



California Department of Public Health  
**MEMORANDUM**

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DATE: December 19, 2014

TO: Remedios Sunga  
Project Manager  
Brownfields and Environmental Restoration  
Program - Berkeley Office - Department of  
Toxic Substances Control  
700 Heinz Avenue  
Berkeley, CA 94710-2721

FROM: Sheetal Singh, PhD  
Senior Health Physicist  
Environmental Management Branch  
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A handwritten signature in blue ink, appearing to read "S. Singh", is written over the typed name and title of the sender.

**SUBJECT:** Review comments for *Draft Final Status Survey Report Non-Time Critical Removal Action for Bigelow Court Solid Waste Disposal Area, Installation Restoration Site 12 Former Naval Station Treasure Island San Francisco, California*. Issued November 12, 2014.

Upon the request of the Department of Toxic Substance Control (DTSC), the Environmental Management Branch (EMB) of the California Department of Public Health (CDPH) has reviewed the *Draft Final Status Survey Report Non-Time Critical Removal Action for Bigelow Court Solid Waste Disposal Area, Installation Restoration Site 12 Former Naval Station Treasure Island San Francisco, California*. Issued November 12, 2014. This review was performed in support of the Interagency Agreement between DTSC and CDPH.

If you need further assistance about this response please contact Matthew Wright of my staff at (916) 449-5687.

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The Environmental Management Branch (EMB) of the California Department of Public Health (CDPH) appreciates the opportunity to review the submitted document, *Draft Final Status Survey Report Non-Time Critical Removal Action for Bigelow Court Solid Waste Disposal Area Installation Restoration Site 12, Former Naval Station Treasure Island San Francisco, California*.

**General Comments:**

1. The California Department of Public Health - Environmental Management Branch (CDPH-EMB) utilizes the California Code of Regulations (CCR), Title 17, Section 30256(k), which requires that radioactive material be removed, a reasonable effort has been made to eliminate residual radioactive contamination and the licensee can demonstrate the site is suitable for unrestricted release. In practice this means utilizing the decision making process outlined in the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), which includes establishing a reference background area for each of the materials to remain in situ. These background measurements are then compared to survey units using the MARSSIM statistical approach.
2. Please include Waste Manifests for any Low Level Radioactive Waste shipped off site with signature acknowledging receipt at waste receiving site.

**Specific Comments:**

3. Section 3.2, Background Reference and Investigation Levels, page 3-2, paragraph one, sentence two, "An a priori IL count rate is defined specifically for each ratemeter/scaler detector pair, for each media (soil or asphalt) and each type of survey (GWS or gamma static.)" Please include a table of Instrument-Specific Investigation levels for each instrument used including: ratemeter/scaler detector pair unique identifiers, Background Reference Areas and Survey Unit(s) Investigation Levels (ILs) for both medias, GWS or gamma static values as applicable.
4. Section 3.2, Background Reference and Investigation Levels, page 3-2, paragraph one, sentence five, "There are two background reference areas: Area 7 is the background for reference area for soil, and Area 9 is the background reference area for asphalt." Please include the Site-Wide Background Areas soil sample data results as outlined in the April 23, 2012, Shaw Environmental, Inc. memorandum to Christine Donahue, Project Radiation Safety Officer, from Steve

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Adams, Certified Health Physicist; Subject, Analysis of Gamma Survey and Radium-226 Soil Concentration Data at the Treasure Island Site-wide Background Areas and the Area 7 Background Reference Area for the reference background concentration of <sup>226</sup>Ra in soil. Please include a discussion in which the application of the Kruskal-Wallis Test will demonstrate there is sufficient variability in the soil data of the background areas to justify the use of Scenario B.

5. Section 3.3, Survey Instrumentation, Please Include in the body of the text a discussion of Calculation of Minimum Detectable Concentrations including worked out equations for the portable instruments used in this document.
6. Section 3.3.4, Characterization Surveys, page 4-1, paragraph one, sentence three, "After each 12-inch lift of soil was excavated from the sub-area, in process GWS was performed to identify any radiological anomalies present in the next lift." The Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) is based on investigating the top six inches of soil. Please make explicit in the body of the text the radiological sampling methodologies used to characterize the excavated soil once it had been transferred to Radiological Screening Yards (RSY(s)).
7. Section 3.4.7 Systematic Soil Sampling, page 3-7, paragraph two, sentence four, "Due to the irregular shape of the sidewall SU, the triangular grid left many gaps in sampling coverage. To correct for these gaps, additional sidewall sampling locations were manually added to the design". CDPH-EMB appreciates the extra effort in this matter. Please include a diagram of the walls, showing the location of systematic and biased soil samples.
8. Section 4.1.2, Gamma Walkovers – Survey Results, page 4-2. Please include data contained in the April 23, 2012, Shaw Environmental, Inc. memorandum to Christine Donahue, Project Radiation Safety Officer, from Steve Adams, Certified Health Physicist; Subject, Analysis of Gamma Survey and Radium-226 Soil Concentration Data at the Treasure Island Site-wide Background Areas and the Area 7 Background Reference Area; as it applies to Gamma Walkover Surveys for Area 7 Reference Area. Please include a map of the Area 7 Background Reference Area showing the results of the GWS including the Mean  $\pm$  3 standard deviations.
9. Section 4.5, Final Excavation Inspection, page 4-8 paragraph one, sentence one, "According to the Final Work Plan (CB&I, 2014a) a final inspection was

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performed by a registered Professional Engineer to identify evidence of solid waste or signs of contamination in the excavation bottom and sidewalls. The inspection report is provided as Appendix K.” CDPH-EMB appreciates the inclusion of this report.

10. Section 5.3.2, Conclusions, bullet number one, might need rewording for clarification; “GWS and subsequent follow-up surveys did not identify elevated <sup>226</sup>Ra levels.” Please note the following:

- a. Section 4.1.2.1, Survey Unit 1, page 4-2, GWS identified 254 measurements above instrument-specific IL: 7 of the 29 follow up measurements were above the static IL.
- b. Section 4.1.2.2, Survey Unit 2, page 4-2, GWS identified 10 measurements above instrument-specific IL, none of the follow-up measurements were above the static IL.
- c. Section 4.1.2.3 Survey Unit 3, page 4-2, widespread measurements above the instrument-specific scan IL were identified; 29 of the 55 follow-up measurements were above the static IL.

CDPH-EMB is mindful that in all three Survey Units, a step by step investigation process was followed; with the end result that all follow-up biased soil sampling results were below the project screening criterion of 1.69 pCi/g. However; this is not quite the same thing as, “GWS and subsequent follow-up surveys did not identify elevated <sup>226</sup>Ra levels.” Please reword this bullet.

11. Section 5.3.2, Conclusions:

- a. Please include an additional bullet which addresses radiological sampling results from the RSYs as part of the conclusion.
- b. Please include an additional bullet noting that the data from each SU was compared to TI Sitewide Background data set and were concluded to be indistinguishable from background.

12. Table 7, RSY Pad Samples Survey, has a summary of the soil sample results. Please include in the main document the methodology used to systematically sample the soil excavated from Survey Units one through three, once it was transported to the RSYs.

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13. Appendix A, "Work Instructions", please delete RSY Data Reports from Appendix A.
14. Appendix C, Instrument Calibration Certificates. CDPH-EMB appreciates the inclusion of the Daily Usage Spreadsheets. Please include copy of original Daily Instrument Check Sheets and Control Graph for each portable instrument used. (Shaw TWI-12-01, section 6.1.5 Response Source Check)