Basin data.
- BNI commented that the 95% UPL was used to describe the distribution of reference and West Basin data.
- NOAA questioned how the field replicates at the reference stations were treated? Were they treated as the same samples? BNI responded that the reference

substations (e.g., 40010.1, 40010.2, 40010.3), originally intended to represent field replicates of the entire reference area (e.g., 40010), were treated as individual sampling stations. However, field replicates at each of the reference station substations (e.g., 40010.1, 40010.2, and 40010.3) were averaged to obtain a mean for that sampling station.

- It was agreed by SWDIV, BNI, and the Agencies that additional text will be added to the Draft RI Report describing: 1) the UPL (i.e., what the statistic does and does not accomplish); 2) the variability encountered in the reference data and how the reference data were used; and 3) the effect of removing station 40032 from the reference pool.
- NOAA requested that station 40010 also be experimentally removed from the reference pool and the resulting effects on the reference data set studied. BNI responded that the reference stations sampled were selected on the basis that they collectively encompassed a range of physical characteristics similarly found in West Basin sediments; if certain reference stations are now removed from the data set, the range of physical characteristics originally sought will be lost. In addition, the DQOs were established at the beginning of this project and they ought to be followed. Furthermore, station 40010 was actually comprised of three reference stations (40010.1, 40010.2 and 40010.3), NOAA needs to clarify which of these stations it means, and the basis for its removal. Reference data should not be arbitrarily removed from the data. J. Christopher stated that data can be removed from the data set if Type II error exists.

Conflict Station

Break

O. Kadaster provided a full set of data validation guidelines (both EPA and NEESA) to CDFG.

M. Radecki concluded the reference station discussion by stating that data were pooled at each reference station itself (i.e., field replicates were averaged to provide a mean at each reference station). NOAA did not realize from the text how the field replicates at each reference station were treated.

NOAA commented that the bottom line is that the Agencies do not agree with the no further action recommendation for the West Basin. M. Radecki responded that given the current use of the West Basin, sediments left in place represent no risk to the ecosystem. The environment underneath the piers is different from the reference station environment, however, this is not a result of contamination. For example, the fuel pier area was completely dredged around 13 years ago, near the time historical discharge sources had predominantly ceased. Today, the fuel pier environment, which has not been influenced by Navy-associated historical sources, is similar to the other piers. SWDIV then asked for the points of departure the Agencies have with the Draft RI Report:

Necessity
Point source

NOAA:

- Interpretation of PAH concentrations, especially in sediments from underneath piers, in fish bile, and in clam tissue. PAHs are somewhat correlated with toxicity endpoints; NOAA disagrees that sulfides are causing the toxicity as stated in the Draft RI Report.
- Zinc is elevated in sediments at some stations; zinc as normalized to acid volatile sulfide (AVS) is driving the echinoderm mortality. Zinc is also elevated in fish tissue from the West Basin.
- There are fewer taxa and mollusks at some West Basin stations than the reference stations, and therefore such West Basin stations are semi-stressed. Therefore, sediments left in place will continue to cause toxicity to invertebrates.

EPA:

- Weston independently came to the same conclusions as NOAA.

USFWS:

- Also agreed with NOAA, asked that a better definition of what the echinoderm data means be added to the Draft RI Report.

DTSC:

- The primary emphasis in determination of toxicity should be the bioassay results.
- The interpretation of data within the Draft RI Report is incorrect.
- The conclusion of no further action was derived at the wrong time in the CERCLA process.
- The Navy must first recognize the adverse effects within West Basin and then evaluate remediation alternatives. Only then can the risk managers make a no further action decision.
- The third page of Table 4-36 shows that Station 46 (end of the fuel pier) is drastically different than Stations 44 and 45 (near-shore and middle of fuel pier, respectively). Station 46 had many Nematodes, which are indicators of stressed benthic communities. When grouped into SEZs, this effect found at Station 46 is diluted. Therefore, "obvious" adverse effects found at sampling stations throughout West Basin must be discussed within the RI Report.

CDFG:

- Exposure pathways must be further developed, e.g., sources must be more closely evaluated.
- The analysis of data is not compelling.
- It must be presumed that chemicals found in West Basin are a result of Naval operations and should thus be remediated, if necessary.
- Data normalized to TOC and percent fines should be evaluated.

NOAA revealed that they had normalized the data to TOC and percent fines and found that such data normalization activities did not strengthen correlations to bioassay response.

J. Christopher commented that concentration isopleths seem to correlate with terrestrial IR sites on the Mole. For example, Figure 4-18 shows silver concentrations associated with IR Site 2. The silver concentration pattern appears to imply a release. Mr. Christopher suggested evaluating potential terrestrial releases to the surface water and sediment.

USFWS:

- Table 4-51 (the evaluation matrix) is incomplete for SEZs C, D, E, and F. No bioaccumulation results exist for these zones. These data gaps must be filled prior to making any decision or conclusion regarding ecological risk to West Basin.

SWDIV and BNI requested a 15 minute caucus.

M. Radecki opened up the post-caucus discussion by agreeing with J. Christopher's comment as to the timing and place of the no further action recommendation and stated that it will be removed from the Draft RI Report. The evaluation of SEZs will be further refined, possibly via a "hot spot analysis" within the current SEZs, or by evaluating the original CLEAN I seven depositional areas as SEZs. NOAA commented that the SEZ concept is still not intuitive.

Concerning M. Martin's comments on historical discharges, source identification will not be further defined for purposes of this RI. The Navy never stated within the Draft RI Report, or otherwise, that they were not responsible for chemicals inside the West Basin.

Therefore, considering that the no further action decision will be removed from the Draft RI Report, SWDIV asked whether the Agencies' overall opinions on the Report would change. J. Christopher responded that DTSC would still raise some technical issues, however the comments may not be as extensive. The other Agencies concurred with this response.

M. Radecki asked the Agencies what the Navy must do from this point forward to come to closure on the RI and respond to comments:

- EPA requested a response to the Agencies' comments considering today's discussions. However, the response to comments would hinge on the results of data validation by the Agencies.
- J. Christopher commented that it may be possible for SWDIV to structure their response to comments around the four major subject areas defined at the beginning of today's meeting.

- SWDIV cautioned that it still does not agree with some of the Agency comments, primarily those concerning natural resources damage assessment; the RI process is not designed to answer such questions.
- M. Martin's impression was that the Navy does not want to conduct further work concerning West Basin. CDFG is not solely interested in damage assessment, it is also interested in determining if risk is characterized properly according to the CERCLA process for the sake of the public welfare.
- M. Radecki commented that the RI shortcomings may have been due to trying to follow the work plans too closely. The procedural deviations from the work plans can be easily discussed within the RI Report. However, SWDIV and the Agencies must first agree on the validity of the data prior to moving forward.
- J. Christopher questioned if the Navy was requesting to postpone further discussions of the Draft RI Report until after the data is validated and all of CDFG's comments are received. EPA agreed that tabling this discussion until after the data is validated by the Agencies is a good idea.

A discussion concerning SEZs then commenced, stemming from NOAA's concern over the appropriateness of SEZs as an analytical tool for the West Basin data set:

- The non-contiguous nature of the SEZs do not make sense to NOAA. The figures showing areas of gray shading based on chemistry exceedances of the reference 95% UPLs make more sense when one superimposes similarly constructed bioassay and benthic community figures on top. BNI responded that the gray-shaded plots are consistent with the SEZs. NOAA agreed that the PAH data plots do match.
- NOAA suggested grouping SEZs based on biological effects, since the risk assessment is evaluated based on such effects. BNI responded that comparisons of the patterns between the gray-shaded plots showing bioassay "hits" and the gray-shaded chemical exceedances of the reference 95% UPLs show that chemistry within West Basin does not predict the measured toxicity. NOAA did not agree with this response, stating that complex mixtures of chemicals are causing the observed toxicity. Some chemicals are driving certain endpoint responses and other chemicals are driving other endpoint responses. NOAA contended that the SEZ method does not explain toxicity of sediments, and that toxicity should also be used in developing SEZs. NOAA suggested defining the clusters at higher cutoff lines and evaluating the results. NOAA also recommended the analysis of chemicals most likely driving toxic response: PAHs, copper, lead, and zinc. That is, use toxic response to develop the SEZs.
- John Christopher stated that SWDIV had considered that, but he rejected the idea because it looked like circular logic - using toxicity to explain toxicity.
- C. Roberts asked how the "jigsaw puzzle" SEZ concept can be converted into remedial action objectives (RAOs).

- NOAA wondered if the SEZ lines are drawn to properly describe the West Basin. If too much interpretive judgment (i.e., "black magic") was used defining the SEZs, then maybe the SEZ concept should be reconsidered. Risk decisions should not be based on excessive interpretive judgment, or "black magic" statistics.
- NOAA perceives each piece of the SEZs as 21 different zones based on proximity, regardless of TOC, grain size, and chemistry similarities.
- J. Christopher stated that the non-testable assumptions used in development of the SEZs are 1) equal concentrations of chemicals are equally toxic, and 2) equal combinations of chemicals are equally toxic. The assumptions, however, appear to be wrong.
- M. Martin suggested that the chemicals involved in the cluster analysis should have been weighted based on relative toxicity.
- BNI commented that the SEZs were developed over a 1.5 year period of time and as a result of many meetings with the Agencies; the SEZ concept was not developed casually. BNI asked for copies of NOAA's work on correlations between West Basin sediment chemistry and bioassay responses.
- M. Martin's opinion on SEZs was consistent with that of NOAA. The use of SEZs is not clear. If the purpose is to describe physical and chemical patterns, SEZs do not aid in describing patterns. The gray-shaded chemical distribution maps (showing exceedances of the reference 95% UPLs) are more helpful when the corresponding bioassay gray-shaded "hit" maps are overlaid on top; this is the more traditional, understandable approach to describing sediment physical and chemical patterns. If SEZs are used as a starting point for the remedial decision-making process, the SEZ procedure is far removed from the procedures that should be utilized in such a process. A site-specific apparent effects threshold approach, or the use of laboratory-spiked sediments, should be used to define RAOs. Comparisons of site-specific chemistry data to effects range-low (ER-L) and -median (ER-M) values can also be used.
- J. Christopher suggested bridging the SEZ approach and the gray-shaded chemistry and toxicity distribution map approach. The gray-shaded toxicity distribution maps showing West Basin toxicity "hits" define the toxicity "foot print" of West Basin.
- SWDIV questioned why it was necessary to identify the exact source of West Basin toxicity. M. Martin replied that it was essential. The only methods available to identify the source of toxicity are 1) conduct additional toxicity work on West Basin sediments and 2) remove sediments where toxicity was measured, regardless of the exact chemical cause. BNI responded that if sediments are removed without identifying the chemical cause of toxicity, how will remediation efforts be proven effective? M. Martin

replied that monitoring of the remediated area would be required to ensure no toxicity existed after remediation efforts.

M. Radecki concluded the meeting. SWDIV and BNI will continue to answer and respond to the Agency Draft RI Report comments, with specific attention to those regarding data validity, reference stations, adverse effects, and SEZs. Agencies stated that they would provide the results of their data validation to SWDIV on or before 21 June 1996. On this basis, the next meeting between SWDIV, BNI, and the Agencies was set for 25 June 1996, at which time the data validation conducted by the Agencies will be the topic of discussion.

AGENDA
NAVAL COMPLEX LONG BEACH - RESOLUTION MEETING
CTO-0026 SITE 7 - WEST BASIN
3 & 4 June 1996

Date: 3 June 1996 (Monday) 4 June 1996 (Tuesday) (if needed)	Time: 1000 - 1630 0900 - 1630	Place: BNI - Norwalk Office 12440 East Imperial Hwy. Conference Room 7W
Leader: Omer Kadaster (310) 807-2178	Recorder: Sharon Ohannessian	Timekeeper: Sharon Ohannessian

<u>Time</u>	<u>Topic</u>	<u>**</u>	<u>Leader</u>	<u>Pre-Reading</u>	<u>Desired Outcome</u>
1000	Opening	-	M. Radecki	-	
1010	Project overview	I	O. Kadaster	Draft RI Report	Review major agency comments
1020	Review Comments	D	DTSC/Cal DFG	Draft RI Report	DTSC/Cal DFG perspectives on the Draft RI Report
1050	Review Comments	D	USEPA	Draft RI Report	USEPA perspectives on the Draft RI Report
1120	Review Comments	D	USF&WS	Draft RI Report	USF&WS perspectives on the Draft RI Report
1150	Review Comments	D	NOAA	Draft RI Report	NOAA perspectives on the Draft RI Report
1220	LUNCH BREAK (Lunch to be ordered in)				
1330	MEETING RESUMES				
	The afternoon session is intended for discussions between reviewers of the Draft RI Report and SWDIV/BNI technical staff. SWDIV and the BNI technical staff will be available to assist in resolving reviewers' comments with the intent of reaching consensus and making rapid progress towards finalization of the RI Report.				
1445	BREAK				
1500	MEETING RESUMES				
1620	Closing comments				
1625	Closure	-	M. Radecki	-	Decision to be made by attendees as to whether the meeting needs to continue the following day.
1630	Adjournment				

I = Informational D = Discussion

Draft RI Report: Draft Remedial Investigation (RI) Report, Installation Restoration Program, for Site 7, Naval Station Long Beach, Long Beach California. 22 February 1996.

AGENDA
NAVAL COMPLEX LONG BEACH - RESOLUTION MEETING
CTO-0026 SITE 7 - WEST BASIN
3 & 4 JUNE 1996

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