NAVAL AIR STATION (NAS) ALAMEDA RESTORATION ADVISORY BOARD MEETING SUMMARY

Paden School
Alameda, California

Tuesday, 06 January 1998

ATTENDEES:

See the attached list.

MEETING SUMMARY

I. Approval of minutes

John Spafford, Community Co-Chair, opened the meeting at 7:02 p.m. and thanked those present for attending. Meeting minutes were amended on page 1 to reflect Jo Lynne Lee's new title as Co-Chair elect in lieu of alternate Co-Chair and on page 2, Fiscal Year (FY) 1998 budget was $17.8 million rather than $17.8. Meeting minutes were approved with these corrections.

II. Co-Chair Announcements

Steve Edde, BRAC Environmental Coordinator and Navy Co-Chair, made the following announcements and wished everyone a Happy New Year:

- Mr. Edde introduced the new officer in charge of the Caretaker Site Office at Alameda, Lieutenant Commander Scott Smith.

- Mr. Edde corrected an article in the 06 January 1998 *Alameda Journal* that announced the National Environmental Protection Act (NEPA) Environmental Impact Statement/Environmental Impact Report (EIS/EIR) Record of Decision (ROD) date had slipped to November 1998. Mr. Edde reported that the actual ROD date will be January 1999; the previous date was scheduled in August 1998. Mr. Edde explained that completion of the NEPA ROD is necessary for property transfer. Mary Rose Cassa, Department of Toxic Substances Control (DTSC), further explained that the document is used to evaluate the environmental impact of base reuse, which is a different domain from that governed by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Doug deHaan expressed concern that the submittal date for the EIS/EIR ROD had slipped two years, and Malcolm Mooney noted that delays will extend the Navy's ownership of the base, caretaker responsibilities, and expenses. Mr. Edde committed to provide a one page synopsis of the NEPA ROD milestones with corresponding public review schedule at the next meeting. Mr. deHaan asked for

assurance that the NEPA ROD slip would not impact the IR program timelines. Mr. Edde explained that the NEPA ROD only impacts property transfer and does not impact the cleanup program. The IR program schedule, set by the BCT, continues to move forward.

Karen Hack thought it important to note whether the EIS/EIR adequately addresses environmental impacts of long term operation and maintenance and residual contamination. Ms. Hack then asked for the reasons behind the delay to which Mr. Edde responded that both the Navy and the City of Alameda agreed that more time was needed to prepare the report.

It was noted that the Fleet Industrial Supply Center (FISC) Annex is included in the NEPA ROD.

- Mr. Spafford shared the following RAB goals for the coming year and requested RAB response:

1) More progress toward site cleanup with improved community involvement
2) More board member involvement via Project Team development
3) Better understanding of terminology
4) Greater use of consensus development cards (red for disapprove; yellow for "can live with the concept with some exceptions"; and green for approval of a notion)
5) Consensus (Mr. Spafford added that if consensus is not reached, then majority vote may be required.)
6) Move RAB meetings to Building 1 at Alameda Point
7) Move all audience members to the RAB table
8) Get better acquainted
9) Have fun
10) Provide a map for Diane Behm
11) Provide coffee

Consensus development was discussed in light of RAB members representing various constituencies. Tom Palsak asked if each member represents a constituency to which Mr. Spafford responded that constituencies are defined by individual RAB members. For instance, the RAB member may represent himself, his street, or an organization. Mr. Spafford asked RAB members to contemplate how each member polls and represents his or her respective constituencies and suggested discussing constituency responsibilities as a future agenda topic.

Lyn Stirewalt reminded RAB members that Department of Defense guidelines specify that RAB members are expected to do community outreach. This information was provided during new member orientation which will be organized again for new and existing RAB members. She also mentioned that there has been in the past a RAB subcommittee that interfaced with local papers and met with reporters to disseminate information.

III. Semi Final Project Team Results and Breakout Session

Mr. Spafford shared results of the Project Team Groupings. Team leaders were discussed and are as designated:

1) **Radiological Team**
Tony Dover (Team Leader)
Lauren Helfand
Patrick Walter
Michael Torrey
George Kikugawa, RPM

2) **UST/Fuel Line Removal**
Tom Palsak (Team Leader)
Tony Dover
Diane Behm
Bert Morgan
Ken O'Donoghue
Dan Yee, RPM

3) **EBS/Tiered Screening/ Transfer Documentation**
Diane Behm (Team Leader)
Karen King
Lyn Stirewalt
Michael John Torrey
Ann Klimek, Temporary RPM

4) **Lead Based Paint**
Mal Mooney (Team Leader)
Ardella Dailey
Bill Kaktis, RPM

5) **OU1 RI**
Wayne Mayer (Team Leader)
Karen Hack
Jo Lynne Lee
Patricia McFadden, RPM

6) **New or Emerging Issues**
John Spafford (Team Leader)
Bert Morgan
Tom Palsak
Michael John Torrey
Steve Edde, POC

Mr. Spafford encouraged teams to develop a rapport with their respective RPM at EFA West and gain a better understanding of their project. Each team may then report on its findings at RAB meetings. Mr. Spafford brought the RAB's attention to the Draft Position Description for RAB Project Leaders and noted that he had received no response.

IV. CERCLA Process "The Road to ROD"

Mary Rose Cassa reintroduced herself as Tom Lanphar's replacement and circulated handouts on the CERCLA cleanup process. She explained that CERCLA, promulgated in 1980, designed a protocol for hazardous waste and hazardous substance cleanup. CERCLA, also known as Superfund, was amended in 1986 by the Superfund Amendments and Reauthorization Act (SARA). Regulations for the Superfund statute or law are found in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Title 40, part 300 of the Code of

Federal Regulations. She further explained that although Superfund money may be used to clean up hazardous wastes at non-federal facilities, the Department of Defense (DoD) funds its own cleanup at military installations.

The State of California has statutes that parallel CERCLA in the California Health and Safety Code. Regulations are documented in Title 22 of the California Code of Regulations.

Ms. Cassa reported that submittal of the Remedial Investigation Report for Operable Unit 1 places NAS Alameda in the middle of the CERCLA cleanup process. She informed the RAB that the first steps to identify possible hazardous waste releases were taken by DoD in 1975. In 1980, the Navy later expanded DoD's program into the Navy Assessment and Control of Installation Pollutants (NACIP). In 1982, NAS Alameda began investigating potentially hazardous waste releases. In 1988, the Navy realigned NACIP more closely with CERCLA and renamed it the Installation Restoration (IR) Program. The Navy began the cleanup process long before BRAC. Initial Navy investigations paralleled the first CERCLA step - the **Preliminary Assessment/Site Investigation (PA/SI)**. State protocol calls this step a Preliminary Endangerment Assessment (PEA). The objective of this step is to identify potentially contaminated sites that warrant further sampling and investigation. This objective is reached by interviewing past base employees and conducting record searches. During this step, 12 IR Program sites were identified as posing a potential risk to human health and the environment. These sites were scheduled for further evaluation.

Ms. Cassa noted that if particularly hazardous threats are discovered during the preliminary investigation, the contamination may be removed quickly through a process called a Removal Action.

By mid-1997, 24 IR sites at NAS Alameda had been identified and were broken into four manageable operable units (OUs). OU1 is proceeding to the next IR step, the **Remedial Investigation (RI)**, to further characterize the nature and extent of contamination. Treatability studies are simultaneously being analyzed to determine appropriate cleanup technologies.

Once the Final RI is completed, sites determined to pose a significant risk move into the **Feasibility Study (FS)** stage. An FS compares costs of selected cleanup alternatives or strategies. The NCP provides guidance on how to evaluate cleanup alternatives.

The nine evaluation criteria ask:

1) Is the alternative protective of public health and the environment?
2) Does it comply with applicable or relevant and appropriate regulations (ARARs)? ARARs are all the local and regional regulations that apply to particular remedial actions that are more stringent than federal regulations.
3) Is it effective in the long term?
4) Will the alternative reduce volume, mobility, or toxicity?
5) Is the alternative effective in the short term?
6) Is the treatment implementable?

7) Is the cost economically feasible?
8) Is the alternative accepted by the state?
9) Is it accepted by the community?

Once all the criteria have been carefully considered, a preferred alternative evolves. Preferred alternative and selection logic are presented to the public in a **Proposed Plan.** A public meeting is held to introduce the plan, and public comment is solicited and documented. The State's equivalent of the Proposed Plan is a **Draft Remedial Action Plan**.

The Navy responds to all written and verbal comments, and responses are contained in a Responsiveness Summary in the **Record of Decision (ROD)**. The ROD documents the final cleanup strategy derived by the community, DTSC, U.S.EPA, and the Navy. The State's equivalent to the ROD is a **Final Remedial Action Plan**.

Following the ROD, **Remedial Design (RD)** and **Remedial Action (RA)** ensues for respective design and construction phases. Regulatory oversight is provided to ensure that objectives of the ROD are met in the RD and RA phases.

Ms. Cassa additionally noted that Environmental Baseline Survey (EBS) Tiered Screening is also proceeding, as is Resource Conservation and Recovery Act (RCRA) cleanup; the underground storage tanks and hazardous waste generation and accumulation points are covered under RCRA.

Mr. Spafford encouraged each team to become familiar with the regulatory process. Ms. Cassa also encouraged the groups to share their findings with the entire RAB so that all may get accustomed to the similarities of the programs and associated acronyms or phrases.

Mr. Mooney asked where there may be anticipated difficulties. Ms. Cassa responded that difficulties may be encountered when defining when a property is suitable for transfer. She also mentioned that some controversy arises about whether the military must respond line by line to comments.

V. Clarification and Status of 10 November Tiered Screening Letter

Ms. Cassa addressed Tom Lanphar's letter regarding EBS Tiered Screening for Zones 20, 21, and 23 dated 10 November 1997. Each comment is written verbatim followed by her explanation in italics (see Attachment C).

Ms. Cassa prefaced her explanation by stating that after working with NAS Alameda for approximately two weeks, she began hearing concerned reports about Mr. Lanphar's letter. The suggestion was made to DTSC to clarify Mr. Lanphar's comments. Ms. Cassa pointed out that the actual EBS Tiered Screening document was submitted by the Navy in August, and regulators

submitted their comments in late September. Mr. Lanphar's letter was dated 10 November 1997.

Ms. Cassa believed that Mr. Lanphar prefaced his letter with the more difficult part of his comments up front to let the Navy know that there are issues that need addressing, but that the goal is in sight. She related that regulators in the past prefaced comments by stating that the document as a whole was good and then followed with their suggestions. Experience has shown that responsible parties don't always read past the good news to reach the recommended changes. Now comment letters are written with recommendations at the beginning followed by an acknowledgment of progress and the need for future discussion at the end of the letter. Ms. Cassa also noted that the Navy has incorporated Mr. Lanphar's comments into the next set of EBS documents resulting in a 30 day delay. Ms. Cassa pointed out that although most of the members of the BCT are fairly new, there is a basic feeling that the remedial project managers are developing unity in their decisions.

Ms. Cassa explained that Comment #1 contrasts use of the 95% upper confidence limit with use of the maximum contaminant value when calculating risk. An agreement was reached that applies the State's Preliminary Endangerment Assessment requirements mandating use of maximum contaminant values on relatively small data sets.

Comment #2 addresses the phenomenon called "marsh crust". Ms. Cassa interpreted Mr. Lanphar's comments as encouraging the Navy to treat Zones 20 and 21 the way the investigation was conducted at Zone 16.

Comment #3 involves calculating risk posed by hazardous waste sites. Ms. Cassa informed the RAB that risk is calculated by incrementally increasing the chances of contracting cancer. She explained that 1×10^{-6} risk relates to increasing the chances of developing cancer by one more additional case in a million; consequently, 1×10^{-4} represents increasing chances of developing cancer by one more additional case in ten thousand. NCP guidance states that sites with risks calculated below 1×10^{-6} are clean and require no further action. However, if risks are determined to be above 1×10^{-4}, then sites must be cleaned up. The area of contention lies between 1×10^{-4} and 1×10^{-6}. Cleanup of these contentious areas is governed by a process called risk management. Risk management requires logical, rational justification to support the conclusion of whether the site is clean or not. Ms. Cassa stated that Mr. Lanphar asked the Navy for additional rationale to support its risk management decisions.

Comment #4 was explained to be asking the Navy to meet the requirements of the RCRA Facility Investigation (RFI), if they intend to fold the RFI into EBS Tiered Screening. Similarly, Comment #5 requested the Navy to furnish UST information in the EBS report.

Mr. Edde explained that the Navy is developing their response to all the regulatory agency comments, and Ann Klimek, EFA West, stated that the response is just about ready and will be available by the official submittal date.

Diane Behm asked to see all regulatory agency comments. Anna-Marie Cook, U.S.EPA, indicated she had no problem forwarding her comments to the RAB, and so Mr. Edde agreed to coordinate mailing U.S. EPA comments out with the meeting minutes. The Navy agreed to present response to regulator comments at the next RAB meeting. Ms. Behm requested maps and overlays to help understand zones, OUs, parcels, and other concepts. Ms. Cassa encouraged incorporating maps of the same scale into the new revision of the BRAC Cleanup Plan. Ann Klimeck added that 8 ½ x 11 maps have been created, and stated that she will make the most useful ones available.

Ms. Hack questioned how deed restrictions will be handled. She understood that DTSC's position is to impose deed restrictions through a CERCLA ROD, whereas, if the Navy chooses to pursue the EBS process through a Finding of Suitability to Transfer (FOST), deed restrictions will be included in the FOST. Ms. Cassa stated that discussion about this issue is being pursued at the management level in an attempt to resolve it.

Ms. Cassa noted that the whole of NAS Alameda entered into the CERCLA process in 1975, and due to this fact, all parcels fall under CERCLA. She also stated she believes that as everyone reaches a better understanding of definitions, then a consensus will be reached.

VI. FY96 & FY97 Budget Review

At the RAB's request, Mr. Edde reported on progress of fiscal year (FY) 1996 and 1997 projects. During the last meeting, Mr. Edde shared that he was able to obtain $3 million additional dollars o add to the FY98 budget which brings the FY98 total to $20.5 million.

The total amount of money allocated for FY97 was $19.2 million and for FY96, $12.3 million. Mr. Edde informed RAB members that some of the FY96 and FY97 money is still being spent, but all of the money is obligated for specific projects.

Mr. Edde showed Compliance and IR Program projects as follows:

Year	*Budget Amount*	*Project*	*Percent of Money Spent*
FY96	$12.3 million	IR Program	72%
		Compliance	87%
FY97	$19.2 million	IR Program	8%
		Compliance	24%

Mr. Edde informed the RAB that FY97 money was made available in August and September, thus the percent of money spent against actual projects is low. Mr. Edde assured the RAB that the money is obligated and available for specific projects, yet the actual payment for completed work has not occurred.

Mr. deHaan asked how much money has been obligated and expended since the beginning of cleanup and what amount is anticipated for cleanup completion. Ann Klimek explained that $53.6 million has been spent so far since base closure, and the projected dollar figure for FY98 and beyond is $143.6 million.

Mr. deHaan also noted that percent of money spent does not mean the cleanup task is progressing at the same rate. Ms. Klimek stated that NAS Alameda is still in the investigative stage, and that once the ROD is signed, remedial design and action will soon follow. The plan is to implement remedial design and remedial action in 2000-2001.

Ms. Cassa introduced Appendix A and B of the BRAC Cleanup Plan (BCP). Appendix A contains the Environmental Programs Master Schedule, and Appendix B is supposed to contain Fiscal Year Funding Requirements and Costs. She noted that Appendix B is empty and that Appendix A requires additional information. She suggested with revision of Appendix A and completion of Appendix B, the BCP will be a good source of project and budget information. She stated that the BCT is currently reviewing and updating the BCP and an update of these appendices will be included in the updated version.

Mr. Spafford summarized the RAB's request and asked for percentages of projects completed and percentage of project money spent. Ms. Klimek encouraged RAB teams to discuss details with the appropriate remedial project manager (RPM). Jo Lynne Lee thought each team could report their findings so that information is more "digestible". Ann Klimek agreed to provide information on projected project completion dates and percentages.

Lyn Stirewalt asked if money will need to be refunded if it is not obligated at year's end. Mr. Edde replied that under certain circumstances money must be returned, but to his knowledge no money has been returned from NAS Alameda. Ms. Klimek stated generally Alameda is one of the best bases, close to one hundred percent execution of applying and awarding our funding.

Ms. Hack asked for clarification of ROD submittal dates. Mr. Edde turned to Appendix A in the BCP and gave the following information:

OU ROD	**Signing Date**
Final OU1 ROD	21 June 1999
Final OU2 ROD	December 1999
Final OU3 ROD	August 2000
Final OU4 ROD	March 2001

Mr. Edde clarified that the schedule is based on a request by Congress that ninety percent of the remedial design and remedial action be completed by 2001. Mr. Edde stated that the last parcel is planned for transfer by 2003.

VII. Community & RAB Comment Period

Mr. Spafford presented Ardella Dailey with a plaque of appreciation to commemorate her selfless service and for keeping the RAB "inside the door of decision making".

Mr. Palsak asked if it is still possible to get a scholarship or stipend to attend the National RAB Caucus in Phoenix, Arizona in January. Ms. Hack reported that ARC Ecology has received a good response from RABs around the nation, and that 30-40 different RABs will be represented. She added that it was too late to obtain a scholarship, but assured members that there is no charge to attend the meetings. Ms. Hack also announced her resignation from the RAB because she will be leaving ARC Ecology, and told the RAB to be expecting a replacement. Mr. deHaan thanked Ms. Hack for her contributions to the RAB. Due to Ms. Hack's resignation, Lyn Stirewalt requested another volunteer for the Membership Committee.

The RAB meeting was adjourned at 9:00 p.m.

The next Restoration Advisory Board Meeting will be held at 7:00 p.m. on Tuesday, 03 February 1998 at Paden Elementary School, Alameda.

ATTACHMENT A

NAVAL AIR STATION ALAMEDA
RESTORATION ADVISORY BOARD MEETING AGENDA

January 6, 1998

RESTORATION ADVISORY BOARD

Naval Air Station Alameda

AGENDA

January 6, 1998 7:00 p.m.
Paden School, Alameda

TIME	SUBJECT	PRESENTER
7:00 -7:05	Approval of minutes	John Spafford
7:05-7:20	Co-Chair Announcements	Co-Chairs
7:20-7:45	Semi Final Project Team Results and Breakout Session	John Spafford
7:45-8:00	CERCLA Process "The Road to ROD"	Mary Rose Cassa
8:00-8:30	Clarification & Status of Nov. 10 Tiered Screening Letter	BCT
8:30-8:50	FY96 & FY97 Budget Review	Steve Edde
8:50-9:00	Community & RAB Comment Period	Community & RAB

ATTACHMENT B

SIGN-IN SHEETS

The RAB members liked this format

Naval Air Station, Alameda
Restoration Advisory Board Meeting Attendance
Date: 1-6-98

RAB MEMBER	Present	ALTERNATE	Present
Diane Behm here			
Saul Bloom/Karen Hack	KH		
Ardella Dailey	AD		
Douglas deHaan			
Tony Dover	TD		
Lauren Helfand	LH		
Karin King			
Richard King			
Jo Lynne Lee			
Wayne Mayer			
Malcolm Mooney			
Bert Morgan			
Ken O'Donoghue			
Tom Palsak			
John Spafford here	JTS		
Lyn Stirewalt	LS		
Michael Torrey			
Dr. Patrick Walter			

Naval Air Station, Alameda
Restoration Advisory Board Meeting Attendance
Date: 1-6-98

REGULATORS AND OTHER AGENCIES	Present	Agency
Shirley Buford		DTSC
Lynn Suer	Lo	RWQCB
Dorothy Wilson		U.S. EPA
Anna-Marie Cook	AMC	U.S. EPA
Laurie Sullivan		NOAA c/o EPA Region IX
Jim Haas		U.S. Fish and Wildlife
Michael Martin		CA Dept. of Fish and Game
Ravi Arulanantham		Alameda County Health Dept.
Norma Bishop		ARRA
Elizabeth G. Johnson		Alameda Reuse & Redevelop. Auth.
Steve Schwarzback		U.S. Fish and Wildlife
Joyce Whiten		CA EPA, Region 1
Mary Rose Cassa here		DTSC
Sandre R. Swanson		
Dave Wilson		
U.S. NAVY	**Present**	**Title**
Steve Edde	SE	Navy Co-Chair, Base Environ.Coord.
~~Ron Choy~~		~~EFA, West~~
Lisa Fasano	LA	NAVY PAO/EnvRel
LCDR Scott Smith	LA	OIC Alameda RT
Tetra Tech EM Inc.	**Present**	
Marie Rainwater		

Naval Air Station, Alameda
Restoration Advisory Board Meeting Attendance
Date: 1-6-98

GPI	Present	ComRel Contractor
~~Darlene Brown~~ Sandra Lukeford		
Barry Gutierrez	BG	

PUBLIC/GUESTS	ADDRESS/PHONE
Added → US NAVY Ann Klimek	EFA-WEST (510) 244-2714
Cal State Hayward John Rea	(510) 535-7550
PATRICK LYNCH RESIDENT	

ATTACHMENT C

NAVAL AIR STATION ALAMEDA
RESTORATION ADVISORY BOARD
MEETING HANDOUT MATERIALS

The Road to ROD

U.S. EPA's Review Comments on EBS Tiered Screening Analysis for Zones 20, 21, and 23

The Road to ROD . . . and beyond

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) was signed into law in 1980 to provide for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment and the cleanup of inactive hazardous waste disposal sites. CERCLA was amended in 1986 by the Superfund Amendments and Reauthorization Act (SARA). Any reference to CERCLA should be interpreted as meaning "CERCLA as amended by SARA." CERCLA regulations are contained in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Title 40, part 300 of the Code of Federal Regulations.

State law governing hazardous waste is contained in the California Health and Safety Code, Division 20; the regulations are contained in Title 22 of the California Code of Regulations. In general, the state and federal programs are similar, but they differ in detail. The same process is used, regardless of whether funding comes from the responsible party (the Navy) or Superfund.

The Remedial Investigation is but one step along the road to the Record of Decision (ROD) and the eventual cleanup of a hazardous waste site. The process at Alameda Point is summarized below:

Site Discovery

In 1975, the Department of Defense initiated a program to identify and investigate potential hazardous waste sites at military installations. The program was expanded into the Navy Assessment and Control of Installation Pollutants (NACIP) program in 1980.

Preliminary Assessment/Site Investigation

In 1982, the Navy began evaluating NAS Alameda under the (NACIP) program. The specific steps that comprised the NACIP program were similar to those used under CERCLA, but with different names. In 1988, the Navy converted its NACIP program into the Installation Restoration Program (IRP) to be more consistent with CERCLA. This change included adopting CERCLA terminology.

Remedial Investigation/Feasibility Study

The Navy began working on a remedial investigation and feasibility study based on the results of the NACIP studies and in response to a remedial action order from the State of California in June 1988. The RAO required that a remedial investigation be conducted at NAS Alameda for selected sites of concern. Between 1988 and 1990, RI/FS the Navy completed work plan documents, based on the results of the earlier NACIP studies, requirements of the RAO, and subsequent identification of additional sites of concern by the Navy. Included in the RI/FS are treatability studies, risk assessment, and remedy selection. Removal actions may be performed in order to reduce a threat to public health or welfare or the environment, or to expedite interim reuse by minimizing immediate risks.

In 1993, the Navy and the State of California completed a draft Federal Facility Site Remediation Agreement that defined the responsibilities of the parties involved and outlined a cleanup schedule. The FFSRA requires that investigations and remedy selections be performed in accordance with applicable State and Federal law and be consistent, to the maximum extent possible, with the priorities, guidelines, criteria, and regulations in the NCP. This agreement has not been finalized.

Under the draft FFSRA, a site management plan was developed which set priorities for specified tasks, identified operable units, addressed project acceleration techniques, and set forth projected dates for submittal of primary documents required to complete all necessary site investigations and remedial actions at NAS Alameda. The site management plan is basically the schedule of milestones or completion dates and is contained in Appendix A of the BRAC Cleanup Plan.

IR Program - Alameda Point/NAS Alameda

NACIP Process	Duration	CERCLA Process	Description	Outcome
Initial Assessment Study Confirmation Study Verification Step	1982-1983 1983-1985	Preliminary Assessment Site Inspection	Identification of potential disposal or contaminated sites and evaluation of these sites for potential threat to human health and the environment	12 sites (1, 2, 3, 4, 13, 14, 15, 16, 17, 20)
Confirmation Study Characterization Feasibility Study	1983-1985	Remedial Investigation (1988-present) Feasibility Study	Verification and characterization of the extent of contamination, definition of potential migration pathways, quantification of risks, and evaluation of the feasibility of potential remedial measures	Additional investigation: Sites 1, 2, 3, 4, 16; Phased RI/FS: 23 sites
Project Documentation		Record of Decision	Documentation and rationale for selected remedy	
Remedial Measures		Remedial Design Remedial Action Site Closure	Design and implementation of the required corrective measures to mitigate or eliminate confirmed problems	

In order to expedite the IRP process, the project team consolidated the 23 IRP sites into four Operable Units. In January 1997, the BCT reorganized the OUs according to four factors: (1) contaminant type, extent of contamination, and media (soil, groundwater, etc.); (2) remediation management; (3) reuse potential; and (4) geographic location. Later in 1997, Site 24 (Piers 1 and 2 sediments) was recognized and Site 2 was moved from OU3 to OU2. The current status is summarized below:

OU Number	Media	IRP Sites	Comments
1	soil and groundwater	3, 6, 7, 8, 9, 11, 12, 14, 15, 16, 22, 23	relatively small, uncomplicated sites with low levels of contamination that may be closed with minimal effort and cost
2	soil and groundwater; landfill	4, 5, 10, 13, 19, 21, 2	metals and chlorinated solvents in upland, industrial locations; landfill (Site 2) geographically isolated from other IRP sites
3	landfill	1	anticipated long-term reuse potential; geographically isolated from other IRP sites
4	surface water and subaqueous sediments	17, 20, 18, 24	aquatic sites and installation storm sewer system which discharged to Seaplane Lagoon and Oakland Inner Harbor; also includes West Beach Landfill wetlands, runway wetlands, Breakwater Beach area, aquatic area off Western Bayside

ROD

The Navy will prepare a Record of Decision/Remedial Action Plan for each OU. The Proposed Plan/Draft RAP recommends a specific set of actions to address contamination in the OU. California law requires a 30-day public comment period during the Draft RAP review process. At least one public meeting is also held during the public review period to receive comments. The Navy must consider these public comments when deciding on the final remediation plan (ROD/Final RAP) for the OU.

Community Involvement

The Navy is required to prepare and implement a Community Relations Plan, a road map for community involvement and outreach activities throughout the cleanup process. The RAB is a key component of the Navy's community outreach effort. The RAB provides for community involvement earlier and more frequently than required by cleanup laws by providing a forum through which local community members, the military, and regulatory agencies can work together in an atmosphere that encourages discussion and exchange of information regarding the Navy's environmental activities. The RAB is not a replacement for other community relations activities required by law, regulation, or policy; rather, it is intended to supplement existing community relations requirements.

Beyond the ROD

Following the ROD, the Navy will develop the Remedial Design, implement the Remedial Action, and conduct ongoing Operation and Maintenance until the remedial goals are achieved.

Other Environmental Programs at Alameda Point/NAS Alameda

Environmental Baseline Survey (EBS): The Environmental Baseline Survey is an inventory of all hazardous waste practices associated with property at a closing military installations. It allows for classification of environmental condition of property prior to transfer. The Comunity Environmental Response Facilitation Act of 1992 requires closing military installations to identify clean or uncontaminated property for transfer to the community for reuse. Phase I of the EBS, completed in October 1994, identified the environmental condition of property for all 208 parcels at NAS Alameda. Six parcels (39, 60, 63, 93, 101, and 194) were classified as Category 1 (CERFA properties). The final phase of the EBS process (also called tiered screening) includes the referral, recommendation, and recategorization of parcels based on earlier results of the EBS investigations. The tiered screening addresses human health risk as described in DTSC and USEPA guidance documents (Preliminary Endangerment Assessment Guidance Manual, DTSC 1994; Risk Assessment Guidance for Superfund, USEPA 1990). As the EBS proceeds, the existing IRP and compliance programs are continuing simultaneously.

RCRA Facility Investigation (RFI): A RCRA Facility Assessment conducted in 1991 identified 142 solid waste management units at NAS Alameda that were not represented in existing RCRA permit applications. Subsequent to the RFA, NAS Alameda acquired a hazardous waste facility permit, including a RCRA Part B application approval, for seven hazardous waste facilities. The hazardous waste facility permit included a Corrective Action Schedule of Compliance which identified 25 RCRA sites for which a RCRA Facility Investigation must be conducted. To accelerate cleanup and facilitate property transfer, the BCT developed a strategy to fulfill the substantial requirements of the RFI at selected RCRA sites by conducting the necessary sampling and analysis under the Phase II EBS.

Further Information:

California Hazardous Waste Control Law: California Health and Safety Code, Division 20

California Code of Regulations: Title 22

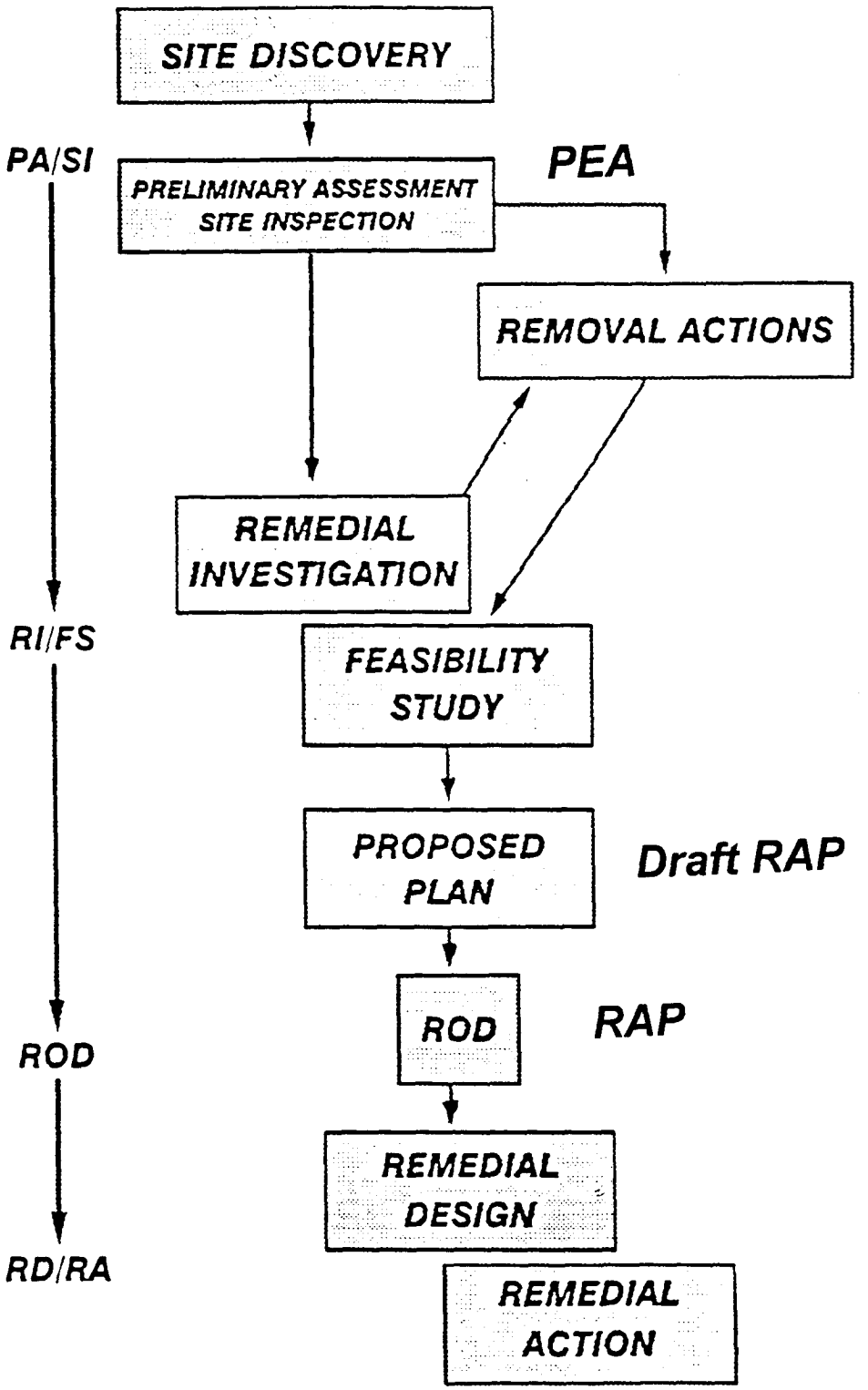
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; 1980)

Superfund Amendments and Reauthorization Act (SARA; 1986)

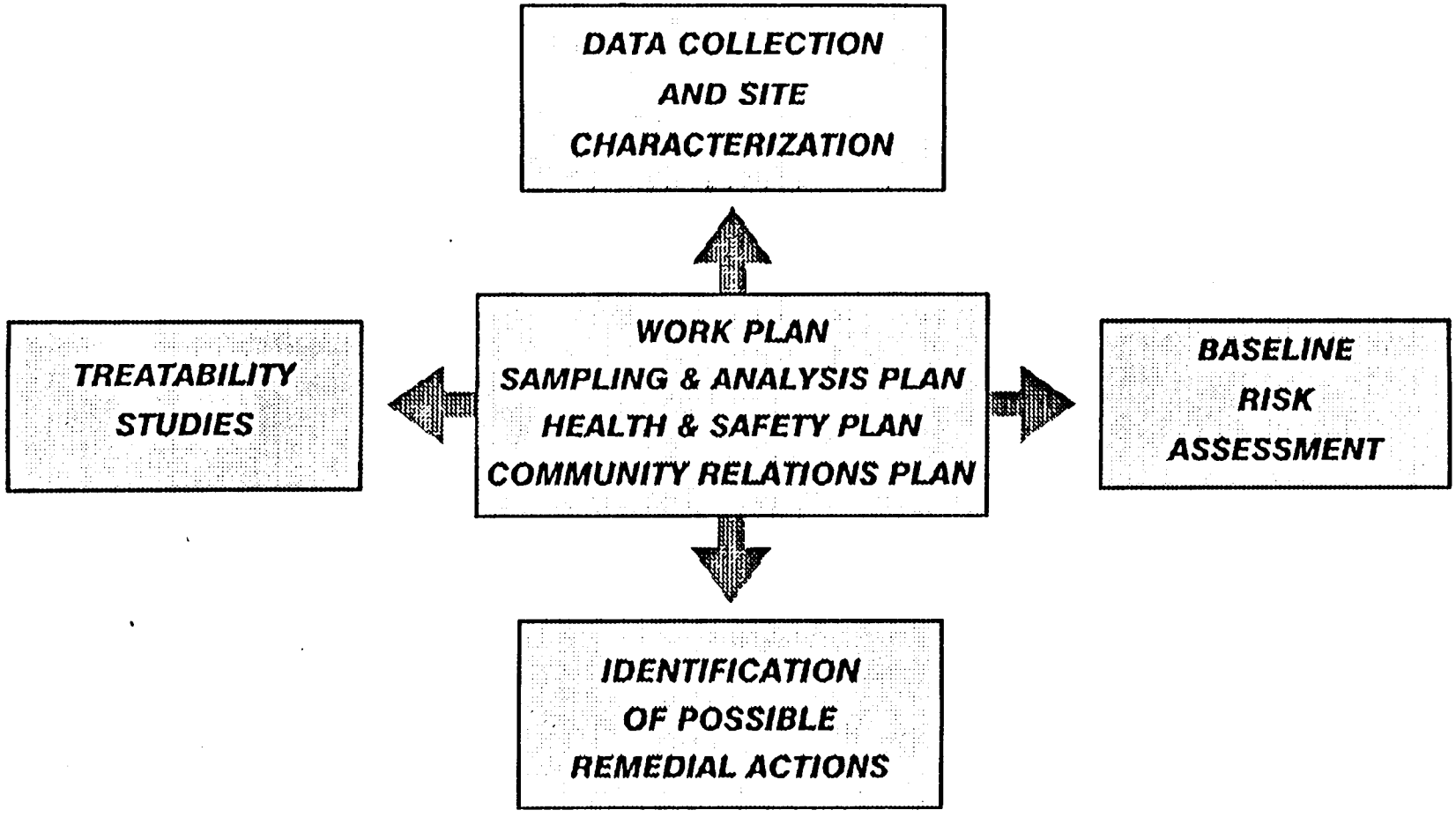
National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Title 40, part 300 of the Code of Federal Regulations

BRAC Cleanup Plan (March, 1997)

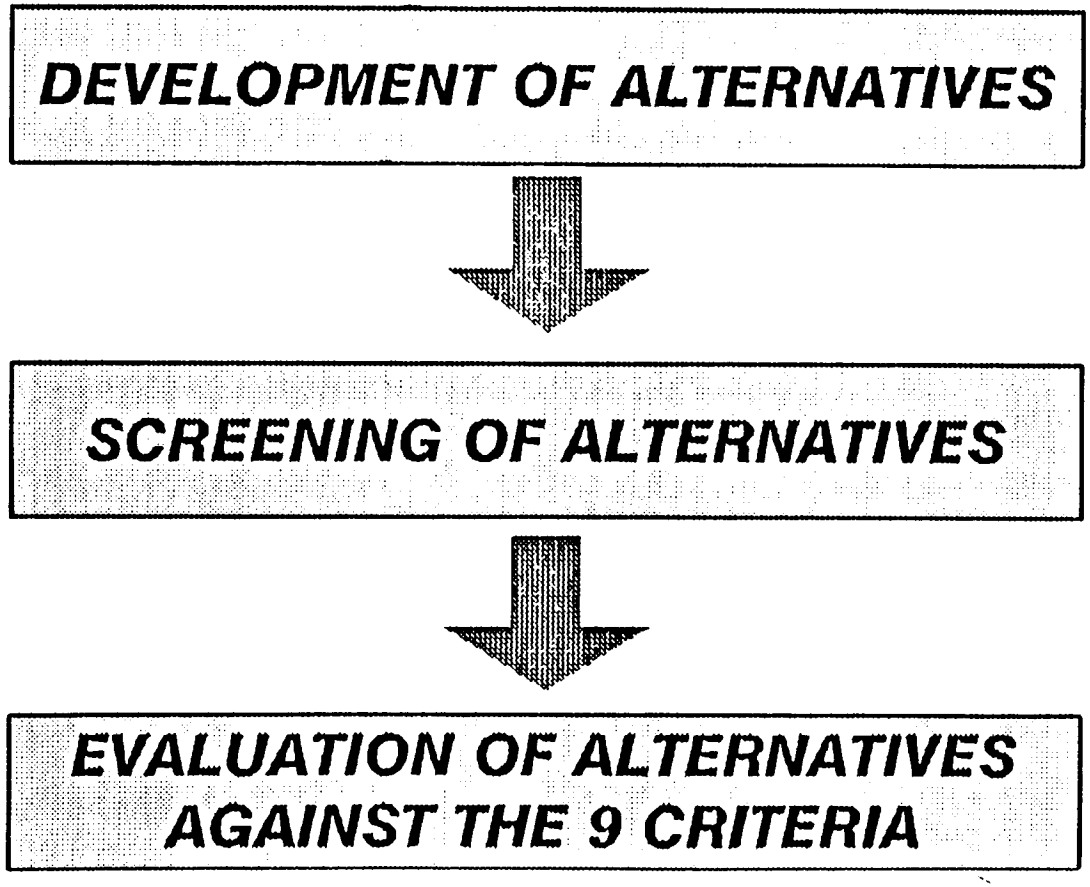
The CERCLA Process



Remedial Investigation Activities



Feasibility Study Activities



The Nine Criteria

THRESHOLD

1. PROTECTIVE OF PUBLIC HEALTH AND THE ENVIRONMENT
2. COMPLIANCE WITH ARARs

BALANCING

3. LONG TERM EFFECTIVENESS
4. REDUCTION OF VOLUME, MOBILITY, OR TOXICITY THROUGH TREATMENT
5. SHORT TERM EFFECTIVENESS
6. IMPLEMENTABILITY
7. COST

MODIFYING

8. STATE ACCEPTANCE
9. COMMUNITY ACCEPTANCE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

December 4, 1997

Ms. Ann Klimek
Code 18245
Commanding Officer
Engineering and Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 946066-2402

Re: U.S. Environmental Protection Agency (EPA) Review Comments - Submittal of Draft Summary Reports with Tiered Screening Analysis for Zones 20, 21 and 23 for Alameda Point (formerly, Naval Air Station Alameda) Alameda, California dated 25 August 1997; and the Draft Navy Response to Agency Comments from September 1997 dated 31 October 1997.

Dear Ms. Klimek:

The U.S. EPA has completed its second review of the subject draft summary reports. As agreed, the Agency's initial set of review comments dated 18 September focussed primarily on the overall organization and format of the draft summary reports. The intent of the second review is to discuss the more substantive and technical issues associated with these draft reports. This review will also address issues discussed in the Navy's 31 October 1997 draft response to regulatory comments since they are similar to those that will be discussed in the draft summary reports. Specifically, the following three issues will be discussed below:

1) referencing pertinent data from other programs (e.g., installation restoration program[IR]) useful for rendering risk management determinations;

2) risk screening methodology for parcels containing multiple target areas;

3) separation of chemicals for each target organ where the hazard index is greater than one

A. Risk Management Decision-making

As noted in our 18 September 1997 review comments to the Navy, EPA determined the draft summary report documents to be comprehensive relative to the objective of risk screening of

property. *The tiered screening analysis is designed as a risk screening tool to be supplemented, as appropriate, with additional existing data to determine the suitability of parcels for lease or transfer*. It is not intended to be a full and comprehensive risk assessment. EPA believes that the documents contains a substantial amount of data, both quantitatively and qualitatively, regarding the environmental condition of the parcels. As previously agreed, information from the IR and other programs will be referenced and included in the calculation of risk (e.g., for parcels that are in close proximity to IR sites or for those potentially impacted by ground water migration). This information shall be utilized in the course of rendering, on a specific case-by-case basis, risk management determinations of the environmental condition of property to determine suitability for lease or transfer. If the tiered screening analysis determines that additional investigation is warranted, then the risk managers will refer those parcels to the IR or compliance program, as appropriate. As EPA noted in our initial set of review comments, additional Navy quality control to remedy the few instances of inconsistencies between the text and summary tables will yield data that will be very useful to the risk managers.

B. Screening Parcels with Multiple Target Areas

EPA reiterates its previously submitted review comments regarding risk screening for parcels containing multiple target areas (See EPA's letter to the Navy dated 18 September 1997, review comment number 4). The issue of multiple target areas is a very salient methodological concern relative to estimating exposure and risk and, ultimately, to risk management decision-making. In addition, Dr. Sophia Serda, EPA Region IX's Regional Toxicologist, has conferred with and reviewed the comments submitted by DTSC's Staff Toxicologist, Dr. James Polisini, regarding the tiered screening methodology. EPA concurs with the methodological concerns discussed by Dr. Polisini which are attached to the 10 November 1997 State of California, Department of Toxic Substances Control (DTSC) letter to the Navy regarding the draft parcel evaluation data summary reports.

C. Separation of Chemicals for Each Target Organ where the Hazard Index Exceeds One

Based upon your telephone conversation with James Ricks on 20 November 1997, the issue of segregating the hazard indices based upon each target organ has been clarified. In fact, the Navy and EPA had previously agreed that prior to "recommending a Tier 2 screening for a parcel based solely on a target hazard greater than 1, the total hazard should be recalculated by summing exposure to all media for chemicals which have the same target organ" (See EPA review comment number 4 on the final **Draft Methodology for Human Health Risk-Based Tiered Screening Analysis Technical Memorandum dated 12 July 1997 Report**). The Navy's response to EPA comment number 4 confirms the previous agreement and reads in part: "The Navy agrees that disregarding the target organ affected by each chemical can result in an over estimate of the hazard index associated with each parcel. Where hazard indices exceed one, chemicals will be segregated by target organs..."

Given the importance of this priority effort relative to expediting cleanup and reuse in a manner protective of human health and the environment, EPA hopes that our review comments will facilitate closure on the remaining outstanding issues associated with the subject draft documents.

Should you have any questions or require additional information, please contact me at (415) 744-1367.

Sincerely,

Anna-Marie Cook
Remedial Project Manager

cc: Sophia Serda, EPA
Lynn Suer, EPA
Mary Rose Cassa, DTSC
Steve Edde, Alameda Point

ATTACHMENT D

NAVAL AIR STATION ALAMEDA
RESTORATION ADVISORY BOARD
ADDITIONAL MATERIALS

Position Description for RAB Project Leaders

Alameda Point FY96 and FY97 Project Status Report

Navy Response to U.S. EPA Comments on Tiered Screening Analysis for Zones 20, 21 and 22

Navy Response to DTSC Comments on Tiered Screening Analysis for Zones 20, 21 and 22

POSITION DESCRIPTION
FOR
RAB PROJECT LEADERS

1. STAY CURRENT DURING THE YEAR ON ALL THE PROGRESS OF YOUR ASSIGNED PROJECT, AND

2. BE PREPARED TO REPORT AND/OR, RAISE ISSUES/CONCERNS AT EACH MONTHLY RAB MEETING ON THE STATUS/PROGRESS ASSOCIATED WITH YOUR PROJECT, AND

3. MEET OR COMMUNICATE REGULARLY WITH THE ASSIGNED NAVY RPM SO AS TO BE AWARE OF ANY AND ALL ISSUES/PROBLEMS WITH YOUR PROJECT, AND

4. BE GENERALLY AWARE OF THE FINANCIAL STATUS OF YOUR PROJECT, AND

5. SEEK OUT OTHER RAB MEMBERS TO PARTICIPATE ON YOUR TEAM, AND

6. SEEK OUT RABOARD EXPERTS, OR REGULATORY STAFF WHO MAY BE MORE TECHNICALLY COMPETENT, TO ADVISE YOUR TEAM ON SCIENTIFIC OR ENGINEERING MATTERS, AND

7. IF TIME PERMITS, VISIT YOUR SITE AND BECOME AN "EXPERT" ON YOUR PROJECT FOR THE ALAMEDA COMMUNITY AND THE BALANCE OF THE RAB MEMBERSHIP, AND

8. PERFORM ALL RELATED DUTIES THAT MAY BE ASSIGNED BY THE COMMUNITY CHAIR.

9. HAVE SOME FUN, SINCE WE'RE VOLUNTEERS!

1/98jts

ALAMEDA POINT FY96 AND FY97 . JECT STATUS REPORT TO THE RAB

WORKING DOCUMENT SUBJECT TO CHANGE

	A	B	C	D
1	DESCRIPTION	CONTRACT TYPE	FY AWARDED	% OF PROJECT COMPLETED
2	REMEDIAL INVESTIGATION	CLEAN	FY96	51
3	COORDINATION WITH UC BERKELEY	IDQ	FY96	45
4	ASBESTOS REMEDIATION	SSPORTS	FY96	100
5	SITE 13 PILOT SCALE	UCB	FY96	100
6	EE/CA & IMPLEMENT WORK PLAN	RAC	FY96	90
7	EBS FINAL SHELL WORKPLAN	IDQ	FY96	100
8	ZONE FIELD SAMPLING AND ANALYSIS	RAC	FY96	90
9	EBS/FOSL FOR PRIORITY PARCELS	IDQ	FY96	100
10	FUEL LINE REMOVAL PHASE II	RAC	FY96	100
11	UST REMEDIAL INVESTIGATION	CLEAN II	FY96	100
12	UTILITIES SERVICE FOR IR SITE	PWC	FY96	100
13	EECA FOR SITES 7C & 16	IDQ	FY96	100
14	EBS & FOSL BUILDING 12	CLEAN II	FY96	100
15	VARIOUS IR WARNING SIGNS	PWC	FY96	100
16	SIX SITE SPECIFIC EBS & FOSL	CLEAN II	FY96	100
17	SOIL MANAGEMENT PLAN	IDQ	FY96	100
18	ECOLOGICAL FIELD WORK PHASE II	CLEAN II	FY96	57
19	TEMPORY STORAGE & TREATMENT	RAC	FY96	100
20	SITE 1,4 & 5 BENCH TESTS	UCB	FY96	100
21	UPDATE EBS AND DATA MANAGEMENT	CLEAN II	FY96	88
22	ERC PERMIT/ANALYSIS	IDQ	FY96	100
23	BCP UPDATE AT NAS ALAMEDA	CLEAN II	FY96	100
24	TIME CRITICAL REMOVAL ACTION	RAC	FY96	100
25	RI/FS SUPPLEMENTAL	CLEAN II	FY96	61
26	UST REMOVAL	IDQ	FY96	100
27	EBS/FOSL DOCUMENTS	CLEAN II	FY96	100
28	NON-TIME CRITICAL REMOVAL ACTION	RAC	FY96	2
29	SITE 17 BENCH TEST	UCB	FY96	100
30	CHARACTERIZATION OF SEAPLANE	CLEAN II	FY96	48
31	UST REMOVAL (SOIL PILE)	IDQ	FY96	77
32	ASBESTOS REMEDIATION FOR BLDGS	CLEAN II	FY96	36
33	SITE 17 TREATABILITY STUDY	UCB	FY96	100
34	PISTOL RANGE CORRECTIVE ACTION	AGS	FY96	34
35	ACTIVE UST REMOVAL DESIGN	IDQ	FY96	100
36	FIELD SCREENING AT SEAPLANE	UCB	FY96	10
37	% OF IRP COMPLETION FY96			72
38	% OF COMPLIANCE COMPLETION FY96			87
39	% OF TOTAL PROJECT COMPLETION FY96			80

ALAMEDA POINT FY96 AND FY97 PROJECT STATUS REPORT TO THE RAB

WORKING DOCUMENT SUBJECT TO CHANGE

	A	B	C	D
40	**DESCRIPTION**	**CONTRACT TYPE**	**FY AWARDED**	**% OF PROJECT COMPLETED**
41	NAS ALAMEDA ASBESTOS INSPECTION & ABATEMENT	RAC	FY97	100
42	EBS DATA AND RISK SCREENING	CLEAN II	FY97	70
43	EBS DATA SUMMARY	RAC	FY97	70
44	ODS INVENTORY PLAN	IDQ	FY97	100
45	UST SOIL PILE MAINTENANCE	PO	FY97	0
46	ODS ABATEMENT PLAN	PWC	FY97	100
47	ABANDONED UST REMOVAL DESIGN	MOJU	FY97	100
48	REMEDIAL FOLLOW-ON ECO. ASSMT	CLEAN II	FY97	1
49	RI/FS, SUPPLEMENTAL GRNDWTR	CLEAN II	FY97	0
50	TREATABILITY STUDIES	CLEAN II	FY97	0
51	RI/FS, NEW SITES DISCOVERED	CLEAN II	FY97	0
52	IR SITES 4/5 - NATURAL ATTENUATION CHLORINATED SOLVENTS	UCB	FY97	17
53	ADMIN RECORD	IDQ	FY97	0
54	UCB OPTION YEAR	UCB	FY97	0
55	REMEDIAL INVESTIGATION FOR UST	IDQ	FY97	23
56	NRAD FOLLOW ON ECO	IDQ	FY97	0
57	ERC PERMIT	IDQ	FY97	0
58	BACKGROUND	WR	FY97	0
59	AIR EMISSION CREDITS STUDY	IDQ	FY97	0
60	UST REMOVAL SOIL PILE MAINTENANCE	IDQ	FY97	0
61	SITE 15 DISPOSAL DOCS/DESIGN	IDQ	FY97	0
62	SITE 18 STORM DRAIN REMOVAL ACTION	RAC	FY97	100
63	COMREL	IDQ	FY97	10
64	NON-CRITICAL REMOVAL ACTION	IDQ	FY97	28
65	ODS INVENTORY PLAN	IDQ	FY97	90
66	FFSRA/SMPP	CLEAN II	FY97	0
67	RADIOLOGICAL REMOVAL	SSPORTS	FY97	0
68	REMOVAL OF FUEL LINES & USTS	RAC	FY97	11
69	OVERSITE REMOVE ACTIVE FUEL LINES	CLEAN II	FY97	1
70	RI/FS RADIOLOGICAL REMOVAL ACT	CLEAN II	FY97	3
71	ASBESTOS REMEDIATION	FRAC	FY97	0
72	OPERATION OF COORDINATION OFFICE	UCB	FY97	0
73	RADIOLOGICAL REMOVAL ACTION -	RASO/IOC	FY97	0
74	LEAD-BASED PAINT SURVEY/ABATEMENT	RAC	FY97	0
75	OU1/OU 3 LOE SHIFTED FROM FY95	CLEAN II	FY97	0
76	**% OF IRP COMPLETION FY97**			**8**
77	**% OF COMPLIANCE COMPLETION FY97**			**44**
78	**% OF TOTAL PROJECT COMPLETION FOR FY97**			**23**

DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-2402

IN REPLY REFER TO:
5090
Ser 702P3/L8088
16 Jan 1998

From: Commanding Officer, Engineering Field Activity, West, Naval Facilities Engineering Command
To: U.S. Environmental Protection Agency, Region IX, San Francisco (Attn: Dr. Sophia Serda)
U.S. Environmental Protection Agency, Region IX, San Francisco (Attn: Ms. Annamarie Cook)

Subj: SUBMITTAL LETTER OF U.S. NAVY RESPONSE TO U.S. EPA COMMENTS ON THE DRAFT DATA SUMMARY REPORTS WITH TIERED SCREENING ANALYSIS FOR ZONES 20, 21, 23

Encl: (1) Response to Comments

1. Enclosure (1) is submitted as the U.S. Navy's response to U.S. EPA's comments from 4 December 1997 on the Data Summary Reports with Tiered Screening analysis for Zones 20, 21, and 23 at Alameda Point, California.

2. Thank you for your timely and supportive input on this project! For further information, please contact the undersigned at (650) 244-2714 or Ms. Jil Finnegan at (650) 244-2554.

ANN KLIMEK
By direction of
the Commanding Officer

Copies to:
State of California, Environmental Protection Agency, Department of Toxic Substances Control, Berkeley (Attn: Mr. David Rist)
State of California, Environmental Protection Agency, Department of Toxic Substances Control, Berkeley (Attn: Mary Rose Cassa)
State of California, Environmental Protection Agency, Department of Toxic Substances Control, Berkeley (Attn: Dr. James Pollisini)

NAVY RESPONSES TO U.S. EPA COMMENTS
on the
DATA SUMMARY REPORTS WITH TIERED SCREENING ANALYSIS
for ZONES 20, 21, and 23 at ALAMEDA POINT
ALAMEDA, CALIFORNIA

Following are the U.S. Navy's responses to the U.S. Environmental Protection Agency's (U.S. EPA) comments on the Draft Data Summary Reports with Tiered Screening Analysis for Zones 20, 21, and 23 at Alameda Point. As discussed at the meeting among U.S. Navy, U.S. EPA, DTSC, Tetra Tech EM Inc., and IT Corporation representatives on August 25, 1997, the regulatory agency submitted their first round of comments on general format. The comments below pertain to the Zone 20, 21, and 23 Data Summary Report's technical content in supporting reclassification of the parcels in these zones and their eventual transfer or referral. The U.S. EPA submitted its first round of comments on these report's overall format on September 18, 1997. The U.S. Navy received U.S. EPA's second round of comments on December 4, 1997.

The U.S. EPA's comments are presented (verbatim) in regular type; the U.S. Navy's responses are presented in italics.

U.S. EPA Comments

...the following three issues will be discussed below:

1) referencing pertinent data from other programs (e.g., installation restoration program [IR]) useful for rendering risk management determinations;
2) risk screening methodology for parcels containing multiple target areas;
3) separation of chemicals for each target organ where the hazard index is greater than one

A. Risk Management Decision-making

As noted in our 18 September 1997 review comments to the Navy, EPA determined the draft summary report documents to be comprehensive relative to the objective of risk screening of property. *The tiered screening analysis is designed as a risk screening tool to be supplemented, as appropriate, with additional existing data to determine the suitability of parcels for lease or transfer* [italics not added]. It is not intended to be a full and comprehensive risk assessment. EPA believes that the documents contains a substantial amount of data, both quantitatively and qualitatively, regarding the environmental condition of the parcels. As previously agreed, information from the IR and other programs will be referenced and included in the calculation of risk (e.g., for parcels that are in close proximity to IR sites or for those potentially impacted by ground water migration). This information shall be utilized in the course of rendering, on a specific case-by-case basis, risk management determinations of the environmental condition of property to determine suitability for lease or transfer. If the tiered screening analysis determines that additional investigation is warranted, then the risk managers will refer those parcels to the IR or compliance program, as appropriate. As EPA noted in our initial set of review comments, additional Navy quality control to remedy the few instances of inconsistencies between the text and summary tables will yield data that will be very useful to the risk managers.

Response: *The Navy agrees with EPA on the risk management decision-making process.*

B. Screening Parcels with Multiple Target Areas

EPA reiterates its previously submitted review comments regarding risk screening for parcels containing multiple target areas (See EPA's letter to the Navy dated 18 September 1997, review comment number 4). The issue of multiple target areas is a very salient methodological concern relative to estimating exposure and risk and, ultimately, to risk management decision-making. In addition, Dr. Sophia Serda, EPA Region IX's Regional Toxicologist, has conferred with and reviewed the comments submitted by DTSC's Staff Toxicologist, Dr. James Polisini, regarding the tiered screening methodology. EPA concurs with the methodological concerns discussed by Dr. Polisini which are attached to the 10 November 1997 State of California, Department of Toxic Substances Control (DTSC) letter to the Navy regarding the draft parcel evaluation data summary reports.

Response: *In accordance with EPA guidance (1989), receptor-specific exposures were evaluated on an exposure area basis; this approach is taken since receptors move randomly during the exposure time and do not typically remain in one target area. Due to size, sampling constraints, and exposure conditions, it is not feasible, nor appropriate, to subdivide a parcel into smaller target areas; resulting targets areas may have little or no data which was the case for the data from Alameda. Additionally, if parcels are subdivided into target areas, carcinogenic risks and noncarcinogenic hazard indices (HIs) will more than likely be estimated using only one sample (point estimate approach). This practice may result in an underestimation or overestimation of receptor-specific risks and HIs. Therefore, parcels will not be separated into target areas, and the Tier 1 and Tier 2 screening evaluations will not be revised.*

C. Separation of Chemicals for Each Target Organ where the Hazard Index Exceeds One

Based upon your telephone conversation with James Ricks on 20 November 1997, the issue of segregating the hazard indices based upon each target organ has been clarified. In fact, the Navy and EPA had previously agreed that prior to "recommending a Tier 2 screening for a parcel based solely on a target hazard greater than 1, the total hazard should be recalculated by summing exposure to all media for chemicals which have the same target organ" (See EPA review comment number 4 on the final **Draft Methodology for Human Health Risk-Based Tiered Screening Analysis Technical Memorandum dated 12 July 1997 Report**). The Navy's response to EPA comment number 4 confirms the previous agreement and reads in part: "The Navy agrees that disregarding the target organ affected by each chemical can result in an over estimate of the hazard index associated with each parcel. Where hazard indices exceed one, chemicals will be segregated by target organs..."

Response: *The Navy agrees. Therefore, for those parcels whose hazard index exceeded 1.0, the Navy will recalculate the hazard index by segregating the chemicals by target organ.*

DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-2402

IN REPLY REFER TO:
5090
Ser 702P3/L8087
16 Jan 1998

From: Commanding Officer, Engineering Field Activity, West, Naval Facilities Engineering Command
To: State of California, Environmental Protection Agency, Department of Toxic Substances Control, Berkeley (Attn: Mr. David Rist)
State of California, Environmental Protection Agency, Department of Toxic Substances Control, Berkeley (Attn: Mary Rose Cassa)
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Subj: SUBMITTAL LETTER OF U.S. NAVY RESPONSE TO U.S. EPA COMMENTS ON THE DRAFT DATA SUMMARY REPORTS WITH TIERED SCREENING ANALYSIS FOR ZONES 20, 21, 23

Encl: (1) Response to Comments

1. Enclosure (1) is submitted as the U.S. Navy's response to DTSC's comments from 10 November 1997 on the Data Summary Reports with Tiered Screening analysis for Zones 20, 21, and 23 at Alameda Point, California.

2. Thank you for input on this project. For further information, please contact the undersigned at (650) 244-2714 or Ms. Jil Finnegan at (650) 244-2554.

ANN KLIMEK
By direction of
the Commanding Officer

Copies to:
U.S. Environmental Protection Agency, Region IX, San Francisco
(Attn: Dr. Sophia Serda)
U.S. Environmental Protection Agency, Region IX, San Francisco
(Attn: Ms. Annamarie Cook)

NAVY RESPONSES TO DTSC COMMENTS
on the
DATA SUMMARY REPORTS WITH TIERED SCREENING ANALYSIS
for ZONES 20, 21, and 23 at ALAMEDA POINT
ALAMEDA, CALIFORNIA

Following are the U.S. Navy's responses to the Department of Toxic Substances Control's (DTSC) comments on the Draft Data Summary Reports with Tiered Screening Analysis for Zones 20, 21, and 23 at Alameda Point. As discussed at the meeting among U.S. Navy, U.S. EPA, DTSC, Tetra Tech EM Inc., and IT Corporation representatives on August 25, 1997, the regulatory agency submitted their first round of comments on the report's general format. The comments below pertain to the Zone 20, 21, and 23 Data Summary Report's technical content in supporting reclassification of the parcels in these zones and their eventual transfer or referral. The DTSC submitted its first round of comments on these report's overall format on September 18, 1997. The U.S. Navy received DTSC's second round of comments on November 10, 1997.

The DTSC's comments are presented (verbatim) in regular type; the U.S. Navy's responses are presented in italics.

DTSC Comments

General Comments

Comment 1. The use of the 95% Upper Confidence Limit (UCL) as the concentration term for conducting the Tiered Screening analysis is only acceptable if the extent of contamination at a parcel is characterized. The objective of the Phase IIa and b sampling was not to characterize contamination, but instead was to screen potential releases. Because the parcel investigation often included more than one target area, and because the number of data points in most parcels are limited, the 95% UCL is not an appropriate concentration term for the Tiered Screening. The Preliminary Endangerment Assessment Guidance (DTSC, January 1994, page 2-19) requires that the "maximum contaminant value" be used as the exposure point concentration. The PEA Guidance recognizes that the data quality objective of this type of investigation is to produce data of a quality that allows the screening of releases. Very rarely will sites be characterized enough, and therefore the data a sufficient quality, to rely on the 95%UCL for site screening. By using the 95%UCL potential hot spots of contamination will be overlooked by lowering the concentration term of a contaminant to a value below the screening level.

Response: *In accordance with EPA guidance (1992), the 95 percent upper confidence limit (95 UCL) on the arithmetic mean was used as the exposure point concentration (EPC) in the calculation of receptor-specific carcinogenic risks and noncarcinogenic hazard indices (HIs). As stated in EPA guidance (1992):*

> *"...the concentration term (C) in the intake equation is an estimate of the arithmetic average concentration for a contaminant based on a set of site sampling results. Because of the uncertainty associated with*

estimating the true average concentration at a site, the 95 percent upper confidence limit (UCL) of the arithmetic mean should be used for this variable."

The average concentration is the most representative of the chemical concentration that would be contacted at the parcel over time. It is not reasonable to assume that an individual will contact a portion (or one sample location) of the parcel for the entire exposure duration; an individual typically moves randomly across an area. Therefore, a spatially averaged soil concentration should be used to estimate the true average chemical concentration contacted over time. However, if the 95 UCL concentration exceeds the maximum detected concentration (due to a relatively small data set or high variability within the data set), the maximum detected concentration was used to calculate receptor-specific risks and HIs for each parcel. Usually ten to fifteen samples were used for calculating the 95 UCL. In other cases where the samples collected were less than this range, the 95 UCL was usually greater than the maximum detected concentration. When this occurs, the maximum detected concentration was used in the calculation.

Further, the directed nature of the EBS sampling further justifies the use of the 95 UCL. The Phase 2A and Phase 2B sampling efforts represent sampling that closely approximates a full characterization of individual target areas. The Phase 2A sampling was directed toward suspected areas of contamination through the examination of historic use information. This eliminated areas that were not likely to contain contamination. The Phase 2B sampling further refined the distribution of chemical constituents, further focusing the distribution of samples in areas with a high potential for containing contamination. Although not necessarily a complete characterization, in most cases, the data from these sampling efforts provide enough data to justify the use of the 95 UCL.

The selection of chemical groups for laboratory analysis based on historical and previous sampling results reduces the number of chemical results that are averaged into the tiered screening. This selectivity is normally driven by cost considerations but has the added advantage in the tiered screening phase of reducing the number of unrelated compounds that are averaged into the risk and hazard numbers. The use of the 95 UCL is further justified when considering the selectivity of constituents analyzed.

The interactive nature of planning the EBS sampling, which involved the DTSC, EPA, and Navy, adds to the focus of the data gathering activities. The meetings that were held in conjunction with the regulatory agencies during the EBS sampling served to further direct the sampling activities to locations that were likely to contain elevated constituent levels. This interaction adds to the directed nature of the EBS sampling and further supports the applicability of the 95 UCL as the input level for tiered screening.

Comment 2. Zones 20 and 21 Target Area 1 (Filled Wetlands)

The objective of the Phase 2A sampling conducted in Zone 16 was to determine if the marsh curst [sic] presents an immediate public health threat for people living in family housing and attending the elementary school. DTSC requested that the filled wetlands, also known as the marsh crust, should be further investigated to determine the extent of known contamination previously identified at Fleet Industrial Supply Center Oakland, Alameda Annex. Without empirical information on the absence of the marsh crust within Zones 20 and 21, DTSC can not concur on recategorization of any parcels in this zone to any category other than Category 6.

Response: *The presence or absence of the marsh crust is not critical to the transfer of property at Alameda Point. What is critical is the presence of constituents in the marsh crust that may have potential for impact to humans or the environment. Investigations related to the marsh crust layer, to date, have not demonstrated impacts to humans or the environment. In the absence of reasonable suspicion that site related activities have contributed chemicals to the soil or groundwater that have pathways to receptors, no additional activity is necessary in order to complete recategorization in Zones 20 and 21. The Navy will add an additional analysis of the Zone 16 data for Zones 20 and 21 in the text.*

Comment 3. The Navy has continued to use 10^{-4} incremental cancer risk as the point of departure for determining if a parcel should be advanced to the Tier 2 assessment or into the Installation Restoration program for further evaluation. This is done without justifying the Navy's risk management decision. Parcels with incremental cancer risks between 10^{-4} and 10^{-6} may be considered for 'no further action' only if the decision is adequately supported. The Tiered Screening reports do not provide that support.

Response: *The Navy agrees and will provide in addition to the information provided in the draft documents, the draft final versions for Zones 20, 21, and 23 will include information to support 'no further action' decisions. The additional information will include (1) potentiometric surface maps, (2) IR data tables summarizing soil and groundwater analytical results against their respective PRGs, (3) IR soil and groundwater data summary maps, (4) a monitoring well location map, (5) IR soil sample location maps, (6) potential migration assessment discussions summarizing IR soil and groundwater data, UST data, groundwater flow direction, and fuel line information, (7) conclusions regarding the Tier 1 and Tier 2 risk screening for each parcel, (8) environmental parcel summary reports for each parcel from the EBS database, and (9) a discussion of groundwater quality and assessment of beneficial use.*

Comment 4. The Navy's 1993 RCRA Facility Permit required the completion of a RCRA Facility Investigation (RFI) for Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs). The Navy completed the sampling phase of the RFI at SWMUs and AOCs through the Environmental Baseline Survey (EBS). The data collected for the RFI was evaluated through the Tiered Screening. The

report, however, does not adequately specify when the EBS is being used to fulfill this requirement. If these reports are to be used for this purpose, they must identify the RCRA units and report the conclusions and recommendations of the investigation. Please specify if the Navy intends to submit a separate RFI Report.

Response: *The Navy agrees and will be submitting the Comprehensive Guide to the EBS which includes a RCRA section that will satisfy the requirement for a RCRA Facility Investigation document. This will be provided in the next submittal which is scheduled for January 23, 1998. This section will identify all the RCRA related facilities on Alameda Point. The status of each RCRA facility will be addressed in this section or will be referenced to its location within the EBS data summary reports. The parcel data summaries currently identify target areas that relate to RCRA sites. Each data summary report provides the status of the RCRA facilities (GAPs, SWMU, tanks, etc). The inclusion of the RCRA section in the Comprehensive Guide and the discussion of specifics of the RCRA target areas in the individual data summary reports will adequately satisfy the requirements for the RFI. Further, after review of the RFI plan and discussion with the Navy, DTSC approved the investigation for the RFI.*

Comment 5. Parcels that are part of an ongoing Installation Restoration investigation should be classified as category 6 parcels. If data from the UST program exist for a parcel, this data should be summarized in the reports.

Response: *The Navy agrees that installation restoration sites (as currently depicted in the IR program) will remain as Category 6 parcels regardless of the human health risk-based tiered screening results. Adjacent parcels, however, will be recategorized appropriately based on risk evaluation of the EBS data and careful review of all other parcel information as noted in response to DTSC general comment #3.*

Comment 6. Zone 21

Response: *DTSC's comment (reprinted above in its entirety) was not completed, therefore the Navy cannot respond.*

<u>Specific Comments</u>

Zone 20
Parcel 112

Comment 1. Zone 20 Tiered Risk-Based Screening Evaluation Summary Table, and Phase 2A, Page 2, Description

The investigation for Installation Restoration (IR) Site 7 within Parcel 112 identified the presence of PCBs, TPH, VOCs, SVOCs, pesticides and metals.

Based on the EBS Phase II investigation, the Navy proposed that Parcel 112 be reclassified as Category 3 parcel (Zone 20 Tiered Risk-Based Screening Evaluation Summary Table). The Tiered Screening evaluation does not include the IR data in the tiered screening risk assessment; therefore, the report is inconclusive. If the Navy intends to determine the suitability of Parcel 12 for transfer, the Navy must demonstrate that contamination discovered through other studies does not pose and environmental or public health risk. The DTSC can not concur on reclassifying Parcel 112 as a category 3 parcel without this documentation. This parcel is part of an active Installation Restoration investigation and also requires a RCRA Facility Investigation (RFI). Because Parcel 112 is affected by an ongoing IR investigation, DTSC request that Parcel 112 be classified as Category 6.

Response: *As agreed to among representatives from EFA West, Alameda Point, U.S. EPA, and DTSC, IR soil and groundwater analytical data is not to be used in the EBS human health risk-based tiered screening analysis. In addition to the information provided in the draft documents, the draft final versions for Zones 20, 21, and 23 will include information to support 'no further action' decisions and transfer decisions. The additional information will include (1) potentiometric surface maps, (2) IR data tables summarizing soil and groundwater analytical results against their respective PRGs, (3) IR soil and groundwater data summary maps, (4) a monitoring well location map, (5) IR soil sample location maps, (6) potential migration assessment discussions summarizing IR soil and groundwater data, UST data, groundwater flow direction, and fuel line information, (7) conclusions regarding the Tier 1 and Tier 2 risk screening for each parcel, (8) environmental parcel summary reports for each parcel from the EBS database, and (9) a discussion of groundwater quality and assessment of beneficial use. As this information is evaluated, the reclassification of Parcel 112 will be reassessed.*

Comment 2. Phase 2A, Page 4, fourth paragraph and page 6, Section 1.8 Underground Storage Tanks/Fuel Lines

Tank 506-1 contained waste oil and chlorinated solvents. A RCRA Facility Investigation (RFI) is required for Tank 506-1. If the Navy intends to meet its RFI obligation through this report, more information on RCRA sites must be presented. The information presented in the report is incomplete and not clear. Were the two soil boring, to the north and west sides of the tanks collected by ERM-West 1988, or were they collected at the time of the tank removal? What other data was collected at the time of tank removal; such as water samples, side wall samples, and samples collected at the bottom of the excavation? Please indicate how the Navy intends to complete the RFI for this and other RCRA sites at NAS Alameda.

The second to last paragraph on page 6 states that tank 506-1 is scheduled for removal. This tank must be removed and the excavation investigated before a determination on hazardous substance releases can be made at Parcel 112.

Response: *The Navy agrees and will meet its RFI obligations. Tank 506-1 is identified as UST-16 in the RCRA section of the Comprehensive Guide to the EBS. Information regarding this RCRA tank and others will be included in the EBS as it becomes available. Information will be summarized in the parcel summary reports and reference to specific tank investigation documents will be included. The information will be cross-referenced in the RCRA section of the Comprehensive Guide to the EBS. Tank 506-1 was removed in 1995 and sampling was conducted during that activity. Summary information available indicates that only low levels of TRPH, TPH-diesel, and motor oil were found in the soil. Groundwater samples detected very low levels of lead as well as low levels of the constituents detected in the soil. The tank removal documentation will be further examined and pertinent information regarding the tank removal will be summarized in the data summary report.*

Comment 3. Table 1, Risk Calculation Parcel 112

The Navy calculated a residential soil risk of 2.88E-5 for Parcel 112. This is within the risk range of 1E-4 to 1E-6. A tier 2 risk assessment was not conducted for this parcel and the Navy recommends that Parcel 112 be reclassified to Category 3. All parcel showing risk in excess of 1E-6 at the conclusion of Tier 1 should be advanced to Tier 2 unless not advancing the parcel can be supported through risk management. The Navy has not demonstrated, through the Tiered Screening process, RFI, or IR Site 7 remedial investigation, that Parcel 112 is a viable candidate for Category 3. The Navy must support their 'risk management decision' that Parcel 112 is suitable for transfer to the community.

Response: *The Navy agrees that risk management will be assessed by the BCT in the risk range of 1.0E-04 to 1.0E-6. In addition to the information provided in the draft documents, the draft final versions for Zones 20, 21, and 23 will include information to support 'no further action' decisions and transfer decisions. The additional information will include (1) potentiometric surface maps, (2) IR data tables summarizing soil and groundwater analytical results against their respective PRGs, (3) IR soil and groundwater data summary maps, (4) a monitoring well location map, (5) IR soil sample location maps, (6) potential migration assessment discussions summarizing IR soil and groundwater data, UST data, groundwater flow direction, and fuel line information, (7) conclusions regarding the Tier 1 and Tier 2 risk screening for each parcel, (8) environmental parcel summary reports for each parcel from the EBS database, and (9) a discussion of groundwater quality and assessment of beneficial use. As this information is evaluated, the reclassification of Parcel 112 will be reassessed.*

Parcel 113

Comment 1. Phase 2A, Page 5, Underground Storage Tanks and Page 7, RCRA Sites

The report states that a solvent and waste oil tank is scheduled to be removed. What is the status of these tanks and what is the results of the UST investigations? The Navy has stated that they intend to complete the RFI through these reports. This can not be accomplished if the data from RCRA sites are not included in the reports.

Response: *The Navy agrees and will meet its RFI obligations. Tank 459-7 is identified as a RCRA tank in the RCRA section of the Parcel Data Summary. This tank is being added to the list of RCRA facilities in the Comprehensive Guide to the EBS. Information regarding this RCRA tank and others will be included in the EBS as it becomes available. Additional information will be summarized in the parcel summary reports and reference to specific tank investigation documents will be included. Tank 459-7 was removed in 1995 and sampling was conducted during that activity. Summary information available indicates that lead, BTEX and petroleum constituents were found in the soil and groundwater. The tank removal documentation will be further examined and pertinent information regarding the tank removal will be summarized in the data summary report.*

Comment 2. Phase 2B, Page 4, Conclusions and Recommendations and Table 15, Blood Lead Model For Soil

DTSC's September 18, 1997 comments on the Parcel Evaluation Reports requested a summary discussion of the results of the Tiered Screening. Parcel 113 illustrates the need for this discussion. Lead at 2,460 ppm was detected in soil at Parcel 113. A blood lead model was used to calculate the affect this concentration might have on public health. The results of this model are not discussed in the text or in the Zone 20 Summary Table. The results of the Tiered Screening Risk Assessments and the conclusions and recommendations the Navy is making as a result must be summarized in this section.

Response: *The Navy agrees and has presented all calculations and results of the blood lead model on Table 15 of the Parcel 113 Parcel Evaluation Data Summary. Further, Note #6 on the Zone 20 summary table states the soil lead concentration at Parcel 113 produces a blood lead level that exceeds 10 ug/dl in children. Navy will provide a discussion of the lead modeling results in the conclusions section of the draft final submittal for Zone 20.*

Parcel 114

Comment 1. Phase 2A, Page 2, Description, and Zone 20 Tiered Risk-Based Screening Evaluation Summary Table

Parcel 114 is included in IR Site 7. This parcel is therefore a Category 6. Zone 20 Tiered Risk-Based Screening Evaluation Summary Table identified Parcel 114 as Category 2. Although no samples were collected though the EBS program, reclassifying Parcel 114 as a Category 2 is not appropriate given the ongoing IR Site 7 investigation.

Response: *The Navy agrees that installation restoration sites (as currently depicted in the IR program) will remain as Category 6 parcels regardless of the human health risk-based tiered screening results. Adjacent parcels, however, will be recategorized appropriately based on risk evaluation of the EBS data and careful review of all other parcel information as noted in response to DTSC general comment #3. Further, in addition to the information provided in the draft documents, the draft final versions for Zones 20, 21, and 23 will include information to support 'no further action' decisions and transfer decisions. The additional information will include (1) potentiometric surface maps, (2) IR data tables summarizing soil and groundwater analytical results against their respective PRGs, (3) IR soil and groundwater data summary maps, (4) a monitoring well location map, (5) IR soil sample location maps, (6) potential migration assessment discussions summarizing IR soil and groundwater data, UST data, groundwater flow direction, and fuel line information, (7) conclusions regarding the Tier 1 and Tier 2 risk screening for each parcel, (8) environmental parcel summary reports for each parcel from the EBS database, and (9) a discussion of groundwater quality and assessment of beneficial use. As this information is evaluated, the reclassification of Parcel 114 will be reassessed.*

Zone 21

Comment 1. Phase 2A, Page 9 and Page 13, Zone 21 Target Area 3 Sampling Results

The report states that lead was detected in sample 115-0007M at 3,000 mg/kg. According to Figure Z 21-2 and Table Z 21-2, the correct sample identification is 118-0007M.

Response: *DTSC's comment correctly identifies the sample containing elevated lead as 118-0007M. The text will be changed accordingly.*

Parcel 102

Comment 1. Zone 21 Tiered Risk-Based Screening Evaluation Summary, Parcel Reclassification

See general comment number 2.

Response: *Please refer to Navy response to DTSC general comment number 2.*

Parcel 115

Comment 1. Phase 2A, Page 8, Zone 21 Target Area 3 Sampling Results and Page 11 second paragraph.

The first bullet on page 8 states that arsenic, barium, beryllium, copper, lead, mercury, nickel, and zinc were above background and Region 9 PRGs. Page 11 only list arsenic and mercury as being above background and Region 9 PRGs. Please correct or clarify these statements. A summary table, as requested in DTSC's September 18, 1997 comments, would assist the reviewer in understanding what samples exceeded background and Region 9 PRGs and to what extent.

Response: *The sentence mentioned in the comments indicates that all metals detected were below background and PRGs except the ones identified. The sentence after the one cited in the comment incorrectly states that barium, copper, lead, nickel, and zinc were above Region 9 PRGs. These compounds were detected above background, but below the Region 9 PRGs. The modification of the words in the sentence from "Region 9 PRG" to "background" make the statement correct and consistent with the second statement in the comment.*

Detection synopsis tables will be included in the parcel summary reports to assist in the evaluation of these situations. Detection, PRG, and background information will be included in these tables.

Comment 2. Table 1, Risk Calculation Parcel 115

Please explain why metals that were identified in Zone 21 Target Area 3 are not included in the Tiered Screening Analysis.

Response: *Metals data from Target Area 3 are included in the tiered screening analysis. The source of concern may be an elevated arsenic detection in sample 115-0006M at 28.8 mg/kg. This detection is not included in the Tier 1 screen because the CLP confirmatory sample (115-0006), which takes priority over this screening sample, had an arsenic concentration of 7.4 mg/kg. Where a CLP sample was available for a given sample location, it was used instead of the screening sample result.*

Further, the chemical inventory identified in each environmental medium was examined prior to evaluation to select parcel-specific preliminary chemicals of concern (COCs); retaining chemicals that are not installation-related unnecessarily draws attention away from those potentially presenting the most serious health risks and which can be remediated. As part of the tier 1 screen, preliminary COCs were selected by comparing parcel concentrations to background concentrations and determination of essential nutrient status.

<u>Tier 1 Background Comparisons.</u> The maximum detected concentration of the site-specific inorganic chemicals was compared to the 80th percent lower confidence limit of the 95th percentile (80 LCL/95) of the background distributions. The 80 LCL/95 method of comparing site to background data has a relatively high probability of falsely concluding that the site concentration is higher than background levels. It is not an appropriate analysis for assessing whether the mean site concentrations exceed background levels, and was used

only as a method for identifying particular results that may indicate hot spot areas and as a quick method for screening sites. Any chemical for which the maximum detected concentration exceeds the 80 LCL/95 was retained as a preliminary COC and evaluated in the tier 1 risk analysis. If the maximum detected site concentration was less than the 80 LCL/95 of the background distribution, the chemical was eliminated as a COC.

Tier 1 Determination of Essential Nutrient Status. Chemicals required as essential nutrients can be eliminated as COCs if they are (1) present at concentrations only slightly above naturally occurring levels, and (2) are toxic at very high doses. According to EPA (1989), these chemicals can be eliminated early in the COC selection process and need not be considered further in the quantitative evaluation. Those chemicals at NAS Alameda that satisfy the essential nutrient requirements were considered for elimination. Chemicals considered as essential nutrients included: calcium, iron, magnesium, potassium, and sodium (EPA 1989).

In the tier 2 screening evaluation, the preliminary COCs selected in the tier 1 screening evaluation were re-examined; in general, this screening involved detailed background statistical analyses for inorganic chemicals. The methodology used was the same as that presented in the Statistical Methodology for Background Comparisons Technical Memorandum for inorganic analytes. The tier 2 background comparison included a complete statistical analysis of background and parcel data to compare both means and variances of the data and select COCs above background. Inorganic chemicals eliminated from consideration are identified in the footnotes of the tier 2 screening evaluation summary tables; however, in the Draft Final Report, this information will also be presented in the summary text for each parcel.

Comment 3. Zone 21 Tiered Risk-Based Screening Evaluation Summary, Parcel Reclassification

The DTSC can not concur with the parcel reclassification of this parcel without the metal data being included in the tiered Screening. Further, please see general comments 1 and 2.

Response: *As noted above, metals data are included in the tiered screening analysis. Also, please refer to Navy response to DTSC general comments 1 and 2.*

Parcel 116

Comment 1. Phase 2B, Page 3, Phase 2B Sampling Results

The report states that four SVOCs were reported above the Region 9 PRGs in at least on sample. This is an example of the type of statement found in the reports that provides little useful information to the reviewer. Without a summary table, as requested in DTSC's September 18, 1997 comments, the reviewer is required

to compare every detection with the PRGs for those contaminants. This information is not available on Table 1 nor on Table 2. Understanding the site characteristics is equally, if not more, important than the Tiered Screening Risk Assessment. Further, in most cases, the maps do not contain detection information. A similar statement is found on page 5 of the same report. This states, "The groundwater in former bunkers area was found to contain elevated levels of arsenic and lead."

Response: *The Navy agrees; and therefore, the data summary reports shall be modified to provide additional information with respect to specific detections. Detection Synopsis tables will be provided for all parcel summary reports. The detection synopsis will include result, detection limits, PRGs, background value, and specific sampling information such as depths and sampled media. Sample detection maps are not generated for all detected compounds. Where elevated detections of specific compounds are few in number, the sample location maps are sufficient to identify the location of interest.*

Comment 2. Table 1, Risk Calculation Parcel 116.

The value for Arsenic listed in Table 1 as 31.50 ug/kg. The correct unit is mg/kg. 31.50ug/kg was also used in the Tiered Screening calculation. This resulted in an incorrect answer of 8.36E-8. DTSC calculated a value of 8.2895E-5. Please correct this value and check the difference between the numbers after the decimal point.

Response: *Table 1 will be revised accordingly. The arsenic concentration was reported correctly in the tier 2 screening evaluation; the tier 2 screening evaluation supporting tables do not require revision.*

Comment 3. Table 1, Risk Calculation Parcel 116.

According to Table 1, Antimony and compounds appear to be elevated at 107ug/L and resulted in a hazard index of 7.33E+00. However, this detection is not listed in the Appendix A, Laboratory Data Summary Reports.

Response: *The correct value for the antimony concentration in groundwater in Table 1 and Table 2 should be 2.5 ug/l. The values will be corrected accordingly.*

Comment 4. Table 1, Risk Calculation Parcel 116.

Arsenic and lead in groundwater were detected in two samples (116-0009 and 116-0012). The maximum concentration for these contaminants are 16.1 ug/L for arsenic and 172 ug/L for lead in sample 116-0012. The risk calculation, however, uses the lower detections found in sample 116-0009. Please use the maximum detected concentration for the risk assessment.

Response: *Sample 116-0012 is a duplicate of sample 116-0009. Both sets of results were not included in the tiered screening process; only the higher of the two values was selected. The impact of this is thought to be minimal. The original and the duplicate, in this case, were slightly different but the net effect was insignificant. The lead concentrations were 107 ug/l verses 172 ug/l and the arsenic was 15.0 ug/l versus 16.1 ug/l. Both constituents were elevated in the two samples. The application of the risk and hazard calculation, whether or not the constituent exceeded the PRG, still provides for a reasonable evaluation of the problems.*

Comment 5. Zone 21 Tiered Risk-Based Screening Evaluation Summary, Parcel Reclassification

DTSC concurs on the reclassification of this parcel to a Category 6. This parcel should be further investigated under the CERCLA, Installation Restoration program.

Response: *The Navy agrees and will also be providing additional information with respect to this parcel as indicated in response to DTSC general comment #3.*

Parcel 117

Comment 1. Zone 21 Tiered Risk-Based Screening Evaluation Summary, Parcel Reclassification

See general comment number 2. Further, the DTSC can not concur on reclassifying this parcel as a Category 1 because contamination identified at adjacent parcel 116 has not been characterized. The data within this zone indicates that a metals release of unknown origin and extent has impacted this area. The extent of this release must be determined before a nearby parcel can be reclassified and found suitable for transfer.

Response: *Please refer to Navy response to DTSC general comment number 2. Also, Navy will re-evaluate the data for Parcel 117 to determine if this parcel should be reclassified to an ECP category other than category #1.*

Parcel 118

Comment 1. Phase 2B, Page 5, Phase 2B Former Bunkers

Please highlight the occurrence of lead in soil at 3000 mg/kg in sample 118-0002.

Response: *The detection of elevated lead in subsurface sample 118-0007M, adjacent to 118-0002, from the Phase 2A investigation will be discussed in greater detail in the Phase 2B report. The current text of the Phase 2B report is correct within*

the limited context of the Phase 2B data, but Phase 2A results do need to be integrated into the discussion.

Comment 2. Table 1, Risk Calculation Parcel 118 and Table 2, Parcel 118 Summary

The incorrect maximum concentration for Benzo[a]pyrene was listed in the tables and used in the Tiered Screening. The maximum detected concentration for Benzo[a]pyrene is 5700 ug/kg not 680 mg/kg.

Response: *A check of the data file and sample collection summaries indicates that there were 8 soil samples analyzed for SVOCs in Phase 2A and Phase 2B. The maximum detected value was entered in the Tier 1 with the correct units of ug/kg. The value of 680 ug/kg is the correct maximum value for benzo[a]pyrene in the tiered screen. The maximum observed value was derived from sample 118-0002. The 5700 ug/kg result proposed by DTSC as the maximum was detected in sample 118-0002M, the companion screening sample to 18-0002. The screening sample (118-002M) was analyzed using Method 8270 and the primary sample (118-0002) was analyzed using CLP methods. In the case of CLP and screening level data, the CLP sample is always used, preferentially. The screening sample data was not validated and had elevated detection limits that suggested problems with the analysis. These factors supported the use of the 680 ug/kg value as maximum.*

Comment 3. Table 1, Risk Calculation Parcel 118 and Table 2, Parcel 118 Summary

An example of the necessity for using the maximum concentration as the concentration term is Aroclor-1260. Aroclor-1260 was detected in sample 118-0003M at 5200 ug/kg. The value used in the risk assessment, however, was 2202.58 ug/kg. This lower, statistically generated number, is a result of a large range between the minimum and maximum concentration (14 ug/kg to 5200 mg/kg) and a large standard deviation (1955). For

Response: *Please refer to Response to General Comment 1. Also, DTSC did not complete its comment (reprinted in its entirety), therefore, Navy cannot respond in full.*

Comment 4. Parcel Reclassification

DTSC concurs on the reclassification of this parcel to a Category 6. This parcel should be further investigated under the CERCLA, Installation Restoration program.

Response: *The Navy agrees and will also be providing additional information with respect to this parcel as indicated in response to DTSC general comment #3.*

Parcel 119

Comment 1. See general comment number 2. Further, the DTSC can not concur on reclassifying this parcel as a Category 1 because contamination identified at adjacent parcel 118 has not been characterized. The data within this zone indicates that a metals release of unknown origin and extent has impacted this area. The extent of this release must be determined before a nearby parcel can be reclassified and found suitable for transfer.

Response: *Please refer to Navy response to DTSC general comment number 2. Also, Navy will re-evaluate the data for Parcel 119 to determine if this parcel should be reclassified to an ECP category other than category #1.*

Parcel 120

Comment 1. See general comment number 2. Further, the DTSC can not concur on reclassifying this parcel as a Category 1 because contamination identified at adjacent parcel 118 has not been characterized. The data within this zone indicates that a metals release of unknown origin and extent has impacted this area. The extent of this release must be determined before a nearby parcel can be reclassified and found suitable for transfer.

Response: *Please refer to Navy response to DTSC general comment number 2. Also, Parcel 120 was reclassified as ECP category #3, not category #1 as indicated by DTSC. The tier 1 residential human health risk analysis conducted on the EBS sampling data from this parcel resulted in an estimated potential excess carcinogenic risk of 1.1E-06 and a non-carcinogenic hazard index of 0.047. Navy, therefore, feels recategorization of this parcel to category #3 is appropriate.*

Parcel 121

Comment 1. See general comment number 2.

Response: *Please refer to Navy response to DTSC general comment number 2.*

Parcel 129

Comment 1. Zone 21 Tiered Risk-Based Screening Evaluation Summary

A significant amount of lead was found in soil (1600 mg/kg) and groundwater (150,000 ug/L) at this site. This information should be included in the column "Rational for Reclassification or Referral Decision".

Response: *The indication of lead being a risk driver is noted in Note #6 at the end of the Zone 21 summary table. For clarity purposes, a reference to Note #6 will be provided in the "Rationale for Reclassification or Referral Decision" column.*

Also, the groundwater lead concentration of 150,000 ug/L noted in DTSC's comment is actually 105,000 ug/L, as presented in Tables 1 and 2.

Comment 2. Zone 21 Tiered Risk-Based Screening Evaluation Summary, Parcel Reclassification

DTSC concurs on the reclassification of this parcel to a Category 6. This parcel should be further investigated under the CERCLA, Installation Restoration program.

Response: *The Navy agrees and will also be providing additional information with respect to this parcel as indicated in response to DTSC general comment #3.*

Parcel 130

Comment 1. Table 1, Risk Calculations and Table 2, Parcel 130 Summary

Mercury is listed as detected at 94.9 ug/kg in Tables 1 and 2. Table 130-2 identifies mercury as detected at 4.7 mg/kg. The correct detection of mercury is used in the Tier 2 analysis.

Response: *The correct value for mercury (4.7 mg/kg) will be entered into Tables 1 and 2 of the Tier 1 screen.*

Comment 2. Table 1, Risk Calculations and Table 2, Parcel 130 Summary

Beryllium is listed as detected at 56 mg/kg in Table 1 and 56 ug/kg in Table 2. Table 130-2, however, list beryllium as detected at 1.1 mg/kg.

Response: *The correct value for beryllium (1.1 mg/kg) will be entered into Tables 1 and 2 of the Tier 1 screen.*

Comment 3. Zone 21 Tiered Risk-Based Screening Evaluation Summary

See general comment number 2. Further, the DTSC can not concur on reclassifying this parcel as a Category 3 because contamination identified at adjacent parcel 129 has not been characterized. The data within this zone indicates that a metals release of unknown origin and extent has impacted this area. The extent of this release must be determined before a nearby parcel can be reclassified and found suitable for transfer. Further, the Navy has not supported their decision not to further investigate this parcel. Parcel 130 exhibits an excess residential risk of 2.3E-05. This is above the "no further action" point of departure of 1.0E-06. The Tiered Screening risk assessment was calculated using one sample point. This is not an adequate data base to make this conclusion.

Response: *Please refer to Navy response to DTSC general comment number 2. Also, the tier 1 estimated potential excess carcinogenic risk (2.3E-05) calculated for Parcel 130 falls below the DoD policy point of departure of 1.0E-04. Based on DoD policy, parcels with an estimated potential excess carcinogenic risk below 1.0E-04 are suitable for transfer. The point of departure of 1.0E-06 is a decision point for remedial action. The tiered screening being conducted for the Alameda Point EBS is not for the purpose of remedial action, but for transfer of property.*

Parcel 197

Comment 1. Zone 21 Tiered Risk-Based Screening Evaluation Summary

Please see general comment number 2. Further, the DTSC can not concur on reclassifying this parcel as a Category 3 because contamination identified at adjacent parcels 116 and 118 has not been characterized. The data within this zone indicates that a metals release of unknown origin and extent has impacted this area. The extent of this release must be determined before a nearby parcel can be reclassified and found suitable for transfer.

Response: *Please refer to Navy response to DTSC general comment number 2. Also, the tier 1 residential human health risk analysis conducted on the EBS sampling data from this parcel resulted in an estimated potential excess carcinogenic risk of 8.4E-07 and a non-carcinogenic hazard index of 0.00019. Navy, therefore, feels recategorization of this parcel to category #3 is appropriate.*

Parcel 208

Comment 1. Zone 21 Tiered Risk-Based Screening Evaluation Summary

Please see general comment number 2. Further, the Navy has not supported their decision not to further investigate this parcel. Parcel 130 exhibits an excess residential cancer risk of 2.7E-05. This is above the "no further action" point of departure of 1.0E-06.

Response: *Please refer to Navy response to DTSC general comment number 2. Also, Navy assumes DTSC is referring to Parcel 208 in this comment, not Parcel 130.*

Further, the Navy agrees that risk management will conducted by the BCT in the risk range of 1.0E-04 to 1.0E-06, but the Navy disagrees that all parcels with a risk in excess of 1.0E-06 at the conclusion of the Tier 1 analysis should be advanced to Tier 2. In accordance with DoD policy, no further action is recommended for parcels whose carcinogenic risk does not exceed 1.0E-04 accumulated across all pathways. Further, in addition to the information provided in the draft documents, the draft final versions for Zones 20, 21, and 23 will include information to support 'no further action' decisions and transfer

decisions. The additional information will include (1) potentiometric surface maps, (2) IR data tables summarizing soil and groundwater analytical results against their respective PRGs, (3) IR soil and groundwater data summary maps, (4) a monitoring well location map, (5) IR soil sample location maps, (6) potential migration assessment discussions summarizing IR soil and groundwater data, UST data, groundwater flow direction, and fuel line information, (7) conclusions regarding the Tier 1 and Tier 2 risk screening for each parcel, (8) environmental parcel summary reports for each parcel from the EBS database, and (9) a discussion of groundwater quality and assessment of beneficial use. As this information is evaluated, the reclassification of Parcel 208 will be reassessed.

Comment 2. Table 1, Risk Calculations and Table 2, Parcel 208 Summary

Please see general comment number 1. Four SVOCs were detected above the PRGs, however, by using the 95% UCL the concentration term for three of these contaminants dropped below the PRG. Recalculate the risk assessment using the maximum concentrations.

Response: Please refer to Navy response to DTSC general comment number 1.

Parcel 209

Comment 1. Please see general comment number 2. Further, the DTSC can not concur on reclassifying this parcel as a Category 3 because contamination identified at adjacent parcel 129 has not been characterized. The data within this zone indicates that a metals release of unknown origin and extent has impacted this area. The extent of this release must be determined before a nearby parcel can be reclassified and found suitable for transfer.

Response: Please refer to Navy response to DTSC general comment number 2. Also, Navy recommended reclassifying Parcel 209 to category #1, not category #3.

Navy will re-evaluate the data for Parcel 209 to determine if this parcel should be reclassified to an ECP category other than category #1.

Zone 23

Parcel 161

Comment 1. No specific comments. However, DTSC will suspend concurrence on the reclassification of parcels until the final Zone Summary Reports.

Response: Comment noted. As requested by DTSC, the Navy will also be providing additional information with respect to this parcel as indicated in response to DTSC general comment #3 to further support reclassification to Category #1.

Parcel 162

Comment 1. Page 6, Conclusions/Recommendations

Although no hazardous substances were found at this parcel, significant levels of petroleum (motor oil at 3,700 mg/kg) were identified. This petroleum release must be referred to the petroleum program for consideration. This report should discuss how this petroleum release will be addressed and closed.

Response: *The investigation of Parcel 162 detected elevated levels of motor oil, but no indication of diesel, gasoline, or BTEX constituents at the surface or in the subsurface. Even though the presence of motor oil at these concentrations draws attention to the parcel, there are no detected risk drivers to require a cleanup.*

Parcel 165

Comment 1. Page 6, Conclusions/Recommendations

Although no hazardous substances were found at this parcel, significant levels of petroleum (maximum concentration of motor oil at 5,300 mg/kg) were identified in several samples. This petroleum release must be referred to the petroleum program for consideration. This report should discuss how this petroleum release will be addressed and closed.

Response: *The petroleum related constituents detected at Parcel 165 identify motor oil and diesel at near-surface depths. Subsurface samples were taken at selected locations where motor oil was elevated at the surface. These samples were evaluated for BTEX constituents. These subsurface locations did not contain elevated petroleum or BTEX constituents. The petroleum is suspected to result from the transfer of raw product. Based on these results, there appears to be no risk drivers present to necessitate the removal of petroleum products from this area.*

Parcel 166

Comment 1. No specific comments. However, DTSC will suspend concurrence on the reclassification of parcels until the final Zone Summary Reports.

Response: *Comment noted. As requested by DTSC, the Navy will also be providing additional information with respect to this parcel as indicated in response to DTSC general comment #3 to further support reclassification to Category #1.*

Parcel 167

Comment 1. No specific comments. However, DTSC will suspend concurrence on the reclassification of parcels until the final Zone Summary Reports.

Response: *Comment noted. As requested by DTSC, the Navy will also be providing additional information with respect to this parcel as indicated in response to DTSC general comment #3 to further support reclassification to Category #3.*

Parcel 168

Comment 1. Phase 2A, Page 7 RCRA Sites

One RCRA SWMU/GAP site is located on Parcel 168. The text states that the UST associated with the RCRA site was scheduled for removal in 1994. If this tank has been removed, please provide the data collected during the removal or collected in subsequent investigations.

Response: *According to PWC's tank removal report, Tank T-608-1 on Parcel 168 was removed in 1995. According to the report, post-removal soil and groundwater samples were collected and analyzed for TRPH, lead, TPH-g, TPH-d, jet fuel, motor oil, BTEX, and pesticides/PCBs. Soil results (max. concentrations [mg/kg]) are as follows: TRPH (6,300), lead (36), diesel (1,900), jet fuel (1,900), motor oil (15,000), chlordane (880). Groundwater results (max. concentrations [mg/l]) are as follows: all ND except TRPH (0.0064). This information will be provided in the draft final submittal for Zone 23.*

Comment 2. Table 1, Risk Calculation and Table 2, Parcel 168 Summary

The risk calculation for this parcel illustrates the need to use the maximum concentration as the concentration term for the risk assessment. Only one sample in eleven detected SVOCs; however, the Navy calculated a 95% UCL. This practice reduces the ability of the risk assessment to recognize 'hot spots'. The following table clearly illustrates why this is unacceptable to the DTSC:

Contaminant	max detect	95% UCL	PRG
Benzo[a]anthracene	2300 ppb	759.20 ppb	610 ppb
Benzo[a]pyrene	2700 ppb	860.85 ppb	61 ppb
Benzo[b]fluoranthene	1800 ppb	577.00 ppb	610 ppb
Benzo[k]fluoranthene	2000 ppb	683.13 ppb	610 ppb

Response: *Please refer to Navy response to DTSC general comment number 1.*

Comment 3. Phase 2B, Page 5, Conclusions and Figure 168-1

The report states that there was no indication from the 2B sampling that the constituents detected in Phase 2A sampling were extensive in nature. According to Figure 168-1, the 2B samples were collected approximately 50 feet from the

area where contamination was found in the 2A investigation. Data collected from that distance does not aid in determining if the contamination is extensive or is not extensive. Because of this and previous comments made on this parcel report, the DTSC can not concur with the Navy's conclusions.

Response: *The original sampling location planned for Phase 2B was in closer proximity to the Phase 2A sample containing elevated SVOC constituents. The actual location where the Phase 2B sample was taken was driven by logistical considerations. Although the Phase 2B follow up does not constrain the extent of the SVOC compounds to a small area, it does indicate that the material is not present in the southwest quadrant of the parcel. This level of definition is significant with respect to the determination of overall exposure scenarios.*

Parcel 169

Comment 1. Phase 2B, Page 5, Conclusions

Although no significant levels of hazardous substances were found at this parcel, significant levels of petroleum (maximum concentration of motor oil at 4,900 mg/kg) were identified. This petroleum release must be referred to the petroleum program for consideration. This report should discuss how this petroleum release will be addressed and closed.

Response: *The target area discussed in this comment was intensively sampled in the Phase 2A and Phase 2B investigations. Surface and subsurface samples examined the soil in great deal for constituents of concern commonly found at petroleum sites. The motor oil detection of 4,900 mg/kg appears to be an isolated shallow occurrence of oil without significant concentrations of other metals, SVOCs, BTEX, or PCBs in the area. There appears to be no risk drivers that require additional work at this site.*

Parcel 198

Comment 1. No specific comments. However, DTSC will suspend concurrence on the reclassification of parcels until the final Zone Summary Reports.

Response: *Comment noted. As requested by DTSC, the Navy will also be providing additional information with respect to this parcel as indicated in response to DTSC general comment #3 to further support reclassification to Category #3.*

DTSC - HERD Comments

General Comments

Comment 1. There remain several decision criteria in the risk-based screening which are unacceptable to HERD and counter to direction provided to the U.S. Navy and

U.S. Navy contractors in previous discussions regarding the human health risk assessment portion of a Finding of Suitability to Lease (FOSL) or Finding of Suitability to Transfer (FOST).

Response: *As agreed to in the interagency meeting of January 24, 1996, the methodology for human health risk-based tiered screening at Alameda Point was submitted to allow the agencies opportunity to comment on the screening methodology as understood by the Navy. This document summarizes the Navy's approach to parcel screening and details both the Tier 1 and Tier 2 methodologies. It reflects discussions between the agencies, and describes in detail the methodology as outlined by Ms. Ann Klimek in the December 1995 Technical Evaluation: Environmental Screening and Application to BRAC III Environmental Condition of Property Classification at the Naval Air Station Alameda, California (EFA-West 1995) with the following exception. Decision criteria contained in the technical memorandum have been modified in accordance with recent U.S. Department of Defense (DoD) policy (DoD 1993). The Navy has been made aware of DoD policy implementing President Clinton's decision to promote early reuse of closing bases by expediting environmental cleanup, which includes the use of 1.0E-04 as a risk level requiring further investigation, rather than 1.0E-06. The risk level of 1.0E-06 is for remedial action decisions, which is not the objective of the EBS and human health risk-based tiered screening. The objective of the EBS is to transfer property. As the lead agency, the Navy is directed by DoD to follow its own policies and has, therefore, submitted revised methodology for risk assessment of land parcels sampled under the EBS program that is consistent with DoD policy and is conservative and protective of human health and the environment. The Navy believes that the risk-based screening follows applicable guidance for evaluation of parcels in the Finding of Suitability to Transfer.*

Tiered Screening Methodology

Specific Comments

Comment 1. The 1995 revision of the BRAC Guidebook contains a general discussion of impact of differing levels of incremental cancer risk on remediation costs (DoD, 1995, pages 4-68 through 4-69) with the counsel that risk careful risk management consideration is required for incremental cancer risks between 10-4 and 10-6. We believe this discussion supplies the framework in which to consider risks rather than rely on the 'hierarchy' of incremental cancer risk based on consideration of single and then multiple pathways (Part 1, Section 2.2.1, page 12). HERD does not accept a strict criterion which specifies no further action for sites with incremental cancer risks less than 10-4 for all carcinogens across all exposure pathways. Parcels with incremental cancer risk in excess of 10-6 are candidates for risk management consideration by the Navy and regulatory agencies to reduce exposure and risk.

Response: *The evaluation of parcels in the tiered screening is initially based on a screening of site concentrations to PRGs developed by EPA Region 9 (EPA 1996). Both*

soil (from 0 to 10 feet below the ground surface) and groundwater are included in this screen. Using these PRGs, and this depth interval, the following conservative measures are included in the Tier 1 screening evaluation:

1. *The following exposure pathways for soil are considered complete for all receptors: ingestion of soil, dermal contact with soil, inhalation of particulates, and inhalation of volatile chemicals. For groundwater, the following pathways are evaluated using residential exposure assumptions: ingestion of groundwater and inhalation of volatile chemicals. PRGs are based on standard default exposure assumptions and toxicity values because they are intended to be conservative screening concentrations. Residential land use is not the probable current and future land use for each parcel but is the one involving the most extensive use of the land.*

2. *A soil depth interval of 0 to 10 feet is used, and it is assumed that all pathways are complete regardless of the depth at which a chemical is detected. This is conservative because it is not likely that receptors would contact soil to a depth of 10 feet below ground surface, and inhalation of particulates (included in the PRG) would not be a complete pathway for undisturbed deep soil.*

3. *The assumption that groundwater will be used as the only source of domestic water when this use has not been established.*

4. *Assuming that concentrations of chemicals of concern (COCs) do not attenuate over time. Attenuation of concentrations would be expected in any dynamic system, due to many natural processes (for example, weathering, bioattenuation, and photodegradation).*

The Navy believes that these conservative and protective assumptions justify the use of 1.0E-04 as a level at which a site is further evaluated, as described in DoD policy (1995). U.S. EPA lists 1.0E-04 to 1.0E-06 as an acceptable risk range, and 1.0E-04 is the point of departure as established by DoD policy.

According to the Department of Defense (DoD) Base Realignment and Closure (BRAC) Cleanup Plan (BCP) Guidebook (1995), no further action is necessary when risk estimates do not:

- *Exceed 1.0E-06 for any carcinogenic hazardous substance detected in any medium*
- *Result in a hazard quotient above 1.0 for any noncarcinogenic hazardous substance detected in any medium*
- *Exceed 1.0E-06 for any carcinogenic hazardous substance, taken together, in any exposure pathway*

- *Result in a hazard index above 1.0 for all noncarcinogenic hazardous substances, taken together, in any exposure pathway*

- *Exceed 1.0E-04 for any carcinogenic hazardous substance accumulated across all pathways*

- *Result in a hazard index above 1.0 for all noncarcinogenic hazardous substances accumulated across all pathways*

Due to the nature of potential exposures and the derivation of EPA Region 9 preliminary remediation goals (PRGs), the Navy considers the last 2 aforementioned criteria as appropriate for the screening of parcels in the assessment of suitability to transfer. For example, exposure pathways included in the development of soil PRGs include: ingestion of soil, inhalation of particulates, inhalation of volatile organic chemicals (VOCs), and dermal contact with soil. Groundwater PRGs are based on the residential exposure pathways of ingestion, dermal contact, and inhalation of VOCs. Furthermore, receptors are not preferentially exposed to individual chemicals via individual exposure pathways; typically, exposure occurs for multiple chemicals in various media via multiple exposure pathways (cumulative exposure).

Furthermore, the Navy understands that DTSC considers 1.0E-06 as the point of departure in making risk management decisions for remedial action. However, as stated in EPA guidance (1991):

> *"Where the cumulative carcinogenic site risk to an individual based on the reasonable maximum exposure for both current and future land use is less than 10-4, and the noncarcinogenic hazard quotient is less than 1.0, action is generally not warranted unless there are adverse environmental impacts."*

Therefore, in accordance with DoD policy and EPA guidance, the Navy will continue to consider a cumulative carcinogenic risk of 1.0E-04 and a cumulative noncarcinogenic HI of 1.0 as one of the risk management criteria in the determination of suitability to transfer.

As discussed during the October 28, 1996 interagency conference call, the Navy is documenting its decisions to further evaluate parcels, or transfer parcels, as a risk management decision, and providing justification for those decisions. If regulatory agencies desire to further evaluate any parcel not carried through a Tier 2 screen, the information is available in the Data Summary Report documents. However, the Navy does not believe that parcels with risks below 1E-4 in the Tier 1 screen warrant the expenditure of time and money for further assessment when several conservative assumptions have intentionally been included and disclosed in the Tier 1 screen. For these technical reasons and to be consistent with DoD facilities nationwide, the Navy will continue to use a risk level of 1E-4 as the point at which a parcel is further evaluated. However, the Navy agrees that risk management will be conducted by the BCT in the risk range of 1.0E-04 to 1.0E-06.

Comment 2. We disagree with the criterion in the tiered screening methodology which restricts tier 2 screening to those parcels with a total risk greater than 10-4 or total hazard index (HI) greater than 1.0 under residential land use assumptions (Part 1, Section 3.1, page 13). Tier 2 screening should be performed for all parcels with incremental cancer risk greater than 10-6 or HI greater than 1.0.

Response: *According to DOD (1995) policy, areas of contamination below action levels are defined as follows:*

> *... a geographically contiguous and mappable area where environmental evidence demonstrates that hazardous substances or petroleum products have been stored, released or disposed of, but are present in quantities that require no response action to protect human health and the environment.*
>
> *Designation as this area type also means that risk estimates do not:*
>
> - *Exceed 1.0E-06 for any carcinogenic hazardous substance detected in any medium*
> - *Result in a hazard quotient above 1.0 for any noncarcinogenic hazardous substance detected in any medium*
> - *Exceed 1.0E-06 for any carcinogenic hazardous substance, taken together, in any exposure pathway*
> - *Result in a hazard index above 1.0 for all noncarcinogenic hazardous substances, taken together, in any exposure pathway*
> - *Exceed 1.0E-04 for any carcinogenic hazardous substance accumulated across all pathways*
> - *Result in a hazard index above 1.0 for all noncarcinogenic hazardous substances accumulated across all pathways*

This policy is in agreement with risk information developed by EPA and was accepted as documented by the memorandum of understanding between the U.S. Environmental Protection Agency and the U.S. Department of Defense, dated May 1994 (DoD 1994). Parcels will be advanced to Tier 2 at Alameda Point only if the estimated risk is greater than 1.0E-04 or the hazard index is greater than 1.0 for all COCs accumulated across all pathways.

Comment 3. The decision on whether incremental cancer risk in excess of 10-6 is 'acceptable risk' is a decision reached by risk managers after implementation of the nine balancing criteria contained in the National Contingency Plan (NCP). Incremental cancer risk below 10-4 are should not automatically be designated

'acceptable' (Part 1, Section 3.5, page 19). The EPA document cited refers to an EPA survey of actions taken after the risk management implementation of the nine balancing criteria. Using an incremental cancer risk value of 10-4 as a risk assessment decision criterion is inappropriate without the risk management consideration of the nine balancing criteria by the DTSC Project Manager.

Response: *Please refer to Navy response to DTSC-HERD specific comment number 2.*

Comment 4. The comments above on the tiered screening methodology were previously transmitted in a HERD memoranda to Tom Lanphar, dated April 2, 1996 and October 17, 1996.

Response: *The responses to these comments were previously submitted to DTSC by the Navy on July 12, 1996 and January 15, 1997.*

Comment 5. We object to the Tier 1 screening use of the Region IX chromium PRG of 210 mg/kg rather than the California-modified chromium VI PRG of 0.2 mg/kg for parcels where no analyses were performed for chromium VI and coupled analyses for total chromium. We reviewed the screening of all parcels for which only a Tier 1 screening was performed. Chromium was not detected at any of these parcels, according to the descriptive statistics tables for each parcel. The issue is moot for the parcels contained in the Zone 20, 21, and 23 screening, but could become an issue for parcels evaluated later.

Response: *Chromium occurs in oxidation states ranging from -2 to +6; however, trivalent (+3) and hexavalent (+6) are the only stable species and, consequently, are the predominant forms found in a ratio of 6:1 in natural systems. Based on historical records and available data, if hexavalent chromium is not expected to be present in concentrations exceeding normal levels, total chromium PRGs and toxicity values, which evaluate exposure to both trivalent and hexavalent chromium, will be used in the tier 1 and tier 2 screening evaluations, respectively. However, if parcel-specific information indicates hexavalent chromium may be present and data is available, hexavalent and trivalent chromium will be evaluated separately in the tier 1 and tier 2 screening evaluations.*

Comment 6. We checked at random the U.S. EPA Region IX PRGs used in the Tier 1 screening and found them accurate.

Response: *Comment noted and appreciated.*

Comment 7. One of the Tier 1 screening tables contains a puzzling column heading which is not present in other Tier 1 tables. The Tier 1 screening table for Parcel 118 contains sequential columns for the media concentration equal to a cancer risk of 1x10-6 and the media concentration equal to a non-cancer hazard quotient of 1,

followed by two columns which present the estimate of cancer risk and non-cancer hazard arrived at by comparing the media concentration with the respective cancer or non-cancer toxicity value. This is easy to follow. The Tier 1 screening table for Parcel 120 is a different matter. The Tier 1 screening table for Parcel 120 contains a fifth column placed between the four columns described above for parcel 118. This column heading is 'PRGs Soil', which only repeats the lowest value from the two previous columns. This column should be removed from the Parcel 120 Tier 1 screening tables.

Response: *The table will be modified to reflect the current table format.*

Comment 8. The reference doses used in the Tier 2 health screening were checked at random and the reference doses listed in the Integrated Risk Information System (IRIS) are those which were used in the Tier 2 health screening. There are, however, several reference doses used in the Tier 2 health screening for the inhalation route of exposure which are absent from IRIS. For example, an inhalation reference dose for particulates and vapors of 2.9E-01 is listed for 2-butanone (Parcel 116, Table 13). Neither IRIS nor the latest version of the U.S. EPA Health Effects Assessment Summary Tables (HEAST) contains an inhalation reference dose for 2-butanone. Please footnote reference dose values which are obtained from sources other than the U.S. EPA IRIS or HEAST.

Response: *All reference doses (RfDs) collected from sources other than EPA's IRIS and HEAST are currently identified in the chemical-specific toxicity profiles; this information will also be added to the tier 2 screening evaluation supporting tables.*

Additionally, an inhalation reference concentration (RfC) of 1.0E+00 milligrams per cubic meter (mg/m3) for methyl ethyl ketone, or 2-butanone, is available from IRIS (EPA 1997). When converted from a concentration to a dose, as described in EPA guidance (1989) (multiplying by 20 mg/m3 and dividing by 70 kilograms [kg]), the inhalation RfD is equal to 2.9E-01 milligrams per kilogram per day (mg/kg-day).

Comment 9. The cancer slope factors used in the Tier 2 health screening were checked at random. The U.S. EPA slope factors checked all agreed with the current values in the Integrated Risk Information System (IRIS). Several of the California cancer slope factors were not those contained in the most recent list (November 1, 1994) of California cancer slope factors released by the Office of Environmental Health Hazard Assessment (OEHHA):

a) The California oral and inhalation toxicity value listed for n-nitroso-diphenyamine (Parcel 118, Table 3) is 9.0E-03 (mg/kg-day)-1. The correct OEHHA value is 2.2E-02 (mg/kg-day)-1.
b) The California oral and inhalation slope factor listed for Aroclor is 2.0E+00 (mg/kg-day)-1 (Parcel 116, Table 3). The correct OEHHA value for polychlorinated biphenyls (PCBs) is 7.7E+00 (mg/kg-day)-1.

Please correct these values and check the California slope factors used for conformity with the current OEHHA California slope factor list. A copy of the current list can be obtained from the OEHHA Hazardous Waste Toxicity Section at (916) 324-2829.

Response: *The majority of cancer slope factors (CSFs) used in the calculation of Cal/EPA carcinogenic risks were from the California Cancer Potency Factors: Update from the Office of Environmental Health Hazard Assessment (OEHHA) dated November 1, 1994. As presented by OEHHA (1994), the oral and inhalation CSFs for N-nitrosodiphenylamine (CAS # 86-30-6) are both 9.0E-03 (mg/kg-day)-1; 2.2E-02 (mg/kg-day)-1 is the oral and inhalation CSF for p-nitrosodiphenylamine (CAS # 156-10-5). Additionally, OEHHA does list an oral and inhalation CSF of 7.7 (mg/kg-day)-1 for polychlorinated biphenyls (PCBs). However, a revised oral CSF of 2.0E+00 (mg/kg-day)-1 was recently published by EPA in IRIS; furthermore, DTSC has previously requested use of the most current CSF for PCBs at other naval installations.*

Parcel-Specific Tiered Screening

Comment 10. The residential use incremental cancer risk and non-cancer hazard values listed for Parcel 113 in the summary table for Zone 20 (Page 1 of 1) do not agree with the values presented in the Parcel 113 detail (Section 2.0). The Zone 20 summary table values for the Parcel 113 residential use scenario are 1.6E-05 for incremental cancer risk and 7.7 for non-cancer hazard. Table 1 lists a Tier 1 residential use scenario incremental cancer risk of 1.35E-05 and a non-cancer hazard of 2.87E+01. The Parcel 113 Tier 2 non-cancer hazard for the residential reasonable maximum exposure (RME) scenario (Table 3) lists a HI of 4.3E+00. The Parcel 113 Tier 2 incremental cancer risk for the residential RME scenario (Table 9) lists 3.7E-05. Please correct these tables so they are correct and agree. All other risk and hazard values in the Zone 20 summary table agree with the values contained in the detail sections (Section 1.0, 2.0 and 3.0).

Response: *The Tier 2 incremental cancer risk and hazard index for the residential RME scenario should be 3.7E-05 and 4.3, respectively. The Zone 20 summary table will be corrected accordingly.*

Comment 11. Words were truncated, apparently during the copying process. An example is page 11 of Section 1.0. These should be corrected, if only for ease of reading.

Response: *The text will be examined for these duplication errors and correctly reproduced pages will be inserted in future versions of the report.*

Comment 12. Parcel 113 is part of Installation Restoration (IR) Program Site 7A (Section 2.0, Subsection 1.6, page 6). IR Program samples were apparently not used in estimating the incremental cancer risk and non-cancer hazard for parcels. The

risk and hazard associated with use of each parcel is, therefore, not complete without consideration of any additional exposure from associated IR sites. HERD recommends that the IR Programs data for adjacent or included IR sites be evaluated when considering lease or transfer options for each parcel.

Response: *The Navy agrees and notes that as agreed to among representatives from EFA West, Alameda Point, U.S. EPA, and DTSC, IR soil and groundwater analytical data is not to be used in the EBS human health risk-based tiered screening analysis. In addition to the information provided in the draft documents, the draft final versions for Zones 20, 21, and 23 will include information to support 'no further action' decisions and transfer decisions. The additional information will include (1) potentiometric surface maps, (2) IR data tables summarizing soil and groundwater analytical results against their respective PRGs, (3) IR soil and groundwater data summary maps, (4) a monitoring well location map, (5) IR soil sample location maps, (6) potential migration assessment discussions summarizing IR soil and groundwater data, UST data, groundwater flow direction, and fuel line information, (7) conclusions regarding the Tier 1 and Tier 2 risk screening for each parcel, (8) environmental parcel summary reports for each parcel from the EBS database, and (9) a discussion of groundwater quality and assessment of beneficial use. As this information is evaluated, the reclassification of Parcel 113 will be reassessed.*

Comment 13. Parcel 114 is part of IR Site 7A (Section 3.0, Subsection 1.2, page 2). HERD recommends that parcels which are part of IR Sites not be transferred prior to completion of IR Program remediation.

Response: *The Navy agrees that installation restoration sites (as currently depicted in the IR program) will remain as Category 6 parcels regardless of the human health risk-based tiered screening results. Adjacent parcels, however, will be recategorized appropriately based on risk evaluation of the EBS data and careful review of all other parcel information as noted in response to DTSC general comment #3. Also, the FY97 Defense Authorization Act contains a provision (Section 334) that modifies Section 120(h)(3) of CERCLA to allow contaminated federal real estate to be transferred to private parties before remedial action has been taken provided concurrence with the State's Governor's office is received.*

Comment 14. A distinction should be made in the parcel descriptions between open space with no paving and open space with paving for consideration by the Navy and regulatory agencies project managers. For example, Parcel 115 in Zone 21 is a five acre parcel with 95 percent open space (Zone 21 Summary, page 1). The summary table (Zone 21 Summary, Table Page 1 of 2) lists the open space for Parcel 115 as 'Paved (100%)'. The summary zone summary tables should be amended to include columns which present the size of the parcel and the relative proportion of coverage by buildings and open space in addition to the percent of total space which is currently paved. Two and one half acres of open space on a five acre parcel (50 percent unpaved open space) could have a greater effect on

the conclusions of the human health and ecological risk assessments then one quarter acre of open space on a half acre (50 percent unpaved open space) parcel.

Response: *The parcel description in the text identifies how much of the parcel consists of open space. The zone summary tables identify how much of that open space is paved. Information including parcel size and percentage of parcel covered by buildings and open space is available in the Sector I and Sector II final EBS reports, Volume II.*

Comment 15. DTSC risk managers should refer to the descriptive statistics tables and cumulative cancer risk estimates and cumulative non-cancer hazard estimates contained in the amended zone summary tables, rather than rely upon statements in the parcel-specific text which indicate which contaminants are below their respective EPA Region IX PRGs (e.g. Zone 21, Parcel 116, Section 3.0, Subsection 2.2, pages 6 and 7). Incremental cancer risk in excess of 1x10-6 and non-cancer hazard may still exist when the concentration of all contaminants is less than the EPA Region IX PRG.

Response: *Comment noted.*

Comment 16. There appear to be no recommendations for parcel 116 in the text (Zone 21, Parcel 116, Section 3.0, Subsection 4.0, pages 4 and 5). Please include recommendations for parcel 116 in the text.

Response: *The Navy agrees and will provide additional recommendations which will be incorporated into the text of section 4.0 of the Parcel 116 data summary report. These recommendations will be based on additional input from Tier 2 screening with respect to exposure routes and potential risk factors.*

Comment 17. Please include benzo(a)pyrene among the risk drivers for parcel 116 in the Zone 21 summary table. Benzo(a)pyrene contributes risk roughly equivalent to arsenic in the Tier 2 RME residential use scenario (Table 3).

Response: *The Navy agrees. The EPA tier 2 residential RME carcinogenic risks for arsenic and benzo(a)pyrene are 2.9E-04 and 1.5E-05, respectively. The cumulative carcinogenic residential risk is due predominantly to arsenic with contributions from the polycyclic aromatic hydrocarbons (PAHs); however, PAHs (specifically benzo(a)pyrene) can be included as risk drivers. The zone 21 summary table will be modified accordingly.*

Comment 18. The residential use incremental cancer risk and non-cancer hazard values listed for Parcel 129 in the summary table for Zone 21 (Page 1 of 2) do not agree with the values presented in the Parcel 129 detail (Section 9.0). Please correct the tables so that they are correct and agree.

Response: *The residential use incremental cancer risk (1.1E-02) is correct as presented. This value represents the cumulative risk of exposure to soil and groundwater taken together. The hazard index value, however, should be 120.5 and will be corrected in the summary table.*

Comment 19. The Zone 21 summary table values for the Parcel 129 residential use scenario are 1.1E-02 for incremental cancer risk and 130 for non-cancer hazard. Table 1 lists a Tier 1 residential use scenario incremental cancer risk of 1.33E-02 and a non-cancer hazard of 2.64E+04. The Parcel 129 Tier 2 non-cancer hazard for the residential RME scenario for soil and groundwater (Table 3 and Table 5) lists a HI of 5.0E-01 for soil and 1.2E+02 for groundwater. The total residential use RME hazard index is 120.5.

Response: *The non-cancer hazard index for the residential RME scenario should be 120.5; the summary table will be corrected accordingly.*

Comment 20. The non-cancer hazard index for the recreational use RME scenario in the Zone 21 summary table for Parcel 129 is 0.36. The non-cancer hazard index in the Tier 2 recreational use RME scenario (Table 13) is 3.4E-02, which does not equal the 0.36 in the summary tables.

Response: *The non-cancer hazard index for the recreational RME scenario should be 0.034; the summary table will be corrected accordingly. Additionally, the carcinogenic risk for the recreational RME scenario will be changed in the summary table to 9.9E-06 to be consistent with Table 11. The value currently presented (1.0E-05) in the summary table was simply rounded from 9.9E-06.*

Comment 21. The incremental cancer risk for the occupational use RME scenario in the Zone 21 summary table for Parcel 129 is 6.0E-06. The incremental cancer risk in the Tier 2 occupational use RM scenario (Table 15) is 5.5E-06.

Response: *The carcinogenic risk for the occupational RME scenario should be 5.5E-06; the summary table will be corrected accordingly.*

Comment 22. The non-cancer hazard for the occupational use RME scenario in the Zone 21 summary table for Parcel 129 is 0.22. The non-cancer hazard index for the Tier 2 occupational use RME scenario (Table 17) is 2.2E-02, which does not equal the 0.22 in the summary table.

Response: *The non-cancer hazard index for the occupational RME scenario should be 0.022; the summary table will be corrected accordingly.*

Comment 23. The RME residential use incremental cancer risk listed for Parcel 197 in the summary table for Zone 21 (Page 2 of 2) does not agree with the value presented in the Parcel 197 detail (Section 11). The summary table lists an incremental cancer risk for the residential RME scenario of 8.7E-07. The Tier 1 residential incremental cancer risk for Parcel 197 (Table 1) is listed as 8.44E-07. As the incremental cancer risk is less than 1x10-6 and the hazard index is less than 1.0 the difference will not affect the transfer or use decision. The discrepancy should, however, be corrected.

Response: *The Zone 21 summary table will be modified to correctly present the tier 1 residential RME carcinogenic risk of 8.4E-07 for parcel 197.*

Comment 24. The non-cancer hazard for the residential use scenario listed for Parcel 165 in the summary table for Zone 23 (Page 1 of 1) does not agree with the value presented in the Parcel 165 detail (Section 3). The summary table lists a hazard index of 0.17 for the residential use RME scenario. The Tier 1 non-cancer hazard index for Parcel 165 (Table 1) is listed as 9.32E-05. The 0.17 value in the Zone 23 summary table may have been mistakenly duplicated from the Parcel 167 health screening where the detail sheets (Table 1, Section 5) agree with the summary table. As the incremental cancer risk is less than 1x10-6 and the hazard index is less than 1.0 the difference will not affect the transfer or use decision. The discrepancy should, however, be corrected.

Response: *The Zone 23 summary table will be modified to correctly present the Tier 1 residential RME noncarcinogenic HI of 9.3E-05 for parcel 165.*

Comment 25. Please add lead to the list of risk drivers for Parcel 168 in the Zone 23 summary table (Table 1 of 1). The hazard quotient for lead in soil is greater than all the other contaminants listed as risk drivers (Table 1).

Response: *The Zone 23 summary table will be modified to present lead as one of the risk drivers for parcel 168.*

Comment 26. The non-cancer hazard for the residential use scenario listed for Parcel 168 in the summary table for Zone 23 (Page 1 of 1) does not agree with the value presented in the Parcel 168 detail (Section 6). The summary table lists a hazard index of 1.0 for the residential use RME scenario. The Tier 1 residential non-cancer hazard index Parcel 168 summed for soil and groundwater (Table 1) is 6.92E-01. The discrepancy should be corrected.

Response: *The Zone 23 summary table will be modified to correctly present the Tier 1 residential RME noncarcinogenic HI of 6.9E-01 for parcel 168.*

Conclusions

Once the errors and inconsistencies listed above are corrected the health risk screenings presented for parcels in Zone 20, 21, and 23 should provide information useful in making risk management determinations of the appropriateness for lease or transfer.

HERD recommends that the IR Program data for adjacent or included IR sites be evaluated when considering lease or transfer options for each parcel.

The DTSC risk manager should also consider the descriptive statistics tables when evaluating the estimated cancer risk or non-cancer hazard when making risk management decisions. Estimates of risk or hazard based on a single detection in eight samples (e.g., Parcel 116 soil) or a single detection in three samples (e.g., Parcel 120) are highly uncertain.

Response: *As noted above in Navy response to DTSC general comment #3, in addition to the information provided in the draft documents, the draft final versions for Zones 20, 21, and 23 will include information to support 'no further action' decisions and transfer decisions. The additional information will include (1) potentiometric surface maps, (2) IR data tables summarizing soil and groundwater analytical results against their respective PRGs, (3) IR soil and groundwater data summary maps, (4) a monitoring well location map, (5) IR soil sample location maps, (6) potential migration assessment discussions summarizing IR soil and groundwater data, UST data, groundwater flow direction, and fuel line information, (7) conclusions regarding the Tier 1 and Tier 2 risk screening for each parcel, (8) environmental parcel summary reports for each parcel from the EBS database, and (9) a discussion of groundwater quality and assessment of beneficial use. However, as agreed to among Navy, U.S. EPA, and DTSC representatives, IR soil and groundwater analytical data will not be included in the EBS human health risk-based tiered screening analysis.*

References

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