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From: Commanding Officer, Navy Environmental Health Center  
To: Commander, Atlantic Division, Naval Facilities Engineering Command,  
Code 1822, Norfolk, VA 23511-6287

Subj: MEDICAL REVIEW OF INSTALLATION RESTORATION PROGRAM  
DOCUMENTS FOR NAVAL BASE, NORFOLK, VIRGINIA

Ref: (a) LANTNAVFACENCOM ltr 5090 1822:KHW:srw of 20 Apr 93

Encl: (1) Health and Safety Plan Review

1. As requested by reference (a), medical review of the "Health and Safety Plan for the Remedial Investigation/Feasibility Study for the CD Landfill, Naval Base, Norfolk, Virginia" has been completed. Our comments are provided in enclosure (1).
2. We are available to discuss the enclosed information with you and, if desired, with you and your contractor. We are also available to provide a health-related review of subsequent documents for this project.
3. If you require additional assistance, please contact Ms. Sheila Berglund, P.E., Head, Installation Restoration Program Support Department, at 444-7575 extension 430.

  
W. P. THOMAS  
By direction

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## HEALTH AND SAFETY PLAN REVIEW

Ref: (a) 29 CFR 1910.120  
(b) Navy/Marine Corps Installation Restoration Manual (February 1992)

### General Comments:

1. The "Draft Health and Safety Plan for the CD - Landfill, Naval Base Norfolk, Virginia" was prepared for Atlantic Division, Naval Facilities Engineering Command (LANTNAVFACENGCOM) by Baker Environmental, Inc. and was received by the Navy Environmental Health Center on 15 April 1993. The document is dated 14 April 1993.
2. This review addresses both health and safety and emergency response sections of the plan. The method used for the review is to compare the Health and Safety Plan (HASP) to federal requirements contained in OSHA regulations (29 CFR 1910.120) and to Department of the Navy requirements under the "Navy/Marine Corps Installation Restoration Manual." See references (a) and (b) above. Deviations and/or differences in the plan from these two primary references are noted.
3. The overall impression of this HASP is one of vast improvement over earlier submissions by this contractor and shows a positive desire to respond to previous review comments. It was particularly helpful to receive a copy of the project work plan. Information not otherwise provided in the HASP was found and explained within the work plan and had a significant impact on the HASP review. Specific comments regarding remaining concerns are provided below.
4. The point of contact for review of the health and safety plan is Mr. John H. Austin, Head, Site Support Department, who may be contacted at (804) 444-7575, or DSN 564-7575, extension 398.

### SPECIFIC COMMENTS:

1. Page ES-1, Executive Summary:

#### COMMENTS:

(1) The use of the executive summary is a good idea and its continued use is encouraged. The information provided, however, must be clear and accurate. The second sentence describes the various site hazards anticipated to be encountered by site personnel. The potential for exposure to "volatiles, semi-volatiles, and pesticides" is noted, however, Material Safety Data Sheets (MSDSs) are not provided nor is there a rationale for their exclusion from concern included in the body of the HASP. The inclusion of these materials as chemicals of concern, without a statement of conclusion as to their significance, is

Enclosure (1)

misleading to the reader.

(2) Asbestos is mentioned within the HASP and would be a greater potential hazard than those actually listed, yet it is not included within the summary.

(3) A summary statement concerning the nature of the provisions for Emergency Response Action(s) should be included in the summary.

**RECOMMENDATIONS:**

(1) Provide complete summary information.

(2) Explain the exposure potential to asbestos.

(3) Provide a summary statement regarding the provisions for emergency response.

**2. Page 3-3, Section 3.3, "Site Description":**

**COMMENT:** Cadmium is clearly recognized as a carcinogen in terms of current toxicity data literature and federal regulations governing worker occupational exposures in industrial settings. In the context of non-industrial, non-production, open air environments, however, the relative risk to the same element must be re-evaluated. As indicated in paragraph three on page 3-3, cadmium exists in significant quantity only in the sediment where sample results ranged from 1 to 115 ug/g (ppm). Further, it is indicated that "EPA toxicity testing of the sediment confirmed that the cadmium is not readily leachable." Finally, current EPA Health Effects Assessment Summary Tables (HEAST), used to assess human health risk associated with hazardous waste sites for the general public, assume life time exposure potential. These tables, assuming airborne exposures to be the greatest risk, assign an extremely low risk factor to cadmium. Considering the nature of the work planned for this site, the stated low level risk of significant exposure due to acute (short term) exposures by site personnel and the fact that it is not readily leachable from the sediment, there appears to be a conflict between the stated facts and the conclusion concerning the potential hazard to site personnel presented in section 3.4.2, Chemical Hazards, on page 3-7.

**RECOMMENDATION:** Resolve the apparent conflict between the facts as given and the final conclusion of risk, based on those facts. If it is decided that a reduction in the potential risk is warranted, modify as necessary any subsequent requirement(s) for personnel protection while on the site.

**3. Page 3-3, Section 3.3, "Site Description":**

**COMMENT:** It is noted in paragraph 6 that the contaminants of concern were detected in the subsurface soils and sediment and that lead and iron exceeded the Virginia

Water Control Board (VWCB) groundwater standards. These standards are considered to be secondary (reference) standards and not generally, legally, enforceable. Such is the case in Virginia. Additionally, elevated background concentrations of lead and iron in the groundwater are not uncommon within the Hampton Roads area. This should be considered when determining the health risk to site personnel.

**RECOMMENDATION:** Reevaluate the presumed health risk associated with the site related tasks and change the prescribed personnel protective levels and equipment accordingly.

4. Page 3-7, Section 3.4.2, "Chemical Hazards":

**COMMENT:** It is noted that the chemicals listed in Tables 1 and 2 "present the greatest hazard" among those mentioned in the HASP . The paragraph following Tables 1 and 2 mentions "chemicals not mentioned...and asbestos...among the construction debris." This is the first mention of any construction debris, certainly with any asbestos associated with it, made either in this document or the work plan. It is assumed since it is not mentioned as a primary chemical of concern or included in the task analysis that the asbestos is of no concern. An explanation of the omission of asbestos from the list of contaminants of concern should be included in the discussion.

**RECOMMENDATION:** Clarify the condition(s) involving asbestos and any other chemicals which are mentioned as contaminants of concern.

5. Page 3-12, Section 3.4.4, "Radiation Hazards":

**COMMENT:** The beginning of the first paragraph is missing. The general subject is obviously a discussion of Alpha particles. The "bullet" and any appropriate text additions need to be made.

**RECOMMENDATION:** Provide the necessary text changes as needed.

6. Page 3-12, Section 3.4.5, "Environmental Hazards":

**COMMENT:** The CD-Landfill area is not considered by any definition a "forested" area. Therefore, the likelihood of encountering any significant poisonous, thorny or dangerous flora and/or fauna is minimal. A preliminary walk-through survey of the site would have confirmed this and aided in providing a more site specific discussion.

**RECOMMENDATION:** Provide a more detailed site specific discussion for this section.

7. Page 3-13, Section 3.4.6, "Additional Hazards":

COMMENTS:

(1) Should any unknown or unanticipated hazards exist at the time of commencement of work they should be addressed within the body of the HASP itself . The HASP is viewed as a stand alone, living document. It should be modified on site as tasks and/or work requirements change.

(2) A hazard analysis should include the presentation of pertinent facts, the context within which those facts are being considered and a conclusion based the same facts. A concise conclusion with a clear rationale or logic for the resulting decisions (e.g. choice of PPE or medical surveillance items of interest) is not evident in this HASP.

RECOMMENDATIONS:

(1) Establish a methodology for making appropriate field changes to the HASP when required.

(2) Provide a task specific analysis of the hazards associated with each task.

8. Page 4-5, Section 4-3, "Work Zones", subsection Level D and D+ Activities: Populated Areas:

COMMENTS: The first sentence at the top of the page is a repeat of the previous sentence.

RECOMMENDATION: Delete this sentence.

9. Page 5-3, Section 5.3, "Perimeter Monitoring":

COMMENT: The first "bullet" paragraph reads as an incomplete thought.

RECOMMENDATION: Review and rewrite this sentence as necessary.

10. Page 5-5, Section 5.6 "Monitoring Documentation":

COMMENTS:

(1) The first sentence is a sentence fragment from the previous page of text and is also repetitive.

(2) The use of the word "till" in the second sentence represents a colloquial

form of expression inappropriate to a public document.

**RECOMMENDATIONS:**

- (1) Delete this sentence fragment from the text.
- (2) Substitute the word "until" for the word "till".

11. Page 6-2, Section 6.2, "Site-Specific Levels of Protection":

**COMMENTS:**

(1) The process of installing a groundwater monitoring well can be a sloppy, wet job. Since there is the potential for personnel exposure to subsurface contaminants, the PPE indicated for this task should include the use of some splash protection for the face.

(2) Task 5, on page 3-6, indicates elevated noise levels from equipment operation is anticipated on the site. The PPE of choice for monitoring well development does not indicate the use of hearing protection.

**RECOMMENDATIONS:**

- (1) Provide for the use of a face shield (item 22) as appropriate.
- (2) Add hearing protection to the equipment list for monitoring well development.

12. Page 8-7, Section 8.6 "Emergency Medical Treatment":

**COMMENT:** Within the subsection regarding chemical injury the first "bullet" refers to "the emergency eyewash station." This is the first mention of this equipment. For clarity the location and nature of the station needs to be stated. Additionally its use is described by saying "wash the eyes...using large amounts of water...." The standard requirement for eyewash stations is to have a 15 minute, continuous flush capability, therefore the procedures for use of the eye wash station should be clarified to reflect this requirement.

**RECOMMENDATION:** Change the referenced text to provide appropriate information regarding the location of the eyewash station and requiring it to have a minimum 15 minute flush capability. Further rewrite the first aid procedures to require the eyes to be flushed for the 15 minute interval as a minimum.

13. Page 8-10, Section 8.8 "Personal Protection and First Aid Equipment":

**COMMENT:** Emergency eye wash bottles do not provide the minimally required

amount of water to provide adequate protection for the eyes in case of injury.

**RECOMMENDATION:** Delete the requirement for eye wash bottles. Ensure adequate eye wash facilities are labeled and located for easy access by injured employees.

14. Page 10-1, Section 10.0 "Medical Surveillance Requirements":

**COMMENT:** Paragraph three indicates subcontractors are "to provide medical clearance information," presumably to the prime contractor . There is no indication, however, of where the information will be maintained for recordkeeping/auditing purposes.

**RECOMMENDATION:** Indicate where the requested medical clearance information will be maintained.

15. Appendix A, Section 2.7 "Air Quality":

**COMMENT:** It is stated "breathing air may be supplied ...from...air compressors." However there is no mention of the type of compressor (i.e. oil-free, oil-lubricated, or oil-less) or any associated breathing air QA/QC testing program to ensure the provision of the Grade D breathing air quality specified.

**RECOMMENDATION:** Specify the type of compressor to be used, and the required air testing frequency/procedures for the compressor, if any.

16. Appendix A, Section 2.8 "Cleaning and Maintenance":

**COMMENT:** Paragraph three of this section indicates respiratory equipment will be cleaned/sanitized on a schedule "... (specified by OSHA in 29 CFR 1910.134)." Routine maintenance of respiratory equipment is required, but OSHA does not specify a particular schedule.

**RECOMMENDATION:** Delete this reference to "a schedule (specified by OSHA in 29 CFR 1910.134)."

17. Appendix A, Section 3.2.4 "Safety Shoes/Boots (Levels D through B)":

**COMMENT:** Gouges occur in safety equipment as opposed to gauges.

**RECOMMENDATION:** Change reference to "gauges" to "gouges".

18. Attachment A, Section 4.2 "SITE PRECAUTIONS":

**COMMENT:** The statement is made "[S]moking will not be allowed in areas where flammable materials are present." As a matter of health and safety policy, smoking should

not be allowed anywhere on site. The purpose of this policy is to avoid accidental ignition of flammable materials as well as to avoid the possibility of inadvertent cross-contamination or self contamination by the hand-to-mouth route.

**RECOMMENDATION:** Eliminate the implied allowance of smoking on the site.