

PROJECT NOTE NO. PROJECT NO.  
 PN-0249/250-11 01-F249/250-YS  
 CLE-C01-01F249/250-I2-0005

CONFIRMATION OF:	CONFERENCE	DATE HELD	26-27 January 1993
	TELECOM	DATE ISSUED	04 February 1993
	OTHER	RECORDED BY	Kathy Brewer/CH2M HILL
SUBJECT		PLACE	Dept. of Toxic Substances Control (DTSC) Long Beach
	Initial Evaluation Review Meeting		N60258.000750
	Naval Complex (NC) Long Beach		NSY LONG BEACH
	Remedial Investigation/Feasibility Study (RI/FS) Work Plans		SSIC # 5090.3

**PARTICIPANTS: (\* DENOTES PART-TIME ATTENDANCE)**

- |                                     |                        |                         |
|-------------------------------------|------------------------|-------------------------|
| A. Muckerman - Code 1823.AM         | J. Polisini - DTSC*    | D. Shelton - CH2M HILL* |
| C. Leadon - Code 1852.CL            | A. Winans - DTSC*      | D. Heinle - CH2M HILL*  |
| B. Fisher - Code 231.WFC.           | J. Christopher - DTSC* | S. Costa - CH2M HILL    |
| K. Masden - LBNSY*                  | J. Woodling - DTSC*    | J. Grovhoug - NCCOSC*   |
| A. Ulaszewski - LBNSY               | C. O'Rourke - DTSC     | M. Pumford - RWQCB*     |
| T. Johnson - Port of Long Beach*    | J. Friedman - IT Corp  |                         |
| B. Kanter - Port of Long Beach*     | K. Brewer - CH2M HILL  |                         |
| LtCdr J. Snyder - NAVSTA Long Beach | P. Torrey - CH2M HILL  |                         |

**ACTION REQ'D. BY**

**ITEM**

A meeting was held on 26-27 January 1993 to review the approach that was taken for the initial evaluation of data from Naval Station (NAVSTA) Long Beach and the Naval Shipyard Long Beach (LBNSY). Other topics discussed were the approach to the toxicity evaluation for harbor sediments, further information that has been obtained on the groundwater conceptual model for the facility, the preliminary evaluation of Applicable or Relevant and Appropriate Requirements (ARARs), and data quality objectives (DQOs). This project note summarizes the discussion.

On 26 January 1993, the meeting started at 0930 and concluded at 1400. On 27 January 1993, the meeting started at 0915 and concluded at 1200. Each day's participants are noted on the attached sign-in sheet.

Introductions

Participants who were not present at the previous meetings were introduced: Bill Fisher, SOUTHWESTDIV Natural Resources; Jeff Grovhoug, Naval Command Control and Ocean Surveillance Center (NCCOSC); Tom Johnson, Port of Long Beach; Anna Ulaszewski, LBNSY point-of-contact (POC); Jim Polisini, DTSC toxicologist; and Allen Winans, DTSC hydrogeologist. Anna Ulaszewski is taking over for Ken Masden as the POC for LBNSY. Allen Winans is taking over for John Woodling as project hydrogeologist for DTSC.

Items from Last Meeting

Andrea Muckerman indicated that the current plan is to include Sites 4 and 8 in the Draft RI/FS Work Plans that will be submitted on 30 April 1993. The Draft Site 6B Preliminary Assessment will also be submitted at that time.

New sediment quality criteria proposed by Federal Environmental Protection Agency (EPA) and the State of California were discussed. Federal EPA has proposed criteria for



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five compounds. Bob Kanter said that he had heard that the State Water Resources Control Board was in the process of developing sediment criteria. He will find a contact and get that information to the Jacobs Team and DTSC.

The Jacobs Team has obtained additional information on dredging, Drydock 1 operations, and dewatering operations since the last meeting. This information was discussed later in the meeting.

Screening Criteria Groundwater

The Jacobs Team reviewed the materials that were distributed prior to the meeting on the screening criteria developed for soil and groundwater. Because the primary beneficial use of shallow groundwater at the facility is discharge to surface water, the California Enclosed Bays and Estuary Standards were used in conjunction with the Federal Ambient Water Quality Criteria (AWQC) for screening criteria. Several of the contaminants detected in groundwater did not have promulgated criteria under either set of standards, however. John Christopher indicated that it was appropriate to use the lowest observable effects level (LOEL) that are part of the AWQC or use surrogates for contaminants with similar toxicological properties to supplement promulgated standards for the screening. The groundwater screening criteria will be updated for the Work Plan to include these values and will reference them accordingly.

One other issue brought up under the groundwater criteria discussion is whether the shallow groundwater at NC Long Beach would potentially be considered a source of drinking water under the EPA criteria. Under the California Sources of Drinking Water (Resolution No. 88-63), the total dissolved solids (TDS) limit for a potential source of drinking water is 3,000 mg/l; however, J. Christopher mentioned that the EPA criteria may be as high as 10,000 mg/l. J. Woodling will follow up on a reference for this value.

Screening Criteria for Soil

Screening criteria for soil were developed for both the leaching pathway and the direct contact pathway. For the leaching pathway, the groundwater screening criteria were used as the endpoint, and allowable concentrations in soil that would not cause groundwater to exceed those criteria were calculated using a conservative leaching model (see further discussion of leaching model later in this project note). In general, the leaching pathway has lower criteria for metals and some pesticides and polychlorinated biphenyls (PCBs) than the direct contact pathway because of the toxicity of these compounds to ecological receptors.

To date, the screening criteria for the direct contact pathway for soil have been based on an industrial exposure scenario. A. Muckerman discussed the Navy's decision to expand the screening evaluation in the RI/FS Work Plans to include the residential exposure scenario. She explained that not assuming a residential exposure scenario is considered to be a point-of-departure, and has to be documented in the Administrative Record. In particular, the Navy is concerned that if NC Long Beach goes on the National Priorities List (NPL) and EPA takes over, then they will require the work to be redone if a residential exposure scenario was not considered. Both Craig O'Rourke and J. Christopher said that they would be willing to support the Navy in documenting the appropriateness of the industrial use scenario for NC Long Beach. David Wang is the head of the Base Closure



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Unit at DTSC and may also be able to provide assistance in getting EPA involved at this point in the process. J. Christopher also commented that he would like to see only one exposure scenario (residential or industrial) used in the Work Plan since it is tedious to review work that attempts to consider both.

A table showing a comparison between screening criteria for soil using the residential and industrial scenarios was distributed. In general, the residential scenario has criteria that are 5 to 10 times lower than the industrial scenario.

J. Christopher said that the California Environmental Protection Agency (CAL EPA) Leadsread Model should be used to develop the CAL EPA criteria for lead. Under a residential scenario, the Leadsread model calculates a reference concentration for lead of approximately 240 mg/kg. The Jacobs Team can obtain a copy of the model by calling 916/255-2277. He also said that the CAL EPA value for carcinogenic PAHs should be developed assuming each of the seven carcinogenic polynuclear/polycyclic aromatic hydrocarbons (PAHs) measured during priority pollutant scans has the same potency factor as benzo(a)pyrene.

The soil screening criteria tables will be updated for the Work Plan to include the residential exposure scenario and the other information discussed above. Also, any values greater than 10<sup>6</sup> mg/kg will be deleted from the table.

Initial Evaluation Summary Tables

A draft version of the initial evaluation summary tables for each site was distributed showing contaminants that exceeded screening criteria for soil or groundwater. Most of the exceedances were for metals or PAHs. Arsenic and beryllium exceeded the screening criteria in background soils. It was emphasized that these tables will change when the residential exposure pathway is considered for soils.

J. Christopher commented on the number of data qualifiers used in the tables. He said that he would prefer that data qualifiers be limited to U, B, J, and R.

Sediment Toxicity Evaluation

The proposed approach for sediment toxicity evaluation distributed prior to the meeting was discussed in detail.

J. Christopher asked if the proposed screening criteria for sediment had the same basis (i.e., dry weight and same organic carbon assumed). Don Heinle said that all of the criteria presented in the table were based on dry weight and an assumed organic carbon content of 1 percent.

In the set of sediment criteria, the effects range-low (ER-L) were proposed as the screening level of choice. Jim Polisini concurred. The Puget Sound Maximum Contaminant Level (MCL) criteria were proposed for use where ER-L, effects range-median (ER-M), or equilibrium partitioning (EP) criteria were not available. J. Polisini said he was unsure that the Water Board would accept those as valid criteria for California. D. Heinle commented that it may be a moot point since most of the contaminants that do



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not have other criteria are co-contaminants with compounds that do have ER-L or ER-M criteria.

J. Polisini disagreed with the proposal to eliminate the earth forming metals and selenium, inorganic tin, and vanadium from further consideration for toxicity screening. He would like to see the potential toxicity of these metals evaluated. D. Heinle mentioned that he had a reference that discussed typical background levels of these metals in the Long Beach area. He will forward the reference to J. Christopher and J. Polisini.

The approach for developing a screening criteria for organotins was discussed. It was proposed that the criteria for tributyltin be set at the detection limit; however, J. Christopher stated the need to provide toxicity information to support the appropriateness of the detection limit and the evaluation of analytical methods. J. Grovhoug commented that for their toxicity evaluation work, the NCCOSC developed a special analytical method for organotins. Peter Torrey said that NCCOSC method was used for the site inspection (SI) and had a detection limit of 75 ug/kg. J. Grovhoug and D. Heinle will look into the available information on organotin toxicity to see if this detection limit is adequate.

The usefulness of measuring acid-volatile sulfide (AVS) in order to interpret metals toxicity was discussed. There was general agreement that it was not appropriate to use AVS to modify screening levels for metals since its effect on the bioavailability of metals is not that well defined. However, it may be useful in the interpretation of bioassay results.

J. Christopher emphasized the need to address in the Quality Assurance Project Plan (QAPP) the adequacy of the detection limits proposed in the Work Plan for biological receptors.

The decision tree for the sediment toxicity evaluation was reviewed. J. Polisini liked the use of the double decision criteria (bioassay toxicity vs. chemical screening levels) for evaluating the appropriate actions to take with the sediments. However, he disagreed with relying on the "Green Book" models to assess water column toxicity and bioaccumulation and would prefer to see pore water bioassays, short-term bioaccumulation tests, and maybe some tissue sampling of benthics included in the approach.

B. Kanter commented that the decision tree does not address how the horizontal and vertical extent of contaminated sediments will be determined. For example, the approach specifies that only the top 5 cm of sediment will be sampled for the bioassays. D. Heinle said that bioassays are limited in usefulness to the upper, aerobic sediments because deeper sediments that exist under anaerobic conditions are toxic due to naturally occurring sulfides and other compounds. An alternative is to characterize the chemical composition of sediments at depth and then try to correlate that with the bioassay results from the upper sediments to determine their toxicity. J. Polisini commented that the characterizing the toxicity of deeper sediments is important in areas that are to be dredged. This issue was not resolved in the meeting and will be addressed in future discussions.

The need for reference stations to address the problem of regional background contamination was discussed. J. Polisini would prefer that a reference station be used rather than raising the screening criteria. D. Heinle said that Ed Long/National Oceanic

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and Atmospheric Administration (NOAA), can provide data on the coordinates of three reference stations. B. Kanter suggested Tomales Bay as another reference location. D. Heinle commented that it is also important that the sediment obtained from the reference stations are physically comparable to those in the harbor. P. Torrey said that there may be grain size distribution data for the sediment samples collected during the SI.

J. Polisini said that he would provide C. O'Rourke with a list of species recommended for toxicity testing to forward to the Navy and the Jacobs Team. He said that it would likely include arthropod, worms, sandab, and bivalve larvae.

B. Fisher commented that any bioaccumulation testing or tissue testing should address species utilized by endangered species in the area, in particular the least tern and brown pelican. He said that information on fish present in the harbor area can be obtained from capture reports from the Drydock 1 operations. He also suggested that fish can be obtained for tissue analysis during one of the drydock capture episodes.

Human health issues associated with the ingestion of fish tissue needs to also be addressed. Besides determining expected levels of contaminants in fish tissue, the types of fish people typically catch and eat from the area, the parts of the fish eaten, and the rates of ingestion need to be evaluated. Collection of this data should be addressed in the Community Relations Plan (CRP). B. Fisher will attempt to do a survey in February of people fishing off of the Mole and will discuss his findings at the next meeting.

D. Shelton cautioned trying to get too site-specific with either the bioassay testing or the bioaccumulation measurements. He said that for the interpretation of the data to be well-supported, standard protocols should be used. J. Polisini concurred.

J. Polisini suggested that the Jacobs Team submit a revised proposal for the sediment toxicity evaluation that addresses the issues discussed here so that he can provide comments prior to the completion of the Work Plan. The Jacobs Team will get a revised proposal to DTSC sometime in the next few weeks.

Physical Model for the Harbor

Steve Costa addressed the issue of whether sediment disturbance is likely in the harbor. One mechanism by which sediment disturbance occurs is dredging. This is fairly controlled and episodic and only a few dredging activities have occurred in the harbor over the last decade since the harbor has a fairly low sedimentation rate. The dredging at Pier Echo (Pier E) was a maintenance dredge, but the other dredging done around the piers was to accommodate particular classes of ships.

The other mechanism by which sediment disturbance occurs in the harbor is by propeller wash. Based on the information he has been able to obtain about shipping operations in the area, S. Costa said that the potential for sediment mobilization in the harbor is significant. Though the natural currents in the harbor are benign, they are capable of transporting mobilized fine material over large distances. The Army Corps model of the harbor indicates that the current tends to move in a counterclockwise direction.

S. Costa said that he would not be surprised to find a fairly homogeneous distribution of sediments in the harbor as a result of these transport mechanisms. J. Grovhoug



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commented that some size sorting of sediment within the harbor (i.e., less fine material in areas that are continually disturbed) may be observed.

The marina area is the least likely area to be disturbed recently. The areas under the piers would also have undisturbed sediments. J. Grovhoug pointed out that the Navy has seven trained health and safety salvage divers who could be utilized for sampling if needed.

Updates on Groundwater Conceptual Model

Jeff Friedman reviewed the additional information that the Jacobs Team has been able to obtain on the dewatering operations at Southern California Edison (SCE) and Union Pacific Resources Company (UPRC). SCE has recently doubled the pumping rate of their dewatering system. It is expected that the effects of this at the NC Complex will be lowering of the water table in the northeastern portion of the LBNSY and steepening of the groundwater gradients in the area.

A. Winans commented that the DTSC hydrogeologists in Sacramento are working on several sites in the area and are attempting to develop groundwater models that are consistent between the sites. J. Woodling said that it appears that the SCE system may also be influencing groundwater flow on the TLC parcel north of the Cerritos Channel. The channel is hydraulically cut off from Terminal Island by the sea wall, and the dewatering system may be causing underflow. The aquitard separating the surficial deposits and the Gaspar Aquifer has been observed at 80 feet bgs at that site.

The Jacobs Team has been able to obtain some design drawings of the hydrostatic pressure relief system at Drydock 1, but no as-builts have been located. The ten wells that are part of the system are pumping on average 3,200 gallons per minute from the Gaspar Aquifer. The effect of this pumping on groundwater gradients in the shallow zone and possible transport of groundwater from the shallow zone to the Gaspar Aquifer cannot be determined from the data currently available.

Mark Pumford said that the Army Corps has done some research on groundwater contaminant transport in tidally influenced zones. J. Snyder has the telephone number of the Naval Exchange Officer at the Army Corps who may be able to provide the Jacobs Team with further information on this.

Leaching Pathway Model

K. Brewer presented the leaching model used to develop soil screening criteria that would be protective of the groundwater. A copy of the model was included in the advance meeting materials. There was agreement that the model was appropriately conservative for the screening evaluation and the assumption of mixing over a 10-foot depth of the aquifer had a reasonable physical basis (e.g., typical well screen interval). K. Brewer recommended that the percent organic carbon be modified from 1 percent to 2 percent to be consistent with risk assessment guidance, and this was accepted. J. Woodling commented that porosity should not be considered when determining groundwater flux in the aquifer. It was agreed that porosity would be removed from the equation.

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DTSC and the Regional Water Quality Control Board (RWQCB) requested copies of the reference used for the majority of the octanol-water partition coefficients. The Jacobs Team will forward copies to them, as well as to C. Leadon and A. Ulaszewski.

Preliminary ARARs Evaluation

A. Muckerman explained that the Department of Defense takes the lead for their sites on the identification of federal ARARs. It is the responsibility of the lead agency for the state to identify state ARARs. The Navy has sent a letter to DTSC requesting formal identification of state ARARs within 30 days. This letter was sent on 15 January 1993, but was not received by C. O'Rourke until 26 January 1993. One of the issues to be addressed in the ARARs evaluation is the legal significance of the CAL EPA cancer potency factors that differ from the federal EPA values.

Data Quality Objectives

K. Brewer reviewed the DQO process and presented an example of how DQOs may be summarized in the Work Plan. Detailed discussion of data quality objectives will be in the Sampling and Analysis Plan. DQOs for the facility and the individual sites at NC Long Beach will be discussed at the next meeting.

Action Items and Next Meeting

Action items from this meeting are listed in the attached table. The next meeting will be at CH2M HILL's Santa Ana office on 2-3 March 1993. The Jacobs Team will provide advance review materials and an agenda to meeting participants on 23 February.

Nonparticipant Distribution

R. Green - Code 0232.RG  
 P. Husted - Code 0232.PH  
 A. Vela - JEG/Pas  
 G. Guha - JEG/Pas  
 J. Crenca - CH2M HILL  
 J. Harris - CH2M HILL

M. Nuzum - Code 1812.MN  
 R. Udabe - JEG/Pas  
 K. Tomeo - CH2M HILL  
 Bryant Wong - CH2M HILL  
 File - CTO Notebook/PMO  
 File - PMO  
 File - CH2M HILL

**Follow-up Actions from Initial Evaluation Review Meeting  
Long Beach Naval Complex (NC)  
RI/FS Work Plans**

**26-27 January 1993**

<b>Action Required by</b>	<b>Description</b>
Jacobs Team	Obtain a copy of the Leadsread Model from CAL EPA
Jacobs Team	Prepare revised proposal for the sediment toxicity evaluation for submittal to DTSC.
Jacobs Team	Send copies of octanol-water partition coefficient reference to A. Winans, M. Pumford, A. Ulaszewski, and C. Leadon.
Jacobs Team	Send reference on typical background levels of metals in Long Beach area to DTSC.
Jacobs Team	Contact Corps of Engineers regarding research on groundwater contaminant transport in tidally influenced zones.
Jacobs Team	Provide meeting participants with agenda for next meeting and advance review materials by 23 February 1993.
J. Polisini	Send C. O'Rourke a list of species recommended for toxicity testing to be forwarded to the Navy and the Jacobs Team.
J. Woodling	Locate reference for EPA TDS criteria for sources of drinking water of 10,000 mg/l.
B. Fisher	Perform initial survey of recreational fishing activities at NC Long Beach.
B. Kanter	Forward contact for state sediment quality standards to Jacobs Team and DTSC.

SIGN-IN

26 Jan 93 - 27 Jan 93

<u>NAME</u>	<u>ORGANIZATION</u>	<u>PHONE</u>
ANDREA MUCKERMAN	US NAVY iRPM	619 532 1250
JOHN SNYDER, LCDR	NAVAL STATION LONG BEACH	310 547 7513
JEFF GROVHOUK	NCCOSC ROT&E Division (Navy)	(619) 553-5475
CHRIS LEADON	SOUTHWEST DIV. NAVFAC TECH. SECTION, ENV. DIV.	(619) 532-1153
STEVE COSTA	CH2M HILL	510-251-2426(x225)
Bill Fisher	SW DIV / Natural Res	(619) 532-1488
BOB KALTER	PORT OF LONG BEACH	(310) 590 4156
Craig ...	DTSC, ...	(310) 590-4575
Peter Torrey	CH2M HILL	(714) 250-5582 (x.34)
John Christopher	DTSC / Of. Sci. Advisor	916 255 2038
JIM POLSINI	DTSC / OSA	(916) 255-2043
Kathy Brewer	CH2M Hill	714 / 250-5522 (x.415)
Dennis ...	CH2M Hill	(603) 752-271
	IT Corp	714/660-5393
KEN MADDEN	LBNSY	310/439-9375
Don Heine	CH2M HILL	206/453 5000
C. ANNA ULASZEWSKI	LBNSY	310/547-8386
Allen R. Winans	DTSC - HQ	916-255-2104
Tom Johnson	Port of Long Beach	310-590-4160
JOHN WOODLING	DTSC - HQ	(916) 255-2108