



**DEPARTMENT OF THE NAVY**  
SOUTHWEST DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
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ALAMEDA POINT  
SSIC NO.5090.3

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February 2, 2004

Ms. Anna-Marie Cook  
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Region 9  
75 Hawthorne Street  
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Dear Ms. Cook:

This letter transmits the minutes for the meeting held on December 10, 2003 to discuss the Navy's responses to agency comments (RTC) on the Draft Skeet Range Remedial Investigation, Report and Seaplane Lagoon Feasibility Study Scoping Meeting, Alameda Point, California. While the minutes detail the discussion of the meeting, follow-on agency comments on the RTCs will be addressed in the Draft Final RI and will not appear in these minutes.

If you have any questions, please call Mr. Darren Newton, Remedial Project Manager at (619) 532-0963.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Macchiarella".

THOMAS L. MACCHIARELLA  
BRAC Environmental Coordinator  
By direction of the Commander

Encl: (1) Meeting Minutes, Response to Comments on Draft Skeet Range Remedial Investigation, Report and Seaplane Lagoon Feasibility Study Scoping Meeting, Alameda Point, California, December 10, 2003

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**Response to Comments on Draft Skeet Range Remedial Investigation Report and  
Seaplane Lagoon Feasibility Study Scoping Meeting  
Alameda Point, California  
December 10, 2003**

These minutes summarize the meeting held on December 10, 2003 to discuss the Navy's responses to agency comments on the Draft Remedial Investigation (RI) Report on IR Site 29 – Skeet Range, located in Alameda Point, California. In addition, the latter half of the meeting was focused on scoping IR Site 17 - Seaplane Lagoon Feasibility Study Report. The meeting was held in Room 140 at Building 1 on Alameda Point. The sign-in sheet of meeting attendees is provided as Attachment A. Action items identified from this meeting are listed in Table 1. The specific objectives of the meeting were to:

- Present and discuss Navy responses to agency comments on the Draft Skeet Range RI report
- Define path forward for finalizing the Skeet Range RI report
- Develop the initial scope of the Draft Feasibility Study for Seaplane Lagoon

Michael Pound of SWDIV started the meeting with introductions and stated that the purpose of the meeting was to present an overview of Navy's responses to agency comments on the Draft RI report for Skeet Range. He thanked all participants for their patience in scheduling this meeting and stated the purpose of the meeting was to help facilitate agency review of Navy's responses to the Draft RI report and in addition, discuss scoping for the Feasibility Study at Seaplane Lagoon.

**SKEET RANGE RESPONSE TO COMMENTS**

Virginia Lau from Battelle began the presentation with slides addressing responses to agency comments on the nature and extent of contamination. One of the issues raised by the agency was the inclusion of a discussion regarding the potential migration of surface and groundwater contamination from Landfill IR Site 1. The recommendation was to have impacts associated with Site 1 discussed in the Site 1 RI/FS. Mark Ripperda from US EPA Region 9 recommended that a paragraph be incorporated into the report that discusses potential offsite migration of contamination from Site 1. Ms. Lau responded that the RI report for the Skeet Range focused on contamination related to the operations of the site which include lead shot and polycyclic aromatic hydrocarbons (PAHs) from potential dissolution of clay target fragments. Evaluation of chemical impacts from other sources would be addressed in the specific RI report where remedial alternatives would be considered. Marcia Liao from DTSC questioned whether other chemicals were analyzed in addition to PAHs and lead shot along the shoreline since she noted that chlorinated solvents were measured in near shore samples at IR Site 1. Ms. Lau stated that the focus of the investigation were chemicals related to historical skeet range activities. Jennifer Holder from BBL added that a full chemical suite was conducted on samples collected from Western Bayside which is located south of the Skeet Range. Risks estimated from these samples were comparable to ambient conditions in the San Francisco Bay. In addition, the Navy has installed a network of perimeter groundwater wells located along the boundary of IR Site 1 to monitor for potential contamination migration from the landfill. Naomi Feger from RWQCB concurred with Mr. Ripperda that potential contaminant impacts from IR Site 1 should be added to the report; however, any remedial actions would be considered in the source specific RI report. It was agreed that a discussion will be included in the draft final RI regarding potential offshore impacts from IR Site 1.

The next slide discussed the issue of whether lead shot is being buried at the site. The analysis of the field investigated data indicate that higher lead shot concentrations were found at depth in the southern sampling stations which suggest that gradual burial is occurring. Mr. Ripperda noted gradual burial of lead shot should not eliminate evaluation of potential risks to receptors. He added that the Bay Area is a gradual erosional environment and as such, buried lead shot may potentially become available in the

future. Ms. Lau commented that no pathways were eliminated based on burial of lead shot and that the ecological risk assessment found that potential risks to avian receptors via ingestion of lead shot were within the acceptable threshold.

In regards to human health exposure, DTSC commented that the human health risk assessment (HHRA) should consider all potential future exposure pathways. Ms. Feger commented that a full chemical suite of analysis was not conducted on samples collected at the Skeet Range and the presence of other compounds besides PAHs should be addressed as potential offsite migration of contaminants from IR Site 1 in the Site 1 RI/FS reports.

Ms. Holder continued the presentation with responses to comments concerning the ecological risk assessment. Mr. Jim Haas of US Fish and Wildlife Service requested additional clarification regarding the model input "i" – blood lead retention time. Ms. Holder stated that the term is defined as the number of days that lead extracted from lead shot are retained in the blood. Ms. Beckye Station of US Fish and Wildlife Service questioned if the binomial model accounts for continuous ingestion of lead shot over time rather than having a single ingestion of lead shot that is purged prior to next ingestion. In addition, Ms. Stanton asked if a power analysis was conducted to determine if the number of iterations conducted in the Monte Carlo Analysis (MCA) (i.e., 10,000) was sufficient to ensure random sampling of the distributions. Ms. Margaret Bardon of BBL stated that a power analysis was not conducted on the MCA.

Ms. Haas stated that he thought the distributions input into the MCA modeling were well developed given the literature articles that were available on the subject. Ms. Stanton asked why the extreme minimum and maximum values for each input parameter based on the research study was not used in the model instead of the mean values. Ms. Bardon responded that the objective of the analysis was to evaluate chronic conditions at the site based on reasonable site use. Ms. Stanton noted that the research data contained large variabilities, which would be difficult to quantify in this type of modeling.

In developing the number of dives per day, Ms. Feger asked how the number of dives for grit was estimated. Ms. Holder stated that based on research studies conducted on the stomach content of birds, it was found that 90% of the stomach contained food while the remaining 10% was grit. Assuming a simple linear relationship, it was assumed that 10% of the dives per day were for grit while the remaining 90% were for food. Ms. Holder commented that much of the data on this subject is variable and added that it is highly dependent on the amount of grit that is available in the environment. She added that if birds are in a grit-rich environment, the birds will turn over grit frequently versus a poor grit environment where the birds will retain grit for longer periods of time. Ms. Stanton agreed that amount of grit retained is not well studied. In San Francisco Bay, majority of grit consist of shell hash from bivalves.

In the discussion regarding site use factors (SUF), Mr. Haas asked if the SUF was adjusted based on the water depth since the birds can dive to a certain depth to forage for food. Ms. Holder stated that no adjustment was made based on the bathymetry of the range. Mr. Russell asked what percentage of the Skeet Range has a water depth of 5-10 feet. Ms. Holder estimated that approximately half of the site has a water depth of 5-10 feet; however, she added that the MCA was conducted assuming that the entire site was available for foraging. Mr. Russell added that following this methodology, it is likely that the SUF was overestimated if the entire range was considered available. Mr. Haas commented that this may not necessarily be the case since some species stay at a single location while others tend to migrate over larger distance. Ms. Feger asked if the scaups and scoters are likely to remain at the range long enough to ingest a lethal dose of lead shot. Mr. Haas stated that a sensitivity analysis may be conducted to allow for various foraging time and water depth ranges. Based on Ms. Holder's review of the bathymetry, majority of the range had water depths that allowed birds to forage.

In regards to the blood lead retention time (i.e., parameter “i” in the MCA), Mr. Haas wonder if the model accounts for conditions in which there is an increased risk from ingestion of shot for those birds that already have some lead shot present in their system. Ms. Holder explained that since a range of values was used in the MCA, it is likely that this uncertainty may have been addressed, but added that none of the research available looked at conditions in which birds already had lead shot present. Ms. Stanton concurred that the blood lead retention times used in the model were similar to studies conducted in Japan on quails.

In determining the effect levels (i.e., “r”), Ms. Feger questioned why the mean of a range of NOAEL values was used to describe this parameter rather than applying the range in values from the LOAEL to NOAEL. She asked if this method may potentially ignore the affects from a low dose. Ms. Holder responded that the research studies were not designed to develop dose response curve and consequently, few of the studies evaluated effects to birds based on a range of possible lead shot exposures. Ms. Feger noted that the findings from the Sanderson study may be biased since ducks were provided with a high protein diet that may have improved survivability. Ms. Holder commented that the diet used in the studies is consistent with environmental conditions where ducks mainly ingest bivalves that are high in protein.

The discussion then lead to the development of the population level benchmark probability of 1 x 1000. Ms. Feger commented that the Castro Cove site on the Chevron Refinery in Richmond, California has an unacceptable risk level of 1 in 10,000. Ms. Haas stated that he had not reviewed the Castro Cove report, but thought the risk level was conservative given that 31% of the adult bird population expires in naturally. Mr. Haas then discussed how the population level benchmark was developed and presented an example for estimating increased mortality to birds based on the presence of lead shot at the Skeet Range.

**Step 1:** Assuming that a site has a population of 10,000 birds, 31% of that population will die during the course of the year:

$10,000 \times 0.31 = 3,100$  of the 10,000 population will die annually

**Step 2:** Using the information generated from the MCA modeling, it was found that 96.3% of the iterations had risks below 1 in 1000.

$10,000 \times 0.963 \times 0.31 = 2,985$  of the 10,000 population will die naturally with no lead exposure

$10,000 \times 0.024 \times (0.31 + 0.01 = 0.32) = 77$  individuals in the population have a 1 in 100 probability of being exposed to lead shot above the NOAEL (2.4% of the iterations)

$10,000 \times 0.012 \times (0.31 + 0.1 = 0.41) = 49$  individuals in the population have a 1 in 10 probability of being exposed to lead shot above the NOAEL (1.2% of the iterations)

$10,000 \times 0.0013 \times 1 = 13$  individuals in the population have a 1 in 1 probability of being exposed to lead shot above the NOAEL (0.13% of the iterations)

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Summing the total number of individuals that will die annually = 3,124

**Step 3:** Dividing the additional mortality over 3,100 which equates to 24 addition deaths over a population of 10,000 or  $24/10,000 = 0.0024$

Mr. Haas stated that the 1 in 1000 benchmark was taken from damage assessment from oil spills to assess financial restoration costs. Ms. Bardon requested further clarification of the calculation presented and agreed that they would talk offline to determine if there was a calculation error used in the model.

When the MCA results were presented, Mr. Ripperda asked if the model requires the birds to be present for the entire duration of their exposure time to receive a lethal dose. Ms. Holder stated that the model assumes that the entire site was available for foraging and that the bird would ingest the lethal dose of lead from the site. Ms. Feger wondered if it is possible to run the model for only areas in which lead shot was found since more than half of the site had no shot. Ms. Holder stated that foraging range was the most sensitive parameter in the MCA that would produce the most significant changes to the model results. Mr. Ripperda questioned what the model would produce if more reasonable deterministic values were used for the majority of the inputs and distributions were only applied for select parameters such as the NOAEL. Mr. Russell concurred with Mr. Ripperda and recommended that the model be run using a constant SUF. Ms. Feger asked if the Navy had estimated the proportion of lead shot to grit that was available. Ms. Holder responded that based on the sensitivity analysis any additional changes to the model inputs would not significantly alter the results except for the foraging range.

Ms. Haas stated that given that the Skeet Range is exposed and windy, both scaups and scoters are not likely to forage in this area for a lengthy period of time since they tend to favor sheltered foraging areas. Ms. Holder added that the data from the Port of Oakland on foraging ranges did not describe whether the birds were feeding or resting in the area. However, Ms. Stanton responded that this uncertainty is accounted for in the number of dives parameter.

It was agreed upon that individual responses to comments concerning the ecological risk assessment may be discussed with Ms. Holder. Mr. Ripperda then asked the biologists represented by the regulatory agencies if there were any remaining concerns regarding exposures to ecological receptors at the Skeet Range. Mr. Haas stated that he was reasonably convinced based on the MCA results and the site conditions that there were de minimus risks to diving ducks. Ms. Feger responded that she would like to ensure that there was some consistency of approach with Castro Cove and concurred that the range would have limited impact on the avian population. Mr. Ned Black from US EPA Region 9 agreed that the overall risks to birds were acceptable. Ms. Liao commented that the risk assessor from DTSC, Jim Polisini had some additional comments on the Navy's RTC, but overall concurred that the risks to avian receptors were acceptable.

A verbal agreement was reached between all agency representatives that the site will have a No Further Action determination. The agencies will have 30 days (January 10, 2004) to provide the Navy with additional comments on the Navy's RTC. The Draft Final RI report will include the MCA results as part of the refined ecological risk assessment evaluation. Mr. Black recommended that the baseline assessment present a deterministic calculation based on a TRV of 3 lead shot followed by a refined assessment that consist of the MCA modeling results as a method for assessing uncertainty. Mr. Ripperda recommended that the 27 scenarios from the original draft RI report be superseded by the MCA. Ms. Stanton suggested that additional uncertainties including the available foraging range, limitations with the data from San Pablo Bay, and bathymetry of the Skeet Range be discussed further in the uncertainty section. Also, the agencies agreed that the sensitivity model results will be included in the Draft Final RI report.

### **SEAPLANE LAGOON FS SCOPING**

The Seaplane Lagoon FS scoping discussion focused on development of cleanup goals that will be applied in the FS. Mr. Black confirmed that US EPA is proposing a cleanup goal of 200 ppb for total PCBs, which would be consistent with the cleanup goals being evaluated at Hunters Point Shipyard

(HPS). Mr. Pound stated that the cleanup goals are still under evaluation at HPS and there was some question as to whether the cleanup goal would be applied on a point by point basis versus area-weighted. Mr. Ripperda clarified that he would initially apply the cleanup goal on a point by point basis; however, Mr. Pound pointed out that much of the lagoon would be included in the FS if this approach was applied and offered the possibility of using an area weighted average approach. Mr. Thomas Macchiarella questioned if the discussion of cleanup goals was premature and should be delayed until the FS was performed.

In order to finalize the RI report, Mr. Ripperda stated that US EPA concurred with the Navy on proposed cleanup goals for DDX and cadmium. He added it is likely that the total PCB cleanup goals would extend beyond the footprint developed for DDX and cadmium. Mr. Pound asked if all of the agency representatives were in agreement that only DDX, cadmium, and PCB were risk drivers. Ms. Feger asked if the research conducted by US Fish and Wildlife Service found elevated levels of contamination in unhatched eggs for nesting least terns in comparison to terns at other sites. Ms. Stanton stated that the research has not been used to develop cleanup goals due to the limitations of the data (i.e., 6 eggs). Ms. Holder requested if the data can be made available to the Navy for further analysis.

Ms. Liao requested that radiological work plan and investigation results for the radionuclides be provided to Penny Leinwander of Department of Health Services. In order to move forward in the RI/FS process for Seaplane Lagoon, Mr. Pound agreed that the 200 ppb cleanup goal for total PCBs will be considered in the FS. In addition, the Draft Final RI report will be revised to: (1) present total risk and identify risk drivers; (2) eliminate maps presenting proposed FS footprint; (3) identify least terns as receptor of concern for ecological protection; and (4) identify potential adverse impacts to human receptors. Both US EPA and RWQCB concurred with these revisions.

Mr. Russell asked the Navy if additional sampling had been conducted on the mole area located in the north central portion of the lagoon. He suggested that the mole was created from construction debris and may contain various contaminants. Mr. Russell will provide a formal comment to the Navy regarding this issue and recommends that confirmation samples be collected from the mole as part of the FS process. Ms. Liao and Ms. Stanton will be providing comments to Navy's RTC within 30 days (i.e., January 10, 2004). The Draft Final RI report will be submitted at the end of February 28, 2004. A follow-up meeting is scheduled for February 24, 2004 to discuss the development of cleanup goals and FS strategy for Seaplane Lagoon.

**Table 1**  
**Action Items**

<b>Action</b>	<b>Responsibility</b>
<i>Skeet Range Response to Comments on Draft RI Report</i>	
Discussion will be added to the Draft Final RI that discussing IR Site 1 as potential source of contamination	Navy
Follow-up discussion with Mr. Haas on the calculation of increased mortality	Conducted via conference call by Ms. Bardon and Ms. Holder on December 11, 2003
Agency comments on Navy's Response to Comments	Due January 10, 2004
Include additional uncertainties in ecological risk assessment concerning available foraging range, limitations with the San Pablo data, and bathymetry of the Skeet Range	Navy
Include sensitivity analysis results from MCA in the Draft Final RI report	Navy
No Further Action Determination for the Skeet Range	Consensus Agreement
<i>Seaplane Lagoon FS Scoping</i>	
Draft Final RI report will be submitted in February 28, 2004 with revisions agreed upon above	Navy
Mr. Russell will provide additional comments to the Navy regarding the mole area	Due January 10, 2004
Ms. Stanton and Mr. Haas will provide Ms. Holder with unhatched egg data for least terns	Mr. Haas and Ms. Stanton
Radiological Work Plan and Field Results	Navy will provide to Penny Leinwander of DHS
Agency comments on Navy's Response to Comments	Due January 10, 2004
FS cleanup goals and strategy meeting	Schedule for February 24, 2004

**Attachment A**  
**Sign-In Sheet**

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