



DEPARTMENT OF THE NAVY

NORTHERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
10 INDUSTRIAL HIGHWAY
MAIL STOP, #82
LESTER, PA 19113-2090

IN REPLY REFER TO

5090
Ser 1824/1823/FL

MAR 08 1993

Department of Health and Human Services
Agency for Toxic Substances and Disease Registry
Mr Maurice West
Chief, Records and Information Management Branch
1600 Clifton Road, Mailstop E-56
Atlanta, Georgia 30333

Via: Federal Express

Re: Compilation of Navy Comments on the Initial Release (Red Cover) Public Health Assessment dated January 21, 1993 for Naval Education and Training Center (NETC) Newport, R.I.

Dear Mr West:

Thank you for the opportunity to review the initial release "Public Health Assessment" for NETC Newport, Rhode Island. Our comments are provided in enclosures (1) and (2).

Should you have any questions or concerns in regard to the enclosures, please do not hesitate to call me at (215) 595-0567.

Sincerely,

F. A. La Greca.

F. A. La Greca
Remedial Project Manager
By direction of the Commanding officer

Copy to:
NETC Newport, Code 40E
NEHC Norfolk, Ms S. Muschett

- (1) Northern Division review of Public Health Assessment for NETC Newport, RI. CERCLIS NO. RI6170085470 Initial Release
- (2) Navy Environmental Health Center review of Public Health Assessment for NETC Newport, RI. CERCLIS NO. RI6170085470 Initial Release

Internal copy:

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5 MAR 1993

NORTHERN DIVISION REVIEW OF PUBLIC HEALTH ASSESSMENT FOR
NEWPORT NAVAL EDUCATION/TRAINING CENTER
MIDDLETOWN, NEWPORT COUNTY, RHODE ISLAND
CERCLIS NO. RI6170085470
INITIAL RELEASE

General Comment:

1. All reference to the Melville North Landfill site should be deleted from this document. Melville North Landfill is not and never was part of Newport Naval Education Training Center, Rhode Island NPL listing (CERCLIS NO. RI6170085470) as demonstrated and agreed upon by attorneys during the Federal Facilities Agreement negotiations. The Federal Facilities Agreement became effective July 8, 1992 and copies are available if desired. The landfill was sold to the State of Rhode Island prior to NETC becoming NPL. It was also shown that Melville North Landfill is not part of or within NETC boundaries. The Parcel of property on which Melville North landfill is located is owned by a private company known as Melville Marine Industries.

2. A few examples of sections that requires deletion are:

Table of Contents.....

ON-SITE CONTAMINATION

Melville North Landfill.....Page 28

OFF-SITE CONTAMINATION

Melville North landfill.....Page 44

List of Tables.....

Table 8. Maximum Contaminant Concentration.....Page 30

Table 9. Maximum Contaminant Concentration.....Page 32

Table 10. Maximum Contaminant Concentration.....Page 33

Table 11. Maximum Contaminant Concentration.....Page 34

Table 18. Maximum Contaminant Concentration.....Page 45

3. A great deal of investigatory work at Tank Farm 5 has been accomplished at NETC (related to tank closure) but this information has not been used or referenced in the ATSDR report.

4. Summary: Nine lines down, the correct name for the "naval facility" is "Newport naval complex"

Eleven lines down, replace the word "accepted to" with "placed on".

ENCL (1)

- Summary: Last paragraph, first page, reference to Melville North Landfill in this paragraph should be deleted per comment #1, however with respect to the last sentence it is unreasonable to assume that the contaminated groundwater at Melville North Landfill would ever be used as drinking water for the following reasons: (a) There are currently no drinking water wells in the area (including Melville Marine Industries which is located near the site) and (b) The water is either saline or would become saline with any appreciable pumping as would occur if the site were developed into a Marina. (Note: Salinity distribution measurements will be taken during the Phase II Remedial Investigation).
5. Page 6: Last paragraph, two lines down, insert the word "program" after (NACIP).
6. Page 7: First paragraph, first line, replace the word "accepted" with "placed on".
7. Page 9: Second paragraph, the statement, "Tank bottom sludge was disposed directly onto the ground.....probably covered the entire tank farm" is unsupported. Extensive sampling by TRC consultants has not yet located any sludge disposal areas. In addition, it is incorrect to state that sludge covered the entire tank farm at one time, not only for the above reason, but historical information suggests that sludge was probably disposed into broad shallow pits and covered with clean soil rather than being spread on the surface as ATSDR suggested.
8. Page 10: Paragraphs 4 & 5, should be deleted as mention in comment #1, however with respect to paragraph 5 please clarify the statement, "Areas covered with oil and oil sludge were observed throughout the site." What percentage of the site was covered with oil and oil sludge? How was it determined that the areas ATSDR observed were contaminated with oil/sludge and not some other substance resembling oil?
9. Page 11: First paragraph, last sentence, two underground storage tanks were being closed (tanks 53 & 56), not just one as is mentioned by ATSDR.
10. Page 11: Fourth paragraph, first sentence mentions "NETC is the only active federal military installation in the Narragansett Bay area." however Naval Construction Battalion Center (CBC) Davisville is partially active and on the Narragansett Bay area.

11. Page 12: Second paragraph, first two sentences, the first two sentences should be combined to read, "Current land use at the Old Fire Fighting Training area on Coaster's Harbor Island includes a Child Care Center, picnic area, playground, baseball field and related military support services.
12. Page 18: Table 1, delete from table 1 all references to site 02 Melville North Landfill investigations as per comment #1.
13. Page 56: Fourth paragraph, using 7 days/week as the exposure frequency is unrealistic for Coaster Harbor Island. The winter season is very cold especially at the Old Fire Fighting Training Area which is directly adjacent to Narragansett Bay. This site is cold, windy and undesirable for anyone to be outside in the fields during winter months. In addition, what about total days where the ground is covered with snow or ice acting as a protective cap.
14. Page 80: Item 1, line 4, NETC routinely places clean soils on the play areas about twice a year.
15. Page 80: Item 2, as part of the Phase II RI/FS investigations the Navy at ATSDR request will be collecting additional surface soil sample (approximately twelve) specifically from the 0 to 3 inch depth and analyzing for inorganics, PCBs and PAHs in the areas where the children are allowed to play.

A new child care facility will be under construction this year at a new location on base. The Navy plans to move the children to the new building as soon as the construction is completed. The expected completion date is the summer of 1993.

16. Page 80: Item 4, Shellfish and mussel sampling might be warranted on the coastline areas of Tank Farms 4 and 5 if:
- (a) A known release of petroleum product has occurred from the tank farms and that release has reached the bay either overland or through the groundwater or
 - (b) There is reason to believe that the brooks draining into the bay have provided a pathway for significant petroleum contamination to enter the bay.

There are no recorded events from which "A" may have occurred. Item "B" at present does not appear

to be significant source of contamination to the bay either. More sediment will be sampled, however, to support an ecological risk assessment for NETC. If these samples indicate significant contamination (most likely from BNA's) then the Navy will sample mussels and clams on the adjacent shoreline.

17. Page 80: Item 8, the word "personnel" is misspelled.
18. Page 83: Item 4, It is my understanding that NETC's Ms Marino has forwarded a revised NETC Master Plan.
19. Page 83: Item 6, correct punctuation on the authors names and add the word "and" between "Education" and "Training".
20. Page 84: Item 12, the correct title is David Choppy, RIDEM Director of Water Resources.
21. Figure 3: It is impossible to distinguish between polluted areas, seasonally closed areas, and conditional areas. In addition, this map needs to be labelled indicating site locations.


DEPARTMENT OF THE NAVY

 NAVY ENVIRONMENTAL HEALTH CENTER
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 NORFOLK, VIRGINIA 23513-2617

 5090
 Ser 621 - **0989**
05 MAR 1993

From: Commanding Officer, Navy Environmental Health Center
To: Commander, Naval Education and Training Center, Newport, RI 02841-5000

Subj: COMMENTS ON THE AGENCY FOR TOXIC SUBSTANCE AND DISEASE
 REGISTRY PUBLIC HEALTH ASSESSMENT FOR NEWPORT NAVAL
 EDUCATION/TRAINING CENTER, MIDDLETON, NEWPORT COUNTY,
 RHODE ISLAND, INITIAL RELEASE (RED COVER)

Ref: (a) Our letter 5090 Ser 06/0545 of 1 Feb 93

Encl: (1) Medical Review of Public Health Assessment for Newport Naval
 Education/Training Center, Middleton, Newport County, Rhode Island, Initial
 Release (Red Cover)

1. As requested during reference (a), medical review of the document entitled "Public Health Assessment for Newport Naval Education/Training Center, Middleton, Newport County, Rhode Island, (Initial Release)" has been completed. Our comments and recommendations are provided in enclosure (1).

2. The technical point of contact for comments is noted in the enclosure. We are available to discuss the enclosed information by telephone with you and, if necessary, with you and your contractor. If you require additional assistance, please coordinate with Ms. Sheila Muschett, P.E., Head, Installation Restoration Program Support Department at (804) 444-7575 or DSN 564-7575, extension 430.

G.E. Williams
 G. E. WILLIAMS
 By direction

OPTIONAL FORM 89 (7-90)

FAX TRANSMITTAL

 # of pages ► *12*

To <i>Franco Le Greca</i>	From <i>Andrea Lunstford</i>
Dept / Agency <i>NORTHDIV</i>	Phone # <i>(804) 444-7575</i>
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NSN 7540-01-317-7360 5099-101 GENERAL SERVICES ADMINISTRATION	

ENCL (2)

**MEDICAL REVIEW OF PUBLIC HEALTH ASSESSMENT FOR
NEWPORT NAVAL EDUCATION/TRAINING CENTER
MIDDLETOWN, NEWPORT COUNTY, RHODE ISLAND
INITIAL RELEASE (RED COVER)**

General Comments:

1. The document entitled "Public Health Assessment for Newport Naval Education/Training Center, Middletown, Newport County, Rhode Island" (Initial Release) prepared by the U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry (ATSDR), and dated March 8, 1993, was provided to Navy Environmental Health Center (NAVENVIRHLTHCEN) for review on 29 January 1993. Our review comments and recommendations are provided below.
2. The information and methodology in the public health assessment (PHA) is generally consistent with the ATSDR *Public Health Assessment Guidance Manual*, March 1992 (PHA manual). However, one "comparison value" used, an "RfDC" (defined as a "Reference Dose Concentration") is not described in the PHA manual. The RfDC comparison value significantly affects the PHA outcome/conclusions. The RfDC values are more conservative than health protective values recommended by the Environmental Protection Agency (EPA), often by more than an order of magnitude. ~~The assumptions and calculations used to derive the~~ various RfDCs should be provided and contrasted to other health protective standards to show the degree of difference between them.
3. We concur with the ATSDR conclusion, stated in the "Summary" section (page 4), that the Naval Education Training Center, Newport, Rhode Island (NETC Newport) is of "indeterminate public health hazard." Data collected to date do not conclusively support any other determination. We do not concur with the ATSDR conclusion, stated in the fourth paragraph of the same section, that "Completed pathways of past, present, and future exposure to contaminated surface soil have been identified at the Old Fire Fighting Training Area." The data does not support the conclusion of a completed surface soil pathway. With the data collected to date, such a conclusion is premature. Our comments addressing this issue and the few discrepancies noted in the report are presented below.
4. The technical point of contact for this review of the public health assessment (PHA) is Ms. Andrea Lunsford, Head, Health Risk Assessment Department, Environmental Programs Directorate, NAVENVIRHLTHCEN, who may be contacted at (804) 444-7575 or DSN 564-7575, extension 402.

Enclosure (1)

Review Comments and Recommendations:

1. Page 15, "Environmental Contamination and Other Hazards," Section A (Introduction), paragraph 2

Comments:

a. A list of acronyms/abbreviations includes "RfDC - Reference Dose Concentration." The last sentence of the next paragraph states that "The reference dose concentration (RfDC) is a medium-specific concentration corresponding to the RfD." How the RfDC corresponds to the RfD is not explained anywhere in the text.

b. The PHA manual (March 1992) does not include a definition for RfDCs, an explanation of their derivation, or a discussion of the uncertainty associated with their derivation. The EPA guidance manual entitled *Human Health Evaluation Manual, Part B: Development of Risk-based Preliminary Remediation Goals* (OSWER Directive 9285.7-01B, December 13, 1991) provides equations and recommended default assumptions to develop "preliminary remediation goals" (PRGs). Recently, New Jersey, Texas, and EPA Region 10 have applied PRG equations to develop numeric cleanup standards. The RfDCs appear to utilize the same equations. Our calculations indicate that ATSDR used the basic PRG equations, but substituted "infant" body weight and "pica child" daily soil consumption parameters with results more than an order of magnitude higher than PRGs.

c. PRGs (and apparently, the RfDC values) are derived by using chronic RfD values, which are applicable to lifetime exposure durations (i.e., 30 year durations) and then applying alternative assumptions (such as child body weight and ingestion rates) to back-calculate the contaminant concentration in the soil, water, air, etc. for a 10^{-6} risk. The uncertainty in this process is significant, especially if applying chronic RfD values to exposure scenarios with significantly shorter exposure durations. The alternative assumptions used to derive "child" and "pica child" RfDCs are related to body weight and ingestion rate parameters without adjustment for the period of exposure.

Recommendation: Explain the derivation of RfDC values, present the calculations and assumptions used in deriving the individual RfDCs in the PHA, and discuss the uncertainty associated with them.

2. Page 15, "Environmental Contamination and Other Hazards," Section A (Introduction), paragraphs 3 and 4

Comments:

a. Paragraph (3) indicates that a variety of "comparison values" are used by ATSDR, including environmental media evaluation guides (EMEGS), cancer risk evaluation guides (CREGS), EPA's maximum contaminant levels (MCLs), EPA's lifetime health advisories (LTHAs), EPA's oral reference doses (RfDs), and RfDCs. Paragraph (4) notes body weight and ingestion rate assumptions. The assumptions do not apply to MCLs, LTHAs, and RfDs.

b. The body weight assumption for a "child" is given as 10 kilogram (kg). This value is not consistent with either the PHA manual, Appendix D or the EPA guidance document *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual; Part A*, (December 1989), (RAGS manual). Both documents reference 16 kg for calculating intake values for children (ages 1-6 years). Both documents recommend 10 kg as the default body weight for infants. Use of an infant body weight to derive a soil ingestion risk for a child is not appropriate (i.e., infants are not found on playgrounds ingesting soil) and yields an unrealistically conservative risk estimate and low soil reference concentration.

c. Soil ingestion rates of 200 milligram per day (mg/day) for a child and 100 mg/day for an adult are given. These values are in the ~~RfDC manual~~, however, they are inconsistent with default values in the PHA manual. The PHA manual (Appendix D, pag D-5) uses soil ingestion rates of 50-100 mg/day for a child (non-pica child) and 50 mg/day for an adult.

Recommendations:

a. Change paragraph (4) to clarify use of body weight and ingestion rate assumptions to derive comparison values.

b. Use a body weight value of 16 kg to calculate the exposure doses for children.

c. Provide rationale for using a soil ingestion rate value different from the default value in the PHA manual. Where ATSDR guidance is not followed, provide a reference (e.g., EPA, etc.).

3. Page 16, "Environmental Contamination and Other Hazards," Section A (Introduction), paragraph 8

Comment: This paragraph states that ATSDR reviewed Toxic Release Inventory (TRI) data for air contaminants and determined no air release impact. The rationale to make this "no impact" determination is not explained. Contaminants listed on the TRI

included copper, nickel and chromium. All three of these chemicals are listed by ATSDR as contaminants of concern at NETC Newport. The distance and location an air contaminant travels depends on a variety of parameters which should be evaluated to make a determination of impact.

Recommendation: Justify the statement made regarding TRI air concentrations not impacting the base.

4. Page 21, Table 2 ("Maximum Contaminant Concentrations in On-Site Subsurface Soil Samples, Fire-Fighting Training Area"), and page 32, Table 9 ("Maximum Contaminant Concentration in On-Site Surface Soil Samples, Melville North Landfill")

Comment: Beginning with Table 2, the abbreviation "N/A" is sometimes used in the "Comparison Value" column. The legend on these tables indicates that the abbreviation means "comparison values not available." However, this abbreviation is used inconsistently in the tables; it is not clear that it has the same meaning throughout the document. For example, both Table 2 and Table 9 list chromium as one of the contaminants detected in surface soil samples (collected at the Fire Fighting Training Area (FFT area) and the Melville North Landfill, respectively). However, Table 2 provides a numerical comparison value (10 ppm) for chromium while Table 9 indicates "N/A" for a chromium comparison value. We do not see how a comparison value can be available for chromium in surface soil at the FFT area but not at the Melville North Landfill.

Recommendation: Ensure that consistent comparison values are used for contaminants of concern. Clarify the meaning of "N/A" as used in this document.

5. Page 22, Table 3 (Maximum Contaminant Concentrations in On-site Surface Soil Samples, Old Fire Fighting Training Area)

Comment: Table 3 lists zinc as a contaminant of concern; however, neither Table 3 nor the "Public Health Implications - Fire Fighting Training Area" section provide any comparison values for zinc.

Recommendation: Provide a comparison value for zinc on Table 3 or discuss the value in textual format.

6. Page 26, Section B (On-site Contamination), subsection entitled "McAllister Point Landfill (Surface Soil)" and page 27, Table 6 ("Maximum Contaminant Concentrations in On-site Surface Soil Samples, McAllister Point Landfill"); page 19, Section B (On-site Contamination), subsection entitled "Old Fire Fighting Training Area" and page 21 Table 2 ("Maximum Contaminant Concentrations in On-site Subsurface Soil Samples, Fire Fighting Training Area")

Comments:

a. In the Section B discussion concerning McAllister Point Landfill, the collection of two off-site surface soil samples for Target Analyte List (TAL) metals analysis is mentioned. In the Section C discussion of McAllister Point Landfill the text states that off-site surface soil samples "did not exceed comparison values"; however, the background soil results are not presented in either the text or tables.

b. The PHA manual indicates that if site-specific background values are not available, state, regional, or national background levels may be used for comparison purposes.

c. Such comparisons are useful so that the public may put sampling results in perspective with natural soil concentrations, particularly for the pica child. For example, Table 6 lists the manganese comparison value derived for the pica child as 200 parts per million (ppm). Table 5.1 ("Mean Concentrations...of Soils in the Coterminous United States") of the PHA manual lists the range of manganese concentrations in Eastern United States (U.S.) soils as <2 to 7000 ppm, with the arithmetic mean for manganese being given as 640 ppm. The arithmetic mean is therefore significantly above the concentrations detected on-site.

Recommendation: Discuss background soil concentration data and compare to on-site data.

7. Page 29, Section B (On-site Contamination), subsection entitled "Melville North Landfill (Subsurface Soil)," paragraph 2, and page 30, Table 8 ("Maximum Contaminant Concentrations in On-site Subsurface Soil Samples, Melville North Landfill")

Comment: This paragraph states "Pesticides and PCBs... were detected at levels above comparison values." Neither the text nor Table 8 provide information concerning the specific pesticides detected or the comparison values. While the two types of PCBs detected are listed on Table 8, the detected pesticides are not.

Recommendation: State which pesticides were detected at levels above comparison values and determine whether or not they

should be listed on Table 8.

8. Page 49, Section A (Completed Exposure Pathways) and page 22, Table 3 (Maximum Contaminant Concentrations in On-site Surface Soil Samples, Old Fire Fighting Training Area)

Comments: The first paragraph of Section A states "A completed exposure pathway (surface soil) was identified at the Old Fire Fighting Training Area." In the subsection entitled "Surface Soil Pathway" the text states that the contaminants of concern in the surface soil include metals (cadmium, copper, arsenic, lead, vanadium, zinc, antimony, manganese, and chromium), PAHs, and PCBs. We question the existence of a completed exposure pathway. The discussion below addresses the contaminants of concern in the FFT area:

a. Metals - As discussed below, specific metal concentrations of concern were measured at locations other than the child care facility. For all contaminants except antimony, the measured concentrations are less than the arithmetic mean concentration for Eastern United States (U.S.) soils. The concentration observed for antimony at the FFT area is well within the normal concentration range for antimony in Eastern U.S. soils.

(1) Cadmium - Cadmium was detected in only one of six surface soil samples (i.e., in sample SS-04). Cadmium was not detected at SS-02 (the sampling site in the playground area) or at any of the other four sampling sites. The comparison value listed on Table 3 is 0.4 ppm and the reference listed is "EMEG, pica child." The text acknowledges the concentration detected at this one site (0.94 ppm) is only of concern for pica children.

(2) Copper - Copper was observed in all surface soil samples collected at the six sampling locations. Results range from 11.2 to 44.3 ppm. However, no comparison value is provided on Table 3. The text indicates that the highest concentration found is of concern for pica children. Concentrations of copper in Eastern U.S. soils range from <1 to 700 ppm. The arithmetic average is 22 ppm. The concentration measured at SS-02 is 11.2 ppm, a value significantly below the arithmetic average for Eastern U.S. soils.

(3) Arsenic - Arsenic concentrations ranged from 2 to 8.9 ppm. The concentration measured at SS-02 is "5.1 U", indicating an estimated value. The comparison value is "0.6 ppm" with the reference source for this value being shown as "RfDC pica child." Concentrations of arsenic in Eastern U.S. soils range from <0.1 to 73 ppm. The arithmetic average is 7.4 ppm, which is above the concentration measured at the SS-02 location.

PAHs. The contamination measured at SS-06 is highly likely to be attributable to the presence of asphalt in the soil sample.

b. In asphalt material, PAHs are tightly bound. Thus, PAH levels found in soil samples containing asphalt may be representative of the chemicals in the sample, but not representative of potential contamination in the soil or of contamination that will be transported.

c. Besides asphalt, the presence of PAHs in soil is often associated with contamination by petroleum products, which may be indicated by staining and odors. The RI report (page 3-32) states "No visible signs of contamination (e.g., odors, staining) were observed in any of the surface soil samples collected from the Old Fire Fighting Training Area site."

d. The shoreline sample may have had a significant fraction of bay sediments already known to be polluted (from sources other than NETC). The RI report states "The sediments in the Bay are contaminated with heavy metals, hydrocarbons and sewage sludge." A survey conducted by EPA (EPA 1975)...found 7048 milligram per liter (mg/l) manganese, 2351 mg/l zinc, 559 mg/l iron, 55 mg/l lead, 46 mg/l nickel, 44 mg/l copper, and less than 1 mg/l cadmium" (page 3-6). Although the levels of "hydrocarbon" contamination are not stated, it is clear that bay sediments have elevated contaminant levels. Thus, the sample taken from the shoreline is likely not representative of most of the site's surface soil.

e. At the FFT area, one discreet surface soil sample was collected from each of the following areas: child care center, playground, baseball field, large soil mound in the center of the site, soil mound at the western end of the site, shoreline and pavilion/park area. The RI indicates that for PAHs, the concentrations found in the samples other than SS-06 are an order of magnitude lower than the "maximum concentrations" used to assess public health risks. This is not addressed in the initial release document.

f. The RI report states that the child care recipients are "not normally exposed" to the shoreline. Apparently the children at the day care center are generally restricted to the building or to the fenced playground area adjacent to the building. This being the case, the exposure pathway is not complete for children or adults who are not exposed to the shoreline.

Recommendations:

a. Discuss the presence of asphalt pieces in surface soil sample SS-06 and the potential impact asphalt may have on PAH results.

b. Discuss the other five PAH surface soil sample results, particularly the results for the sample collected at the child care facility. Evaluate representativeness of SS-06 for exposures at the child care facility. Discuss the concentrations observed in the samples taken at locations "where the children play."

c. Consider using representative surface soil samples (e.g., samples other than Sample SS-06) for site characterization of exposure.

11. Page 66, "Public Health Implications," Section A (Toxicologic Evaluation), subsection entitled "Old Fire Fighting Training Area (Site 09)," subsection entitled "Manganese"

Comment: The text states that "Dermal exposure is not considered to be of health concern except for the KMnO_4 ...form... which is corrosive." The text does not elaborate on expectations for finding the KMnO_4 form at the site. Potassium permanganate is rarely, if ever, found in a natural state.

Recommendation: Discuss the likelihood of finding KMnO_4 at this site or delete this statement from the text in this section.

12. Page 67, "Public Health Implications," Section A (Toxicologic Evaluation), subsection entitled "Old Fire Fighting Training Area (Site 09), subsection entitled "Polycyclic Aromatic Hydrocarbons"

Comments:

a. Paragraph four states "Benzo-a-pyrene is considered to be one of the most carcinogenic forms of PAHs. The potential for cancer-related health effects has been evaluated assuming that the total PAHs detected at the Old Fire Fighting Training Area are exclusively benzo(a)pyrene." A more realistic approach is to separate PAHs into two fractions, i.e., cancer-related PAHs and non-cancer related PAHs, and determine the potential for cancer-related health effects from the total cancer-related PAHs. This method was used for determining exposures to the same pathway (i.e., incidental ingestion to soil) at the Melville North Landfill (see page 73).

b. Even the assumption that all "carcinogenic PAHs" (which include both "known" and "probable" human carcinogens) have the same toxicity as benzo-(a)-pyrene is highly conservative. Recently (February 1992) EPA Region IV adopted a toxicity equivalency factor (TEF) methodology for carcinogenic PAHs based on each compounds' relative potency (relative to the potency of benzo(a)pyrene). The potency factors vary from 0.01 to 0.1. This methodology was adopted in recognition of the fact that

application of the toxicity of benzo-(a)-pyrene to all "potentially carcinogenic" PAH fractions may be unrealistically conservative. TEF methodology has also been adopted by EPA Region 10 (August 1992).

Recommendations:

a. Use the carcinogenic fraction of PAHs to determine the cancer-related health risks for children and pica children to PAHs by incidental ingestion of soil at the FFT area.

b. Address the uncertainty involved with the use of the toxicity value of benzo-(a)-pyrene to calculate the risk from other potentially carcinogenic fractions of PAHs.

c. Consider adopting TEF methodology to address health risk associated with the carcinogenic fraction of PAHs.

13. Page 67, "Public Health Implications," Section A (Toxicologic Evaluation), subsection entitled "Old Fire Fighting Training Area (Site 09), subsection entitled "Zinc," paragraph 2

Comment: For the other contaminants of concern (e.g., copper and lead) the text has mentioned whether the contaminant is a carcinogen, suspected carcinogen, or has not been classified as a carcinogen. In this paragraph addressing zinc, the statement is made that "...adverse noncancer health effects are not expected from current exposure;" however, the potential carcinogenic effects of zinc are not addressed.

Recommendation: State the carcinogenic classification of zinc.

14. Page 80, "Recommendations"

Comment: Recommendation #6 states "Remediate Melville North Landfill before it is developed into a marina." Based on information disclosed in the ATSDR/NETC Newport pre-red cover draft site visit (16 to 18 November, 1992) our understanding is that the Melville North Landfill is no longer considered part of the NETC Newport National Priorities List (NPL) listing (CERCLIS No. RI6170085470). NETC Newport environmental staff explained that this was agreed upon during the Federal Facility Agreement (which was negotiated between the Department of Defense, the EPA, and the State of Rhode Island).

Recommendation: ATSDR should specify the party or parties who are recommended to remediate Melville North Landfill prior to developing the site into a marina.