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From: Mark Ripperda [<mailto:Ripperda.Mark@epamail.epa.gov>]

Sent: Friday, July 08, 2011 10:27

To: Forman, Keith S CIV OASN (EI&E), BRAC PMO West

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Subject: EPA Comments on the Draft Proposed Plan for Parcel E-2

Hi Keith, attached are EPA's comments on the Draft Proposed Plan for Parcel E-2. The comments are not nearly as long as they first look, I cut and pasted liberal amounts of text from the Proposed Plan to provide context around all our suggested changes.

Because so many of our comments are proposed language edits to the text, a classic RTC matrix will be difficult. I would be happy with just seeing a working version of the revised document. However, if you need to do a matrix for Navy purposes, I suggest the Navy responses can be simply: "comment accepted"; "comment partially accepted, see text in document", or "comment rejected".

## EPA Comments on the Parcel E-2 Draft Proposed Plan

The Proposed Plan lacks specific details on the remedy, i.e., what exactly will be done where. See our several specific suggestions for Pages 10 and 12.

The PP also lacks a thorough description of all the most recent PCB and East Adjacent Area excavations. The current PCB and East Adjacent Area excavations and the SS Drain Radiation Removal Action are essentially common elements for all the alternatives. The SS Drain removals are identified as a common element at the end of the Summary of Remedial Alternatives discussion, but the PCB and East Adjacent Area Removals are not. We understand that the FS included these excavations in Alternatives 4 and 5, but you need to be clear about what is actually happening now. Please update and clarify Figures 5 and 9 to clearly differentiate the removal actions from the remedial alternatives. We have a specific comment below asking to add the current removal actions to the previous activities on Page 5, but maybe the PCB/East Adjacent Area removal should be called out as a current activity in that section to explain that it was part of Alternatives 4/5 in the FS, but the Navy is currently performing a removal action.

Please consider not using acronyms for several key Navy documents such as the Record of Decision, Historical Radiological Assessment, Screening-Level Ecological Risk Assessment and Remedial Design. They don't occur too frequently and are thus easier for a lay-person to read as words not acronyms.

EPA tends to hyphenate words like long-term, short-term, on-site, off-site. There isn't a clear right or wrong style, just be consistent after incorporating our comments.

Page 2, First Paragraph: The U.S. Navy encourages the public to comment on its *Proposed Plan* for cleanup of Parcel E-2 at Hunters Point Shipyard (HPS) in San Francisco, California. Parcel E-2 includes an unlined solid waste landfill along the shoreline in the southwest portion of the Shipyard (see Figure 1).

¶ This Proposed Plan presents several remedial alternatives and identifies the Navy's Preferred Alternative. The Navy, in consultation with the U.S. Environmental Protection Agency (EPA), the California EPA Department of Toxic Substances Control (DTSC) and the San Francisco Bay Regional Water Quality Control Board (Water Board), will select a remedy for the site in the Record of Decision (ROD) after reviewing and considering all information submitted during the public comment period. The Navy may modify the Preferred Alternative or select another response action presented in this Plan based on new information or public comments. Therefore, the public is encouraged to review and comment on all the alternatives presented in this Proposed Plan. A final decision will not be made until all comments submitted during the review period are considered. The Navy may modify the Preferred Alternative or select another one of the alternatives based on new information received. See how to comment in the box below.

This Proposed Plan presents various remedial alternatives, one of which will be selected in the Record of Decision (ROD) for Parcel E-2. The U.S. Environmental Protection Agency, Region 9 (EPA), the

California EPA Department of Toxic Substances Control (DTSC), and the San Francisco Bay Regional Water Quality Control Board (Water Board) worked with the Navy in the evaluation of remedial alternatives and in the selection of the *preferred alternative*.

Page 2, Second Paragraph: This Proposed Plan summarizes the remedial (cleanup) alternatives evaluated by the Navy ~~evaluated under the *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*~~ and explains the basis for ~~choosing~~ identifying the preferred alternative to address contamination at Parcel E-2 at HPS.

Page 2, Item 1: Delete “(referred to as hot spots)”.

Second Page, Item 3: Install a protective liner and soil cover over all of Parcel E-2, ~~and install a *protective liner* under the soil cover.~~

Page 2, Item 4: Install ~~vertical~~ below-ground barriers ...

Page 2, Item 9: Use ~~*institutional controls (ICs)*~~ land use controls (LUCs) to restrict specific land uses and activities on Parcel E-2 (see Insert 1 on page 21 for more details on LUCs)

Page 2, third paragraph: Delete the third paragraph (This Proposed Plan summarizes ...). We suggested moving key language into the first paragraph and the rest is redundant with other text on the first couple of pages.

Page 2, fourth paragraph: ~~A public comment period will be held~~ Public comments will be accepted from September 7 through October 24, 2011, and public comments can be submitted via mail, fax, or e-mail throughout the comment period.

Page 2, fifth paragraph: Delete the fifth paragraph (The Navy may modify ...). Same reasons as third paragraph.

Page 2: Display the comment information in a box on the front page. Some people gravitate to a graphic more than words. It is best when this type of information both appears in a graphic and writing on the first page.

Page 3, CERCLA PROCESS, First Paragraph: The Navy ~~has~~ received public input during the development of ~~on~~ the RI/FS Report and radiological addendum, and this input ~~has~~ helped identify the remedial alternatives discussed in this Proposed Plan.

Page 3, CERCLA PROCESS, Second Paragraph: ~~Since the mid-1980s, The Navy has conducted numerous investigations have been conducted at HPS since the mid-1980s. These investigations have identified contamination which poses a potential risk to human health and the environment. under the Navy's *Installation Restoration (IR) Program*, which is a comprehensive environmental investigation and cleanup program, that identifies, investigates, and cleans up chemical and **radiological contamination** at HPS. The IR Program complies with CERCLA (also referred to as the “Superfund” law), the California Hazardous Substances Account Act, and all other federal and state laws that govern environmental cleanups. The Navy also conducted several early **removal actions** from 1997 to 2011~~07~~ to excavate contaminated soil, remove radionuclides, control landfill gas, and to limit the flow of contaminated groundwater from under the landfill into the Bay. These removal actions provided protection to the community for the short-term, but the Navy must address the remaining contaminants~~

with a permanent remedy for the entire parcel. The Navy's Preferred Alternative is presented in this Proposed Plan. The *Record of Decision (ROD)* will present ...

Page 3, CERCLA PROCESS, third paragraph: Delete the first two sentences.

Page 3, CERCLA PROCESS, third paragraph: After the ROD, the **remedial design** and remedial action are the next steps in the CERCLA process and involve the careful planning and implementation of the ~~final~~ selected remedial action.

Page 3, CERCLA PROCESS, fourth paragraph: ~~This Proposed Plan summarizes information detailed in t~~The RI/FS Report, radiological addendum, and other documents that provide information about the conditions and Navy activities at Parcel E-2 are available in the Administrative Record file for Parcel E-2. The Navy encourages the public to review these documents to gain an understanding of the environmental investigations and removal actions that have been conducted. Documents are available for public review at the locations listed on page 14.

Page 4, Site Background: A facility owned by the University of California, San Francisco (UCSF) is located north of Parcel E-2, and non-Navy off-base property is located to the west. Parcel E is located to the East and the Navy is currently investigating this parcel and developing remedial alternatives. The San Francisco Bay forms the southern edges of Parcel E-2.

Page 4, Site Background, third paragraph: The last sentence says Parcel E-2 will be used in the future for mostly open space. The word mostly is a problem, because it begs the question of what other uses and where. I hate to add complexity for the City's misplacement of a map line, but you should probably add a phrase that says "One-quarter acre?? in the northeast corner will be zoned for multi-use." This comment also applies to the later discussions of LUCs and the LUC Insert.

Pages 4 and 5, Site Background and Site Characteristics: The first set of bullets lists the four distinct areas in Parcel E-2, but then no further discussion or distinction is made between them. The fill events to make Parcel E-2 are sometimes described very generally and sometimes focused on the landfill. Photographs 3-6 are described as showing landfill activities, but they also show filling in the other areas. Please merge the first three paragraphs (and related bullets) of Site Characteristics in with Site Background and then separately describe the non-landfill areas. The Site Characteristics section header would go away and new headers Previous Investigations and Cleanup Activities would be added. A rough draft of the proposed new layout is located at the end of these comments. The following comments apply to either the existing format or the proposed new layout.

Page 4, Site Background, second set of bullets: Specify the number of trenches and soil borings separately, i.e., "Over XXX trenches and YYY soil borings to identify ..."

Page 4, Site Background: Similar to the last comment, add a little more specifics to the sampling of both the landfill waste, groundwater, Panhandle and East Adjacent Area. Arc Ecology commented on behalf of the community in 2003 requesting more information about the landfill. Make a pro-active statement that the trenching, soil borings and groundwater sampling provide sufficient information to support the Navy's preferred alternative.

Page 4, Site Background, Last Paragraph: Figure 4 shows the locations where samples were collected to analyze groundwater, soil, landfill gas and radiation during the numerous site investigations. shows where samples have been collected at Parcel E-2. The RI/FS Report and radiological addendum summarize the results of the environmental investigations at Parcel E-2 and document how much is known about the site.

Page 5: Can you add an explanation before the bullets on why these actions were done when they were, i.e, address the question of whether people were exposed prior to the actions and why the actions were necessary to do before the final remedy.

Page 5: Add a bullet to discuss the cap that was placed over most of the landfill.

Page 5, Groundwater Extraction System: Clarify tense in discussion of GW treatment system, as most of it should be in the past tense. Add a statement that the extracted water was tested for chemical contaminants and that the water passed screening levels without treatment and was discharged directly into the City's storm drains.

Page 5, Landfill Gas Removal Action: Clarify tense of the Landfill gas paragraph. Most of the language is written in the past tense, but the final sentence indicates that the system is on-going. Also, since the Navy has been studying the landfill since 1989, why did this action happen so much later. Is the landfill gas migration the result of the cap installed in 2000? Were there unacceptable exposures before the gas removal action?

Page 5, List of Past Actions: Add a bullet to describe the current PCB Hotspot Removal and related Tiered Removals in the East Adjacent Area.

Page 5, Site Background, Last Paragraph: The removal actions described above successfully removed significant amounts of contamination from certain Parcel E-2 areas; however, contamination remains elsewhere at Parcel E-2 which the Navy intends to address with the preferred alternative described in this Proposed Plan. The Navy has collected additional soil and groundwater samples during the removal actions to help guide the future cleanup. For example, the Navy identified additional soil contamination at the PCB Hot Spot Area that is currently being removed as part of a removal action that started in 2010 and is expected to be completed in late 2011.

Page 5, Site Characteristics, Third Paragraph: Describing soil volume in terms of a soil pile over a football field seems questionable. A better description might be number of truck loads.

Page 5, Site Characteristics, Third Paragraph: After the landfill closed in the early 1970s, the Navy covered it with 2 to 5 feet of soil. This followed standard landfill practices at the time and was prior to the existence of any landfill regulations.

Page 6, Potential Radioactive Wastes at Parcel E-2, First Paragraph: The Navy prepared a **Historical Radiological Assessment (HRA)** that identified areas where low-level radiological waste may have been disposed of at Parcel E-2 (referred to as "**radiologically impacted**" areas). These radiologically impacted areas at Parcel E-2 are shown on Figure 7. These areas make up most of the land area at Parcel E-2. The following radiological waste disposal activities were documented at Parcel E-2:

Page 6, Potential Radioactive Wastes at Parcel E-2, First Paragraph: There is no reason to make an acronym out of HRA. It is only used twice more on this page (where you could just spell it out or delete it) and nowhere else in the document.

Page 6, Potential Radioactive Wastes at Parcel E-2, Second Bullet: Disposal of industrial debris and metal slag with dials, gauges, and deck markers painted with radioactive paint at the Metal Slag Area (removed during an early previous removal action)

Page 6, Potential Radioactive Wastes at Parcel E-2, Third Bullet: Potential discharge of small amounts of low-level radioactive chemicals into drains at **Naval Radiological Defense Laboratory (NRDL)** buildings; former NRDL buildings were located outside of Parcel E-2 but their drain lines may have led to drain lines in the eastern part of Parcel E-2. These drain lines and any contamination in them are currently being addressed through an ongoing excavation and removal action.

Page 6, Potential Radioactive Wastes at Parcel E-2, Second Paragraph: Radium-226, which is commonly used in radioactive glow-in-the-dark paint, but also occurs naturally in the environment, was the most common radioactive chemical found at Parcel E-2 soil. [Make the groundwater discussion a new paragraph]

Page 6, Landfill Gas: Please provide some perspective on the landfill gas. Were the detections at UCSF the result of the cap? Were people exposed earlier?

Page 7, Landfill Gas at Parcel E-2, Second Bullet: Built a gas control, extraction, and treatment system to prevent further migration gas from leaving Parcel E-2.

Page 7, Landfill Gas at Parcel E-2: Delete the third bullet, it is redundant with the following paragraph and wasn't really part of the removal action.

Page 7: Change title to Summary of Site Risks at Parcel E-2

Page 7, Summary of Site Risks, First Paragraph: "Risk" is the likelihood or probability that a hazardous chemical, when released to the environment, will cause adverse effects (such as cancer or other illnesses) on exposed humans or wildlife. Chemicals that are spilled onto the ground can contaminate soil, air, and groundwater. Figure 8 shows the ways, such as touching soil, that people and wildlife may be affected exposed by to contamination. The figure shows where people and wildlife can be affected and what actions (such as touching soil) affect people and wildlife (referred to as the exposure pathway).

Page 7, Summary of Site Risks, Second Paragraph: The Navy's investigations showed that soil, shoreline sediment, and groundwater were contaminated from chemical releases at Parcel E-2. The Navy evaluated the risk to humans and wildlife from exposure to the contaminated soil, shoreline sediment, landfill gas and groundwater. The Navy also evaluated risk to humans from exposure to soil gas from the Parcel E-2 Landfill.

Page 7, Summary of Site Risks, Last Paragraph: Cancer risk is the estimated probability that a person will develop cancer from exposure to site contaminants, and is generally expressed as an upper bound probability. For example, a 1 in 10,000 chance is a risk of  $1 \times 10^{-4}$ . In this case, that for every 10,000 people, one additional cancer case may occur as a result of exposure to site contaminants. An additional cancer case means that one more person could get cancer than would normally be expected from all other causes. A 1 in 1,000,000 chance is a risk of  $1 \times 10^{-6}$ . In this case, that for every 1,000,000 people, one additional cancer case may occur as a result of exposure to site contaminants. EPA established a risk management range of  $10^{-4}$  to  $10^{-6}$  1 in 10,000 to 1 in 1,000,000 to guide risk management decisions at contaminated sites. The Navy adopted a conservative approach at Parcel E-2 and evaluated action where potential risk exceeded 1 in 1,000,000.

Page 8, Summary of Site Risks, Second Paragraph: ~~Noncancer hazard is the risk of health effects other than cancer, and is expressed as a number called the hazard index (HI). The HI is estimated by comparing chemical exposure levels with reference values established by the regulatory agencies. An HI of 1 or less is considered an acceptable exposure level for noncancer health hazards. Risk managers often use an HI greater than 1 to evaluate whether noncancer health hazards are significant enough to warrant further action. The Navy uses an HI greater than 1 to trigger a response action at Hunters Point.~~

Page 8, Summary of Site Risks, Third Paragraph: ~~The estimated cancer risk from exposure to landfill gas (NMOCs) is less than 1 in 1,000,000 (see Table 3 on page 22). [Also, the table uses "Soil Gas" and the text in this paragraph uses "landfill gas". Please make them consistent]~~

Page 8, Screening-Level Ecological Risk Assessment (SLERA): ~~An ecological risk assessment considers risk to wildlife, such as small mammals, birds, and marine life. The Navy performed a screening level ecological risk assessment to evaluate risk to wildlife, such as small mammals, birds, and marine life and SLERA to evaluate risks to wildlife from exposure to soil and shoreline sediment. The SLERA concluded that contaminated soil and shoreline sediment in Parcel E-2 pose a potential threat to wildlife. [The Navy developed PRGs for chemicals that pose a potential risk identified in the SLERA (Table 4 on page 23). Ecological exposure to chemical concentrations exceeding the PRGs that poses an unacceptable risk that would be prevented-addressed by the remedial actions.] [also replace prevented with addressed in the last paragraph of the human health discussion. The risk is not prevented, it is reduced or addressed.] [Also, the above {} text is an example of how to remove discussions about the PRGs]~~

Page 8, SLERA, Second Paragraph: ~~The Navy also compared data for chemicals detected in groundwater with values the Water Board uses to protect aquatic wildlife in San Francisco Bay. The screening evaluation found that metals and organic chemicals in groundwater may pose a potential risk to aquatic wildlife if groundwater with these chemicals reaches the bay. The Navy intends for [The remedial action to] ~~would~~ control (through either containment or removal of the contaminant source) these chemical concentrations in groundwater and protect aquatic wildlife in the bay.~~

Page 8, Remedial Action Objectives, Second Paragraph: ~~Most of the remedial action objectives include PRGs. Exposure to chemical concentrations exceeding the PRGs poses an unacceptable risk that would be prevented by the remedial actions. PRGs for COCs are presented in Tables 4, 5, and 6 on pages 23 and 24 and will be finalized in each the ROD. The remedial action objectives are listed below.~~

Page 8, Remedial Action Objectives, Second Paragraph: ~~Sample text if PRG tables are removed: Delete entire second paragraph, then change text in bullets to: Protect people from exposures to vapors from soil or from eating and touching contaminated soil with chemical concentrations greater than the PRGs in Table 4.~~

Page 9: Remedial Action Objectives for Soil and Shoreline Sediment (and associated waste)

Page 9, Remedial Action Objectives for Landfill Gas: ~~Why are the PRGs for the NMOCs 500 ppm at the Parcel boundary and 5 ppm above background on-site? The LFG Monitoring Reports word it differently with a distinction of 5 ppm in the breathing zone and 500 ppm in the GMPs based on a 2002 Tetra Tech Report. The RAOs for landfill gas have no prior discussion. Add a section to the risk assessment that provides a basis for the methane and NMOC numbers. Why is 500 ppm in the GMPs acceptable? The basis for these numbers should be explained in either the Risk section or the Landfill Gas section. Finally, "on-site buildings" is straight from the CA regs, but since there are no buildings on-site, this should be modified to "buildings near the landfill or any future structures placed on or near the landfill".~~

Page 9, Remedial Action Objectives for Groundwater: The third bullet discusses the B aquifer, but how does the remedy address the B aquifer? Are there currently anthropogenic contaminants above the PRGs in the B aquifer? Also, this is the first mention of the B aquifer. The two aquifers should be explained in the Site Characteristics section.

Page 9, Remedial Action Objectives for Groundwater: The fourth bullet should point to an appropriate table, the reader has no way to know what groundwater contaminants were identified in the SLERA.

Page 9, Remedial Action Objectives for Groundwater: Why is there a bullet for construction workers here. Isn't their protection from proper PPE and not the remedy?

Page 9, Summary of Remedial Alternatives, First Paragraph: The Navy developed a range of alternatives in the Feasibility Study to address the contamination at Parcel E-2. All of the alternatives except for the No Action alternative address the Remedial Action Objectives. The various alternatives present a variety of methods with different costs and approaches to meet the Remedial Action Objectives. The remedial alternatives evaluated in the FS ranged from no action to complete removal of the Parcel E-2 Landfill. The Navy evaluated several remedial alternatives involving ~~hot spot~~ partial removal along with ~~and~~ containment because EPA guidance indicates that these types of actions are usually the most appropriate for large landfills (greater than 10 acres) such as Parcel E-2. The remedial alternatives are presented in Table 7 (page 25) and summarized below.

Page 9, Summary of Remedial Alternatives: Alternative 1 is no action; CERCLA requires an evaluation of a No Action alternative to provide a baseline for comparison with other other cleanup options. Under a No Action alternative, no further cleanup is conducted. ~~therefore, no further cleanup would be performed and the remedial action objectives would not be met.~~ EPA requires that no action be included among the remedial alternatives to help understand and compare the relative advantages of other alternatives. All other alternatives were designed to meet the remedial action objectives, would be protective of human health and the environment, and would include long term monitoring and ICs to ensure their protectiveness.

Page 10, Alternative 2, 3, 4, and 5: Again suggest truckloads as analogy rather than football fields to help visualize the amount of soil.

Page 10, Alternatives 2, 3, 4, and 5: Please consider adding a listing of Estimated Capital Cost, Estimated Annual O&M cost, Estimated Net Present Value of O&M cost, and Estimated Timeframe to Complete Construction to the beginning of each alternative discussion, similar to the sample Proposed Plan in Appendix A of the EPA Guidance.

Page 10, Alternatives 3, 4, and 5: The land use controls should be included as a general element, with a reference to Insert 1.

Page 10, Alternative 2: Please consider stating the depths of the excavations in the Landfill and the shallow excavations in the Panhandle, shoreline and East Adjacent Areas.

Page 10, Alternative 3: Please explain where the excavations in "certain areas" would be and how those areas were chosen. Delete the term "(or hot spots)" as it isn't defined and not all "hot spots" are being removed.

Page 10, Alternative 3: Alternative 3 consists of removing contaminated soil (~~or hot spots~~) from certain areas (please define) followed by covering the remaining soil, waste, and sediment entire parcel with a liner and 2-3 (is this right? Are the wetlands different? Provide the thicknesses for each distinct area in the

Parcel) feet of soil. Alternative 3 would involve excavating 15,500 cubic yards of waste, soil, and sediment from Parcel E-2, with disposal off-site at an approved landfill. This volume is equal to about one football field filled with about 7 feet of soil on top. In addition, the entire parcel would be scanned for radioactivity to a depth of one-foot and radioactive contamination near the ground surface would also be excavated and removed under Alternative 3, and the excavated hot spots and radioactive contamination would be disposed of off-site at an appropriate landfill.

Page 10, Alternatives 4 and 5: *Alternatives 4 and 5* include the same elements as Alternative 3, but include ~~expanded hotspot removal~~ more excavations and additional elements to contain groundwater. A total of 26,700 cubic yards (roughly 2,000 dump truck loads) of ~~An extra 11,200 cubic yards of waste,~~ soil, and sediment would be removed from Parcel E-2 and disposed of at an appropriate landfill. This is ~~an extra 11,200 cubic yards compared to Alternative 3.~~ The total volume of hot spots removed would be 26,700 cubic yards, which is equal to about one football field with about 12 feet of soil on top. Similar to *Alternative 3*, the entire parcel would be scanned for radioactivity to a depth of one-foot and radioactive contamination near the ground surface would be excavated and disposed of off-site at an appropriate landfill. Radioactive contamination near the ground surface would also be removed under *Alternative 3*, and the excavated hot spots and radioactive contamination would be disposed of off site at an appropriate landfill.

¶*Alternatives 4 and 5* would also involve a below-ground water collection system (french drain) along the western, upgradient, boundary of the parcel to minimize water flowing underneath the landfill. The Navy would install a below-ground barrier near the San Francisco Bay to better limit the flow of groundwater to the Bay. Currently, most of the groundwater flowing towards the Bay is not contaminated above State of California standards, but the Navy would continue monitoring the groundwater and pump water from behind the barrier if the water is contaminated in the future at levels that pose a risk to the Bay. ~~building a below-ground barrier near San Francisco Bay to better limit the flow of contaminated groundwater to the bay.~~ [Add another paragraph break before discussing the differences between 4 and 5.]

Page 10, Evaluation of Alternatives, First Paragraph: The Navy evaluated the remedial alternatives using the criteria specified by federal regulations in the NCP. General descriptions of the nine criteria are presented in the illustration to the right (Insert 9). Protection of human health and the environment and compliance with state and federal laws and regulations, called **applicable or relevant and appropriate requirements (ARARs)**, are threshold criteria that each alternative must meet to be eligible for selection. CERCLA requires that remedial actions meet federal (or state, if more stringent) environmental standards, requirements, criteria, or limitations that are identified as ARARs. A complete discussion of ARARs for all of the alternatives is presented in detail in Appendix N of the RI/FS Report, and will be finalized in the ROD.

Page 10: Please explain the distinction between the amount of excavations in Alternatives 3 and 4/5? Is it based on a lower contaminant level for defining hotspots or excavation in areas that would otherwise be left in place? Does any of the excavated material trigger RCRA HW requirements?

Page 10, Summary of Remedial Alternatives: Add a more detailed discussion of the cover at the end of this section. Something like: A cover is a common element for Alternatives 3, 4, and 5. The cover over the landfill area will include a high density impermeable plastic liner under three? feet of soil cover. The new cover will be placed over ?? acres and tie in with the existing cover that was placed in the year 2000 over ?? acres. The cover in the East Adjacent area will include a plastic liner under a minimum two? feet of soil The cover in the Panhandle will include a plastic liner under a minimum of two? feet of soil in the non-wetlands areas. The wetlands in

the Panhandle will be excavated to ?? feet deep then ?? feet of clean soil and sediment will be placed back. The plastic liner over the landfill would be impermeable to limit water seeping into the landfill. The liner in the Panhandle and East Adjacent Area would be permeable because water seeping into these areas does not pose a threat for leaching contaminants into the Bay [Is this true?, if so, explain the purpose of the liner, is it just a demarcation layer? I didn't ask this during the FS, but if it is impermeable, then won't that cause problems with water ponding and require extensive subsurface water drainage controls?] The three-foot cover and plastic liner over the landfill are considered protective because ???. The two-foot cover and plastic liner over the East Adjacent Area and Panhandle are considered protective because ?? [Is the liner everywhere plastic and is it impermeable in some areas and not others?]

Page 11, First Paragraph: ~~The Navy's evaluation also considered the balancing criteria specified in the NCP. The following five balancing criteria are used to weigh major tradeoffs in the benefits and limitations among alternatives: (1) long-term effectiveness and permanence; (2) reduction of toxicity, mobility, or volume through treatment; (3) short-term effectiveness; (4) implementability; and (5) cost. Balancing criteria are used to weigh tradeoffs in the benefits and limitations among alternatives.~~ Modifying criteria include state acceptance and community acceptance. State acceptance is based on comments on the RI/FS Report and Proposed Plan. Community acceptance is evaluated based on comments received from the public during the comment period for the Proposed Plan.

Page 11, Criteria 3: Long-Term Effectiveness and Permanence: Alternatives 3, 4, and 5 would each be effective in the long-term because ~~the hotspot certain contaminated areas~~ would be removed and the final soil cover, protective liner, and control systems (for landfill gas and groundwater) would protect people and the environment from being exposed to remaining contamination. The final cover, liner, and control systems would be maintained as long as as contamination that could pose an unacceptable risk remains at the site necessary to protect human health and the environment. Alternatives 4 and 5 each include additional actions that would make them more effective in the long-term when compared with Alternative 3.

Page 11, Criteria 8: Add a statement that the State approved the RI/FS and agreed in principal with the Navy's preferred alternative in order to go forward with this public comment process.

Page 12, Conclusion, Second Paragraph: EPA's guidance, based on a national analysis of numerous other large landfills (greater than 10 acres) similar to Parcel E-2, supports these conclusions. The EPA concluded that moving waste from one location to another causes more hazards than leaving it in place, ~~especially considering and that most landfills nationwide the numerous landfills that are being can be~~ properly contained, monitored, and maintained to protect human health and the environment and comply with numerous regulatory requirements. ~~Overall, the excavation of a large landfill like Parcel E-2 may be a local solution, but it is not a global solution. [This last sentence is a nice sentiment, but is too editorial]~~

Page 12, Summary of Preferred Alternative:

~~The Navy expects the preferred alternative will satisfy the following statutory requirements of CERCLA~~

~~Section 121(b):~~

- ~~1. Protect human health and the environment~~
- ~~2. Comply with ARARs (as summarized in Attachment 1 on pages 27-31)~~
- ~~3. Be cost effective~~
- ~~4. Use permanent solutions and alternative treatment technologies to the maximum extent practicable~~

~~The preferred alternative is summarized below and shown on Figures 9 and 10.~~

The Navy, in consultation with EPA, DTSC and the Water Board, selected Alternative 5 as the Preferred Alternative for addressing contamination at Parcel E-2. This is the recommended alternative because it will achieve effective risk reduction by removing significant amounts of contaminants and providing safe management of remaining material. This combination reduces risk sooner, is easier to implement and costs much less than Alternative 2 (complete removal) and provides additional risk reduction at a reasonable cost compared with Alternatives 3 and 4.

These Preferred Alternative consists of removing 33,500 cubic yards of waste, soil, and sediment from Parcel E-2 (Figure 9) with disposal at an appropriate off-site landfill. This figure also shows areas on Parcel E-2 which have been excavated by previous Navy removal actions. The excavation areas were selected based on closeness to the Bay and concentrations of contaminants found during the site investigations. hotspot areas followed by covering the remaining soil, waste, and sediment. Alternative 5 would involve excavating 33,500 cubic yards of waste, soil, and sediment from Parcel E-2 (Figure 9).

Radioactive contamination near the ground surface would also be removed under Alternative 5, and the excavated hot spots and radioactive contamination and would be disposed of off-site at an appropriate landfill.

Excavation would be performed in the Panhandle Area to build new wetlands, and excavated material would be screened to remove radioactive contamination before placing it elsewhere on Parcel E-2 (Figure 10). The wetlands are not required as part of the remedy to prevent exposure to contaminants. The wetlands are being created to offset the loss of wetlands on other portions of the parcel and the base. The Panhandle is the best location for wetlands creation because of its location along the shore of the South Basin.

A soil cover would be placed over all of Parcel E-2, and a protective liner would be placed under the soil cover in all areas except the new wetlands. The liner will minimize water seeping into the landfill, prevent animals from burrowing under the cover, and serve as a visual marker for the bottom of the cover.

Alternative 5 The Preferred Alternative would include elements maintain and continue the existing landfill gas controls. The landfill gas controls include monitoring and venting of methane (the NMOCs are captured by filters). The landfill gas controls have effectively prevented off-site migration of landfill gases from Parcel E-2. to control landfill gas and

Flow of contaminated groundwater into San Francisco Bay would be limited by diverting upgradient water from flowing under the landfill. A below-ground barrier would be installed near the shoreline and groundwater quality would be monitored behind the barrier. The groundwater would be pumped and treated if necessary to keep contaminants from flowing into the Bay. the flow of contaminated groundwater to San Francisco Bay.

Alternative 5 The Preferred Alternative would also include monitoring and maintenance that would be performed as long as necessary to protect human health and the environment. The Navy and the regulatory agencies would also implement HCs land use controls for continued protection of human health and the environment and to ensure the integrity of the final remedial action. Insert 1 on page 21 provides an overview of HCs land use controls.

Page 12, Summary of Preferred Alternative: Add additional detail to the above Preferred Alternative discussion, including: Where will the cover thickness be 2 feet and where will it be thicker? How thick will the thickest portion be? Will there be a cover and how thick placed back in the excavated wetlands? What triggered the excavation areas to differentiate them from non-excavation areas? Also, it may be

beneficial to break the above into the four distinct areas, Landfill, Panhandle, Shoreline and East Adjacent Area. Some of the discussion is common elements for all areas, but it may be easier to understand if wetlands, revetments, excavations, landfill gas, etc. are linked to their specific area.

Page 12, Summary of Preferred Alternative, Why is this the preferred alternative: Based on information currently available, the Navy believes that the Preferred Alternative provides the best balance among the alternatives with respect to long-term and short-term effectiveness, implementability, and cost. The Navy expects the Preferred Alternative to satisfy the following statutory requirements of CERCLA §121(b): Protect human health and the environment; comply with ARARs; be cost-effective; and utilize permanent solutions and alternative treatment technologies to the maximum extent practicable.

The Navy finds that Alternative 5 would protect people from being exposed to remaining contamination left in place, ~~including radioactive chemicals,~~ because significant sources of contamination will have been removed from the shoreline and the proposed cover, landfill gas controls and groundwater controls will prevent contact with hazardous materials at levels that might pose an unacceptable risk. The remedy will be designed to withstand sea level rise, erosion and earthquakes and will meet the standards used at other landfills nationwide. The Preferred Alternative would allow the property to be used for the anticipated future land use of primarily open space parks, with a small amount of commercial and residential. [Then delete the three bullets.]

Page 13, Why is this the preferred alternative?: The Navy's findings are consistent with EPA's recommendation findings that containment actions are routinely typically the best alternative selected for other large landfill sites instead of removal or treatment actions. EPA findings were summarized in ~~four separate documents that form their~~ **presumptive remedy guidance** for CERCLA landfills. The Navy determined that the Parcel E-2 Landfill meets all of the criteria specified in EPA's presumptive remedy guidance. However, based on feedback from members of the local community, the Navy fully evaluated excavation of the landfill in the RI/FS to provide information to support the community's review of potential remedial alternatives for Parcel E-2.

Page 13, Liquefaction Potential: The Navy will further evaluate this very important part of the design, including consulting with other technical experts, to make sure that the final cover is built to withstand the MPE and comply with numerous other regulatory requirements for landfill covers ~~(see Attachment 1 on pages 27-31).~~

Page 13, Landfill gas treatment: Extracted landfill gas would be treated by either an enclosed flare or adsorbent material such as a charcoal filter. An enclosed flare involves controlled burning of methane and low levels of other organic chemicals. An enclosed flare is the most common technology for treating landfill gas, and it limits the amount of methane (a "greenhouse" gas) and NMOCs that are released to the atmosphere. Adsorbent material is designed to capture retain the NMOCs, but not methane as gas flows through them. The Navy currently uses a charcoal filter to capture NMOCs from the landfill gas control system. The Navy will further evaluate the treatment options during the design and will consult with the regulatory agencies and the community to determine which treatment option will be used.

Page 13, Shoreline protection and future open space reuse: The new tidal wetlands would be combined with the planned wetland restoration at the non-Navy California State Parks property next to Parcel E-2 along Yosemite Slough.

Page 14: Switch the "How to Find Additional Information" section with the "Administrative Record" section.

Back Page: Make sure to add at the bottom right side of the back page of the mailer: "Request Public Comment on Parcel E-2 Landfill. Comment Period from September 7, 2011 to October 24, 2011. See inside how to comment."

Page 15: EPA point of contact is Craig Cooper, phone (415) 972-4148, email cooper.craig@epa.gov

Page 17-20, Glossary: Delete Hot Spots; Delete Installation Restoration Program; Replace IC with LUC; Metal Slag is defined as a melted mineral or rock – isn't all the metal slag at HP melted metal and debris?; Change Radioactive Paint to Glow-In-The-Dark Paint; Unacceptable Risk – delete the parenthetical exponent expression.

Pages 17-20, Glossary: Add or edit the following definitions

**Aquifer:** An underground geological formation, or group of formations, containing water. Sources of groundwater for wells and springs.

**ARARs:** The NCP requires adherence to all state or federal statute that pertains to protection of human life and the environment in addressing specific conditions or use of a particular cleanup technology at a Superfund site.

**Environmental investigation:** Add to existing text - "Often referred to as the Remedial Investigation" during the CERCLA or Superfund cleanup process."

**Presumptive Remedy:** Add to existing text - Presumptive remedies are preferred technologies for common categories of sites, based on EPA's experience and its scientific and engineering evaluation of alternative technologies. The objective of the initiative is to use the Superfund program's experience to streamline site characterization and speed up the selection of cleanup actions.

Page 21, Insert 1: Replace IC with LUC throughout and spell out Land Use Controls in the first sentence.

Page 21, Insert 1: The last sentence of the first paragraph does not apply for this remedial action, probably best to delete it rather than fine tune it. The ROD will properly address this issue.

Table 1: The radionuclide column is the same as the soil column for exposure pathways, however, it should have another bullet describing exposure to radiation that doesn't require direct contact.

Table 2: Consider making the title: Maximum Cancer Risks and Noncancer Hazards from Soil Before Cleanup<sup>a</sup>. The footnote makes the same point, but it seems better to make it more clear.

Table 3: Add "Before Cleanup" to the title.

Tables 4, 5, and 6. Please remove these tables and related discussions in the text. The numbers in these tables really don't mean anything without context. Such tables imply that the soil and groundwater will be cleaned up to these levels, not that a pathway will be broken. The PRGs are not driving the excavations, or really not even the cover in any particular sense. The overall risk calculation is driving the cover. If you want to show some kind of PRG table, then select a few key COCs with their levels that are being addressed with excavations.

Figure 4: This is too busy to be of much use. Consider breaking it into two figures to separate out the overwhelming number of grid points (possibly for radiation, impossible to tell from legend on my figure). Make a distinction between intrusive sampling and surface rad scans.

Figure 7: Please consider deleting this figure and showing the Ship-shielding and storm drains on figure 9 or 10. The text explains that rad must be addressed parcel-wide, a figure showing the entire parcel colored in adds nothing new and calls unneeded attention to the subject.

Please consider adding a figure that shows something about known contamination. Maybe one for groundwater sample points with red dots for 10x exceedances of non-background PRGs, blue for exceedance and green for non-exceedance. Maybe a similar one for soil, if it's not all red. We can talk about this, I don't want to be adding figures if they don't help communicate the message that the preferred alternative is protective.

Attachment 1: Please remove this ARARs discussion. EPA guidance does not call for this level of detail in a Proposed Plan, in fact, guidance only suggests discussing individual ARARs when it poses particular difficulties or a waiver is being invoked. Even as an attachment, this is off-putting to the general public, who are the intended audience.

Suggested re-write for Site Background, to better explain the four areas within E-2 and the PCB Hotspot Removal, starting with third paragraph:

Based on the City and County of San Francisco's 2010 Redevelopment Plan for HPS, Parcel E-2 will be used in the future mostly for open space, including parks and restored wetlands. Approximately one-quarter of an acre in the northeast corner will be zoned for multi-use.

Parcel E-2 is part of an area created in the 1940s, 1950s, and 1960s by filling in the edge of San Francisco Bay with various materials, including soil, crushed bedrock, dredged sediments, and waste. The types of waste disposed of at Parcel E-2 are described in the section "Site Characteristics." The photographs below (Inserts 3 through 6) show the conditions at Parcel E-2 from the 1950s to 1970s, prior to, during, and after waste disposal activities at the Parcel E-2 Landfill. Based on the City and County of San Francisco's 2010 Redevelopment Plan for HPS, Parcel E-2 will be used in the future mostly for open space, including parks and restored wetlands. The Parcel E-2 Landfill is a 22-acre area where the Navy disposed of various shipyard wastes from the mid-1950s to the late-1960s. These wastes include:

- Construction debris (including wood, steel, concrete, and soil)
- Municipal-type trash (including paper, plastic, and metal)
- Industrial waste (including **sandblast waste**, paint sludge, solvents, and waste oils)

The Navy's investigations showed that the landfill waste consists of mostly construction debris and trash, with smaller amounts of industrial waste. The photograph below (Insert 8) shows typical waste in the landfill, and Figure 6 presents a conceptual drawing of the landfill contents adjacent to the UCSF facility. After the landfill closed in the early 1970s, the Navy covered it with 2 to 5 feet of soil. The volume of the soil cover, landfill waste, and soil under the waste (which is likely contaminated) is estimated to be over 1,000,000 cubic yards. This volume is equal to about 70,000 dump truck loads.

The East Adjacent Area was created by filling in the Bay prior to the 1950s with dirt and construction debris. Some industrial waste was disposed of in pits here later, either by the Navy or by Triple A Shipyards, who leased the property from the Navy after the Navy closed the base.

The Panhandle was created by filling in the Bay in the 1950s with dirt and construction debris. The Navy disposed of metal slag here in the 1960s?? and also tested ship-shielding for radiologic protection on the Panhandle.

The Shoreline is the boundary between Parcel E-2 and the San Francisco Bay. The sediments immediately along the shoreline are part of Parcel E-2 and will be addressed by the final remedy. All sediments beyond the mean low ??? tide line are part of Parcel F and any potential contamination in those sediments will be addressed by the Navy in the future. Navy investigations found that a portion of the shoreline along the East Adjacent Area and the eastern portion of the landfill has PCB contamination. The Navy is currently excavating soil and sediment in this area as part of a removal action described in the next section.

#### Previous Investigations

The Parcel E-2 Landfill was one of the first environmental investigation sites identified at HPS during the Initial Assessment Study (1984), and the Navy has performed numerous environmental investigations at Parcel E-2 since then.

The Navy has collected extensive information during these investigations, as well as during ongoing environmental monitoring programs for groundwater and landfill gas, including:

- Over 2,000 soil samples and over 800 **groundwater samples** analyzed for various chemicals to determine the types and concentrations of chemicals
- Over 200 trenches and **soil borings** to identify the types of waste disposed of at the Parcel E-2 Landfill
- Over 3,000 soil gas and outdoor air samples analyzed for **methane** and other **organic chemicals** to track emissions from the landfill
- Special investigations to address the unique site conditions at Parcel E-2, including identifying buried waste using special **geophysical instruments**, evaluating **liquefaction potential**, identifying existing wetlands, and analyzing shoreline sediment for various chemicals

Figure 4 shows where samples have been collected at Parcel E-2. The RI/FS Report and radiological addendum summarize the results of the environmental investigations at Parcel E-2 and document how much is known about the site.

#### Previous and Current Cleanup Activities

The Navy has also performed several removal actions at Parcel E-2 (Figure 5) in an effort to minimize potential exposure to hazardous chemicals.

- Groundwater Extraction System, 1997–1998*: a vertical sheet-pile wall and groundwater extraction system were installed at the southeast portion of Parcel E-2 to control contaminated groundwater next to San Francisco Bay. The sheet-pile wall consists of interlocking steel panels and limits the flow of groundwater to the bay. The extraction system consists of horizontal and vertical pipes and groundwater pumps, and removes contaminated groundwater where it is transported for off-site treatment. The Navy operated the extraction system until 2005, when it was removed so that the contaminant source (the **polychlorinated biphenyl [PCB]** Hot Spot Area) could be excavated and disposed of off site.

Add a description of the existing landfill cover installed in 2000

- Landfill Gas Removal Action, 2002–2003*: a landfill gas barrier wall, extraction wells, and monitoring probes were installed along the northern Parcel E-2 boundary to control gas from

moving past the landfill boundary. The barrier wall, which consists of thick interlocking plastic panels, limits the landfill gas from moving past the wall and directs it into a collection trench (Figure 6). The extraction wells were used to remove landfill gas that had migrated under the UCSF facility. The monitoring probes were used to verify that landfill gas was properly controlled. The Navy continues to operate this system to control landfill gas.

□ **Metal Slag Area Removal Action, 2005–2007:** 8,200 cubic yards of contaminated soil and sediment, including 119 cubic yards of material with radioactive chemicals, were excavated from this area in the southwest portion of Parcel E-2 and disposed of off-site.

□ **PCB Hot Spot Area Removal Action, 2005–2007:** 44,500 cubic yards of contaminated soil, including 611 cubic yards of material with radioactive chemicals, was excavated from this area in the southeast portion of Parcel E-2 and disposed of off-site.

Add a bullet to describe the current PCB and East Adjacent Area removal action

The removal actions described above successfully removed contamination from certain Parcel E-2 areas; however, contamination remains elsewhere at Parcel E-2. The Navy has collected additional soil and groundwater samples during the removal actions to help guide the future cleanup. For example, the Navy identified additional soil contamination at the PCB Hot Spot Area that is currently being removed as part of a removal action that started in 2010 and is expected to be completed in late 2011.

#### **Potential Radioactive Wastes at Parcel E-2**

The Navy prepared a **Historical Radiological Assessment (HRA)** that identified areas where low-level

radiological waste may have been disposed of at Parcel E-2 (referred to as “**radiologically impacted**” areas). The radiologically impacted areas at Parcel E-2 are shown on Figure 7. These areas make up most of the land area at Parcel E-2. The following radiological waste disposal activities were documented at Parcel E-2:

| Continue with existing text.