

N00217_001651
HUNTERS POINT
SSIC NO. 5090.3.A

**RESPONSE TO COMMENTS
FINAL TASK-SPECIFIC PLAN FOR THE IR-18
SCOPING SURVEY, HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA
(Dated March 20, 2009)**

Comments by: Ryan Miya, Ph.D.
San Francisco Peninsula Team Leader
Brownsfields and Environmental Restoration Program – Berkeley
Department of Toxic Substances Control
Comments Dated: May 8, 2009

GENERAL COMMENTS	RESPONSE
<p>Comment 1. Section 2.2 – Reference Area. The reference (background) area should be placed on one of the maps and labeled accordingly.</p>	<p>Response 1. The background reference area will be identified on Figure 2-1.</p>
<p>Comment 2. Section 2.6.6 – Elevated Measurement Comparison. Paragraph 3. The text states that “The general assumption is that the concentrations of the radionuclides in the source are homogeneous.” (a) Please verify if the text should be corrected to state that “radionuclides in the source area are homogeneous.” (b) Please briefly describe and reference the data collected at IR-18 that supports this assumption.</p>	<p>Response 2. The statistical tests described in Section 2.6 evaluate whether or not the residual radioactivity in an area exceeds the $DCGL_w$ for contamination conditions that are approximately uniform across the survey unit (or homogeneous). As the conditions at the site do not indicate that there is homogeneous contamination present, Section 2.6.6 provides a discussion to account for small areas of elevated (or non-uniform) contamination that may be present in the source area. a) The Navy will revise the third paragraph in Section 2.6.6 as requested to provide more clarity as follows: “<i>The wide-area $DCGL_w$ is the average concentration across the site that is equivalent to the release criteria, based on dose or risk. MARSSIM assumes that the concentrations of the radionuclides in the source are homogeneous. The degree to which any single localized area can be elevated above the average, assuming the average is at the $DCGL_w$, and not invalidate the homogeneous assumption is characterized by the small area criteria ($DCGL$ for elevated measurement comparison [$DCGL_{EMC}$]).</i>”</p>

**RESPONSE TO COMMENTS
FINAL TASK-SPECIFIC PLAN FOR THE IR-18
SCOPING SURVEY, HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA
(Dated March 20, 2009)**

Comments by: Ryan Miya, Ph.D.
San Francisco Peninsula Team Leader
Brownsfields and Environmental Restoration Program – Berkeley
Department of Toxic Substances Control
Comments Dated: May 8, 2009

b) There are no data to support this assumption; therefore, Section 2.6.6 has been provided to account for small areas of elevated (or non-uniform) contamination that may be present in the source area.

**Comment 3. Section 2.7.5 – Removal of Surface Anomalies.
Paragraph 3.**

(a) Please specify the location of the soil sample relative to the excavated surface anomaly removal (bottom in center, sidewall, etc.).
(b) Please provide the rationale for not collecting and analyzing samples within each of the four sidewalls of the excavation, especially for excavations that extend deeper than 1 foot below the existing groundsurface.

Response 3. a) The Navy will revise the first sentence of the third paragraph of Section 2.7.5 as follows: *“A soil sample will be collected from areas exhibiting activity greater than 3 sigma above background during the follow-up survey. If additional areas exhibit measurements greater than 3 sigma above background, additional samples may be collected. Sample(s) will be analyzed by gamma spectroscopy.”*
b) The Navy anticipates any surface anomalies that are encountered during the surface survey to be indicative of a device. Once the device and the surrounding soil are removed, the presence of any contamination in excess of the release limit is not expected. If this is not the case, additional samples may be collected as specified above.

Comment 4. Section 2.7.7 –Soil Sampling.

Please specify the laboratory methods that will be employed during the current soil sampling event.

Response 4. Laboratory methods are specified in the Base-wide Radiological Work Plan Appendix A, Sampling and Analysis Plan. These methods may include:

- C1402-98 Standard Guide for High-Resolution Gamma-ray Spectrometry or Equivalent for Americium 241, Cesium 137, and Radium 226, consistent with previous data reports

**RESPONSE TO COMMENTS
FINAL TASK-SPECIFIC PLAN FOR THE IR-18
SCOPING SURVEY, HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA
(Dated March 20, 2009)**

Comments by: Ryan Miya, Ph.D.
San Francisco Peninsula Team Leader
Brownsfields and Environmental Restoration Program – Berkeley
Department of Toxic Substances Control
Comments Dated: May 8, 2009

- DOE HASL-300 Method or Equivalent for Isotopic Plutonium (including Pu-238, Pu-239) analysis
- DOE Method Sr-01/Sr-02 or equivalent Strontium 90 analysis

Comment 5. Section 2.8 -Dose Modeling in Support of Unrestricted Release.

The text states that “the intent of this survey is to achieve unrestricted release of the top 12 inches of soil at IR-18.” Please note that unrestricted release of a portion of any site is not achievable. A site in its entirety is placed into the specific categories of unrestricted release, restricted release, etc. However, DTSC understands that it is not the Navy's intent that Site IR-18 in its entirety is proposed for unrestricted release due to the potential for radiological anomalies to exist at depth (greater than 1 foot bgs). Therefore, upon completion of the currently proposed survey, the data collected will be able to adequately support the statement that the top 12 inches of soil at IR-18 will be free of any radiological anomalies exceeding the established release criteria and suitable for use as a part of the clean soil cover. Please revise the Scoping Survey Plan text and section title accordingly.

Response 5. The Navy will revise the text in Section 2.8 to state:

“2.8 DOSE MODELING

The intent of this survey is to remove any radioactive contamination above the release criteria in the top 12 inches of soil at IR-18. To accomplish this goal, it is necessary to provide a means for calculating residual dose from the top 12 inches to the critical group; the residential scenario in RESRAD will be selected. The calculated residual dose and associated excess lifetime cancer risk to the critical group will be provided in the final report.”

**RESPONSE TO COMMENTS FOR
TASK-SPECIFIC PLAN FOR THE IR-18
SCOPING SURVEY, HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA
(Dated March 20, 2009)**

Comments by: Vandana Kohli, Associate Health Physicist
California Department of Public Health

Submitted by: Ronald Pilorin, Section Chief
Emergency, Restoration and Waste Management Section
Environmental Management Branch
California Department of Public Health

Comments Dated: April 30, 2009

GENERAL COMMENTS	RESPONSE
<p>Comment 1. Please explain how the Navy would address the need for 100% surface scan for Sr-90 which has been listed as a potential radionuclide of concern for this site.</p>	<p>Response 1. The presence of ⁹⁰Sr in IR-18 could be attributed to fission products associated with decontamination of ships that participated in atomic weapons testing or a radioluminescent device containing ⁹⁰Sr. If fission products are present, then ¹³⁷Cs would also be present. Any sample containing activity greater than the release criteria for ¹³⁷Cs will also be analyzed for ⁹⁰Sr.</p> <p>However, if a strontium deck marker is present, the device would be identified by gamma scans due to bremsstrahlung. Inner bremsstrahlung is the term applied to the radiation emission during beta decay, resulting in the emission of a photon of energy less than or equal to the maximum energy available in the nuclear transition. This would be easily detected during gamma scans.</p>
SPECIFIC COMMENTS	RESPONSE
<p>Comment 1: Page 2, first paragraph Please change the sentence to state, "The net residual activity in the top 1 foot of soil results in a dose that is less than 15 mrem per year."</p>	<p>Response 1. The Navy will revise the first sentence in the second paragraph of Section 2.1 to read: "<i>The results from this survey will be tested statistically using the unity rule presented in MARSSIM (NUREG-1575)</i>"</p>

**RESPONSE TO COMMENTS FOR
TASK-SPECIFIC PLAN FOR THE IR-18
SCOPING SURVEY, HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA
(Dated March 20, 2009)**

Comments by: Vandana Kohli, Associate Health Physicist
California Department of Public Health

Submitted by: Ronald Pilorin, Section Chief
Emergency, Restoration and Waste Management Section
Environmental Management Branch
California Department of Public Health

Comments Dated: April 30, 2009

(DoD et al. 2000) to ensure that the net residual activity in the top 12 inches of soil results in a dose that is less than than 15 millirems per year (mrem/y)."

Comment 2. Page 2, first paragraph.

Please change the sentence to state, "Residual risk values will also be calculated to ensure that the total radiological risk from the top 12 inches of soil remains less than 1×10^{-6} ."

Response 2. The Navy will revise the second sentence in the second paragraph of Section 2.1 to read: "*Residual risk values will also be calculated to ensure that the total radiological risk from the top 12 inches of soil remains less than 1×10^{-6} .*"

Comment 3. Page 10.

Please provide calculations for Sr-90 Scan MDC.

Response 3. Since strontium-90 is a pure beta emitter, there is no scan MDC presented for this isotope. See response to comment 1 above for additional clarification.

Comment 4. Page 11, Section 2.7.5.

Please add a sentence here providing specifics regarding what is the Navy's definition of an anomaly.

Response 4. The Navy will add the following sentences to the first paragraph of Section 2.7.5: "*Surface anomalies are small areas of concentrated contamination that is greater than the release criteria. Anomalies may or may not contain an actual device or a physically identifiable source of contamination.*"

**RESPONSE TO COMMENTS FOR
TASK-SPECIFIC PLAN FOR THE IR-18
SCOPING SURVEY, HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA
(Dated March 20, 2009)**

Comments by: Vandana Kohli, Associate Health Physicist
California Department of Public Health

Submitted by: Ronald Pilorin, Section Chief
Emergency, Restoration and Waste Management Section
Environmental Management Branch
California Department of Public Health

Comments Dated: April 30, 2009

Comment 5. Page 11, fourth paragraph.

The Navy states that the, "Soil removal will continue until the source of elevated gamma activity is removed or a depth of 12 inches is reached." Please change the sentence to state that "Soil removal will continue until the source of elevated gamma activity is removed and a depth of 12 inches is reached."

Response 5. The Navy will revise the sentence in the second paragraph of Section 2.7.5 as requested.

Comment 6. Page 12, second paragraph.

It states that the, "Sampled areas with activity greater than the release criteria will be characterized and remediated to a depth of 1 foot." Please remove 1 foot.

Response 6. The Navy is only clearing the top 12 inches of soil. Therefore, the Navy does not feel it is necessary to remediate to a depth of greater than 1 foot.

Comment 7. Page 12, Section 2.8.

Please change the sentence, "To accomplish this goal, it is necessary to provide a means for calculating residual dose to the critical group" to "To accomplish this goal, it is necessary to provide a means for calculating residual dose from the top 12 inches to the critical group".

Response 7. The Navy will revise the sentence in Section 2.8 as requested.



TRANSMITTAL/DELIVERABLE RECEIPT

Contract No. N68711-98-D-5713 (RAC III)

Document Control No. ECSD-5713-0072-0028

File Code: 5.0

TO: Contracting Officer
Naval Facilities Engineering Command SW
Ms. Beatrice Appling, AQE.BA
Building 127, Room 108
1220 Pacific Highway
San Diego, CA 92132-5190

DATE: 7/08/09
CTO: 0072
LOCATION: San Francisco, CA

FROM: [Signature]
A. N. Bolt, Program Manager

DESCRIPTION: Response to Comments Final Task-Specific Plan for the IR-18 Scoping Survey
(Dated March 20, 2009)

TYPE: [] Contract/Deliverable [x] CTO Deliverable [] Notification
[] Other

VERSION: Final REVISION #: N/A
(e.g. Draft, Draft Final, Final, etc.)

ADMIN RECORD: Yes [x] No [] Category [] Confidential []
(PM to Identify)

SCHEDULED DELIVERY DATE: 07/08/09 ACTUAL DELIVERY DATE: 07/08/09

NUMBER OF COPIES SUBMITTED: O/11C/9E Copy of SAP to N. Ancog []

COPIES TO: (Include Name, Navy Mail Code, and Number of Copies)

Table with columns: NAVY, TtEC, OTHER. Rows include names and copy counts like C. Mafara - BPMOW O/1C, R. Kanaya - 9, etc.

Date/Time Received