

Parker, Mary E CTR OASN (IE) BRAC PMO West

From: Parker, Mary E CTR OASN (I&E) BRAC PMO West
Sent: Monday, December 04, 2006 4:03 PM
To: 'cook.anna-marie@epa.gov'; 'Erich Simon'; 'DLofstro@dtsc.ca.gov'; 'Yvan.Le@uscg.mil'
Subject: FW: RTC's

Attachments: Alameda 11 30 05 Site 31 Agency Draft RTC Combined.pdf



Alameda 11 30 05
Site 31 Agenc...

Draft responses to your comments on the Draft Site 31 Soil RI Report dated April 2006 are attached. U.S. EPA comments are followed by DTSC HERD comments on page 54. DTSC GSU comments and USCG comments then follow. Please share the Draft RTCs with your colleagues, as appropriate. Have a good afternoon!

Mary

Mary Parker
Phone: (619) 532-0945
Hours: 0615 - 1545
9-80 with Alternate Fridays Off

-----Original Message-----

From: Zakowski, Cherie [mailto:ZakowskiCA@cdm.com]
Sent: Monday, December 04, 2006 15:36
To: Parker, Mary E CTR OASN (I&E) BRAC PMO West
Cc: Allen, Michael
Subject: RTC's

Hello: Please find attached the RTC's as requested.

Thanks!

Cherie Zakowski
Project Manager/Scientist
CDM
1331 17th Street, Suite 1100
Denver, CO 80202
Phone: 720-264-1109
Fax: 303-295-1895

-----Original Message-----

From: Parker, Mary E CTR OASN (I&E) BRAC PMO West
Sent: Friday, December 01, 2006 7:54
To: 'cook.anna-marie@epa.gov'; 'Erich Simon'; 'DLofstro@dtsc.ca.gov'
Subject: Site 31 RI

Good morning!

Please note that you will be receiving the Draft Site 31 RI Report -

Revision I today via overnight delivery. Due to a problem that delayed the CDs, the CDs were sent separately from the hard copies. If you do not receive both the hard copy and CD, please let me know and I will have it "tracked". Please also note that as discussed previously, I will be sending you Draft RTCs for your comments on the previous draft report. I will e-mail those to you by COB on Monday, to enable completion of review and formatting.

Have a good day and Great weekend!!

Mary

Mary Parker

Phone: (619) 532-0945

Hours: 0615 - 1545

9-80 with Alternate Fridays Off

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
General Review			
1.	A.	<p>The Draft Remedial Investigation Report for Site 31 is inadequate in that the conceptual site model has not been accurately and carefully developed and thus the conclusions reached are not supportable. The document presents an approach predicated on an assumption that contamination at the site is due to imported construction fill, as such can be deemed "background" contamination, thereby allowing the Navy to conclude that the site warrants no further action. This approach has obfuscated the pertinent information that needs to be considered in making a decision as to whether Site 31 should be carried forward to the Feasibility Study stage.</p>	<p>A. The revised Draft RI report presents additional evidence to substantiate the conceptual site model of no releases from Navy activities. In accordance with input from the regulatory agencies during the August 24, 2006 meeting, the Navy has provided additional statistical, lithological, and geotechnical support in Appendix H2 of this revised Draft RI Report that concentrations of metals, in particular arsenic, are ambient and not related to a release of hazardous substances. These metals do not present a threat to human health and the environment and therefore a remedial decision can be made without an evaluation of remedial alternatives in a FS for IR Site 31.</p> <p>The Draft RI and this revised Draft RI takes an open, unbiased approach to the investigation methods and fully considers past site use, land development history, and data from past investigations, in developing the conceptual site model and identifying data gaps. The historical and current RI analyses address the full range of potential contaminants, with soil sample locations distributed throughout the site in a planned approach reviewed and concurred with by regulatory agencies. The distribution of analytical results shows the absence of release areas and absence of hotspot areas. The historical and RI data support that there is no evidence of a release from past activities and there is evidence that the Alameda Point pink background data do not apply to IR Site 31 based on lithology, fill history, and chemical composition.</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
	B.	<p>There is ample information available, both from historical records and from recently collected data, to develop a robust conceptual site model which can support a decision regarding whether further action is necessary, and which does not require the development of a new background data set for comparison. The conceptual site model must take into consideration the following relevant pieces of information:</p> <p>1) The site was formerly used as a scrap yard and materials storage area;</p>	<p>B. The Navy agrees that it is not necessary to develop a new background data set for comparison because an off-site background is not needed. The on-site concentrations of arsenic fit 1997 DTSC criteria for an ambient population. The California Environmental Protection Agency Department of Toxic Substances Control (DTSC) has a policy titled "Selecting Inorganic Constituents as Chemicals of Potential Concern at Risk Assessments at Hazardous Waste Sites and Permitted Facilities" (DTSC 1997). The DTSC policy describes using on-site data to determine whether chemical concentrations are ambient (a single population) or contaminated (multiple populations). The Navy applied the DTSC policy criteria to arsenic data from IR Site 31 and the adjacent IR Site 30, and the results demonstrate that arsenic concentrations at each site meet the DTSC criteria for an ambient population based on the following.</p> <ul style="list-style-type: none"> • Data fit a lognormal distribution, which is typical of trace metals. • There are no outliers. • The coefficient of variation is less than 1. • The range between minimum and maximum is less than two orders of magnitude. • The cumulative probability plot is a straight line. <p>1) It is important to note that the "scrapyard" activity is associated with the property east of the eastern boundary of IR Site 31 and is the current FISCA IR Site 02. In December 1951, the Navy acquired the majority of IR Site 31 for storage purposes. The northwest portion of</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
	B. (continued)	<p data-bbox="527 1382 972 1414">2) historical sampling data (ERM</p>	<p data-bbox="1056 386 1997 1044">the site was acquired by the Navy in June 1956. The southern portion of Site 31 was formerly used as a warehouse and the eastern third of the site was used for equipment storage from approximately 1953 to approximately 1985. The equipment storage area was unpaved for the first 6 years until 1959. Former Building 369 was located in the southwestern area of the site throughout the mid 1950's to about 1985. Although Navy storage activities could have resulted in small areas of impact from some metals, there is no realistic release scenario that would have resulted in the site-wide (25 acres) concentrations of multiple metals in soil from the surface to 7 foot depth. Neither scrap metal pieces nor small metal filings were present in the soil cores from the site. It is unrealistic to conclude that possible leaching of metals from materials stored at the site resulted in the concentration of metals above the pink background dataset. Similar arsenic concentrations are present across 140 acres east of Main Street in an area with similar lithologies and fill history, including at East Housing, which has historically been used for housing.</p> <p data-bbox="1056 1068 1997 1320">It is also worthwhile to note that although FISCA IR Site 02 was used entirely as an unpaved scrap yard, only two metals, lead and cadmium, were found to require remediation. This contrasts with the finding of 16 metals above the Alameda Point pink background at IR Site 31 at depths from the surface to 7 feet below surface. The RI Report evaluations indicate that the metals at IR Site 31 are ambient and due to natural processes.</p> <p data-bbox="1056 1382 1948 1414">2) The RI Section 1.3.3 was revised to accurately state the findings</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
	B. (continued)	1987 and 1988, PRC 1990) have indicated metal contamination in soil and in groundwater in patterns indicative of releases from the storage activities that occurred at this site from the 1950s to the end of the 1980s;	<p>and limitations of the studies completed by ERM in 1987 and 1988. The PRC report (1990) addresses groundwater, which is not a primary subject of this Soil RI.</p> <p>The referenced reports (ERM 1987 and 1988) were thoroughly reviewed and discussed with the regulatory agencies during development of the RI Work Plan and SAP. Information from these reports was used in developing the investigation and selecting sample locations. The ERM reports identify chromium and nickel as having "elevated concentrations." The Site 31 RI has resampled the area of concern identified in the ERM report as near Building 369, which now correlates to the southwest portion of Site 31. The RI has at least 14 locations in the area of concern with soil samples at multiple depths. None of sample results for chromium or nickel exceed residential PRG criteria. For all 126 RI soil samples at Site 31, analytical results for chromium and nickel did not exceed the residential PRG values. This is consistent with the ERM Phase I and Phase II reports, which make repeated mention that the investigation reviewed past use and aerial photos and found no evidence of a spill or release.</p> <p>In addition, the report clearly states that the very limited investigation "was not sufficiently detailed to identify the extent of contamination..." The area sampled extended significantly beyond the southern and eastern boundaries of the current IR Site 31. The ERM sampling was conducted and reported in two phases. The second phase reported soil analytes of concern as chromium and nickel. For the combined ERM Phase I and II, there were 18 locations</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
	B. (continued)	<p>3) the construction drawings drafted by Hunt Building Corporation call for two feet of construction fill to be added to the site;</p>	<p>sampled and 29 soil samples analyzed. Approximately 10 of the locations were within the current Site 31 area. Only two analyses of chromium were detected at concentrations greater than the current residential PRG values (rPRG = 210mg/kg). The Phase II ERM report shows these two chromium sample results are associated with two soil sample locations (SB-1 north side of Building 369, and SB-3 in the eastern quarter of Site 31) within the area of current Site 31. The reported values for chromium at location SB-1 with a concentration of 360 mg/kg at depth of 0-0.5 feet bgs; and at location SB-3 the sample from 1-1.5 ft bgs reported chromium at 250 mg/kg.</p> <p>The report identifies the northwest portion of the study area, near Building 369, as having "elevated concentrations of metals" because the analytical results were mapped, contoured, and compared relative to the mean concentrations from the group of 29 samples collected. The Site 31 RI resampled the general vicinity of locations sampled and reported in the ERM documents and found that chromium and nickel concentrations are less than regulatory criteria.</p> <p>3) The Navy agrees that at least two feet of clean fill were added for the Marina Village Housing construction in the mid 1990's. The RI Section 1.3.3 and the final housing construction design drawings in Appendix K identify the following construction fill for the entire 300-unit housing area: removal of 3-inch asphalt layer, removal of 6 inches of soil, reconditioning of existing fill, addition of 2-foot minimum imported construction fill and compaction of 4 feet of fill, addition of 4 inches of capillary material, placement of a 40-mil vapor barrier, addition of 2 inches (minimum) of sand, and addition of an 8-</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
	B. (continued)	<p>4) it is evident by visual observation that Marina Village Houses are constructed approximately two feet above grade when compared to neighboring Site 25 and Site 30;</p> <p>5) the figures in the report illustrating the areas and depths of soil sampling show that the majority of the contamination in soil occurs below two feet below ground surface and is located in areas that were not covered by former Building 369.</p>	<p>inch slab.</p> <p>4) The Navy agrees that the Marina Village Housing is approximately two feet above grade.</p> <p>5) The distribution of chemical concentrations in soil show no pattern related to the footprint of the former Building 369. The RI has been revised to include supplemental Figures 4-10a and 4-10b for arsenic from 0-2 and 2-7 feet, respectively, and Figures 4-11a and 4-11b for iron from 0-2 and 2-7 feet, respectively. In the upper 2 feet, Figures 4-10a and 4-11a show that a substantial number of concentrations of arsenic and iron are above the 95th percentile in Alameda Point pink background data set. From 2 -7 feet, Figures 4-10b and 4-11b show a similar distribution of concentrations with a tendency for the higher concentrations in the western portion of the site in the vicinity of the former Building 369. However, there is no pattern in the western portion that shows decreased concentrations in soil beneath the footprint of former Building 369. In fact, some of the highest concentrations of arsenic and iron are located beneath the building footprint. There are six samples that can be most clearly assigned as inside the Building 369 footprint. For arsenic, all of these samples have concentrations above the 95th percentile in the pink background data set, and two of the samples have concentrations of arsenic above</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
	C. (continued)	greater of PRGs or established Alameda Point background values. There appear to be only a few areas that generate some minor concern and nothing that indicates a sizeable spill or release.	
	D.	D. EPA requests that same approach be taken for Site 31 as has been used for other sites at Alameda Point where the sample concentration levels are compared to the 95 th UCL "pink" background data set.	D. In accordance with input from the regulatory agencies during the August 24, 2006 meeting, the Navy has conducted additional statistical, lithological, and geotechnical evaluations in Appendix H2 of this revised Draft RI Report. The results of these evaluations are that the pink background dataset compiled by PRC in 1997 is not appropriate for background comparison at IR Sites 31 and 30 as it does not include any samples collected from soil located east of Main Street, includes only one soil sample collected within one-half mile of IR Site 31, and represents soil with a different fill history and different lithology. Please refer to Appendix H2 of the revised Draft RI report, which shows that the pink background area has a different fill history than that for IR Sites 30 and 31 and a different lithology from IR Sites 30 and 31. IR Sites 30 and 31, as well as the East Housing Area and the FISCA Warehouse area, have high gravel content and similar arsenic concentrations.
	E.	E. We request a revised remedial investigation report and recommend a focused feasibility study designed to address the few discrete areas where samples have yielded higher	E. Removal of soil with concentrations of arsenic above the 95 th percentile in the pink background would require removal of over 60 percent of the soil and would not greatly reduce the risk as suggested in this EPA comment. Table 1, included with these responses to comments (RTC) at the end of U.S. EPA comments, shows the change in the risk if samples with different ranges of concentrations of

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
	E. (continued)	levels of contaminants than residential PRGs or background values. Sample results above and below the contaminated samples should be factored in when forming a decision as to how to address the contamination best. Removal of these contaminated areas would greatly reduce the site risk and allow for the unrestricted residential reuse of the site.	arsenic are removed from the data set. Table 1 also shows the risk if the removed data points are replaced with the median concentration of arsenic in the clean fill used for IR Site 25. The results on this table show that removal of the samples from 0 - 2 feet, (representing a portion of the fill imported in the early 1990s), above the 95 th percentile in the pink background of 9.1 mg/kg (almost 60 percent of the samples) would only result in a decrease in the Cal/EPA cancer risk from 3×10^{-4} to 2×10^{-4} . The same change in risk results if all the samples from 2 to 7 feet above 9.1 mg/kg are removed. In addition, in accordance with input from the regulatory agencies during the August 24, 2006 meeting, the additional statistical, lithological, and geotechnical evaluations conducted in Appendix H2 of this revised Draft RI Report show that concentrations of metals, in particular arsenic, are ambient and not related to a release of hazardous substances.
	F.	F. Alternatively, the Navy could choose to undergo a new background study, submitting soil data from the surrounding Site 25, Alameda Annex and the College of Alameda, including all raw sampling data, and complete chemical, geotechnical and petrographic analyses and statistical presentations of the data to determine a data set that is geographically relevant to Site 31. The regulators would review the	F. The concept of "background" at Alameda Point is fundamentally different from most sites because Alameda Point was created by a series of fill events. The sources of the fill is unknown but included hydraulic fill from dredging activities in the San Francisco Bay and Oakland Inner Harbor as well as construction fill brought in to stabilize the soil. Even areas filled within the same time frame could have fill from different sources. Therefore, contiguous areas could have fill from different sources. The evaluation in Appendix H2 shows that there is an approximate 140-acre area east of Main Street that includes IR Sites 30 and 31, East Housing Area and portions of the FISCA Warehouse area that has a different fill history and lithology, as well as concentrations of arsenic

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
	F. (continued)	new background data submittal and determine whether it is appropriate to use for Site 31. The outcome may not yield significantly different results from the recommended approach described in the first half of this paragraph.	<p>that are different than those in the Alameda Point pink background. This difference is associated with a higher gravel content in this 140-acre area compared to the surrounding areas which have higher content of fine-grained sand. Further discussion of the soil type difference and distribution is presented in Appendix H2 of the Revised Draft RI Report.</p> <p>An evaluation conducted in accordance with 1997 DTSC criteria listed in the Response to Comment 1 and presented in Appendix H2 shows that the arsenic concentrations at IR Sites 30 and 31 represent one population without outliers. The data meet DTSC policy criteria for one population representing ambient concentrations.</p>
General Comments			
1.		Background means ambient levels <u>in the area</u> . Even if it were accepted that the background data for the rest of Alameda would not be appropriate "background" for this site, then the next step would be to sample areas around Site 31 to investigate background there - e.g., at site 25, the College of Alameda and the Alameda Annex. However, this document does not discuss background levels at any of the nearby Alameda sites.	<p>In accordance with your comment, the references to the LBNL dataset as a possible background dataset for Site 31 were deleted from the RI Report, and data for nearby sites are evaluated in Appendix H2. The Navy presents multiple lines of evidence that the arsenic concentrations at IR Sites 30 and 31 are ambient populations, and, therefore, no further analysis of background is needed.</p> <p>Appendix H2 shows that there is an approximate 140-acre area including East Housing, portions of the FISCA warehouse area, IR Site 30, and IR Site 31 that has similar arsenic concentrations, which are different than those found in the "pink" background data set. Data from other nearby locations including IR Site 25, College of Alameda, and FISCA also were evaluated in Appendix H2.</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
2.		<p>Even assuming that arsenic concentrations from the Great Valley group were "natural" in their place of origin, those concentrations, when the soil is brought to another area, do not automatically become "background" levels. One of the reasons given by EPA for generally not cleaning up below background levels is to avoid creating "clean islands" amid widespread contamination, because cleaning up below background may not make sense when there's the potential for recontamination of remediated areas by surrounding areas with elevated background concentrations. (See citations under comment below regarding page 3-5.) Here, it is doubtful that surrounding areas have the "background" numbers discussed in the RI.</p>	<p>Alameda Point is largely fill so ambient concentrations can differ depending on the source of the fill. The fact that one fill source may have naturally higher concentrations of some metals does not mean this soil is "contaminated" relative to the fill with the lowest concentrations of metals.</p> <p>The evaluation in Appendix H2 identifies approximately 140 acres of soil, which is a substantial and contiguous portion of the area east of Main Street, including IR Sites 30 and 31 and the East Housing Area, with similar lithological and chemical characteristics that are different than the "pink" background.</p>
3a.		<p>Even if we knew that this soil came as fill from the Oakland Hills we do not know that in its place of origin, the arsenic was "natural".</p>	<p>In accordance with your comment, the references to the LBNL dataset as a possible background dataset for Site 31 were deleted from the RI Report. The Site 31 arsenic concentrations meet the criteria listed in the 1997 DTSC policy for determining when onsite data represent a single population and are ambient concentrations.</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
			This evidence, in combination with other lines of evidence presented in Appendix H2, is sufficient to show that the arsenic is of natural origins.
3b.		It is unclear whether outliers were removed from the data set. If outliers were removed, they should be evaluated as potential hot spots.	No outliers were removed from the data set for the risk assessment calculations. Additional statistical analysis presented in Appendix H2 shows that there are no outliers in the arsenic data set.
4.		It would be helpful to have a table listing all samples where one or more analytes exceeded screening levels and the associated concentrations of those chemicals. This information cannot be ascertained from Tables 3-6 and 4-1. In addition, Table 4-2 would be more useful if it included the maximum detected concentration of each analyte listed. Please provide a table that includes all samples and analytes that exceeded screening levels and the associated chemical concentrations and revise Table 4-2 to include the maximum detected concentrations.	<p>Table 3-6 presents a summary of sample quantitation limits exceeding target quantitation limits for non-detect soil sample results. This table does not report any detected values.</p> <p>Table 4-1 summarizes detected soil analytes above sample quantitation limits at least once. This table also identifies the number of samples that had detected concentrations per analyte in the first column labeled frequency (detects/number analyzed). Table 4-1 also shows the maximum detected concentration for each analyte.</p> <p>Table 4-2 provides a summary of analytes detected in soil at concentrations greater than one or more regulatory comparison criteria.</p> <p>Tables 4-1 and 4-2 provide the information requested by this comment. The detected analytes that exceed criteria are in Table 4-2, the analytes associated concentration range, and location of maximum concentration are shown in Table 4-1. The complete listing of all analytical results is in Appendix G and the report tables present specific summaries.</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
5.		<p>It is stated in the RI Report that the site is composed mostly of barren habitat, including bare soil, paved areas, and buildings, and of urban habitat, which includes residential housing and landscaped areas. However, no information is presented in the RI Report indicating the percentages of these types of habitats, nor is a map provided to depict all of these habitat areas (including landscaped areas). It is important to include this information as it is related to the actual amount of habitat area available for ecological receptors, and therefore the potential for ecological exposures to chemicals of potential ecological concern (COPECs). Please revise the RI Report to include a discussion of the percentages of habitat types at IR Site 31 and include a complete map showing habitat/ground cover at the site.</p>	<p>Area estimates have not been developed for the Site 31 ground cover types (landscape and pavement/buildings) because they are not considered necessary for the ecological risk assessment. Site 31 is a 25-acre property with 300 homes and extensive roads and paved areas for parking. The landscaped areas are small compared to the area of pavement/buildings. The landscaped areas are also subject to frequent disturbance by human activities and offer little habitat benefit to wildlife populations. The extensive roads and development at Site 31 are shown in the 2004 aerial photograph presented in Figure 1-2. Therefore, detailed estimates of the area for each ground cover type are not considered a critical element in order to prepare risk assessment conclusions.</p>
Specific Comments			
1.	Executive Summary,	Sufficient substantiation has not	The Navy has provided additional statistical, lithological, and

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
	Nature and Extent of Potential Contaminants, Pages vi through vii:	been provided to conclude that the Alameda Point background data set is not applicable to IR Site 31 or that the lines of evidence are valid. Please see specific comments on Section 4.1.3.3, below and revise the Executive Summary as necessary.	geochemical support in Appendix H2 of this revised draft RI showing that the "pink" background is not appropriate. This evidence includes the absence of pink background samples east of Main Street, differences in the fill history, differences in the lithology, and differences in iron and manganese concentrations (metals used in the Alameda Point Background study to identify similar areas).
2.	Executive Summary, Human Health Risk Assessment, Page ix:	It has not been demonstrated that off-site background values can be used for IR Site 31; see specific comments on Sections 4.1.3.3 and 6.1.4.1.4. Please delete the statement "arsenic concentrations are considered below site-specific background."	Additional evidence is presented to show that the arsenic concentrations meet the DTSC criteria for determining when concentrations of a metal on a site can be considered ambient concentrations.
3.	Executive Summary, Human Health Risk Assessment, Page ix:	The statement that there is "no specific area of impact," is in conflict with the discussion of the Nature and Extent of Contamination, where specific areas with elevated concentrations are identified. It appears that there are some hot spots. Please delete or revise the quoted statement.	There is no evidence that releases have occurred based on the range of concentrations versus the footprint of the former Building 369. Although there are individual locations with concentrations of metals that are greater than nearby concentrations in nearby samples, there are no patterns or groupings that can be interpreted as a "hot spot". For arsenic, the on-site concentrations of arsenic fit 1997 DTSC criteria for an ambient population ("Selecting Inorganic Constituents as Chemicals of Potential Concern at Risk Assessments at Hazardous Waste Sites and Permitted Facilities", DTSC 1997). The DTSC policy describes using on-site data to determine whether chemical concentrations are ambient (a single population) or contaminated (multiple populations). The Navy applied the DTSC policy criteria to

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
			arsenic data from IR Site 31 and the adjacent IR Site 30, and the results demonstrate that arsenic concentrations at each site meet the DTSC criteria for an ambient. Outlier analysis shows that there are no outliers.
4.	Executive Summary, Conclusions, Page xi:	The recommendation for no further action based on "no evidence of a release of chemicals to soil due to a Navy release" is not substantiated. IR Site 31 was used for storage of unknown materials; releases could have occurred from the storage area.	As discussed in the response to General Comment A, the revised RI Report provides multiple lines of additional evidence to address this comment.
5.	Executive Summary, Conclusions, Page xi:	There is insufficient evidence to support a recommendation for no further action because elevated concentrations of the risk drivers arsenic, cadmium, polychlorinated biphenyls (PCBs), dieldrin, and polynuclear aromatic hydrocarbons (PAHs) are present. A Feasibility Study should be conducted to address hot spot soil contamination. Remedial alternatives and/or Institutional Controls prohibiting excavation should be considered in the next step. Please revise this document to include the need for a Feasibility Study.	<p>The Navy considers the following information sufficient to support a recommendation for no further action:</p> <ul style="list-style-type: none"> • The arsenic concentrations meet DTSC criteria for one population and are representative of ambient conditions. There are no outliers. Evaluations of lithology, geotechnical data, and fill history also support that arsenic concentrations are ambient. • Cadmium has a U.S. EPA risk of less than 10^{-6} and a Cal/EPA risk of 2×10^{-6}. The maximum cadmium concentration of 1.5 mg/kg is only slightly above the maximum in the pink background of 1.47 mg/kg. The statistical comparison of IR Site 31 data to the pink background data set may have identified cadmium as above background due to the larger size of the Site 31 dataset, as detailed in the RI Report. Cadmium is most likely present at concentrations below the Alameda Point pink background. • The PCB, Aroclor 1016, had a Cal/EPA risk of 1×10^{-5} because 1 of 123 sample results has a concentration above the reporting limit.

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
			<p>The cancer risk above 1×10^{-6} is due to ingestion of homegrown produce. There is no space in the current housing unit for individual or community gardens.</p> <ul style="list-style-type: none"> • The PCB, Aroclor 1260, had a U.S. EPA risk 1×10^{-6} for current and future residents. The Cal/EPA risk was 3×10^{-6} and Aroclor 1260 was reported in 9 of 123 samples, with the risk above 1×10^{-6} due to ingestion of homegrown produce. • Dieldrin was reported in 1 of 123 samples and has a U.S. EPA and Cal/EPA cancer risk level of 1×10^{-6} for current and future residents due to ingestion of homegrown produce. • For PAHs, benzo(a)pyrene is the only PAH with U.S. EPA risk greater than 1×10^{-6}; the U.S. EPA risk is 2×10^{-6} for current residents and 6×10^{-6} for future residents. The total PAH risk (for all PAHs to a depth of 7 feet below ground surface) is 8×10^{-6} for future residents. The Cal/EPA risk is 1×10^{-5} for future residents. Therefore, the risk associated with PAHs is at or below 1×10^{-5}, a target risk level for PAHs. The Site 31 arithmetic mean of the B[a] P equivalent is 499 micrograms per kilogram.
6.	Section 2.4.2, Alameda Point and IR Site 31, Page 2-8:	Section 2.4.2 implies that Figures 2-4 and 2-5 show a vertical extent of up to 105 feet below ground surface (ft bgs) but the figures show only a vertical extent of approximately 30 ft bgs. Please clarify in the text the vertical extent of figures 2-4 and 2.5.	The referenced sections in the Revised Draft RI report were revised to clarify and differentiate the discussion of the site specific RI data, at the shallower depths, from the regional discussion which was obtained from a previous report.

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
7.	Section 2.4.2, Alameda Point and IR Site 31, Page 2-8:	<p>The third paragraph suggests that Figures 2-2 and 2-4 show well D-02, but neither figure includes the location of this well. Please reconcile this discrepancy.</p> <p>Also the text implies that the hydrostratigraphic units are differentiated in the cross section figures, but the figures show the differentiation of soil classification type rather than a distinction between hydrostratigraphic units. Please resolve this discrepancy.</p>	<p>Well D-02 is north of Site 31 and is located in Site 25. It is discussed in section 2.4.2 because it is the only well with a water level in the SWBZ.</p> <p>The Revised Draft RI text was revised to clarify the discussion of the RI related information, at the shallower depth, from the regional information, which was obtained from a previous report. The text was revised to clarify that the cross sections figures are limited to depicting lithologic information interpreted from boring logs to a depth of approximately 30 feet bgs.</p>
8.	Figure 2.2, Cross section Location Map and 2.4 Geologic Cross Section:	<p>It is unclear why boring number 3146 which has an offset of 86 feet was used for cross section A to A', when the boring for location 3134 is much closer to the A to A' cross section. Please revise the cross section to include the closer boring or explain the rationale for the use of 3146 over 3134.</p>	<p>Boring 3146 was used in cross section A to A', as represented on Figure 2-4, because it is more in line with adjacent borings 3138 and 3113 (Figure 2-4) than boring 3134.</p>
9.	Figure 2-4, 2-5, and 2-9:	<p>The contact boundaries between some of the soil types are vague and standard cross-section symbols are not used. For Figure 2-4 in the vicinity of boring 3104, the well</p>	<p>Consistent closure of all hypothetical pinch-outs was added to the figures.</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
		<p>graded sand should be pinched out. West of boring 3118 the clay should be pinched out or connected to the ground surface. For Figure 2-5 in the vicinity of well 3136, the clay layer should pinch out in the eastern direction. For Figure 2-9 in the vicinity of well 3143 the sand layer should be pinched out. Please revise the cross section boundaries.</p>	
10.	<p>Figures 2-4, 2-6, 2-7, 2-9, 4-4, 4-6, 4-7, and 4-9, and Appendix D, Borehole Logs:</p>	<p>It appears that some of the borehole logs have been re-interpreted for the cross sections because some of the soil classifications from the borehole logs do not match the cross sections. It is not generally appropriate to revise or reinterpret field logs to create cross sections; if this is done, an explanation should be provided for every change. In Figures 2-4 and 4-4, the third unit from the top of boring 3118 is listed in the borehole log as SP but on the cross section it is depicted as SP-SC. In Figures 2-6 and 4-6, the third unit from the surface of boring 3142 is listed in the borehole log as SP, but on the cross</p>	<p>The interpretations on the cross sections were made jointly between the Registered Professional Geologist and the field geologist. The cross section interpretations were aided by use of the physical soil property test data, which was not available during the field logging, and hence the cross sections represent a slightly more refined description than that of the soil boring logs. Some of the altered names on the cross-sections appear to be template artifacts and were corrected, as appropriate.</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
		<p>section it is shown as SP-SM. In Figures 2-7 and 4-7, the fourth unit from the top of boring 3132 is listed in the borehole log as SW-SM, but is depicted as SW-SC on the cross section; and the first unit of boring 3122 is listed as SP on the log but the cross section depicts this unit as SP-SM. In Figures 2-9 and 4-9, for boring 3132, the fourth unit from the surface is listed in the borehole log as SW-SM, but on the cross section it is depicted as SW-SC and for boring 3143 the second unit from the top is listed as SP but the cross section depicts this unit as SP-SM. Please revise the cross sections to match the borehole logs or provide justification for each of these changes.</p>	
11.	<p>Figure 2-10, Top of Clay Elevation Map:</p>	<p>In general contour lines should be smooth, but some of the contours on this figure do not follow this convention. The 5 foot contour in the north central portion of the map centered on hydropunch location 3121 has an acute angle and the 6 and 7 foot contours in the same</p>	<p>The top of the dark gray clay represents the top of dredged fill and, in many boreholes, a soil surface with plant roots and drainage patterns. V-contours are inferred drainage pathways.</p> <p>The 6-foot contour was closed by a data point at 6.0 feet elevation between two data points at 6.5 feet elevation.</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
		<p>region have right angles. Please revise the elevation contours to follow standard contour conventions by eliminating acute angles and right or near-right angles.</p> <p>Also, it is unclear why there is a closed 6 foot contour around hydropunch location 3134 when there is a 6 foot contour adjacent and to the south that could be extended to include the area surrounding punch location 3134. Please remove the closed contour around this location and extend the southerly contour to include this sample location.</p>	
12.	Figure 2-11, Groundwater Elevations AMSL:	<p>This figure does not include many features discussed in Section 2.4.2. For example, the two areas of higher groundwater elevations, the trough, the division of groundwater flow directions in winter 2003, are not shown. Please revise this figure to include these major features or include additional groundwater elevation maps to depict the conditions described in the text.</p>	<p>The text of Section 2.4.1 in the RI Report was revised to clarify that Figure 2-11 depicts an interpretation of the shallow groundwater elevations measured in existing monitoring wells during this RI (November 2005).</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
13.	Section 4.0, Nature and Extent of Contamination, Page 4-2:	The text states that PAH data collected in 2002 "was largely duplicated in a 2003 PAH assessment," but this statement implies that some data points were not duplicated. Also, comparison of data from nearby points may provide an indication of the variability in PAH concentrations in Site 31 soil, so the 2002 data should be included. Please revise the RI Report to include a presentation and discussion of the 2002 PAH data.	Section 4 on page 4-2 explains that the 2002 locations were resampled during the 2003 PAH assessment. During the 2002 PAH assessment 46 soil samples, including four duplicates (BEI 2002) were collected in June 2002 from direct push borings at 12 locations within IR Site 31. This sampling effort was largely duplicated and superseded in a 2003 PAH assessment (BEI 2004a), which included 648 soil samples. Therefore, the 2002 data were not used in the soil nature and extent evaluation.

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
14.	Section 4.1.3.2, Polynuclear Aromatic Hydrocarbons, Page 4-9:	<p>The text indicates that the arithmetic mean of the benzo(a)pyrene (BaP) equivalent values was calculated for the entire site, but it is not appropriate to calculate a single mean for an approximately 25 acre site. The site should be broken up into smaller units for consideration of the nature and extent of contamination. In addition, an examination of the data indicates that there are just a few areas where there is significant contamination in the 0 to 4 foot depth interval (e.g., the northwest corner and borings along the western edge of Site 31; the western portion of the 12 housing units west of IR Site 30, etc. In addition, a figure showing all of the BaP equivalent concentrations should be included. Please break up the site into smaller areas and revise the discussion of mean values to reflect these smaller areas. Also, please provide a figure that includes all of the BaP equivalent concentrations.</p>	<p>The calculation of a mean value for the site is appropriate for the general discussions and for the comparison being made in this RI. The use of the mean value is to put the large amount of data into perspective. The mean values are also presented and discussed for each of four depth intervals.</p> <p>Based upon the referenced document, and as mentioned in the PAH summary in the Site 31 RI, there is no distinct pattern for lateral distribution of PAH that would allow for segregation into discrete geographical areas. The variation in PAH concentration appears to be primarily associated with vertical changes. Benzo(a)pyrene is the only PAH with a current EPA residential risk greater than 1×10^{-6}, and the U.S EPA risk is 2×10^{-6} for current residents. For future residents, the total EPA risk for all PAHs (to a depth of 7 feet below surface) is 8×10^{-6}. If the PAHs were determined to be primary and or significant contributors to the human health risk, then such segregation into sub areas would be appropriate in evaluation of potential response actions, which is typically done in an engineering evaluation/cost analysis or feasibility study.</p> <p>The IR Site 31 RI activity did not sample and analyze for the PAH because the PAH concentrations in soil were not a data gap that was planned to be addressed in this remedial investigation. The regulatory agencies agreed with this approach during the RI work plan preparation. This RI presents a reasonable summary of the PAH work performed in a previous investigation. The PAH data and associated distribution are completely discussed in the document cited as a reference (Bechtel 2004a); <i>Field Activity Report, Assessment of PAH Contamination at Selected CERCLA Sites and EBS Parcels. Alameda</i></p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
		Also, it appears that some of the locations discussed in the text were omitted from Figure 4-1. For example, CS31B006 is missing. CS31B0012 is also missing from Figure 4-1. Please revise Figure 4-1 to include all of the boring locations.	<p><i>Point, Alameda, California. April.</i></p> <p>The two referenced locations do not have any data and are identified as no samples collected in Figure 2-5 of the SAP. Consequently these two locations were not mapped.</p>
15.	Section 4.1.3.2, Polynuclear Aromatic Hydrocarbons, Page 4-9:	The second paragraph suggests that the high values of BaP equivalent values found in the soil represent biased PAH values due to the proximity of the soil samples to asphalt but justification has not been provided for this statement. Further, most of the locations with the highest concentrations of PAHs in shallow soil are located near IR Site 25 or in close proximity to Main Street. PAH contaminated fill was found in IR Site 25 and in the West Housing Area in EDC-5. Further, the assumption that the PAH concentrations were impacted by the presence of asphalt has serious implications for the sampling protocols used during the 2003 PAH investigation. It is inappropriate to	<p>At IR Site 25, borings were not drilled through roads or other hardscape. As shown in Appendix H2, the Site 25 lithology and fill history are different from Site 31. The interpretation of the potential impact to soil samples is made based upon the information below. The three samples discussed have BaP equivalent concentrations that are an order of magnitude greater than the average value for that depth interval. The potential to have shallow soil samples that include asphalt particles when collected immediately beneath and or adjacent to asphalt paved surfaces is a likely scenario and does not present serious or negative implications for sampling protocols or sample integrity. The PAH investigation report (Bechtel 2004), Section 2.4.3 identifies the planned procedure to minimize the impact of asphalt particles which was implemented relatively successfully.</p> <p>Of the total 648 samples at Site 31, three shallow samples in borings C3S031B017, C3S031B028, and C3S031B036 are the only samples identified as potentially anomalous owing to asphalt pavement. Although the level of detail in boring logs varies between geologists, borings C3S031B017 and C3S031B028, which were logged by the same geologist, specify asphalt and roadbase at the top of the logs. For boring C3S031B028, "white powder from gravel breakup" is</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
		<p>dismiss the PAH values for the three highest soil samples in the 0 to 2 foot range, when many of the soil samples throughout the entire site are beneath or adjacent to asphalt, the sampling protocols are called into question, and PAH-contaminated fill is known to have been used at adjacent and nearby sites. Please delete the statement that the three locations with the highest BaP equivalent values are "considered biased by the presence of asphalt and not representative of soil conditions."</p>	<p>specified in the boring log to a depth of 2 feet bgs. Despite the best field procedures, sometimes white powder from the breakup of the road is unavoidable in shallow samples.</p> <p>The Site 31 RI Report information is summarized below:</p> <p>The mean values for each depth interval are listed below.</p> <ul style="list-style-type: none"> • Depth interval 0 to 0.5 feet bgs, mean value is 186 µg/kg; • Depth interval 0.5 to 2.0 feet bgs, mean value is 120 µg/kg; • Depth interval 2 to 4 feet bgs, mean value is 226 µg/kg; and • Depth interval 4 to 8 feet bgs, mean value is 1,472 µg/kg. <p>For samples collected in the 0 to 2 foot depth, the three greatest B[a]P equivalent values are from locations where samples were collected directly beneath or immediately adjacent to asphalt paving. These results are considered biased by the presence of asphalt and not representative of soil conditions. These three locations with the greatest B[a]P equivalent values are listed below and the locations are shown on Figure 4-1.</p> <ul style="list-style-type: none"> • 3,800 µg/kg at 0 to 0.5 foot bgs in C3S031B036; • 2,400 µg/kg at 0.5 to 2.0 feet bgs in C3S031B017; and • 1,700 µg/kg at 0.5 to 2.0 feet bgs in C3S031B028

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
16.	Section 4.1.3.3, Evaluation of Background Metals, Page 4-11 and History of IR Site 31, Page 4-13:	<p>The first bullet point on page 4-11 suggests that because of the current and historical residential use of this area that there is no reasonable scenario in which metal concentrations could be increased, but this is a narrow assertion that does not take the use of this site pre-1990 for storage or other possible scenarios into consideration. Further, the text on page 4-13 states that there was no "activity that would have resulted in increased concentrations of 15 metals," but storage of aircraft parts which are fabricated from metal alloys containing the metals found as contaminants is known to have occurred. Since the site was used for storage from 1959 through some time between 1985 and 1993, it is probable that contaminant releases occurred in IR Site 31 soil. Please delete the first sentence on page 4-13, since there <u>are</u> scenarios that could have resulted in contamination.</p>	<p>This section has been revised, and the bullets have been deleted. The text states "Past use for storage at the IR Site 31 could have resulted in limited releases of selected metals to the soil beneath the unpaved storage areas". The text explains that analytical results of soil samples and review of historic aerial photographs show no evidence of a release. The report discusses the occurrence of 15 metals with concentrations greater than pink background, which occur at various depths throughout the site. Although Navy activities could have resulted in small areas of impact of some metals, there is no realistic release scenario that would have resulted in the site-wide concentrations of 15 metals in soil <u>given the degree and uniformity of elevated metals concentrations.</u></p>
17.	Section 4.1.3.3,	The second bullet point on page 4-11	This section has been revised, and the bullets have been deleted.

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
	Evaluation of Background Metals, Page 4-11:	states that soil from IR Site 31 is different than soil in the data set used for the pink background data, but there is no justification for this statement, since a comparison of all of the boring logs from the two data sets has not been provided. Please provide a comparative analysis and also provide all of the boring logs for the pink background data set.	New Section 4.1.4 and Appendix H2 present a detailed evaluation of the lithology, including evidence that the pink background data are not appropriate for IR Site 31.
18.	Section 4.1.3.3, Applicability of Alameda Point Background Data, Pages 4-13 to 4-15:	The text states that the fill soil at Site 31 is geologically different from other Alameda Point soils, but data was not provided to support this statement. In addition, lithologic descriptions tend to vary, depending on the geologist who records the lithology and whether or not standardized materials like a rock or soil color chart was used. Please provide data that compares the Site 31 soil with lithologic information from the rest of Alameda Point. This comparison should include a discussion of whether color charts were used by each geologist who logged a set of boreholes and specify	This section has been revised, and a new Section 4.1.4 has been added. Please refer to Appendix H2, which presents an evaluation of the lithology and color comparison of soil east of Main Street.

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
		<p>the number of borehole logs from the rest of Alameda Point that were used for the comparison, compared to the total number of boreholes at Alameda Point. Please revise this paragraph to include a comparison of soils from Site 31 with clayey sands and sands present in fill from other areas of Alameda Point.</p> <p>In addition, data was not provided to support the discussion of mineralogy on page 4-14. Please provide details about this analysis, including the procedures used. Further, it appears that the comparison should be made between clayey soils, not between clay and sand. This comparison should be made using data from fill soils, not the Bay Mud. Please revise this paragraph to compare clayey soils from Site 31 with clayey soils present in fill from other areas of Alameda Point.</p>	

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
19.	Section 4.1.3.3, Correlation of IR Site 31 Soil With Off-Site Sources, Page 4-14 and 4-15 and Section 4.1.3.3, Summary and Conclusions for Background Evaluation of Metals, Page 4-16:	<p>The RI Report argues that metals data from IR Site 31 are more similar to the combined Oakland Hills data than they are to the Alameda point background data set to support the hypothesis that other sources of fill soil in the Bay Area could have been used as fill material at IR Site 31; however, it appears, from the data presented in Table 4-4, that the median values of the combined Oakland hills data set are about as different from the IR Site 31 values as they are from the Alameda Point background median values. The only similarities appear to be elevated arsenic concentrations and similar cobalt and vanadium concentrations. In addition, no metals data are presented for the Great Valley Group, from which the background arsenic concentration was taken. The Great Valley Group was selected based on soil type and appearance, but metals concentrations in the Great Valley Group are not discussed or</p>	<p>In accordance with your comment, the references to the LBNL dataset as a possible background dataset for Site 31 were deleted from the RI Report, and data for nearby sites are evaluated in Appendix H2. A new Section 4.1.4 has been added, and the referenced text has been deleted. As discussed in the responses to the General Comments, new information is provided, which shows that arsenic concentrations at IR Sites 30 and 31 are ambient. References to Oakland Hills data are limited to general comparison in Appendix H2.</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
		<p>compared with IR Site 31 metals concentrations. There appears to be insufficient justification for selecting the Great Valley Group arsenic concentration as the background concentration for IR Site 31. Please provide the remaining metals data for the Great Valley Group or delete this comparison. In addition, please delete or revise the text of the third bullet point on page 4-16, since the only similarities are the median concentrations of cobalt and vanadium.</p>	
20.	<p>Section 4.1.3.3, Summary and Conclusions for Background Evaluation of Metals, Page 4-16:</p>	<p>The second bullet point suggests that naturally occurring metals from a single population are generally normally distributed. Because it is plausible to have a normal distribution with artificially occurring populations this point is irrelevant. Please remove this generalization from the text.</p>	<p>New Section 4.1.4 presents an evaluation based upon the following quote from the DTSC guidance (Cal/EPA 1997), which states "If the data are drawn from just one population, the cumulative probability plot will be a straight line." Therefore, if there is only one population represented by the data, then it is likely that the population is naturally occurring.</p>
21.	<p>Section 4.1.3.3, Summary and</p>	<p>The text of the second bullet point on page 4-17 states that the geologic content of the clayey gravel at IR Site 31 matches the Oakland</p>	<p>In accordance with your comment, the references to the LBNL dataset as a possible background dataset for Site 31 were deleted from the RI Report, and data for nearby sites are evaluated in Appendix H2. A new Section 4.1.4 has been added, and the</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
	Conclusions for Background Evaluation of Metals, Page 4-17:	Conglomerate and Joaquin Miller formation, but there is insufficient justification for this statement. Sufficient justification could consist of collecting a statistically significant number of samples from both locales and doing metals analyses, grain size analyses, and petrographic analyses. Please delete the second bullet point on page 4-17 and revise the text on pages 4-15 and 4-16 or provide metals analyses, grain size analyses, and petrographic analyses for a statistically significant number of samples from both locales to support this conclusion.	referenced text has been deleted.
22.	Section 4.1.3.3, Summary and Conclusions for Background Evaluation of Metals, Page 4-17 and Section 4.1.3.4,	Although the text of the third bullet point indicates that arsenic concentrations in IR Site 31 soil are similar to those in soil from the Great Valley Group, data has not been provided for the other metals to support this statement. Please delete the third bullet point on page 4-17 and also delete the comparison between arsenic in site soils and arsenic concentrations in the Great	In accordance with your comment, the references to the LBNL dataset as a possible background dataset for Site 31 were deleted from the RI Report, and data for nearby sites are evaluated in Appendix H2. A new Section 4.1.4 has been added, and the referenced text has been deleted. References to the LBNL studies are only be used for general comparison purposes in Appendix H2.

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
	Arsenic, Page 4-18:	Valley Group on page 4-18.	
23.	Section 4.3.1.4, Metals, Pages 4-17 through 4-19:	Since the Oakland Hills median concentrations for metals vary significantly from the Site 31 data set and a full set of metals data has not been provided for the Great Valley Group, all comparisons with the Oakland Hills data set and the Great Valley Group data should be deleted. Please delete all comparisons with the Oakland Hills data set and the Great Valley Group data.	In accordance with your comment, the references to the LBNL dataset as a possible background dataset for Site 31 were deleted from the RI Report, and data for nearby sites are evaluated in Appendix H2. A new Section 4.1.4 has been added, and the referenced text has been deleted.
24.	Section 4.1.3.4, Iron, Page 4-18:	Although the text states that "releases of iron associated with Navy activities were considered unlikely in quantities that would affect large areas of soil," IR Site 31 was used as a storage yard, so iron could have been released from rusting drums and other materials. In addition, it is possible that spent silica sand sandblast abrasive, which could be yellow in color, was used as fill material; this material likely would have abundant fine particles	Although Navy activities could have resulted in small, localized areas of impact of some metals, there is no realistic release scenario that would have resulted in the site-wide increase in concentrations of 12 metals in soil. Metal alloys used in aircraft are manufactured to withstand weathering and are unlikely to rust to the extent necessary to impact the top seven feet of almost 30 acres. There is no evidence of scrap metals in the soil or of historical uses of the site for milling activities.

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
		of iron. Please delete the quoted statement.	
25.	Table 4-7, Groundwater Comparison:	The entry for arsenic is incorrect; the first column indicates that arsenic was not detected and the remainder of the row is blank. Arsenic was detected in 3142 at 14.8 micrograms per liter (ug/L). Please revise the table to reflect the analytical data in Appendix G.	The groundwater sampling discussed in Section 3.2.2, specifically, page 3-5 for location 3142, explains that groundwater samples were collected from two depth intervals. In section 4.2.1, the data and comparisons made in Table 4-7 are discussed. For comparisons to the monitoring wells, analytical results from samples in the direct push probes from depths greater than 14 feet and less than 20 feet bgs are used. Therefore, the deeper groundwater (i.e., from location 3142 at 20.5 feet bgs) was deemed not comparable to groundwater of the monitoring wells on IR Site 31. The analytical results from samples collected at the first groundwater sample depth of 16.5 feet bgs at location 3142 are used as appropriate. Appendix G provides a summary of all analytical results.
26.	Figure 4-17, Comparison of Benzene and Naphthalene in Groundwater to the OU-5/IR-02 Plume:	The benzene concentration listed for location 3146 is incorrect; it should be 137 ug/L. Please revise this figure to include the correct concentration and check to verify that all of the other posted concentrations are correct.	In response to this comment, the revised Figure 4-17 now includes at location 3146 the benzene as 137 J ug/l as the qualified concentration.
27.	Section 5.1.2, Soil, Pages 5-2 and 5-3:	The text attributes elevated arsenic concentrations to imported fill. However, in addition to being	It is acknowledged, and the text has been modified to note, that metal alloys, pesticides, and abrasive blast material can be sources of arsenic soil contamination and that rusting and lead-based paint can

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
		<p>present in metal alloys comprising aircraft components stored on site, arsenic may have come from pesticide/rodenticide use in housing or storage areas; release of arsenic from stored antifouling additives, pesticides, rodenticides, or treated wood; and release of arsenic from spent abrasive blast material, since arsenic was used as an antifouling additive to marine paint. Please include these other potential sources of arsenic in the text.</p> <p>Similarly, other sources of iron could be rusting materials that were stored in this area or fine iron and steel particles in spent sandblast abrasive. Sources of lead contamination include lead-based paint, since this area was used for housing during the time period when lead-based paint was in use. Please include this information in the text.</p>	<p>be sources of iron and lead soil contamination, respectively. However, such sources would not result in the soil conditions found at the site. Please refer to the responses to the General Comments for additional information.</p>
28.	Section 6.1.3, Exposure Assessment, Page 6-4:	<p>In the discussion of the exposure point concentrations (EPCs), the RI Report indicates that specific statistical tests were applied based</p>	<p>The text was clarified to explain that ProUCL was used to determine the distributions, and a reference was added to the table of contents for Appendix I.</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
		upon the data set distribution. The RI Report is slightly misleading, as it appears that the distributional tests were pre-determined. Please clarify the text to indicate that the USEPA model ProUCL was used to determine data set distribution and the most appropriate distributional-based test, and add a reference to Appendix I for the model outputs.	
29.	Sections 6.1.5.1.4 and I6.4, Cancer Risks - Without Alameda Point and Site-Specific Background Concentrations, Second Paragraph, Pages 6-8 and I-15, respectively:	This paragraph states initially that arsenic at the site is above Alameda background however, later it is stated that arsenic concentrations are similar to background from Bay-area soil. This paragraph further concludes that because the arsenic is within the Bay-area background, that the arsenic levels at the site are below site-specific background. Since it has not been demonstrated that the source of the fill material was soil from that Great Valley Group that had high levels of arsenic and that there were no arsenic releases from site activities, it is inappropriate to state that "arsenic	The statement was revised to present new evidence in Section 4.1.4 and Appendix H2 that arsenic concentrations are ambient.

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
		<p>concentrations in soil are considered below site-specific background." Please delete the quoted statement and revise the text to discuss the possible uses of arsenic listed in the comment on Section 5.1.2.</p>	
30.	<p>Section 6.3.2, Refined Risk Assessment, Page 6-23:</p>	<p>A site use factor (SUF) of 0.1 was used for refining risk estimations for ecological receptors. No information is provided to clarify how this assumption was derived, other than an indication that Site IR 30 contained 13% of landscaped habitat. However, no information is provided to clarify how much actual landscaped habitat is present at IR Site 31. Please revise the RI Report to include this information and clarify how the SUF was determined.</p>	<p>The SUF value of 0.1 was not used in the formal calculations and HQ values presented in the tables do not use this factor. The SUF was discussed in the uncertainty section to address the affect that the paved/building area would have on the risk estimates. The SUF value of 0.1 was assumed in the uncertainty section of the RI Report based on the site conditions and estimate used and agreed upon for the adjacent Site 30. This is consistent with the developed site, as shown on the 2004 aerial photograph in Figure 1-2 of the Site 31 RI Report.</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
31.	Section 7.2, Recommendations, Page 7-5:	<p>It appears that portions of the text from Section 4.1.3.3 were repeated in this section, but the arguments made in that section have not been substantiated with data. Please delete the text that has been copied from Section 4.1.3.3 from this section.</p> <p>In addition, although the text states that "IR Site 31 data and statistical analyses indicate that metals concentrations in construction fill soil at IR Site 31 are not associated with a Navy release of hazardous substance but are naturally occurring and from a different origin than the soil sampled to generate the Alameda Point background data set" and that the "Alameda Point background data set should not be used for IR Site 31," but as discussed in earlier comments, Navy activities that could have resulted in soil contamination likely occurred in this area. It has not been conclusively demonstrated that the concentrations of arsenic and metals are naturally occurring Please delete</p>	<p>In accordance with your comment, the references to the LBNL dataset as a possible background dataset for Site 31 were deleted from the RI Report, and data for nearby sites are evaluated in new Appendix H2. A new Section 4.1.4 has been added, which summarizes results of Appendix H2 evaluations, including that arsenic concentrations are ambient.</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
		<p>the quoted statements.</p> <p>As stated earlier, a background value from the Great Valley Group cannot be used for Alameda Point. Please delete all references to the Great Valley Group from the text and use Alameda Point background data to evaluate IR Site 31 data.</p>	
32.	Section 7.2, Recommendations, Page 7-5:	<p>The recommendation for no further action based on "no evidence of a release of chemicals to soil due to a Navy release" is not substantiated. Please revise the text to acknowledge that site activities could have resulted in contaminant releases.</p>	<p>Although Navy activities could have resulted in small areas of impact from some metals, there is no realistic release scenario that would have resulted in the site-wide concentrations of 15 metals in soil. Additional evaluation is presented in the revised RI Report, including in new Appendix H2. As noted by EPA in General Review Comment, "There appear to be only a few areas that generate some minor concern and nothing that indicates a sizeable spill or release."</p>
33.	Section 7.2, Recommendations, Page 7-5:	<p>There is insufficient evidence to support a recommendation for no further action because elevated concentrations of the risk drivers arsenic, cadmium, PCBs, dieldrin, and PAHs are present. A Feasibility Study should be conducted to address hot spot soil contamination.</p>	<p>The Navy considers the following information sufficient to support a recommendation for no further action:</p> <ul style="list-style-type: none"> • The arsenic concentrations meet DTSC criteria for one population and are representative of ambient conditions. There are no outliers. Evaluations of lithology, geotechnical data, and fill history also support that arsenic concentrations are ambient. • Cadmium has a U.S. EPA risk of less than 10⁻⁶ and a Cal/EPA risk

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
		<p>Remedial alternatives and/or Institutional Controls prohibiting excavation should be considered in the next step. Please revise this document to include the need for a Feasibility Study.</p>	<p>of 2×10^{-6}. The maximum cadmium concentration of 1.5 mg/kg is only slightly above the maximum in the pink background of 1.47 mg/kg. The statistical comparison of IR Site 31 data to the pink background data set may have identified cadmium as above background due to the larger size of the Site 31 dataset, as detailed in the RI Report. Cadmium is most likely present at concentrations below the Alameda Point pink background.</p> <ul style="list-style-type: none"> • The PCB, Aroclor 1016, had a Cal/EPA risk of 1×10^{-5} because 1 of 123 sample results has a concentration above the reporting limit. The cancer risk above 1×10^{-6} is due to ingestion of homegrown produce. There is no space in the current housing unit for individual or community gardens. • The PCB, Aroclor 1260, had a U.S. EPA risk 1×10^{-6} for current and future residents. The Cal/EPA risk was 3×10^{-6} and Aroclor 1260 was reported in 9 of 123 samples, with the risk above 1×10^{-6} due to ingestion of homegrown produce. • Dieldrin was reported in 1 of 123 samples and has a U.S. EPA and Cal/EPA cancer risk level of 1×10^{-6} for current and future residents due to ingestion of homegrown produce. • For PAHs, benzo(a)pyrene is the only PAH with U.S. EPA risk greater than 1×10^{-6}; the U.S. EPA risk is 2×10^{-6} for current residents and 6×10^{-6} for future residents. The total PAH risk (for all PAHs to a depth of 7 feet below ground surface) is 8×10^{-6} for future residents. The Cal/EPA risk is 1×10^{-5} for future residents. Therefore, the risk associated with PAHs is at or below 1×10^{-5}, a target risk level for PAHs. The Site 31 arithmetic mean of the B[a]P equivalent is 499 micrograms per kilogram.

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
APPENDIX I, HUMAN HEALTH RISK ASSESSMENT			
GENERAL COMMENTS			
1.		<p>One of the goals for conducting the baseline human health risk assessment was to "provide information for making decisions concerning necessity for remedial action to reduce any potential exposure." Part of assessing exposure is understanding all possible routes for contaminant migration. Several chemicals are present in soil at elevated levels. In addition, a viable drinking water aquifer underlies the site. However, it does not appear that an assessment of the potential for contaminants in soil to migrate to groundwater has been conducted. It is noted that the RI Report indicates that while groundwater at Site 31 is impacted with volatile organic compounds (VOCs) and semi-VOCs (SVOCs), the source for the groundwater contamination is not likely associated with Site 31. However, the RI Report also does not appear to address whether contamination in</p>	<p>The protection of groundwater is discussed in Section 5.2.3. The groundwater RI was conducted separately. Results show that shallow groundwater has lower contaminant concentrations than deeper groundwater.</p> <p>The Site 31 investigation, data evaluation, and reporting were conducted in accordance with the Final Work Plan/SAP, which was developed in close coordination with the regulatory agencies. All comparative criteria and screening methods were presented for agency review, comment, and concurrence. There were no agency comments and/or requests for leachability testing or screening soil data for potential leaching to groundwater.</p> <p>Section 5 of the Site 31 RI provides a qualitative discussion of the potential for chemicals to leach from soil. The predominant chemicals of interest in soil at IR Site 31 are PAH and metals. Because IR Site 31 is covered by development there is minor exposure for infiltration of water to cause leaching, and the chemicals predominantly detected (metals and PAH) are relatively immobile and have a high affinity for sorption to organic particles found in the clayey soils at IR Site 31. Therefore, the potential future leaching of chemicals in soil to groundwater to the extent that adverse impacts to groundwater may occur is unlikely to occur.</p> <p>Because the past site use for storage occurred in the late 1950's to mid 1980's, the duration of approximately 25 years has elapsed and would allow potential releases to have migrated to the groundwater</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
		<p>soil at Site 31 could be a possible source for future contamination via migration of contamination in soil to groundwater. Typically a migration assessment is done to assess whether levels in soil could result in concentration in groundwater above risk-based levels and is assessed using soil-to-groundwater soil screening levels. This evaluation is also useful in determining areas that may require remediation. Please discuss why this evaluation was not conducted and if warranted, revise the RI Report to include a comparison of site concentrations to the soil screening levels.</p>	<p>beneath the site. Soil chemicals and groundwater should be at or very near equilibrium. Future leaching of chemicals from soil to groundwater, at concentrations that could present a risk to human health, is not a likely scenario and is not quantitatively evaluated.</p>
2.		<p>The 1997 United States Environmental Protection Agency (USEPA) <i>Exposure Factors Handbook</i> was used as a primary guidance for deriving exposure factors. Please note that for the evaluation of the child scenarios, exposure data should be obtained from USEPA's <i>Child-Specific Exposure Factors Handbook</i> (2002) (ChEFH). Please</p>	<p>The primary guidance used for the exposure assumptions, including children, is the U.S. EPA Region 9 PRGs. A discussion was added to the Uncertainty Analysis for any exposure assumptions that differ between this guidance and the USEPA's <i>Child-Specific Exposure Factors Handbook</i> (2002).</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
		ensure that the child exposure factors applied in the risk assessment are consistent with those in ChEFH.	
3.		It is not clear what data were used to represent background levels. The risk assessment discusses the fact that site soil may be more representative of fill material from other areas. Off-site background data should not be used. Please clarify the locations from which data used to represent background concentrations was collected and discuss the appropriateness of the background data (e.g., not impacted by site operations).	The pink background data were used for the statistical comparison with the metals data at IR Site 31 as presented in Appendix H1. Additional analysis presented in Appendix H2 shows that arsenic concentrations at IR Site 31 are ambient and do not represent a release.
SPECIFIC COMMENTS			
1.	Appendix I, Section I2, Conceptual Model, Pages I-2 and I-3:	The discussions of the maximum and average concentrations of constituents in soil indicate that concentrations were greater in the four to seven foot interval than in the upper four feet of soil. A conclusion is then made that this indicates that the majority of soil with metals above background were imported to the site. Actually, this pattern	There is no pattern in the western portion related to the footprint of the former Building 369 which would suggest that the metals are due to Navy activities. In fact, some of the highest concentrations of arsenic and iron are located beneath the building footprint. There are six samples that can be most clearly assigned as inside the Building 369 footprint. For arsenic, these six samples have concentrations above the 95 th percentile in the pink background. For iron, all six samples have concentrations above the 95 th percentile in the pink background, and three of these are more than two times greater than the 95 th percentile.

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
		<p>supports the scenario whereby the majority of contamination can be attributed to past storage activities and not to the imported fill on which Marina Village Housing was constructed. It would seem logical that surface soil (the upper four feet) could have been graded and mixed with fill material, thus resulting in lower concentrations than the lower soil. Please provide additional lines of evidence (e.g., geochemical analyses) to support the conclusion that the deeper soil with higher levels of inorganics are not due to site activities but are representative of background.</p> <p>In addition, the following paragraph indicates that the "reverse is true for PAHs." The text further indicates that higher concentrations of PAHs are found in the four to eight foot interval. It is not clear how this is the reverse of the pattern for inorganics. It appears that for both inorganics and PAHs, the higher concentrations are located in soil</p>	<p>Additional evaluations were conducted and are presented in Appendices H1 and H2. The concentrations of arsenic and other metals tend to be higher in the 0-2 foot interval. The percentage of samples with arsenic above the 95th percentile of 9.1 in background is higher (57 percent) from 0-2 feet than from 2- 7 feet (42 percent). Also, the 95th UCLs in the upper 2 feet of 12.5 mg/kg are slightly higher than that for the 2-7 foot interval of 11.8 mg/kg.</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
		greater than four feet, again a scenario that fits with the available information on the historical uses of the site. Please resolve this discrepancy.	
2.	Appendix I, Section I4.2.2, Incomplete Exposure Pathways, Page I-7:	Dermal contact and accidental ingestion of groundwater by a construction worker is identified as a reasonable scenario; however, as the duration of these events would be minimal, the exposure routes were deemed incomplete. Minimal duration is not sufficient justification for exclusion of a pathway. Please revise the risk assessment to include an analysis of dermal contact and incidental ingestion of groundwater for the construction worker.	Dermal contact with groundwater by construction or utility workers is considered to be an incomplete or limited pathway. It is possible that future construction or repair of existing utilities could result in trenching operations at or below the groundwater level. Standard industrial practices would preclude most contact with groundwater. Special techniques are used for construction below the groundwater in order to keep the work area reasonably dry. A construction project in this area would likely require sheet piling or a similar cut-off technique as well as sumps and pumps in order to keep the trenches dry enough to allow work to proceed. This pathway is therefore considered an insignificant source of exposure.
3.	Appendix I, Section I4.3.2, Quantification of Daily Intake, Page I-10:	The exposure frequency for ingestion of homegrown produce assumed ingestion of homegrown produce/vegetables for 20-percent of the total days. Please discuss how this percentage was derived, and clarify whether this accounts for fresh produce/vegetables only, or if it also accounts for ingestion of	The value of 20 percent of the total days is an Alameda-specific assumption that has been approved in numerous Alameda risk assessments. This fraction of homegrown produce is consistent with data from the U.S. EPA <i>Exposure Factors Handbook</i> . (U.S. EPA 1997). All the produce is assumed to be fresh which results in higher concentrations in the vegetables as some organic compounds can be released during canning.

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
		home-canned produce/vegetables.	
4.	Table I4-1, Selection of Exposure Pathways:	<p>Exposure to contaminants through the inhalation of vapors while showering is listed as being a complete exposure pathway for the future adult/child resident. Section 6.1.2 Data Evaluation and Section I3.2 Selection of Chemicals of Potential Concern, indicates that this pathway was evaluated quantitatively in the risk assessment using groundwater data from the Site 31 RI and the OU-5 RI (Neptune et al. 2002). However, the risk assessment does not appear to contain this analysis of this pathway, rather the results were cited from another report, the Final Groundwater RI/FS for Site 25/IR-02. Please clarify how this pathway was evaluated for Site 31. If this scenario was not addressed using site-specific data, please provide justification for its exclusion. Otherwise, this report should represent a standalone document in regards to risks; please revise the</p>	<p>Exposure to contaminants through inhalation of vapors while showering is included in the calculations for OU-5 RI (Neptune et al. 2002) as agreed upon with the regulatory agencies.</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
		risk assessment to include an evaluation of inhalation of vapors while showering.	
5.	Table I4-1, Selection of Exposure Pathways:	The rationale provided in the table for exclusion of dermal contact with groundwater by a future construction worker is that the exposure would be transient and minimal. While the exposure duration may not be long in duration, if the depth to groundwater is within 10 ft bgs, this pathway must be included in the qualitative risk analysis. Section 2.4.2 indicates that depth to groundwater in the first water-bearing zone (FWBZ) is 3.8 to 7 feet below ground surface (bgs). Because shallow groundwater could be contacted during excavation activities, the risk assessment should be revised to include a qualitative analysis of this pathway.	The following information is provided in Section I4 of the Appendix, Human Health Risk Assessment: "Dermal contact with groundwater by construction or utility workers is considered to be an incomplete or limited pathway. It is possible that future construction or repair of existing utilities could result in trenching operations at or below the groundwater level. Standard industrial practices would preclude most contact with groundwater. Special techniques are used for construction below the groundwater in order to keep the work area reasonably dry. A construction project in this area would likely require sheet piling or a similar cut-off technique as well as sumps and pumps in order to keep the trenches dry enough to allow work to proceed. This pathway is therefore considered an insignificant source of exposure." Comments on the dermal pathway were added to the Uncertainty Analysis as requested.
6.	Table I4-5, Reasonable Maximum Exposure Values Used	It is noted that this table does not provide any parameters or equations used in assessing the inhalation of volatiles while showering. In	Exposure to contaminants through inhalation of vapors while showering is included in the calculations for OU-5 RI (Neptune et al. 2002) as agreed upon with the regulatory agencies. The Navy believes it is inappropriate to add the parameters and equations from

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
	for Daily Intake:	addition, this table does not address the ingestion of groundwater. Please revise the table to include input parameters and equations for assessing the inhalation of vapors while showering and the ingestion of groundwater by the future child/adult resident.	a different risk assessment into the table as this will imply that the calculations were done in the IR Site 31 HHRA.
7.	Table 15-2, Chemicals Without Toxicity Values and Their Chemical Surrogates:	Chromium is listed on the table and it is indicated that hexavalent chromium is used as a surrogate for the oral reference dose. First, please clarify if chromium refers to total chromium ($Cr^{+3} + Cr^{+6}$). Second, it is noted that the oral reference dose applied is the reference dose for hexavalent chromium (Integrated Risk Information System, IRIS, 2006). However, it is typically assumed that total chromium is a combination of trivalent chrome and hexavalent chrome at a ratio of 1:6. Therefore, in order to determine an oral reference dose for total chromium, the oral reference dose for hexavalent chromium would be multiplied by a factor of 7, resulting	The chromium applies to total chromium and this was clarified in the HHRA text. The assumption that the chromium is present as hexavalent chromium is more protective than assuming the chromium is present as total chromium. The chromium as hexavalent chromium is not a risk driver so there is no need to reduce the perception of risk.

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
		in an oral reference dose for total chromium of 2.1E-02 mg/kg/day. If total chromium is being assessed, please revise the oral reference dose to be reflective of that for total chromium. Also, please clarify all subsequent tables concerning the issue of chromium as total chromium.	
APPENDIX J, SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT			
GENERAL COMMENTS			
1.		The soil sampling intervals used for examining potential exposures to ecological receptors is unclear. The soil sampling intervals listed for soil appears to be samples collected between 0 and 8 ft bgs. However, no justification is provided to clarify why this depth class is considered appropriate. Surface soil exposures for surface foraging receptors, typically 0 to 0.5 ft bgs, do not appear to have been examined separately from exposures to sub-surface foraging receptors, typically 0.5 to 4 ft bgs (or deeper, depending on the receptor of concern [ROCs]).	The state guidance of surface soil to a depth of 6 ft (Cal/EPA 1998) was used as the selection criterion for soil samples. The 0 - 8 ft bgs values represent the range of top-depth and bottom-depth for the included soil samples. As noted in Section J1.3, the mean sample depth for all soil samples was less than or equal to 6 ft.

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
		<p>The use of a sample collected from the 0 to 8 ft bgs sampling interval does not represent actual site-specific exposures for either receptors class. Please revise the RI Report to clarify and justify the depth classes used for examining exposures to ROCs, or include a clear, complete, and detailed discussion of this in the Uncertainties Section.</p>	
2.		<p>It is stated throughout the RI Report that lower trophic level receptors, such as plants and invertebrates, are not expected to occur at IR Site 31, since current and expected future site conditions are not expected to include habitat areas for these receptors. However, it is also stated in the RI Report that landscape areas are present at IR Site 31, and therefore it can reasonably be assumed that invertebrates are present in these areas. In addition, although probably not native, plant species are also present, and both of these lower trophic level receptors</p>	<p>The landscaped areas have non-native plants and are prepared with soil amendments and other yard management products. The landscaped areas represent a poor potential habitat for native plants and soil invertebrates. Therefore, plants and soil invertebrates are not included as assessment endpoints. The existing plants and invertebrates are a food base for wildlife in the area. This consideration is included in the assessment of the representative wildlife species.</p>

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006.

#	Reference	Comments	Responses
		can be assumed to provide a food base for upper level receptors. This is further supported by the fact that herbivorous, insectivorous, and omnivorous mammal and bird species have been selected as ROCs at the site. Please revise the RI Report to include plants and soil invertebrates as ROCs for the risk assessment.	
3.		No information appears to be contained in the RI Report regarding assessment and measurement endpoints. It is important that the ecological resources in need of protection are clearly established for the site to ensure that the ecological risk assessment process is conducted in an appropriate manner. Please revise the RI Report to include this information.	The following two sentences will be inserted after the first sentence of the last paragraph of Section J1.6: "Assessment endpoints include growth and reproduction of omnivorous and herbivorous mammals, and omnivorous, invertebrate-feeding, and carnivorous birds. Exposure endpoints are hazard quotients for the following representative species."
4.		It appears that a number of soil samples were taken in areas where surface materials are comprised of asphalt, concrete, and/or gravel. While this information is discussed in portions of the RI Report, no	Since the HQ values for PAH compounds did not represent a potential risk for ecological receptors (HQ <1), further evaluation of asphalt/concrete/gravel areas was not conducted.

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
		discussion of this information has been provided specific to the ecological risk assessment. That is, many of these areas could possibly be considered incomplete ecological pathways in that ecological receptors would not be expected to forage in these areas. In addition, as discussed in other portions of the RI Report, asphalt could contribute chemicals, such as PAHs, to underlying substrates. Please revise the ecological risk assessment to incorporate this information.	
SPECIFIC COMMENTS			
1.	Section J1.2.2, Threatened, Endangered, and Of-Concern Species, Page J-4:	Numerous aquatic species are listed in this section. However, as indicated on page J-2, this ecological risk assessment does not focus on the potential groundwater to surface water transport/exposure pathway, and no aquatic resources are present onsite. Please revise the RI Report to clarify why these aquatic species are included in this section (e.g., transport of precipitation driven run off and associated contaminated	Descriptions are provided for habitats occurring within 1 mile of the site, including the listing of occurring or potentially occurring threatened or endangered species (Cal/EPA 1996).

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006</i>			
#	Reference	Comments	Responses
		soils) or remove the aquatic species from this section and provide an abbreviated discussion regarding the information and results presented in the previous documents that deal with contaminated groundwater migrating to nearby aquatic habitats.	
2.	Section J3.2.3, Soil-to-Small Mammal Bioaccumulation Factors, Page J-12:	This section states that 2,3,7,8-tetrachlorodibenzo-p-dioxin was used to estimate bioaccumulation factors for organic COPECs. No justification or rationale has been provided for this approach, nor does the full citation from the 1998 paper by Sample appear to have been provided in the Reference Section. Please revise the RI Report to provide a complete, clear, technical justification for using 2,3,7,8-tetrachlorodibenzo-p-dioxin to estimate bioaccumulation factors (BAFs) for all organic compounds, along with the complete literature citation, or use the appropriate BAFs for these compound from proper open literature.	As noted in this comment and in Section J3.2.3 soil to small mammal bioaccumulation factors were estimated using the value for 2,3,7,8-tetrachlorodibenzo-p-dioxin (Sample et al 1998). This bioaccumulation factor has been routinely used at other screening-level ERAs at Alameda Point. No other organic compound soil to small mammal bioaccumulation factors are available in literature. The estimated value is not very different than a value of 1, which is often used as a default value when bioaccumulation factors are lacking. The full citation for Sample et al. (1998) is shown in the Draft RI Report.
3.	Section J5.5,	The third paragraph in this section	The last two sentences of the third paragraph of Section J5.5 were

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by Anna-Marie Cook dated 26 July 2006 to Draft RI Report Dated 24 April 2006

#	Reference	Comments	Responses
	Exposure Estimates, Page J-15:	states that the maximum detection of methylene chloride in the six "late" soil samples was approximately three times greater than detected in the previously established data set, but these data were not included as it would have no impact on risk characterization. However, no information is included to support this claim. Please revise the RI Report to provide information to verify this statement, or include this information from these six soil samples in the data set for examining potential ecological exposures at IR Site 31.	replaced by these three sentences: "The methylene chloride maximum detected concentration reported for these six soil samples was greater by a factor of 3 than the maximum concentrations developed based on analysis of the initial data set. This risk characterization for methylene chloride would not change since the maximum reported HQ value is 0.004. An increase in the HQ value by a factor of 3 would give an HQ value of 0.012, which is still well below 1."
4.	Section J6.2, Exposure Factors, Page J-17:	Exposure factors (e.g., body weights and ingestion rates) for terrestrial wildlife were refined to more closely represent site-specific conditions. No information appears to be provided in the RI Report to describe the criteria used for this refinement process. Please revise the RI Report to include this information.	The criterion used for the refined exposure factors was the mean value as noted in Section J6.2 and J8. Details of the refined exposure factors are shown on Table J-9 "Refined Exposure Factors for Representative Terrestrial Wildlife Receptors", which was omitted from the Draft RI Report.

Draft Response to Comments - EPA
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

**Table 1: Evaluation of Change in the Arsenic Cancer Risk with Removal of Samples with Higher Concentrations
 0-2 and 2-7 Soil Intervals
 IR Site 31 Alameda Point, Alameda, California**

Scenario	Number of Samples Removed	WITHOUT REPLACEMENT			WITH* REPLACEMENT		
		EPC mg/kg	ARSENIC CANCER RISK		EPC mg/kg	ARSENIC CANCER RISK	
			U.S. EPA	Cal/EPA		U.S. EPA	Cal/EPA
Site 31 (0-7 feet)							
All data (120 samples)	0	11.7	5E-05	3E-04	11.7	5E-05	3E-04
Site 31 (0-2 feet)							
All data (49 samples)	0	12.5	5E-05	3E-04	12.5	5E-05	3E-04
Scenarios with samples removed							
>= 9.1 mg/kg	28	8.5	4E-05	2E-04	6.6	3E-05	2E-04
>= 20 mg/kg	3	10.9	5E-05	3E-04	10.6	4E-05	3E-04
>= 30 mg/kg	1	11.9	5E-05	3E-04	11.8	5E-05	3E-04
Site 31 (2-7 feet)							
All data (71 samples)	0	11.8	5E-05	3E-04	11.8	5E-05	3E-04
Scenarios with samples removed							
>= 9.1 mg/kg	30	5.8	2E-05	2E-04	5.8	2E-05	2E-04
>= 20 mg/kg	7	8.9	4E-05	2E-04	9.7	4E-05	3E-04
>= 30 mg/kg	3	10.2	4E-05	3E-04	9.7	4E-05	3E-04

Note:

* – samples removed were replaced with the IR Site 25 clean fill median concentration of 4.6 mg/kg

Acronyms/Abbreviations:

- >= – greater than or equal to
- EPC – exposure point concentration
- mg/kg – milligrams per kilogram
- ND – not detected
- U.S. EPA – United States Environmental Protection Agency
- Cal/EPA – California Environmental Protection Agency

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisni, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
General Review - Background			
1.		<p>HERD reviewed the document titled <i>Draft Soil Remedial Investigation Report for IR Site 31 Marina Village Housing, Alameda Point, Alameda, California</i>, dated April, 2006. This document was prepared by CDM Federal Programs Corporation, of San Diego, California.</p> <p>Installation Restoration (IR) Site 31 was designated an IR site because groundwater is impacted by an area-wide Volatile Organic Compound (VOC) plume containing benzene, naphthalene and chlorinated VOCs beneath IR Site 31 and surrounding areas, some of which are also IR sites. Area-wide human health impacts associated with the VOC groundwater plume were addressed in the IR Site 25 Human Health Risk Assessment (HHRA). IR Site 31, now called Marina Village Housing, was historically used for storage and warehousing on portions of the site from 1950 to 1990. There is no documented spill or release at IR Site 31, however previous investigations report that IR Site 31 soil may be impacted by polycyclic aromatic hydrocarbons (PAHs). In 1930, the U.S. Army acquired the original</p>	No response is required.

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisni, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		base property from the City of Alameda and began construction activities in 1930. In 1936, the Navy acquired title to the land from the Army and began building an air station. Construction of the Base included filling tidelands, marshlands, and sloughs with dredge materials from the San Francisco Bay. Naval Air Station Alameda (NASA) was an active naval facility from 1940 to 1997. Base operations included aircraft, engine, gun and avionics maintenance; engine overhaul and repair; fueling activities; and metal plating, stripping and painting activities.	
General Comments			
1.		<p>A significant component in the evaluation of human health risk is the 'ambient' concentration of arsenic and cadmium in IR Site 31 fill material. Insufficient documentation is provided for proposing an ambient arsenic concentration (i.e., Great Valley Group ambient) which differs from the NASA "pink" soil ambient concentration reviewed in the HERD memoranda to Dot Lofstrom dated May 15, 2006 and June 12, 2006.</p> <p>Total risk and/or hazard associated with exposure to potential IR Site 31 contaminants</p>	<p>The Great Valley Group is no longer proposed as a new background data set. Additional evaluation of area-specific background is included in a new Section 4.1.4 and Appendix H2, which shows that arsenic concentrations represent one population and ambient conditions. Arsenic concentrations meet the 1997 DTSC criteria for an ambient population. The California Environmental Protection Agency Department of Toxic Substances Control (DTSC) has a policy titled Selecting Inorganic Constituents as Chemicals of Potential Concern at Risk Assessments at Hazardous Waste Sites and Permitted Facilities (DTSC 1997). The DTSC policy describes using site data to determine whether chemical concentrations are ambient (a</p>

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polinski, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		in both soil and groundwater are evaluated by incorporating the risk and hazard estimates for the future residential scenario in the IR Site 25-area / IR-02 groundwater plume Remedial Investigation / Feasibility Study (RI/FS) into the IR Site 31 HHRA.	<p>single population) or contaminated (multiple populations). The Navy applied the DTSC policy criteria to arsenic data from IR Sites 30 and 31, and the results demonstrate that arsenic concentrations at each site meet the DTSC criteria for an ambient population based on the following.</p> <ul style="list-style-type: none"> • Data fit a lognormal distribution, which is typical of trace metals. • There are no outliers. • The coefficient of variation is less than 1. • The range between minimum and maximum is less than two orders of magnitude. • The cumulative probability plot is a straight line.
Specific Comments			
1.		Please amend the text to define the generic term 'preliminary comparison criteria' (Executive Summary, page vi) to which arsenic, iron, lead and vanadium were compared.	The Executive Summary text was amended to indicate that, as detailed in Section 4.1.2.5, the preliminary comparison criteria used is the residential preliminary remediation goals (rPRGs) including California specific values from EPA Region 9, October 2004.
2.		The proposal is presented that concentrations of inorganic elements in IR Site 31 surface soil in the 0 to 4 foot below ground surface (bgs) and 4 to 7 feet bgs both differ from NASA 'pink' ambient concentrations (Executive Summary, page vii). Subsequent discussions conjecture that IR Site 31 surface soils (i.e., 0 to 4 feet)	The text was revised to clarify the fill history.

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisni, Ph.D. received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		represent imported fill. No discussion is presented regarding the history and documentation of importing fill soils from two separate sources. Please clarify whether a single source of fill or two independent sources of fill are proposed.	
3.		The issue for arsenic in IR Site 31 soil is not whether the concentrations 'have been considered acceptable for sites with residential use in other areas of California as well as throughout the United States' (Executive Summary, page x). The issue is what fraction of the arsenic in IR Site 31 soil is due to Navy activities. The current proposal for Great Valley Group importation as the source of elevated arsenic is not supported by any evidence of fill importation from this formation. Please see the HERD comments outlined below.	In accordance with these comments and regulatory agency comments provided during the August 24, 2006 meeting, additional evaluations have been conducted and are presented in new Appendix H2 of the revised RI report. As noted in the response to Comment 1, references to the LBNL background data set have been deleted, except for general comparison purposes. New evaluation of the arsenic data shows that the data represent a single population without outliers, and so none of the arsenic is due to Navy activities.
4.	Executive Summary, page xi:	Please provide the time period estimated in the IR Site 25-area groundwater remedial action which is projected to decrease the risk and/or hazard associated with exposure to indoor air.	The text was revised as follows: "Indoor air risks, within the risk management range, will decrease as groundwater remediation for OU-5 proceeds independently of IR Site 31 soil. In the Proposed Plan for the OU-5/IR-02 groundwater, the preferred alternative indicates the remedy will take approximately 8 years to achieve the remedial action objectives. A vapor extraction and treatment system is included to mitigate potential

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisni, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
			human health risk from possible fugitive emissions during biosparging, although this risk is minimal."
5.		The IR Site 31 Human Health Risk Assessment (HHRA) uses the IR Site 25/ IR-02 groundwater RI/FS estimates of risk and/or hazard (Executive Summary, page viii). Deviations from the IR Site 31 soil sampling plan included inability to collect 0 to 2 foot bgs soil samples at two locations and 4-7 feet bgs at 22 locations due to the presence of groundwater (Section 3.3.1, page 3-9). The IR Site 25/IR-02 HHRA of groundwater risk and/or hazard may not be applicable unless the IR Site 31 groundwater depths conform to the IR Site 25/IR-02 groundwater depths. Please present a clear comparison of the depth to groundwater at these two adjacent IR Sites.	<p>The only groundwater pathway that is affected by depth to groundwater is that for vapor migration to indoor air. The RI report Section 6.1.2 identifies that the previous risk calculations from the IR Site 25/IR-02 HHRA were used for the future residential exposure scenario which did include a calculation of indoor air risk. In addition, site-specific migration of vapors from groundwater to indoor air was calculated for the IR 31 RI HHRA using the groundwater data from the RI. The information from the Site 31 RI is provided below:</p> <p>For estimating the migration of vapors from groundwater, the data from shallow groundwater collected in this RI and the OU-5 RI (Neptune et al. 2002) investigation are used. COPCs identified in groundwater are presented in Table 6-1. For estimating the risks for future residential use of groundwater, completed risk calculations from the Final Groundwater RI/FS for IR Site 25/IR-02 were used (ERRG 2004).</p>
6.		HERD defers to the DTSC Geological Services Unit (GSU), and the DTSC Project Manager, for determination of whether the deviations from the work plan represent significant data gaps in the characterization of IR Site 31 soil (Section 3.3.1, page 3-9) and groundwater (Section 3.3.2, page 3-9 through	No response is required.

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisni, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		3-11).	
7.		Please include the analytical results for manganese (Mn) in the summary tables for IR Site 31 soil (Table 3-6). Elevated concentrations of manganese can produce Hazard Quotients (HQs) greater than one based on non-carcinogenic effects via the inhalation route of exposure.	Manganese was not included in the list of analytes in the approved work plan. Based on these comments, an estimated value was extrapolated for manganese from the raw laboratory data sheets. The results are not certified by the laboratory and are estimated. These data and the associated hazard index are discussed in the HHRA Uncertainty Analysis in Section 6 and Appendix I. The EPC of 1,246 mg/kg for manganese in the upper two feet corresponds with an HI of 0.2 for current residents and the EPC of 953 mg/kg in the upper 7 feet corresponds to an HI of 0.1 for future residents. As discussed in the new Section 4.1.4, it is likely that manganese concentrations are ambient.
8.		U.S. EPA Region 9 Preliminary Remediation Goals (PRGs) and California modified PRGs for arsenic, lead, iron and vanadium were checked and found to be arithmetically correct (Section 4.1.2.5, page 4-8).	No response is required.
9.		The benzo(a)pyrene equivalent (BaP equivalent) soil concentrations of Polycyclic Aromatic Hydrocarbons (PAHs) is generally higher in the western portion of IR Site 31 at depths greater than 2 feet (Section 4.1.3.2, page 4-9). The BaP equivalent 0-4 feet bgs soil concentrations ranges from 1.4 µg/kg to 4,200 µg/kg, while the 4-8 feet bgs soil BaP	The cancer risks in Attachment A are cumulative for all chemicals and not for BaP equivalents. For all PAHs, the U.S. EPA and Cal/EPA cancer risks for future residents from 0 - 7 feet depth are 8×10^{-6} and 1×10^{-5} , respectively, and are not outside the risk management range. This information is included in the supporting tables for the HHRA in Appendix I of the RI. In accordance with U.S. EPA guidance, risk management decisions are made on

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisni, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		<p>concentrations range from 3.9 µg/kg to 71,000 µg/kg. Incremental risk, associated with these BaP equivalent concentrations, exceeds the risk management range (Attachment A). HERD recommends OMF consider a deed restriction prohibiting potential future users from excavating below 2 feet bgs.</p>	<p>the risk associated with the exposure point concentration and not the results of individual sample results. In addition, as specified in City Ordinance 2824, the Marsh Crust is shallow in the western part of the site, with 5 feet below the surface the threshold depth for digging. Therefore, for the deep PAHs, controls are in place to manage potential exposures.</p>
10.		<p>The Cal-modified residential soil PRG for naphthalene (Section 4.1.3.2, page 4-10) is arithmetically correct. However, PRGs do not include the inhalation of outdoor or indoor air. The inhalation pathway for naphthalene and other Volatile Organic Compounds (VOCs) is adequately evaluated by other modeling and comparisons subsequent to this PRG comparison. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.</p>	<p>No response is required.</p>

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisni, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
11.		<p>The majority of the total risk estimate is due to arsenic in IR Site 31 soil. IR Site 31 soil arsenic is elevated above the NASA "pink" ambient arsenic concentration. The proposal is made that the arsenic concentrations in IR Site 30 soil are naturally occurring and that the Alameda Point background concentrations are not applicable (Section 4.1.3.3, page 4-10). The Oakland Hills or the Great Valley Group (Section 4.1.3.3, page 4-11) is proposed as the source of the surface fill material at IR Site 31. HERD has the following comments on this proposal (Section 4.1.3.3, page 4-10):</p>	<p>Please see responses below.</p>
11a.		<p>An enormous amount of time and resources has been directed toward developing a data set acceptable to the regulatory agencies as representative of 'ambient' inorganic element concentrations at NASA. This data set is based on three episodes of fill activity and commonly referred to as the 'blue', 'yellow' and 'pink' data sets. This effort began in 1997. No discussion occurred over this time period of the potential for any other estimate of 'ambient' within the NASA area of operation;</p>	<p>The concept of "background" at Alameda Point is fundamentally different from most sites because Alameda Point was created by a series of fill events. "Background" concentrations are typically based on native soil, but there is not much "native" soil above the water table at Alameda Point. The original Alameda Point background study acknowledged that there were different "backgrounds" and identified three sets of background data based on similarities in iron and manganese concentrations and fill history (PRC 1997). However, the Alameda Point background samples were all collected west of Main Street while IR Sites 30 and 31 are located east of Main Street. Data east of Main Street has been collected recently for the</p>

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisni, Ph.D, received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
			RIs for IR Sites 25, 30, and 31. The fill histories east and west of Main Street are different, as is the lithology for an approximately 140 acre area. Therefore, it is reasonable to conclude that background concentrations east and west of Main Street could be different. Appendix H2 of the revised RI Report provides evaluations of the area east of Main Street.
11b.		A significant discussion centers on the concentration of iron at differing depths at IR Site 31 because iron was used as an indicator in the Alameda ambient assessment (Section 4.1.3.3, page 4-12). While this assessment does indicate that IR Site 31 iron at 0 to 4 feet differs from iron at 4 to 7 feet, this IR Site 31 difference does not indicate the Great Valley Group (GVG) as the potential source of this fill material, based on iron, because iron concentrations are not available for the Oakland Hills or the GVG (Table 4-4);	In accordance with regulatory agency comments, the revised RI report does not propose use of the Great Valley Group and Oakland Hills data as background for Site 31. Please refer to the new evaluations in Appendix H2.
11c.		HERD defers to the DTSC Geological Services Unit, or the Project Manager, on whether the difference on color of shallow IR Site 31 surface soils, and an anecdotal higher clay content (Section 4.3.1.1, page 4-14), are sufficient to conclude that the NASA soil 'ambient' data set is not an appropriate comparison;	No response is required.

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisni, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
11d.		<p>The proposal is made that the IR Site 31 surface soils are 'similar' to the Great Valley Group (Fourth bulleted item). A table in support of this statement (Table 4-4) lists IR Site 31 median values for 0-4 feet and 4-7 feet below ground surface (bgs), Alameda Point Background median values from the 'pink' NASA data set and a column listed as 'Oakland Hills Median' attributed to Lawrence Berkeley National Laboratory (2002). While some median values appear fairly similar, the values listed for all elements in this column (Table 4-4) do not universally support soils similar to the LBNL soils as the source of IR Site 30 surface soil. The listed Oakland Hills Median soil concentrations of zinc, while greater than the Alameda pink background, are less than the IR Site 31 median soil concentrations. The listed Oakland Hills Median soil concentration of copper is greater than both the Alameda pink background and IR Site 31 median soil concentrations. The listed Oakland Hills Median soil concentration of lead is greater than both the Alameda pink background and the IR Site 31 median soil concentration;</p>	<p>In accordance with regulatory agency comments, the revised RI report does not propose use of the Great Valley Group and Oakland Hills data as background for Site 31. Please refer to the new evaluations in Appendix H2.</p>

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisini, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
11e.		<p>The comparison of IR Site 31 soil concentrations to any alternate 'ambient' source must make the comparison of all elements to the same proposed alternate 'ambient' data set. The comparison made in this document (Table 4-4) compares all elements except arsenic to the larger Oakland Hills Median while arsenic is compared to the subset Great Valley Group. This directed selection of a comparison data set is unacceptable. If the Great Valley Group is proposed as the source for IR Site 31 fill, all comparisons must be made to the Great Valley Group;</p>	<p>The revised RI report does not propose use of the Great Valley Group and Oakland Hills data as background for Site 31. The Navy is no longer proposing a new background data set. In the revised RI in a new Section 4.1.4 and Appendix H2, the Navy provides an area-specific analysis that includes lithological evaluation. Arsenic is the inorganic of most concern in the risk assessment. Arsenic concentrations meet the 1997 DTSC criteria for an ambient population. The California Environmental Protection Agency Department of Toxic Substances Control (DTSC) policy titled Selecting Inorganic Constituents as Chemicals of Potential Concern at Risk Assessments at Hazardous Waste Sites and Permitted Facilities (DTSC 1997) was used.</p> <p>Table 4-4 has been deleted from the Draft RI - Revision I report.</p>
11f.		<p>Extensive searches by document name, document number, Great Valley Group text and other search criteria failed to locate a copy of the LBNL (2002) full document on any web page. Even the LBNL main web page index of environmental documents (http://www.lbl.gov/ehs/erp/html/documents.shtml) did not list a copy of the LBNL (2002) document. A summary table of upper bound estimates of LBNL soil background concentrations (Attachment B) was located.</p>	<p>Copies of the LBNL 1995 and 2002 reports were sent to Jim Polisini of DTSC and other regulators after the issuance of these review comments.</p>

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisni, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		<p>A City of Oakland Urban Land Redevelopment Program summary table (Attachment B, second table) lists values for the Great Valley Group, attributed to LBNL (2002), which on visual inspection do not appear similar to IR Site 31 surface soils. The IR Site 30 discussion of Great Valley Group arsenic concentration (IR Site 30 Draft Feasibility Study, Section 2.8.4.2) indicates that the 99th percentile arsenic concentration is 42 mg/kg. A summary table (Attachment C) regarding a Santa Clara site, which summarizes the LBNL (2002) data, indicates that 42 mg/kg arsenic is the highest concentration of the 1397 samples collected, whereas the 99th percentile would be approximately the 1183rd ranked sample concentration; and,</p>	
11g.		<p>The statement that soils were 'mined for sand and gravel to be used for construction' (Section 4.1.3.3, page 4-11) does not necessarily indicate that fill material was extracted from the proposed formations.</p> <p>Based on the information provided, HERD does not accept the proposal that IR Site 31 fill differs geologically from 'ambient' fill and that the IR Site 31 concentrations of</p>	<p>A meeting was held with the regulatory agencies on August 24, 2006 to discuss IR Site 31 (and Site 30). Evaluations of lithology and an area-wide evaluation of the area east of Main Street were conducted based on regulatory agency comments received at this meeting. The Navy is no longer proposing a new background data set. Additional evaluation of area-specific background is included in a new Section 4.1.4 and Appendix H2, which shows that arsenic concentrations represent one</p>

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisni, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		arsenic in excess of 'pink' ambient can be dismissed as background. No path forward seems possible without a consensus among the project team on what constitutes ambient concentrations of arsenic in IR Site 31 soil. A technical meeting should be scheduled to attempt to produce an acceptable process to address IR Site 31 soil.	population and ambient conditions. Statistical evaluation shows that arsenic is ambient. Appendix H2 shows that there is an approximate 140-acre area including East Housing, portions of the FISCA warehouse area, IR Site 30, and IR Site 31 that has similar arsenic concentrations (and similar lithologies), which are different than those found in the "pink" background data set. Data from other nearby locations including IR Site 25, College of Alameda, and FISCA also were evaluated in Appendix H2.
12.		The closest location for Great Valley Group to NASA is on the eastern side of the Hayward Fault (IR Site 30 Draft Feasibility Study, Section 2.8.4.2, page 2-12). The fact that this is "considered a viable distance to transport" fill material does not mean Great Valley Group soils were transported to NASA. The history of NASA development indicates that abundant fill material was available close at hand. HERD does not consider the "viable distance" argument sufficiently convincing without documentation of the extraction of soils rather than excavation of sand and gravel coupled with some evidence of transport to NASA.	The Navy is no longer proposing a new background data set. Additional evaluation of area-specific background is included in a new Section 4.1.4 and Appendix H2, which shows that arsenic concentrations represent one population and ambient concentrations.
13.		A subset of the human health-based screening criteria and ecological screening	No response is required.

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polinski, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		<p>criteria (Table 4-2) were checked and found to be arithmetically correct. The human health-based screening criterion for chromium is the U.S. EPA Region 9 Preliminary Remediation Goal (PRG) which assumed a 6:1 ratio of trivalent chromium (Cr⁺³) to hexavalent chromium (Cr⁺⁶). While no site-specific evidence is provided for the IR Site 31 ratio of Cr⁺³ to Cr⁺⁶, this ratio should be health-protective given the history of site-related activities. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.</p>	
14.		<p>The table presenting the evaluation of soil concentrations for indoor air exposure presents a column titled 'Residential Soil Screening Levels (SSLs) for Vapor Intrusion' with an associated footnote notation of 'c'. No footnote 'c' is present at the end of the table although there is a reference to Groundwater Screening Levels for Vapor Intrusion. Please correct this typographic error to refer to the correct reference work.</p>	<p>This typographic error to refer to the correct reference work was corrected.</p>
15.		<p>HERD does not dispute the fact that 'there are sources of soil in the area that have arsenic at concentrations above the Alameda</p>	<p>No response is required.</p>

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisni, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		Point background' (Section 4.1.3.4, page 4-18). As stated above, the issue is the lack of documentation for transport and placement of that material at NASA. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	
16.		Historic IR-05 groundwater sample results from within the IR Site 31 boundary are mapped (Figure 4-17) but not included in the evaluation of whether IR Site 31 groundwater contamination is associated with the IR 25 area groundwater plume (Section 4.2.2, page 4-21) even though these sample results do not represent the current plume conditions. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	No response is required.
17.		HERD defers to the DTSC GSU, or the DTSC Project Manager, for evaluation of the methodology used for comparison and the conclusion made of no significant difference between IR Site 31 groundwater concentrations and the IR Site 25 area wide groundwater concentrations (Section 4.2.4, page 4-23 through page 4-27).	No response is required.

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisni, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
18.		Please amend the text to ensure that reference to the NASA risk management criterion of 620 µg/kg BaP equivalents for carcinogenic PAHs always includes the indication of BaP equivalents rather than generic reference to PAH concentrations (e.g., Section 6.1.1, page 6-1).	The text of Section 6.1 was amended to refer to Section 4.1.3.2 where it is identified that the 620 ug/kg refers only to BaP equivalents.
19.		The proposed human health exposure pathways (Section 6.1.3, page 6-3 and 6-4), outlined for the Conceptual Site Model, are sufficient to evaluate current and potential future human exposures. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	No response is required.
20.		A subset of the incremental cancer risk and non-cancer hazard values presented in the text (Section 6.1.5, page 6-5 through -10) were compared to the relevant tables (Table 6-2 through 6-11) and found to agree. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractor.	No response is required.
21.		HERD does not accept the human health risk assessment statements made regarding IR Site 31-specific arsenic and cadmium 'ambient' concentrations (Section 6.1.5.1.4,	Additional evaluation of area-specific background is included in a new Section 4.1.4 and Appendix H2, which shows that in accordance with DTSC policy, arsenic concentrations represent one population and are ambient

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisni, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		page 6-8). HERD recommends OMF consider only total risk and/or hazard estimates for these two elements until the issue of IR Site 31-specific 'ambient' is resolved.	concentrations. Cadmium has a U.S. EPA risk of less than 10^{-6} and a Cal/EPA risk of 2×10^{-6} . The maximum cadmium concentration of 1.5 mg/kg is only slightly above the maximum in the pink background data set of 1.47 mg/kg. The statistical comparison of IR Site 31 data to the pink background data set may have identified cadmium as above background due to the larger size of the Site 31 dataset, as detailed in the RI Report. Cadmium is most likely present at concentrations below the Alameda Point pink background.
22.		The Navy expresses the right to 'accept or reject' Cal/EPA toxicity values, presumably for arsenic and cadmium, prior to making cleanup decisions (Section 6.1.5.1.4, page 6-9). HERD is required to use the Cal/EPA toxicity values developed by the Office of Environmental Health Hazard Assessment (OEHHA) in human health risk assessments.	No response is required.
23.		The results of the indoor air evaluation of Parcel 181 Coast Guard housing (Section 6.1.6.3, page 6-11) would appear to offer evidence that indoor air intrusion, at least at Parcel 181, may be less than modeled for IR Site 31 and should be considered when evaluating remedial alternatives for IR Site 31: This comment is meant for the DTSC Project Manager and no response is required	No response is required.

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisni, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		from the Navy or Navy contractor.	
24.		Please include a footnote of the ecological receptors in the Conceptual Site Model (CSM) (Figure 6-1) to make clear that ingestion for ecological receptors includes ingestion of soil and prey tissue potentially containing site-related contaminants. Prey tissue concentrations are estimated in the terrestrial Screening Ecological Risk Assessment (SLERA) based on soil concentrations and bioaccumulation relationships (Section 6.2.3.1, page 6-20).	A footnote was added to Figure 6-1 to make clear that ingestion of soil and prey tissue potentially containing site-related contaminants.
25.		Appropriate refinements of Exposure Point Concentration (EPC), body weight (BW) and Site Use Factors (SUFs) are incorporated into the refined exposure parameters (Section 6.3, page 6-22) at Step 3A of the ERA. This comment is meant for the DTSC Project Manager and no response is required from the Navy or Navy contractors.	No response is required.
26.		Given the current and potential future ecological habitat present at IR Site 31, HERD accepts the recommendation for no further investigation or assessment of ecological hazard (Section 6.3.3, page 6-24). Changes in future land use which lead to the establishment of more significant ecological	No response is required.

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments by J. Polisni, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006</i>			
#	Reference	Comments	Responses
		habitat at IR Site 31 would require a more detailed ERA.	
27.		HERD recommends that consideration of the recommendations for IR Site 31 (Section 7) be delayed until the issue of IR Site 31 'ambient' concentrations, particularly of arsenic and cadmium, are resolved.	Additional evaluation of area-specific background is included in a new Section 4.1.4 and Appendix H2, which shows that arsenic concentrations represent one population and ambient concentrations. Cadmium has a U.S. EPA risk of less than 10^{-6} and a Cal/EPA risk of 2×10^{-6} . The maximum cadmium concentration of 1.5 mg/kg is only slightly above the maximum in the pink background data set of 1.47 mg/kg. The statistical comparison of IR Site 31 data to the pink background data set may have identified cadmium as above background due to the larger size of the Site 31 dataset, as detailed in the RI Report. Cadmium is most likely present at concentrations below the Alameda Point pink background.
Conclusions			
		HERD defers to the DTSC Geological Services Unit, or the DTSC Project Manager, for consideration of 1) the soil characteristic comparison of IR Site 31 fill to NASA 'ambient' fill sites; 2) deviations in the IR Site 31 groundwater sampling plant; and 3) the comparison of IR Site 31 groundwater to IR Site 25 area-wide groundwater. Insufficient justification is provided in support of the Great Valley Group as the source of IR Site 31 fill soil.	A meeting was held with the regulatory agencies on August 24, 2006 to discuss IR Site 31 (and Site 30). Evaluations of lithology and an area-wide evaluation of the area east of Main Street were conducted based on regulatory agency comments received at this meeting. The Great Valley Group is no longer proposed as the likely source of IR Site 31 fill soil and an applicable background dataset. The Navy is no longer proposing a new background data set. Additional evaluation of area-specific background is included in a new Section 4.1.4 and Appendix H2, which shows that arsenic concentrations

Draft Response to Comments - DTSC - HERD
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by J. Polisri, Ph.D; received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006.

#	Reference	Comments	Responses
		<p>HERD recommends that consideration of the IR Site 31 recommendations be delayed pending resolution of the issues outlined above.</p> <p>HERD accepts the conclusions of the Ecological Risk Assessment given the current habitat present at IR Site 31. Changes in future land use which lead to the establishment of more significant ecological habitat at IR Site 31 would require a more detailed ERA.</p>	<p>represent one population and ambient concentrations. The statistical evaluation showing that arsenic is ambient was conducted in accordance with DTSC policy. Appendix H2 shows that there is an approximate 140-acre area including East Housing, portions of the FISCA warehouse area, IR Site 30, and IR Site 31 that has similar arsenic concentrations (and similar lithologies), which are different than those found in the "pink" background data set.</p>

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
General Review - Project Summary			
1.		<p>The draft RI report for IR Site 31 was prepared as part of the remedy-selection process described in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Code of Federal Regulations (CFR) (Title 40 CFR Part 300). The RI was prepared in accordance with the document entitled <i>Final Work Plan for Remedial Investigation at IR Site 31, Alameda Point, Alameda, California</i> prepared by CDM dated September 2005.</p> <p>IR Site 31 is a 25-acre residential use property known as Marina Village Housing. IR Site 31 is located in the northwestern corner of the former San Francisco Bay Airdrome (SFBA). The SFBA which was used primarily by private airplanes and business air fleets, was closed in 1941. In 1947, military housing was present across the northwestern portion of the site. In 1953, a warehouse was built on the southwestern portion of IR Site 31, beginning the industrial storage. Between 1953 and 1959, the military housing was demolished and additional warehouses were built. Between 1985 and 1993, the warehouse</p>	No response is required.

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG-DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		<p>buildings were demolished and the Marina Village Coast Guard Housing was built on the site. The purpose of the RI report is to:</p> <ul style="list-style-type: none"> • Characterize the nature and extent of contaminants in soil that may have resulted from historical site operations, • Assess human health and ecological risks associated with direct exposure to contaminated soil, • Assess human health risk associated with potential indoor air contamination due to volatilization of contaminants from groundwater, and • Evaluate whether groundwater beneath the site has characteristics consistent with the known contaminants of the Operable Unit 5 groundwater plume, or if the data indicate that a site-specific release of contaminants to groundwater has occurred. 	
General Comments and Recommendations			
A.		The determination that the Great Valley Group background data set is an appropriate	A meeting was held with the regulatory agencies on August 24, 2006 to discuss IR Site 31 (and Site 30).

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		<p>background data set for IR Site 31 is not valid or sufficiently supported. This argument should be removed from the RI report. If a background data set other than the Alameda Point background data set is to be established for IR Site 31 soil, a rigorous and thorough evaluation must be undertaken including the collection of additional background samples under the oversight and approval of the regulatory agencies. The data set must be presented to and approved by the regulatory agencies prior to determining whether it is "site-appropriate" and can be used for the purposes of the RI/FS. At the present time, the Alameda Point background data set is the site-appropriate data set upon which to make background comparisons.</p> <p><u>Recommendation</u></p> <p>The discussions regarding the applicability of the Great Valley Group (Oakland Hills) background data set to IR Site 31 soil should be removed from the RI report. The Alameda Point background data set that has been established in accordance with and approval by the regulatory agencies</p>	<p>Evaluations of lithology and an area-wide evaluation of the area east of Main Street were conducted based on regulatory agency comments received at this meeting. The Great Valley Group is no longer proposed as an applicable background dataset. The Navy is no longer proposing a new background data set. Additional evaluation of area-specific background is included in a new Section 4.1.4 and Appendix H2, which shows that arsenic concentrations represent one population and ambient concentrations. The statistical evaluation showing that arsenic is ambient was conducted in accordance with DTSC policy. Appendix H2 shows that there is an approximate 140-acre area including East Housing, portions of the FISCA warehouse area, IR Site 30, and IR Site 31 that has similar arsenic concentrations (and similar lithologies), which are different than those found in the "pink" background data set.</p> <p>The DTSC policy titled Selecting Inorganic Constituents as Chemicals of Potential Concern at Risk Assessments at Hazardous Waste Sites and Permitted Facilities (DTSC 1997) was used. The DTSC policy describes using site data to determine whether chemical concentrations are ambient (a single population) or contaminated (multiple populations). The Navy applied the DTSC policy criteria to arsenic data from IR Sites 30 and 31, and the results demonstrated that arsenic concentrations at each site meet the DTSC criteria for an ambient population based on the</p>

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		should be used.	<p>following.</p> <ul style="list-style-type: none"> • Data fit a lognormal distribution, which is typical of trace metals. • There are no outliers. • The coefficient of variation is less than 1. • The range between minimum and maximum is less than two orders of magnitude. • The cumulative probability plot is a straight line. <p>The Navy does not believe that the Alameda Point pink background dataset is appropriate for background comparison at IR Sites 30 and 31 as it does not include any samples collected from soil located east of Main Street, and includes only one soil sample collected within ½ mile of IR Site 31. Also the area samples for the pink background have a different fill history and different concentrations of iron and manganese than those at IR Site 31. The pink background data set was identified based on locations with a similar fill history and similar concentrations of iron and manganese. These two metals were used as fingerprints for background because they were not expected to be associated with Navy activities.</p>
B.		The RI report does not mention the potential staining that was observed north and west of former warehouse 369 on an aerial photograph from 1968. A soil sample that	The second paragraph of Section 3 refers to the area of potential staining that was inferred from the 1968 aerial photograph. The 1968 photo shows a potential stain adjacent to the northwest corner of the building. In

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		<p>was collected from 2 to 4 feet below ground surface (bgs) in the vicinity of the stained area on the north side of the former warehouse contained the highest arsenic concentration reported in all soil samples collected during the RI. The location of this soil sample was intended to address the apparent stain. However, the RI report fails to discuss this finding.</p> <p><u>Recommendation</u></p> <p>The finding of elevated arsenic in sample location 3106 should be discussed in relation to former site operations and the potential stain observed on the aerial photograph from 1968. An evaluation as to the adequacy of the investigation in this area should be provided.</p>	<p>discussions with DTSC during comment resolution for the Work Plan/SAP, it was acknowledged that the potential stained soil has since been subjected to at least two periods of grading and fill and hence, the soil is likely not present at the location of the area noted in the 1968 aerial photo.</p> <p>The highest arsenic sample result referred to is in a sample collected at 2-4 ft bgs from location 3106, which is about 50 feet west of the west side of Building 369. During comment resolution to the WP/SAP, specifically EPA specific comment #1 to the Work Plan, the Navy agreed to place two samples in the vicinity of the west end and northwest corner of former Building 369. Sample location 3109 is adjacent to the building's west end and closest to the potential stained area adjacent to the north end of former Building 369. Low concentrations of arsenic are reported in analyses of samples from location 3109.</p> <p>Please note that there is no pattern related to the footprint of the former Building 369 as shown in the draft Revision I RI report Figures 10a and 10b for arsenic from 0-2 and 2-7 feet, respectively, and Figures 11a and 11b for iron from 0-2 and 2-7 feet, respectively. In the upper 2 feet, draft Revision I RI Figures 10a and 11a show that a substantial number of concentrations of arsenic and iron are above the 95th percentile in the Alameda Point pink background data set. From 2 -7 feet, draft Revision I Figures 10b and 11b show a similar pattern with a tendency for the higher</p>

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
			<p>concentrations in the western portion of the site around Building 369. However, there is no pattern in the western portion related to the footprint of the former Building 369. In fact, some of the highest concentrations of arsenic and iron are located beneath the building footprint. There are six samples that can be most clearly assigned as inside the Building 369 footprint. For arsenic, these six samples have concentrations above the 95th percentile in the pink background dataset. For iron, all six samples have concentrations above the 95th percentile in the pink background and three of these are more than two times greater than the 95th percentile.</p>
C.		<p>The nature and extent evaluation in the RI report does not present a complete and rigorous evaluation of elevated levels of metals in soil and groundwater. Several metals were found above Alameda Point background levels in soil samples, and elevated levels of these same metals were also found in groundwater samples. Metals in soil and groundwater are potentially related to previous site activities. For example, the soil sample collected from the eastern site boundary to evaluate whether the DRMO scrapyards impacted the site contained elevated chromium and nickel.</p>	<p>The IR Site 31 RI is a soil RI and as such has a very specific and limited discussion of groundwater. The groundwater objectives for this RI were developed in close coordination with DTSC and the other regulatory agencies in the project work plan and SAP. The groundwater objectives are presented in the RI (sections 1.1 and 4.2) and have been met.</p> <p>The contaminants of interest in groundwater were previously identified in the final Groundwater RI/FS (ERRG 2004) and are subject of a groundwater remedial program being developed in the ROD for the groundwater of OU-5/IR-02.</p> <p>The former DRMO scrapyards located to the east of Site 31</p>

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		<p>Chromium and nickel were also found above background in groundwater at this location. This finding is not discussed in the nature and extent evaluation. The RI report presents and discusses only those metals that exceed preliminary remediation goals (PRGs). This type of evaluation does not provide the reviewer with sufficient information to determine whether potential site-related metals contamination has been thoroughly characterized and delineated and whether or not metals contamination in groundwater is site-related.</p> <p><u>Recommendation</u></p> <p>The RI should identify all potentially site-related metals that were found in soil above Alameda Point background and provide maps of their distribution. A similar analysis should be performed for metals in groundwater. Any hot spots and/or relationships observed between the distribution and concentrations of metals detected in soil and groundwater should be discussed in the RI Report. This will provide the basis for the determination as to whether or not metals contamination has</p>	<p>is the FISCA IR Site 02 and is subject of a different remedial program. The Site 31 RI is not evaluating effects of the former DRMO scrapyard.</p> <p>The maximum chromium concentration of 50.5 ug/L from sample 3142 (Table 4-6 of the RI) is below the maximum concentration in the Alameda Point pink background dataset of 82.8 ug/L, as well as below residential PRGs, and does not appear to represent contamination.</p> <p>The RI report discusses and maps metals relative to background concentrations.</p> <p>The revised draft RI presents a new section 4.1.4 that summarizes the detailed evaluation in the new Appendix H2. Arsenic, which is the risk driver, is ambient based on a statistical evaluation conducted in accordance with DTSC policy. Other metals risks are below 1×10^{-6} or, in the case of cadmium, appear to be less than the Alameda Point pink background. Therefore, metals are present at ambient concentrations and do not represent a release resulting from onsite activities.</p> <p>Groundwater beneath IR Site 31 was determined to have chemical impacts similar to those of the area wide OU5/IR-02 groundwater plume. The groundwater has been impacted by benzene and naphthalene at concentrations that are not related to concentrations in soil samples at IR</p>

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple-PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		been adequately characterized.	<p>Site 31.</p> <p>Because this is a soil RI where metals in soil are present at ambient levels or at concentrations where risks are less than 1×10^{-6} and because the groundwater beneath Site 31 is being addressed as part to the OU-5/IR-02 groundwater remediation, the nature and extent of metals in groundwater is not addressed in this soil RI report.</p>
SPECIFIC COMMENTS			
1.	<u>Section 1.3.5.2</u> <u>Environmental</u> <u>Baseline</u> <u>Survey</u> <u>Investigations.</u>	<p>It is stated that the EBS recommended replacing the top 6 inches to 1 foot of soil in the northern portion of the site to reduce the potential risks associated with direct contact with elevated levels of metals in soil. The RI report should clarify whether or not this recommendation was implemented, and the extent of the soil removal and method of disposal, if known. Also, the RI report should clarify why data from these samples were not used in the RI risk assessment (see Specific Comment 7).</p>	<p>The referenced section discusses the EBS and the text in this section identifies that the data and recommendations are from the ERM-West 1987-1988 study of the warehouse area south and east of Site 31. A few sample locations near Building 369 were within the current boundary of Site 31. The ERM reports are discussed in response to EPA comments. There were no risk evaluations made in the ERM studies and the metals concentrations were reported as "elevated" above the mean value of the data set collected for that specific study. The soil represented by samples collected during the 1987 and 1988 study have been subject of at least two site grading and fill events and the analytical results no longer represent soil at Site 31. The Site 31 RI has re-sampled the general vicinity of locations sampled and reported in the ERM documents.</p>
2.	<u>Section 1.3.5.3</u> <u>- Zone</u> <u>Evaluation</u>	<p>It is difficult to locate the three soil samples collected as part of the Zone 16 parcel evaluation on Figure 4-1 because this figure</p>	<p>The document figures are provided in Adobe pdf version and as such are fully searchable. Any sample number or part of a sample number can be used to search and will be</p>

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
	<u>Data Summary, Zone 16: Housing Zone.</u>	is cluttered. Please consider using a different color or symbol for soil samples collected during the different investigations.	highlighted on the map. Because Site 31 has been subjected to extensive sampling at hundreds of locations, individual boring locations are difficult to locate on the hard copy maps. The three locations are; one in the west central portion about 120 feet north of former Building 369; one is located in the south central portion of the site near the eastern end of former Building 369; and the third is located near the north east corner of Site 31.
3.	<u>Section 1.3.5.3 - Zone Evaluation Data Summary, Zone 16: Housing Zone.</u>	It is stated that the data from the Zone 16 parcel evaluation were incorporated into this RI for use in the risk assessment. Please clarify that only the soil data were used in the RI risk assessment, and not the soil gas data.	The RI report clarifies in Section 1.3.5.3, that soil sample results were used.
4.	<u>Section 1.3.5.6 - 2003 Polynuclear Aromatic Hydrocarbon Assessment.</u>	Please clarify what is meant by the statement at the end of the second paragraph that indicates that the PAH data are "mapped" in Section 3.	The sentence was revised to delete reference to mapping and to Section 3.
5.	<u>Section 2.3.3 - IR Site 31 Geology.</u>	It is stated that the shallowest fill materials (0 to 4 feet bgs) appeared to have been imported from other areas (outside of Alameda Island and possibly from terrestrial	The construction design drawings are included in Appendix K. It is unlikely that a definitive answer on whether the fill was placed uniformly across the site and what effect compaction may have had on thickness of the

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		<p>fill sources containing material from the Oakland Hills Area). It is assumed that this interval is interpreted to be construction fill placed during the 1990 construction of Marina Village Housing. However, the lithologic information presented on cross-sections in Section 2 and on boring logs in Appendix D does not clearly identify unique soils in this interval. Also, it is unclear whether the construction fill was placed uniformly across the site, and what effect compaction may have had on the thickness of the fill material. Please identify the unique soils on boring logs and indicate whether construction fill was placed uniformly across the site.</p>	<p>fill material is possible.</p> <p>The RI Section 1.3.3 and the final housing construction design drawings in Appendix K identify the following construction fill for the entire 300- unit housing area: <i>"removal of 3-inch asphalt layer, removal of 6 inches of soil, reconditioning of existing fill, addition and compaction of 4 feet of fill, addition of 4 inches of capillary material, placement of a 40-mil vapor barrier, addition of 2 inches (minimum) of sand, and addition of an 8-inch slab."</i></p>
6.	<p><u>Section 3.5 - Comparison Criteria.</u></p>	<p>The second to the last sentence of this section which states that the Alameda Point Background data set is not appropriate for comparison with IR Site 31 data is not valid or sufficiently supported (see General Comment A). This statement should be removed from the RI report.</p>	<p>Additional evaluation of area-specific background is included in a new Section 4.1.4 and Appendix H2, which shows that arsenic concentrations represent one population and ambient concentrations. The statistical evaluation showing that arsenic is ambient was conducted in accordance with DTSC policy. Appendix H2 shows that there is an approximate 140-acre area including East Housing, portions of the FISCA warehouse area, IR Site 30, and IR Site 31 that has similar arsenic concentrations (and similar lithologies), which are different than those found in the "pink" background data set. Other metals either have</p>

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
			risk less than 1 X 10 ⁻⁶ or are present at or below pink background levels.
7.	<u>Section 4 - Nature and Extent of Contamination</u>	It is stated that the first phase of EBS soil data are not used in the nature and extent evaluations because this soil has been partly removed, redistributed, and buried beneath four feet of fill. However, these data may provide useful information on the distribution of contamination in soil resulting from historical operations (prior to construction of the housing development). The second phase of EBS soil sampling is not discussed. Both phases of EBS soil data should be presented and discussed in the nature and extent evaluations. Also, these data should be considered for use in the human health risk assessment because the partial removal of this soil has not been verified, and the risk assessment includes soil data from the 0 to 7 foot depth interval for the future residential scenario.	The Revised Draft RI, in Section 1.3.3 includes a summary of the Phase I and Phase II findings. The referenced section discusses the EBS and the text in this section identifies that the data and recommendations are from the ERM-West 1987-1988 study of the warehouse area south and east of Site 31. A few sample locations near Building 369 were within the current boundary of Site 31. The limited study did not identify areas of soil contamination. Concentrations of metals in soil were reported as "elevated" relative to the mean value of the 29 samples analyzed for the data set collected for that study. The soil represented by samples collected during the 1987 and 1988 study have been subject of at least two site grading and fill events and the analytical results no longer represent soil at Site 31. The Site 31 RI has re-sampled the general vicinity of locations sampled and reported in the ERM documents.
8.	<u>Section 4.1 - Soil.</u>	For the recent RI analytical data, the higher value was used between the parent and duplicate soil samples for the evaluation of nature and extent. It is stated that for previously collected data, all quality control samples were excluded from the assessment	The text was clarified. The higher of the two detected values between a parent sample and its duplicate was used.

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		of nature and extent. The same method that was used for the recent RI data should be used for the previous data. That is, the higher of the two detected values between the parent and the duplicate should be used.	
9.	<u>Section 4.1.1.2 - Parcel Evaluation Data Summary, Zone 16: Housing Zone.</u>	Soil samples collected from IR Site 31 during the Zone 16 parcel evaluation were analyzed for pesticides, PCBs, and metals. It is stated that the pesticide and PCB results are included in the historical data set used for the HHRA. The rationale for not including the metals results should be provided. Unless a valid reason for exclusion of these data is provided, these data should be used.	All available data from the three soil samples were used. Appendix B presents the analytical results summary for the three soil samples. Analytical results for metals were not available in the historic data set. The absence of the three sample results is more than compensated for by the sample analyses performed for the Site 31 RI.
10.	<u>Section 4.1.2 - Soil Analytical Results.</u>	Although Section 4.1 states that all quality control samples were excluded from the assessment of nature and extent for previously collected soil data, the table in Appendix B indicates that quality control samples were included to calculate frequency of detection. Duplicate analyses should not be used to evaluate frequency of detection. Either the parent or duplicate sample should be used based on the highest reported concentration.	The text in Section 4.1.2 was revised to clarify that per Section 4.1, the quality control sample results were not used and the parent/duplicate sample results were resolved before preparing the summary in Appendix B. The total of 776 sample analyses used in the statistical summary and frequency of detection calculations of Appendix B is the total excluding the 71 field duplicates and the 57 field/trip blanks.

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
11.	<u>Section 4.1.2 - Soil Analytical Results.</u>	For completeness, all data determined to be useable for the RI should be presented on Table 4-2 in the main body of the report, including data from previous investigations.	<p>All previous data has been reported in subsequent documents. The historic data summary is provided in Appendix B.</p> <p>In the revision I Site 31 RI report only the analytical results of soil samples collected during the RI are completely reported and tabulated because this is new data. The RI, and specifically Table 4-2 present data collected for the Site 31 RI. The Site 31 RI activity did not sample and analyze for PAH because the PAH concentrations in soil were not a data gap that was planned to be addressed in this remedial investigation. The Site 31 RI presents a reasonable summary of the PAH work performed in a previous investigation. The PAH data and associated distribution are completely discussed in the primary document cited as a reference (Bechtel 2004a); <i>Field Activity Report, Assessment of PAH Contamination at Selected CERCLA Sites and EBS Parcels. Alameda Point, Alameda, California. April.</i></p>
12.	<u>Section 4.1.2 - Soil Analytical Results.</u>	Please clarify that analytical data used to calculate exposure point concentrations for the risk assessment were not excluded based on a comparison against screening criteria.	Section 6.1.2 in the HHRA results states that: "All chemicals reported in at least one sample at concentrations greater than the sample quantitation limit were included as COPCs (Table 6-1). No chemical was excluded based on comparison to background concentrations. Screening criteria were not applied to eliminate or screen out analytes from the risk assessment."

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
13.	<u>Section 4.1.2.4 - Pesticides and Polychlorinated Biphenyls.</u>	It is stated that all analytes, other than endosulfan sulfate, were not detected in Zone 16 parcel evaluation samples. However, according to information in Appendix B, 4,4-DDT was detected at a concentration of 2.6 milligrams per kilogram (mg/kg) in sample 178-Z16-003. It appears that the units for the results of the Zone 16 samples in Appendix B should be micrograms per kilogram not mg/kg. Please revise the RI report to reflect accurate information. For completeness, all useable data should be included on Table 4-2.	The text states: <i>In the Zone 16 Parcel Evaluation (IT 2001), a surface soil sample from 178-Z16-001 contained 4 µg/kg of endosulfan sulfate; all other analytes were not detected above SQLs.</i> The text was clarified to note that 4,4-DDT was reported as "J" qualified, being an estimated concentration. The units in Appendix B were reviewed and revised accordingly.
14.	<u>Section 4.1.3 - Nature and Extent of Soil Contamination</u>	The first sentence of this section should include the Zone 16 parcel evaluation soil samples in addition to the RI data and the PAH assessment data.	The statement as made in the text of Section 4.1.3 is correct. The introduction in Section 4.1 was clarified to differentiate sample results used in the human Health risk (HHRA) and those use in the nature and extent discussion. Section 4.1.1.2 specifies that the analytical results for the three samples collected during the Parcel evaluation study are used in the HHRA. However, the very limited detections in these three samples are not carried through in the nature and extent discussions and mapping.
15.	<u>Section 4.1.3.2 - Polynuclear Aromatic Hydrocarbons.</u>	Appendix B does not provide sufficient information to support the discussion presented in this section regarding the distribution of PAHs in soil. For completeness, PAH data should be	All previous data has been reported in subsequent documents. The historic data summary is provided in Appendix B. In the revision I Site 31 RI report only the analytical results of soil samples collected during the RI are completely reported and tabulated because this is new

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		<p>included on Table 4-2. In addition, due to the large amount of PAH data and relatively high concentrations reported, maps should be provided to illustrate the distribution of PAHs in soil across the site and at depth.</p>	<p>data.</p> <p>The RI and specifically Table 4-2 present data collected for the Site 31 RI. The Site 31 RI activity did not sample and analyze for PAHs because the PAH concentrations in soil were not a data gap that was planned to be addressed in this remedial investigation. The RI Work Plan was discussed with the regulatory agencies, and concurrence was reached on the planned sampling. This RI presents a reasonable summary of the PAH work performed in a previous investigation. The PAH data and associated distribution are completely discussed in the primary document cited as a reference (Bechtel 2004a); <i>Field Activity Report, Assessment of PAH Contamination at Selected CERCLA Sites and EBS Parcels. Alameda Point, Alameda, California. April.</i></p>

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
16.	<u>Section 4.1.3.3 - Evaluation of Background Metals, History of IR Site 31.</u>	It is stated that historical use of IR Site 31 by the Navy does not indicate any activity that would have resulted in increased concentrations of 15 metals. This statement is not supported. Historically, the site was used for warehousing and storage of unknown materials. Elevated metals were found in previous soil samples collected during the EBS, and the removal of 6-inches to 1-foot of soil was recommended. Metals elevated above background were also found in soil samples collected during the RI. The highest concentration of arsenic was found in the location of a stained area (see General Comment B). It seems likely that historical site operations have contributed metals to soil. The RI report should be revised to indicate that site-related metals contamination is likely (see General Comments B and C).	Although Navy activities could have resulted in small areas of impact of some metals, there is no realistic release scenario that would have resulted in the increase in concentrations of multiple metals in soil over almost 30 acres down to the water table. None of the investigations or construction activities at the site noted the presence of metal in the soil. Neither scrap metal pieces nor small metal filings were present in the soil cores from the site. It is unrealistic to conclude that possible leaching of metals from materials stored at the site resulted in these increases in concentration above the Alameda Point pink background dataset. IR Sites 30 and 31 are part of an approximate 140-acre area with arsenic concentrations (and lithologies) that similar and different from those in the pink background as discussed in detail in the new Section 4.1.4 of the revised RI. East Housing Area, a 72 acre parcel that was not used for industrial purposes is part of the 140 acres. The concentrations of arsenic in the East Housing are similar to or higher than those at IR Sites 30 and 31. Other metals either have risk less than 1×10^{-6} or are present at or below pink background levels.
17.	<u>Section 4.1.3.3 - Evaluation of Background Metals,</u>	The conclusion that there are distinct geologic differences between shallow fill soil at IR Site 31 and other areas of Alameda Point (west of Main Street) is not supported	A new Section 4.1.4 was added to the RI - Revision I report and summarizes the detailed new evaluation in Appendix H2. These evaluations include a detailed lithologic evaluation.

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
	<u>Applicability of Alameda Point Background Data.</u>	by lithologic data. Lithologic logs indicate very similar lithologies on the east and west side of Main Street, with the upper 3 to 5 feet of yellowish brown to brown sands with varying amounts of gravel and clay, underlain by grayish clay-rich soils. The argument regarding distinct differences in soil types should be further supported or should be removed from the RI report. Gradation analysis tests should be completed in order to apply a laboratory-based soil category using the Unified Soil Classification System.	
19.	<u>Section 4.1.3.3 - Evaluation of Background Metals, Summary and Conclusions for Background Evaluation of Metals.</u>	The determination that the Great Valley Group background data set is an appropriate site-specific background data set to use for evaluation of metals at IR Site 31 is not valid or sufficiently supported. This argument should be removed from the RI report. Alameda Point background for the "pink" area is the appropriate background data set that should be used for the evaluation of metals in soil at IR Site 31.	The Great Valley Group is no longer proposed as a background data set for Site 31. Additional evaluation of area-specific background is included in a new Section 4.1.4 and Appendix H2, which shows that arsenic concentrations represent one population and ambient concentrations. The statistical evaluation showing that arsenic is ambient was conducted in accordance with DTSC policy. Appendix H2 shows that there is an approximate 140-acre area including East Housing, portions of the FISCA warehouse area, IR Site 30, and IR Site 31 that has similar arsenic concentrations (and similar lithologies), which are different than those found in the "pink" background data set. Other metals either have risk less than 1×10^{-6} or are present at or below pink background levels.

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
20.	<u>Section 4.1.3.4 - Metals.</u>	The nature and extent evaluation of metals in soil should be revised using only the Alameda Point background data set for comparison. References to the Oakland Hills data set should be deleted from the RI report.	The Great Valley Group is no longer proposed as a background data set for Site 31. Additional evaluation of area-specific background is included in a new Section 4.1.4 and Appendix H2, which shows that arsenic concentrations represent one population and ambient concentrations. The statistical evaluation showing that arsenic is ambient was conducted in accordance with DTSC policy. Appendix H2 shows that there is an approximate 140-acre area including East Housing, portions of the FISCA warehouse area, IR Site 30, and IR Site 31 that has similar arsenic concentrations (and similar lithologies), which are different than those found in the "pink" background data set. Other metals either have risk less than 1×10^{-6} or are present at or below pink background levels.
21.	<u>Section 4.1.3.4 - Metals, Arsenic.</u>	There appears to be an error in the reported location of the highest arsenic concentration at 4 to 7 feet bgs. The concentration of 36.5 mg/kg was found at location 3115 in the duplicate soil sample collected at 4 to 6 feet bgs. Please correct this information.	The data was checked using the data base, Appendix G, and applicable figures and the text was revised, as appropriate.
22.	<u>Section 4.2.2 - Operable Unit 5 Remedial Investigation Groundwater Sampling.</u>	Appendix B is referenced for the historical groundwater data that have been incorporated into the RI. However, Appendix B only contains historical soil data. Please include the historical groundwater data in Appendix B.	The reference to Appendix B was deleted. The groundwater data has been presented in the groundwater OU-5/IR-02 RI/FS and is not to be presented in the soil RI Report.

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple PG DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
23.	<u>Section 5.1.2 - Distribution of Contaminants, Soil.</u>	A review of lithologic logs in Appendix D and geotechnical data in Appendix E shows that the 0 to 2.5 foot depth interval does not contain a clayey gravel as stated. The argument that the higher arsenic concentrations are attributed to the imported fill in this interval is also not supported. Some of the highest arsenic concentrations at IR Site 31 were found in soil samples collected from silty sand and sand lithologies below 2 feet bgs (at sample locations 3106 and 3115). The information regarding the clay content of the fill soil should be reevaluated and revised to more accurately reflect the site-specific data.	The new evaluations in Appendix H2 are summarized in Section 4.1.4, which describe the differences between soil types at IR Site 31 and other soils at Alameda Point.
24.	<u>Section 6.1.6.3 - Indoor Air Exposure Assessment.</u>	The technical adequacy of the indoor air exposure modeling cannot be evaluated without the modeling input and output data sheets. Please include these in an appendix.	The modeling input and output data are included in the Appendix I attachments. A table of contents for these attachments was added in the revised RI report.
25.	<u>Section 7.2 - Recommendations.</u>	GSU does not agree that sufficient evaluation and analysis was performed on analytical data in the RI report to determine that there is no evidence of a release of chemicals to soil at IR Site 31. GSU cannot agree with the no further action recommendation for soil until sufficient evaluation and analysis of site-specific data are provided (see General	The revised RI report includes detailed evaluations that provide additional support that chemicals present in soil at IR Site 31 are not related to a release of hazardous substance, do not present a threat to human health and the environment, and therefore, a remedial decision can be made without an evaluation of remedial alternatives in a FS for IR Site 31.

Draft Response to Comments - DTSC - GSU
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments by M. Dalrymple, PG, DTSC-GSU; comments received from Dot Lofstrom, 26 July 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		Comments B and C).	

Draft Response to Comments - U.S. Coast Guard
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by R.L. Smith, 23 June 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
General Comments			
1.	pp. 1-8/5-1, pp. 4-8/4-17, 18, 19/5-2.3, p. vii/4-10, pp. 4-10, 14, 16/7-2, pp. vii/x/2-5/4-15, pp. 6-7/7-4.	<p>Contamination in Fill Material: As noted in the report, the Navy imported four feet of fill prior to construction of the Marina Village Housing for site grading, leveling, and foundation support, and apparently for covering contaminated soil (pp. 1-8/5-1, etc.). As stated in the Report, this fill had concentrations of iron, lead, vanadium and arsenic that exceeded EPA or California modified residential soil preliminary remediation goals (PRG) from 0-4 feet below ground surface (bgs), and that arsenic exceeded EPA's industrial soil PRG (pp. 4-8/4-17, 18, 19/5-2.3, etc.). Also, it was noted in the report that concentrations of metals are generally higher in the new fill material, i.e., between 0-4 feet bgs, than in the older fill that is between 4-7feet bgs (p. vii/4-10). Furthermore, 15 of the 17 metals contained in the fill material had concentrations exceeding Alameda Point background concentrations (pp. 4-10, 14, 16/7-2, etc.). The Navy position expressed in the Report is despite the fact that these metals exceed background at Alameda Point, they are not an issue because they do not exceed</p>	<p>The revised RI report includes new evaluations in Appendix H2 and summarized in new section 4.1.4 that further support that the occurrence and concentration of metals in soil at IR Site 31 are not related to a release of a hazardous substance.</p> <p>The presence of concentrations above the pink data set used to date as the default background at Alameda Point or the residential and industrial PRGs does not necessarily represent contamination, even from another location. The ambient concentrations of metals in the Bay Area and in California cover a wide range and many soils have higher levels than some of those at Alameda Point.</p> <p>Alameda Point was created through a series of fill events. As explained in detail in the new Section 4.1.4 in the revised RI report, the area including IR Site 31 was filled during a different time than the area sampled for the pink background data set. The concentrations of iron and manganese at IR Site 31 are statistically higher than those in the pink background. Iron and manganese were used to group the background data into the pink, blue and yellow areas because these metals were not associated with Navy activities.</p> <p>The area east of Main Street that includes IR Site 31 was not sampled as part of the Alameda Point background study. It is reasonable to conclude that background</p>

Draft Response to Comments - U.S. Coast Guard
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by R.L. Smith, 23 June 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		<p>naturally occurring background concentrations at the borrow area in the Oakland Hills from which they reportedly were obtained (pp. vii/x/2-5/4-15, etc.). According to the Report, the arsenic in this soil accounts for approximately 90 percent of the potential cancer risk at the site (pp. 6-7/7-4).</p> <p>It was repeatedly claimed in the Report that the concentrations of these metals were not caused by Navy activity at the site (pp. vii/4-10/7-2, 3, 5, etc.) This overlooks the fact that importing the fill with these concentrations of metals to Alameda Point was itself Navy activity, and raises questions of Navy responsibility to have: tested the soil prior to importing it; made a determination as to whether or not the soil needed to be treated or remediated; and, decided if another borrow site should have been used for a source of fill. Nevertheless, the conclusion in the Report is that without evidence of a Navy release having caused these high concentrations of metals that are consistent with background concentrations of local sources of fill material, they are not a basis for evaluating action alternatives in remedial</p>	<p>concentrations in the area east of Main Street could be different given the different fill history and because the soils east of Main street were not included in the background study. The imported construction fill placed in the early 1990's was for foundation support and not for covering contaminated soil.</p> <p>The Site RI report Section 1.3.3 was revised to accurately state the findings and limitations of the studies completed by ERM in 1987 and 1988. The statements made in the ERM study have been taken out of context. The ERM study was for the warehouse area, included areas other than Site 31, and addressed only a portion of Site 31. The study made no estimates of human health risk and only reported metals as "elevated" above a median value derived from the results of the 29 sample analyses performed during that study.</p> <p>The ERM reports identify chromium and nickel as having "elevated concentrations." The IR Site 31 investigation has resampled the area of concern identified in the ERM report as near building 369, which now correlates to the southwest portion of IR Site 31. The investigation sampled at least 14 locations in the area of concern with soil samples at multiple depths. None of sample results for chromium or nickel exceeds residential PRG criteria. For all 126 RI soil samples at IR Site 31, analytical results for chromium and nickel did not exceed the residential PRG values.</p>

Draft Response to Comments - U.S. Coast Guard
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by R.L. Smith, 23 June 2006 to Draft RI Report dated 24 April 2006</i>			
#	Reference	Comments	Responses
		decisions per Navy and EPA policy (p. xi). In short, we are not convinced that the concentration of metals present in the soil at Marina village is not the Navy's responsibility.	Additional evaluation of area-specific background is included in a new Section 4.1.4 and Appendix H2, which shows that arsenic concentrations represent one population and ambient concentrations. The statistical evaluation showing that arsenic is ambient was conducted in accordance with DTSC policy. Appendix H2 shows that there is an approximate 140-acre area including East Housing, portions of the FISCA warehouse area, IR Site 30, and IR Site 31 that has similar arsenic concentrations (and similar lithologies), which are different than those found in the "pink" background data set. Other metals either have risk less than 1×10^{-6} or are present at or below pink background levels.
2.	pp. 6-11, 15, etc., Section 8 "References" pp. x/xi/2-4/7-5, 6, pp. 6-7/7-4	Health Risks from Contamination: In the Report it is repeatedly claimed that exposure to contaminants, e.g., polynuclear aromatic hydrocarbons (PAH), is not a high risk because military personnel who occupy this housing would live in it for about six years out of a standard assumption of 30 years of exposure (pp. 6-11, 15, etc.). Although length of exposure certainly will increase risk, and PAHs at IR Site 31 are generally at a depth of four or more feet, there was epidemiological evidence reported from a civilian site that it is possible for a carcinogenic PAH (cPAH) to attach itself to a human body cell the first	The U.S. EPA and Cal/EPA cancer risks for PAHs are well within the risk management range. For PAHs, benzo(a)pyrene is the only PAH with U.S. EPA risk greater than 1×10^{-6} ; the U.S. EPA risk is 2×10^{-6} for current residents and 6×10^{-6} for future residents. Both current residential and future residential risk estimates conservatively assume that homegrown vegetables are consumed. The EPA total PAH risk (for all PAHs to a depth of 7 feet below ground surface) is 8×10^{-6} for future residents. The Cal/EPA risk is 1×10^{-5} for future residents. Therefore, the risk associated with PAHs is at or below 1×10^{-5} , a target risk level for PAHs. U.S. EPA guidance states the risk management range can be protective, regardless of exposure frequency. Also the

Draft Response to Comments - U.S. Coast Guard
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by R.L. Smith, 23 June 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		<p>time a person is exposed to a site. On the other hand, another person might be exposed to the same site over a long period of time without having this occur. This raises questions of potential risk for current and future occupants at Marina village Housing regardless of length of occupancy.</p> <p>Either the existing or replacement housing may in the future be occupied by civilians who would live there longer than assumed occupancy durations for military personnel.</p> <p>Section 8 "References" does not include the City of Alameda Institutional Controls Ordinance 2824, although it was cited in the Report where it was claimed that exposure to PAH health risks will be managed by this ordinance (pp. x/xi/2-4/7-5, 6). It is recommended that a copy of this ordinance be included in the appendices of the Report, and that the Report explain how the ordinance would manage PAH risks relative to site-specific data at Marina Village Housing. The Report generally does not identify which of the numerous PAHs found at the site are cPAHs, and it is recommended that they all be identified in the final report as is benzo(a)pyrene (pp. 6-7/7-4).</p>	<p>Navy is not aware of the epidemiological study mentioned in the comment and would appreciate the reference.</p> <p>The RI Report Revision I has a new Appendix M which presents a copy of the City of Alameda Marsh Crust Excavation Ordinance number 2824, approved by the City of Alameda on 16 February 2000. The appendix includes the "Threshold Depth" map which is a part of the ordinance. This map shows the threshold depth as 5 feet for the western half of IR Site 31.</p>

Draft Response to Comments - U.S. Coast Guard
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

<i>Following are responses to comments provided by R.L. Smith, 23 June 2006 to Draft RI Report dated 24 April 2006</i>			
#	Reference	Comments	Responses
3.	Table 3-5, Sections 3.2.2 and 3.3.2, p. iii	<p>Groundwater Sampling: Although the purposes of groundwater sampling are outlined in Table 3-5, and sampling methodology is covered in Sections 3.2.2 and 3.3.2, the Report should more clearly explain the basis for selection of the 11 groundwater sampling locations in the first water bearing zone (FWBZ). A matrix format might be used to explain selection criteria to demonstrate why the locations selected were the best for providing useful data, e.g., hydro-geological factors. One round of sampling is generally insufficient, by contrast with the quarterly sampling performed in the groundwater plume which is the typical frequency. It would seem to be advisable to perform sampling in the FWBZ at least a second time to show possible differences between the rainy and dry seasons in order to verify data comparability that would demonstrate whether or not soils at IR Site 31 are a source of contaminants to the groundwater plume underlying it.</p> <p>Based on the foregoing, the Coast Guard is not convinced of the validity of the Navy's recommendation that "...no further evaluations are needed..." (p. iii). The Coast</p>	<p>The selection of and distribution of the temporary well locations used for collecting groundwater samples is explained in detail in the Final RI Work Plan/SAP. Specifically, the Work Plan, Attachment A (SAP) page 4-4 and Figure 4-1 provide the information. The locations were developed closely with the U.S. EPA, DTSC, and RWQCB, including in a meeting with DTSC in which locations were adjusted to meet the specific groundwater objectives of the soil RI. A sentence from the referenced section is copied below: <i>"The proposed groundwater sampling locations are biased to correlate with the 2004 groundwater data (ITSI 2005a) within IR Site 31 and to address the areas of highest potential risk with respect to benzene and naphthalene in the area-wide OU-5/Annex IR-02 groundwater plume within IR Site 31."</i></p> <p>During the RI field program, discrete groundwater samples were collected at IR Site 31 to evaluate the nature of onsite groundwater contamination, assess whether the concentrations of VOCs in groundwater are consistent with those in the OU-5/ IR-02 groundwater plume, and model indoor and outdoor air concentrations for the HHRA. The data collected is considered sufficient to support the conclusions discussed in the Site 31 RI report. The groundwater RI/FS and upcoming remediation are being conducted separately, and the majority of IR Site 31 is within the area to be remediated.</p>

Draft Response to Comments - U.S. Coast Guard
Draft Soil Remedial Investigation Report, IR Site 31, Soil Former NAS Alameda Point, Alameda, California

Following are responses to comments provided by R.L. Smith, 23 June 2006 to Draft RI Report dated 24 April 2006

#	Reference	Comments	Responses
		Guard will await the opinions of the cognizant regulatory agencies, and other interested parties, especially concerning possible need for further remedial action of soils at Marina Village Housing. It is the intention of the Coast Guard to thoroughly review the final report, together with other applicable documents, including those published by the Navy, in order to make appropriate decisions about future Coast Guard occupancy or acquisition of Marina Village Housing.	