STATE OF CALIFORNIA — ENVIRONMENTAL PROTECTION AGENCY

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Region 4
245 West Broadway, Suite 425
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NTC SAN DIEGO
SSIC #5090.3

1995 FEB -6 AM 10: 58

February 1, 1995

Mr. Phillip Dyck
BRAC Environmental Coordinator
Naval Training Center-Environmental Office
33502 Decatur Road, Suite 120
San Diego, California 92133-5000

Dear Mr. Dyck:

DRAFT WORKPLAN FOR EXTENDED SITE INSPECTION, STREAMLINED RISK EVALUATION, AND ENGINEERING EVALUATION/COST ANALYSIS, MCRD DISPOSAL AREA (INACTIVE LANDFILL), NAVAL TRAINING CENTER, SAN DIEGO, DECEMBER, 1994

The Department of Toxic Substances Control (Department) has completed its review of the subject document. The enclosed comments are from the California Regional Water Quality Control Board, San Diego Region, the Hazardous Materials Laboratory and the Office of Scientific Affairs of the Department. Please address these comments accordingly and provide a response to comments letter and/or a final workplan to us within fifteen days.

If you should have any questions please call me at (310) 590-5563.

Sincerely,

Alice Gimeno

Alice Gimeno
Remedial Project Manager
Base Closure Unit, Region 4
Office of Military Facilities

Enclosure

cc: Mr. Corey Walsh
Hazardous Waste Management Division
California Regional Water Quality
Control Board-San Diego Region
9771 Clairemont Mesa Boulevard, Suite B
San Diego, California 92124-1331

Ms. Deirdre Nurre
U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, California 94105

Mr. Kurt Baer
Department of the Navy-Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132-5181

Mr. Thomas Macchiarella
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1220 Pacific Highway
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County of San Diego
Hazardous Materials Management Division
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San Diego, California 92186-5261

STATE OF CALIFORNIA—CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY PETE WILSON, *Governor*

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION
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TELEPHONE: (619) 467-2952
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MEMORANDUM

TO: Ms. Alice Gimeno
California Environmental Protection Agency
Department of Toxics Substances Control
Office of Military Facilities, Region 4
245 West Broadway, Suite 425
Long Beach, CA 90802-4444

FROM: Mr. Corey Walsh
California Regional Water Quality Control Board
San Diego Region (9)
9771 Clairemont Mesa Boulevard, Suite B
San Diego, CA 92124-1331

DATE: January 24, 1995

SUBJECT: Comments on draft document entitled: ***Draft Work Plan For Extended Site Inspection, Streamlined Risk Evaluation, And Engineering Evaluation/Cost Analysis MCRD Disposal Area (Inactive Landfill), Naval Training Center, San Diego, California***

INTRODUCTION

Staff have reviewed the ***Draft Work Plan For Extended Site Inspection*** report and attachment A, ***Draft Field Sampling Plan***, for MCRD Disposal Area, dated December 20, 1994. The Work Plan document was prepared by Bechtel National, Inc.'s subcontractor Brown and Caldwell for Southwest Division Naval Facilities Engineering Command in accordance with CTO-0056.

GENERAL COMMENTS

The Work Plan must evaluate the current landfill soil cover to determine it's ability to minimize percolation of precipitation through the landfill. A surface cover maintenance program must also be developed to protect the integrity of the cover. To that end , we will be issuing Waste Discharge Requirements for Post Closure Maintenance of the landfill. The following minimum information is needed to evaluate the cover:

a) General site cover condition;
b) Surface soil cover thickness;
c) Surface drainage plan for site, and;
d) Engineering characteristics of surface soil cover.

SPECIFIC COMMENTS

EXTENDED SITE INSPECTION

1 Page 2-5, section 2.2.2. Provide location map (see figure 3-1) and tabulate results of Hydropunch™ and soil boring samples collected for proposed Recruit Barracks Enlisted Quarters Subsurface Investigation.

2 Page 2-6, section 2.2.3. Further analysis of existing groundwater gradient data collected during Water SWAT should be done, include pertinent data in ESI.

3 Page 3-1, section 3.2. How do the "two distinct intervals within the artificial fill unit", identified in the Water SWAT by Jacobs Engineering, correlate to the trash fill; how thick are these intervals; is their a correlation of the upper interval to landfill soil cover thickness; what soil engineering properties are know of this upper interval?

4 Page 3-4, section 3.3.2. What is the basis for the conclusion that the Bay Point Formation "apparently contains the most permeable water-bearing zones at the site"? Are both SMW-9 and SMW-10 screened across fill into estuarine deposits?

5 Figure 3-1. Indicate on Figure 3-1 which investigation provided the boring and monitoring well location data. Where were the Hydropunch™ sample points for the Recruit Barracks Enlisted Quarters Subsurface Investigation.

6 Figure 3-2. What are the thicknesses of the landfill soil cover, waste, artificial fill, etc. based on CPT logs generated as part of the NMIS work? What is the basis for the groundwater flow direction (NW) shown in the figure?

7 Page 3-5, section 3.4. Approximately how much dredged material was placed on wastes disposed directly on salt marsh surface during the 1950 to 1960 period? How has the distribution of non-metallic waste been identified? How much fill covers the waste at B-6 and SMW-6?

8 Page 3-7, section 3.5.1. Where are the laboratory results and drilling logs for the eight soil borings sampled as part of the Recruit Barracks Enlisted Quarters Subsurface Investigation.

9 Page 3-10, section 3.5.3. Where are the laboratory results for the Hydropunch™ sample data collected for the Recruit

Barracks Enlisted Quarters Subsurface Investigation? How does TDS results correlate to screened interval? How does the geology of the deep monitoring well drill logs correlate to CPT logs for the estuarine deposits, etc.?

FIELD SAMPLING PLAN

1 Page A1-1, section 1.2. Reportedly the site was covered with "clean soil". What is the thickness of this clean soil? What are the engineering properties of the soil cover, and it's ability to minimize percolation of precipitation? Is the soil cover thickness consistent across the site?

2 Page A2-2, section 2.2.1. How will ponded surface water effect the proposed magnetic survey and the interpretation of Water SWAT data? How deep will the magnetic survey technique detect metallic wastes? What were the problems associated with the original Water SWAT EMI survey which prompted your subsequent decision not to implement additional EMI work?

3 Page A2-4, section 2.2.3. Is GPR method appropriate for delineation of underground utilities for the proposed Hydropunch™ sampling within the trench backfill?

4 Page A2-4, section 2.2.4. How will the CPT exploration holes be destroyed? These exploration holes must be destroyed per California Well Standards Bulletin 74-90 (Supplement to Bulletin 74-81).

5 Page A2-4, section 2.2.4. Will the CPT investigation be able to distinguish between the hydraulic fill (dredged material) and estuarine deposits?

6 Page A2-4, section 2.2.5. How will monitoring wells be designed and constructed? Will additional site specific grain size data be collected for design of monitoring wells? Some grain size analysis data exists (collected as part of water SWAT) which may be useful in the design of the wells.

7 Page A2-4, section 2.2.5. What precautions will be taken to reduce the potential for cross contamination during the construction of deep monitoring wells?

8 Page A2-5, section 2.2.7. Aquifer testing should be done to determine whether their is hydraulic communication between aquifers. Aquifer testing may also be required in the deeper zone to assess aquifer hydraulic characteristics.

9 Page A2-5, section 2.3.1. How will the surface soil samples support the SRE? Are these samples required if additional capping material is placed on top of the site?

10 Page A2-6, section 2.3.2. Collection of subsurface soil samples may also be necessary below the water table in order to fully evaluated whether migration of contaminants has occurred along other geologic contacts.

11 Page A2-6, section 2.3.3. How will the Hydropunch™ exploration holes be destroyed? These exploration holes must be destroyed per California Well Standards Bulletin 74-90 (Supplement to Bulletin 74-81).

12 Page A2-6, section 2.3.3. How were the underground utility trenches identified for Hydropunch™ sampling? How deep are these utility trenches? Does groundwater exist in any of these trenches?

13 Page A2-6, section 2.3.4. Does the proposed Hydropunch™ sampling of underground utility lines include the deep sewer main as a potential pathway for off-site migration of contaminated groundwater?

14 Page A2-6, section 2.3.4. Provide proposal for groundwater monitoring program as required by Regional Water Quality Control Board letter dated October 15, 1993.

15 Page A2-7, section 2.3.5. Will the sewer pipeline trench (located along the west side of site) or any trenches going to be sampled for landfill gas? Is this the area where a sewer pipe was reportedly broken and subsequently repaired?

16 Page A3-1, section 3.1. How does the SRE evaluate the results of the surface soil analysis?

17 Page A3-1, section 3.2. Subsurface soil samples should be collected from "basal 1 foot of artificial fill" even if this unit is saturated.

18 Page A3-3, section 3.3. What is the screen length of the Hydropunch™? Exactly where will the screened interval be placed relative to the contact?

19 Page A3-3, section 3.4. Initial groundwater sampling of new monitoring wells must also include all existing wells. What wells are targeted for abandonment/destruction? All monitoring wells to be proposed for destruction must first

be approved by the RWQCB.

20 Page A3-3, section 3.5. What is the purpose of the landfill gas sampling/analysis?

21 Page A4-1, section 4.4. HVOCs analysis have not been included in the monitoring well analytical parameters. Please provide rationale.

If you have any questions concerning this memorandum, please contact Corey Walsh at (619) 467-2980.

Sincerely,

JOHN P. ANDERSON
Senior Engineering Geologist
Site Mitigation & Cleanup Unit

cc: Deirdre M. Nurre
U.S. EPA (H-9-8)
75 Hawthorne Street
San Francisco, CA 94105-3901

DRAFT WORKPLAN FOR EXTENDED SITE INSPECTION, STREAMLINED RISK EVALUATION, AND ENGINEERING EVALUATION/COST ANALYSIS MCRD DISPOSAL AREA (INACTIVE LANDFILL), NAVAL TRAINING CENTER, SAN DIEGO, CALIFORNIA

SPECIFIC COMMENTS

1) Page 1-1, 1.1 Overview:

For clarification to reader, perhaps the nine criteria for remedy selection outlined in CERCLA should be listed in the overview.

2) Page 2-1, 2.1 Site History, third paragraph:

Because the landfill formerly was part of MCRD, were records reviewed or personnel interviews completed at MCRD?

3) Page 2-1, 2.1 Site History, fourth and fifth paragraph:

Do any of the previous investigations give detail on landfill operations, actual records on disposal practices, the types and amounts of wastes received, or how the landfill was closed?

How much fill material was used to close the landfill and where was this material obtained?

4) Page 2-5, 2.2.2 Recruit Barracks Enlisted Quarters Subsurface Investigation:

Where are the sampling results for this study? What was the rationale for 0-.5 foot sampling depth for shallow soils? Sampling results were not found in Section 3.

5) Page 2-7, 2.2.5 Geotechnical Investigation, North Metro Interceptor Sewer Project:

What were the conclusion of this investigation and what is the status of this project? When was the original sewer line put in and were there any adverse conditions encountered during construction?

6) Page 2-7, Section 2.3 Regulatory History:

Has a groundwater monitoring plan been developed for the landfill per the RWQCB review of the Water SWAT and their comment letter dated October 15, 1993?

7) Page 3-2, Figure 3-1:

Please distinguish which study belongs to what symbol.

8) Page 3-5, 3.4 Distribution and Extent of Landfill Wastes:

The seventh line, "...wastes were reported by buried within east-west..." should be "reportedly" not "reported by."

9) Page 3-7, 3.5.1 Surface Soil:

Where was the "clean soil material obtained for the landfill cover? Please provide rationale for determining background conditions for this site.

10) Page 3-10, First paragraph:

Where are the results of the Recruit Barracks investigation?

11) Page 3-10, 3.5.2 Subsurface Soil:

Have other subsurface soil investigations at NTC revealed similar "naturally occurring" arsenic results?

12) Page 3-18, Second paragraph:

When was this pipe leak fixed? Has there been subsequent sampling in this areas since the pipe leak was fixed?

13) Page 5-2, 5.3 Groundwater Monitoring Plan:

Please provide DTSC with copies of the quarterly monitoring reports also.

Memorandum

To: Alice Gimeno
Southern California Operations
Office of Military Facilities
245 W. Broadway, Suite 350
Long Beach California

From: Bart Simmons, Ph.D.
Hazardous Materials Laboratory

Date: January 20, 1995

Subject: Draft Quality Assurance Project Plan, December 1994
Draft Field Sampling Plan, December 1994
Extended Site Inspection
MCRD Disposal Area (Inactive Landfill)
Naval Training Center
San Diego, CA

We have reviewed the draft Quality Assurance Project Plan (QAPP) and the draft Field Sampling Plan. Our comments are as follows:

1. The project and task organization, which should identify the individuals participating in the project and indicate their roles and responsibilities, was not provided for review.

2. Page A5-3, Table A5-1, Sample Containers, Preservation and Holding Times.

   The holding time for metals except mercury should be 6 months both for soil and water. The holding time for mercury in soil is 28 days. The holding time for water is 38 days in glass containers and 13 days in plastic containers.

   On the method 8270, sample container should be 1-gal. or 2-1/2 gal. amber glass with teflon liner; preservative (samples with no residual chlorine present) should be cool, 4°C; preservative (samples with residual chlorine present) should be add 3ml of 10 % sodium thiosulfate per gallon, cool, 4°C.

3. Page B2-9 to B2-10, Section 2.1.5. Step 5, Decision Rules of the Data Quality Objectives. The decision rules should be revised to be consistent with the following:

   Section 2.1.5.1 Landcap Fill

   Abatement on the landfill should be done, if the contaminant detected in the surface soil samples exceeds the risk-based concentration and the

contaminant detected in the surface soil samples exceeds a limit based on background samples. The risk-based concentration to be used for this project should be specified.

Section 2.1.5.2 Source Area Groundwater Control and Section 2.1.5.4 Offsite Groundwater Remediation

Abatement on groundwater should be done, if the contaminant detected exceeds the federal water quality standards for bays and estuaries and the contaminant detected exceeds a limit based on upgradient results.

4. Page B2-10, Step 6 - Limits on Uncertainty of the Data Quality Objectives.

Step 5 is a typographical error. It should be step 6.

This step on stating the limits of uncertainty was not addressed.

As stated in comment 7, arsenic, beryllium, mercury and nickel standards for the bay and estuaries are lower compared to detection limit of the proposed methods. False negative errors may occur at the range between standards (bay and estuaries) and instrument detection limit (IDL). What would be the acceptable limits for error in making a decision between the standard (bay and estuaries) and the IDL should be addressed.

Alternate method for Arsenic, beryllium and nickel may be considered to meet the low standards for the bay and estuaries. Method 200.8, Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) has lower detection limit compared to the proposed methods and may meet the low standards for the bay and estuaries. The use of ICP-MS or other alternative techniques should be evaluated.

5. Page B2-10, Step 7, Optimize the Design of the Data Quality Objectives.

Section 2.1.7.1 Surface Soil Sampling.

Page A3-1, Section 3.1, stated 17 soil samples will be collected for characterization and the locations were selected randomly, but rationale for selecting the number of samples (17 samples) was not discussed.

It was not explained how and what value (the average, upper or lower limit) of the background samples (3

samples from this project plus samples from Water SWAT investigation done on 1991-1992) would be compared to the soil samples.

6. Page B2-15, Table B2-2, Quality Assurance Objectives, method 8080, PCBs and Pesticides, is a GC method not a GC/MS method. The method 8080 limits for RPD and % Recovery were given as "variable" and "not applicable" respectively. Actual limits should be provided. Percent Recovery limits for method 9020 should also be provided.

7. The designated mobile and stationary laboratories performing the analysis should be accredited by the Environmental Laboratory Accreditation Program (ELAP).

8. Page Ap-1, table showing the Project Required Detection Limit for soil and water, the following were noted:

   The table did not include parameters for methods 8270, 8020, 8010, 8080, 9060 and 9020.

   The standards or action levels required for soil characterization were not provided for review.

   The unit for the Specified Limit for Bays and Estuaries was not provided. We suspect that the unit is ug/L.

   The footnotes(1,2,etc.) were not defined.

   For the following metals, the standards required for bay and estuaries listed may or may not be achieved by the given methods.

Parameter	Method	Specified Limit for Bays & Estuaries (Assume ug/L)	IDL (ug/L)
Arsenic	7060/7061	0.04	1
Beryllium	6010	0.13	0.3
Mercury	7440/7471	0.03	0.2
Nickel	6010	8.3	40

   It should be noted that at instrument detection limit, analytes may be detected but quantitation may not be reliable.

If you have any questions, please feel free to contact Lorna Garcia/Fred Seto at (510) 540-3003.

cc: Fred Seto, Ph.D.
Cindy Dingman
James Cheng
Lorna Garcia

DEPARTMENT OF TOXIC SUBSTANCES CONTROL
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MEMORANDUM

TO: Alice Gimeno, Project Manager
Office of Military Facilities, Region 4
245 West Broadway, Suite 350
Long Beach, CA 94710

FROM: James M. Polisini, Ph.D.
Staff Toxicologist
Office of Scientific Affairs
Human and Ecological Risk Section

DATE: January 12, 1995

SUBJECT: NAVAL TRAINING CENTER INACTIVE LANDFILL
[PCA 14740 SITE 400273-45 OC 2:8]

Background

We have reviewed appendix F of the document titled *Draft Work Plan for Extended Site Inspection, Streamlined Risk Evaluation, and Engineering Evaluation/Cost Analysis MCRD Disposal Area (Inactive Landfill), Naval Training Center San Diego, California*, dated December, 1994 and prepared by Bechtel National, Inc. of San Diego in response to your written work request dated December 28, 1994.

Naval Training Center (NTC) San Diego is located in San Diego, California near the northernmost point of San Diego Bay. Construction of NTC San Diego began in 1921 and the existing 300 buildings currently cover 550 acres. NTC San Diego is scheduled for closure by September 25, 1999. The inactive landfill occupies approximately 32 acres at the eastern part of NTC San Diego in what was formerly a salt marsh adjoining San Diego Bay. Wastes disposed of in the landfill between approximately 1950 and 1971 could have included: dumpster wastes; infectious wastes; paint wastes; empty pesticide containers; wastes potentially contaminated with pentachlorophenol sludge, polychlorinated biphenyls (PCBs), methyl isobutyl ketone,

xylene and methyl ethyl ketone (MEK); and metal-plating wastes (possible containing cyanides). Approximately 5 million cubic feet of waste were estimated to have been placed in this landfill. The landfill was covered with fill dirt after when disposal ceased. Part of the landfill is currently a California least tern protected nesting area under an agreement between the U.S. Navy and the U.S. Fish and Wildlife Services (USFWS).

The Navy intends to address the inactive landfill using the non-time-critical removal action (NTCRA) process provided under CERCLA.

General Comments

The method for incorporating the CalEPA Standards and Criteria Work Group cancer potency factors into the human health risk assessment should be expanded. We propose that the human health risk assessment utilize (1) the more health protective of the U.S. EPA cancer slope factors or CalEPA cancer potency factors or (2) calculate incremental cancer risk both by a EPA and a CalEPA method. Either method of presentation for the incremental cancer risk is acceptable.

The ecological risk assessment, termed a screening ecological risk evaluation, contained in Appendix F appears to concentrate strictly on terrestrial receptors despite the presentation that aquatic receptors may be exposed (Section 3.8, page 3-21). While we agree that potential impacts on endangered species such as the least tern should be investigated, the potential impact on aquatic receptors in San Diego Bay should also be evaluated. There appears to be a potentially complete exposure pathway to San Diego Bay via groundwater (Section 3.6.2, page 3-18)

Specific Comments

Human Health Risk Assessment

The selection of chemicals of concern (Section 2.1, page F2-1) should be an integrated process which considers all pertinent criteria, not a criterion-by-criterion elimination of potential contaminants:

1. Non-detection. Elimination of chemicals not detected in an environmental medium must be balanced against the site conceptual model. For instance, it would be inappropriate to eliminate a compound from consideration as a soil contaminant if the chemical is present in groundwater unless a reasonable explanation can be provided which details a source of the contaminant to groundwater other than on-site soil. Detection limits must also be evaluated against relevant ecological criteria to ensure that analytical methods are sufficiently sensitive.

2. Limited distribution. The 5 percent frequency of detection criterion for selection of chemicals of concern must be considered in combination with other criteria. The 5 percent level is referred to in Risk Assessment Guidance for Superfund (RAGS) only as an example, not a recommendation. Chemicals which are detected at less than 5 percent may still be included in the list of chemicals of concern based on other criteria such as concentration or potency.

3. Laboratory artifact. The criterion must be applied in conjunction with the history of chemical use at the site, the chemical concentration detected in the sample from the site and the concentration of the chemical in the method blank. For instance, elimination of methyl ethyl ketone (MEK), if MEK was known to be used at NTC San Diego and the site concentration is high relative to the method blank, would be inappropriate. Even compounds that are recognized laboratory contaminants should not be eliminated as chemicals of concern if they are detected at relatively high concentrations.

4. Background. Inorganic contaminants should not be eliminated as contaminants of concern based on comparison with 'background' or 'ambient' concentrations. Incremental cancer risk and hazard should be calculated based on total concentration and then an additional calculation of risk or hazard due to 'background' or 'ambient' concentrations should be prepared. Alternatively, in addition to risk or hazard based on total concentrations, a calculation of risk and hazard based on site-related contribution may be provided.

In the soil ingestion equation (Section 2.2.5, page F2-3) the units of the 'correction factor' (CF) are not defined, the ingestion rate of soil should have units of mg/day instead of mg (page F2-4) and the units of averaging time (AT) are not specified (page F2-4).

Surface area (SA), in the equation for dermal contact with soil (Section 2.2.5, page F2-4) usually has the units of cm^2 rather than cm^2/event. If units of cm^2/event remain a rate with events/day must be added.

The equation for exposure to vapors and particulates (Section 2.2.5, page F2-4) requires addition of the particulate concentration for evaluation of the exposure to particulates and use of the air concentration of vapors rather than the soil concentration for exposure to vapors and gases. Perhaps separate equations would be more appropriate.

The phrase 'quasi-quantitative' should be removed from the description of toxicity values (Section 2.3.1, page F2-4) regarding use of a RfD or cancer slope factor from a structurally similar chemical for those chemicals without RfDs or cancer slope factors. These chemicals will not be treated differently in the risk or hazard calculations from those with RfDs or cancer slope factors once the selection of a surrogate value is completed. A discussion of the potential effect of this substitution may be included in the uncertainty section of the risk assessment.

It is not clear how the cancer potency factors released by the Standards and Criteria Work Group of the California EPA will be used in calculation of incremental risk (Section 2.3.1, page F2-5). Regulatory programs in the CalEPA are required to utilize the cancer potency factors produced by the Standards and Criteria Work Group. We propose that incremental cancer risk be calculated by one of two methods: (1) use the CalEPA cancer potency factors in place of the EPA IRIS cancer slope factors where the CalEPA cancer potency factor is more health-protective to produce a single calculation of incremental cancer risk; or (2) perform two separate calculations of incremental cancer risk using EPA IRIS cancer slope factors for one calculation and a list augmented by the CalEPA cancer potency factors for the other calculation. The most recent CalEPA Standards and Criteria Work Group list of cancer potency factors can be obtained from Dr. David Siegel at (916) 324-2829.

How is it proposed to 'adjust' the oral reference dose and cancer slope factors for inorganic contaminants using the oral absorption factors for radionuclides in HEAST (Section 2.3.1, page F2-5)? This 'adjustment' is accounted for in the dermal absorption factor (DAF) included in the equation for dermal contact with soil (Section 2.2.5, page F2-4). If this proposal is to utilize the oral absorption factors for radionuclides in HEAST as DAFs for inorganics in the dermal exposure equation we will reserve evaluation until the list of COCs and the associated DAFs are presented. The Human and Ecological Risk Section (HERS) generally specifies use of the DAF process and default DAFs contained in the Preliminary Endangerment Assessment (PEA) Manual, but if the HEAST-derived DAFs are at least equally health-protective we would not object. A copy of the default DAFs from the PEA Manual is attached.

We suggest that the evaluation of lead (Section 2.4.2, page F2-5) be kept separate from the hazard index calculation for other contaminants. The current proposal, to construct a lead hazard quotient from the ratio calculated lead blood concentration and the 10 ug/dl blood lead guideline, will elevate the hazard index because blood lead concentrations due to 'ambient' lead can be 5 ug/dl or higher.

The skin surface areas for adults in the residential and occupational hypothetical future receptor scenarios are somewhat different (Table F2-1, page F2-6).

Screening Ecological Risk Evaluation

Although it is not explicitly stated, the ecological risk evaluation seems to consider the groundwater exposure pathway for aquatic receptors to be incomplete and focuses most if not all of the evaluation on terrestrial receptors such as the least tern. If the presentation that there may be a potentially complete exposure pathway to San Diego Bay via groundwater (Section 3.6.2, page 3-18) evaluation of this potential route of exposure and the associated threat should be included in the work plan in Appendix F.

How will site residence time or habitat use be used to 'semiquantitatively define the magnitude, frequency and duration of exposure' (Section 3.2, page F3-4)? If the proposal is to identify the exposure of potential receptors as high, medium or low then this proposal should be clearly stated along with the criteria which will result in each exposure characterization.

How will 'body burden' be calculated for each contaminant of potential ecological concern (COPEC) (Section 3.2, page F3-4)? The method proposed to calculate the body burden should be stated along with the information necessary to calculate the body burden.

Exposure should be compared to No Observable Adverse Effect Levels (NOAELs) where available to evaluate potential ecological threat (Section 3.3, page F3-5). Uncertainty factors (UFs) should be utilized to adjust Lowest Observable Adverse Effect Levels (LOAELs) or Lethal Dose (LD50) or Lethal Concentration (LC50) toxicity information prior to comparison with exposure. UFs should be utilized to adjust for insensitive endpoints, less than chronic exposure and cross-species extrapolation.

The methodology proposed to develop the 'toxicological criteria' for comparison with body burden should be fully presented (Section 3.3., page F3-5).

The last sentence (Section 3.3, page F3-5) should be amended to indicate that no further studies are proposed for this screening analysis. Should this screening evaluation determine that a potential threat exists for ecological receptors, further studies may be required.

Evaluation of potential remedial action alternatives should include evaluation of the direct physical impact associated the proposed alternative. For example, excavation to decrease a potential threat associated with contaminant exposure would have a definite, predictable impact on some receptors. The direct, physical impact of

habitat removal for a period of time should be evaluated against the predicted impact associated with contaminant exposure.

Conclusions

Once the comments on the human health evaluation are addressed the evaluation proposed in the work plan should provide an adequate appraisal of the threat to human health posed by contaminants associated with the inactive landfill at NTC San Diego.

It appears that additional sampling may be needed to determine whether the groundwater exposure pathway to San Diego Bay is complete for aquatic ecological receptors. If the groundwater exposure pathway is complete, investigation of potential impacts on aquatic receptors should be included in the work plan.

Reviewed by : Brian K. Davis, Ph.D.
Staff Toxicologist
Human and Ecological Risk Section

Attachment.

cc: Judith Parker, Ph.D., Region 4 Liaison, HERS
Michael J. Wade, Ph.D., OMF Liaison, HERS

Clarence Callahan
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Dan Stralka, Ph.D.
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Denise Klimas
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TABLE 2: SCREENING LEVEL DERMAL ABSORPTION FRACTIONS (ABS) FROM SOIL

Compound Class	Absorption Fraction[1]	References
Chlorinated Insecticides	0.05	Wester, et al., 1990a; Wester, et al., 1992a
Polynuclear Aromatic Hydrocarbons	0.15	Wester, et al., 1990a
Organophosphates	0.25	Cal/EPA Office of Environmental Health Hazard Assessment
Pentachlorophenol	0.25	Wester, et al., 1993b
Polychlorinated Dibenzo-p-dioxins and Dibenzofurans	0.03	USEPA, 1992
Polychlorinated Biphenyls (PCB)	0.15	Wester, et al., 1993c
Other Organic Chemicals	0.10	SCAQMD, 1988
Cadmium	0.001	Wester, et al., 1992b
Arsenic	0.03	Wester, et al., 1993a
Hexavalent Chromium	0%	Not shown to be a systemic carcinogen via dermal exposure
Other metals and complexed cyanides	0.01	SCAQMD, 1988
Free Cyanide	0.10	SCAQMD, 1988

1. Dermal absorption values from soil are based on, in order of preference: in vivo, animal studies on dermal absorption from soil; in vivo, animal studies on dermal absorption from an applicable cosolvent; in vitro, human skin dermal absorption studies; in vitro, animal skin dermal absorption studies. Actual dermal absorption from soil may vary from these estimates due to exposure conditions or soil chsracteristics which differ from the experimental conditions.