



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 2  
290 BROADWAY  
NEW YORK, NY 10007-1866

N60478.AR.000384  
NWS EARLE  
5090.3a

JAN 28 1997

**SENT VIA E-MAIL**

Mr. John Kolicius  
Remedial Project Manager  
Department of the Navy - Northern Division  
10 Industrial Highway, Mail Stop #82  
Lester, PA 19113-2090

Re: Review of the Navy's Draft *Proposed Plan for Site 26* (January, 1997) for NWS Earle,  
Colts Neck, New Jersey

Dear Mr. Kolicius:

The Environmental Protection Agency (EPA), in accordance with our Federal Facility Agreement with the Navy, has reviewed the Navy's Draft *Proposed Plan for Site 26* (January, 1997) for NWS Earle. Our comments are attached.

If you have any questions, please call me at (212) 637-4320.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Jeffrey Gratz".

Jeffrey Gratz, Project Manager  
Federal Facilities Section

Attachment

cc: B. Marcolina, NJDEP  
G. Goepfert, NWS Earle

**EPA Comments on the Navy's *Proposed Plan for Site 26***  
**(January, 1997)**

**Page-specific Comments**

**Page    Comment**

- 1    ¶1, 2, 3, Col 1: The proposed plan, in addition to “summariz[ing] the findings of the Operable Unit 3 FS,” also includes information from the RI and Risk Assessment. These two documents should be mentioned.
- ¶3, Col 2: Change to read, “...Amendments and Reauthorization Act (SARA) and Section 300.430(f) of the National Contingency Plan (NCP).”
- ¶4, Col 2: The scope of this OU in the context of the overall study and federal facility agreement should be mentioned.
- 2    ¶2, Col 2: The information regarding “explosive safety quantity distance arcs” is too jargony and either should be omitted or modified.
- ¶4, Col 2: More detail on process is necessary in this section. What was the building used for? What was discharged into the percolation pit? When did operations end? The Navy should mention that picric acid went through a series of settling basins inside the building prior to the waste stream being discharged into the pit. Also mention that picric acid is an explosive.
- What “process wastes” were disposed in the leach tank? Although the next paragraph mentions that TCE and DCE were found, the text should state the type of activity associated with these substances.
- 4    Figure 2: Site 26 should be better highlighted.
- 5    Figure 3: Delete “Hydropunch” from the legend unless those points are to be added to the figure.
- 6    Figure 3A: The legend should state that “ppb” is “parts per billion.” The legend should also state what the contour lines represent.
- 7    ¶2 and ¶4, Col 1: The text states that surface water and sediment samples were collected at Site 26. This needs to be confirmed.
- ¶5, Col 1: Change to read, “...but none were detected.” Why was picric acid sampled? How does this explosive relate to activities at the site?

¶1, Col 2: State whether these levels were above background. Were they above screening guidance levels?

¶3, Col 2: Were the barium levels significantly higher than background? Were they above screening guidance levels?

Delete the last sentence. It is inappropriate to compare site metal concentrations in soil to “concentrations found routinely in soils in North America.” Soil concentrations should be compared to site background, as was done. The risks should be discussed in the risk section. If there is no risk due to these contaminants, then it is a non-issue and there is no need to explain away the problem. If they are a risk driver, the next step would be to state whether or not there is a hot spot or large area of contamination. It is also important to state whether these constituents were part of any process used at the building.

8 ¶1, Col 1: Instead of stating that concentrations were “above regulatory levels” (there are none), state the actual concentrations.

¶2, Col 1: State the dimensions of the plume. Also state that the type of contaminants detected and the configuration of the plume implicate the leach tank as the source of contamination. A table of groundwater contaminants and maximum concentrations should be presented.

In the third line, “groundwater” is misspelled.

¶3, Col 1: The last sentence should be changed to highlight the most significant mitigating factors: (1) soil sampling results show no evidence of a source area of these contaminants, (2) there is no evidence that these metals were used in significant concentrations or disposed of at the site, (3) detections in groundwater were sporadic, both temporally and spatially (do a detailed check on this), and (4) the risk assessment did not show these contaminants to be the risk drivers.

¶4, Col 1: Change to read, “...indicating that the **one** low level of picric acid found **in soil** during Phase I investigations (1992-1993) had no impact on groundwater and was most likely an isolated occurrence.” (end of ¶)

¶5, Col 1: Change the second sentence to read, “Based on vertical profile sampling, the semi-confining clay layer appears to have limited the vertical migration of TCE and related compounds.” Delete the next sentence. This ¶ probably fits best either in or directly below ¶2.

Human Health Risks: Delete reference to surface water and sediment in the introductory paragraph and in the bullets below. Also, change to read, "To assess these risks at Site 26, the exposure scenarios...."

The document does not provide adequate detail on the results from the risk assessment. Describe the risk assessment process on page 8 before discussing the exposure assessment. Some suggested language is:

A four-step process is utilized for assessing site-related human health risks for a reasonable maximum exposure scenario: *Hazard Identification* -- identifies the contaminants of concern at the site based on several factors such as toxicity, frequency of occurrence, and concentration. *Exposure Assessment* -- estimates the magnitude of actual and/or potential human exposures, the frequency and duration of these exposures, and the pathways (e.g., ingesting contaminated well-water) by which humans are potentially exposed. *Toxicity Assessment* -- determines the types of adverse health effects associated with chemical exposures, and the relationship between the magnitude of exposure (dose) and severity of adverse effects (response). *Risk Characterization* -- summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site-related risks.

The document should state that the baseline risk assessment began with selecting contaminants of concern which would be representative of site risks. These contaminants included: 1,2-dichloroethene and tetrachloroethylene. Several of the contaminants are known to cause cancer in laboratory animals and are suspected or known to be human carcinogens.

Next, the discussion of the Exposure Assessment should be presented.

The discussion of the cancer risk should indicate that the cancer risk is based "over a 70-year lifetime under the specific on-site exposure conditions."

The discussion of the non-cancer assessment requires further clarification. For example "To assess the overall potential for noncarcinogenic effects posed by more than one contaminant, EPA has developed a hazard Index ("HI"). The HI measures the assumed simultaneous subthreshold exposures to several chemicals which could result in an adverse health effect. When the HI exceeds one, there may be concern for potential noncarcinogenic health effects." In addition, the HIs for chemicals exceeding 1 should be identified.

State that the approach for lead is different from the cancer and non-cancer approach. Specifically, exposure to lead is based on the potential for 95% of the children to have blood lead levels exceeding the CDC's recommendation that children under age 6 should not have a blood lead level of greater than 10 micrograms/deciliter. This blood lead level is associated with a soil concentration of 400 ppm.

- 9 ¶1, Col 1: Change to read, "..., including current industrial use, future industrial use and future lifetime resident." (We didn't find any analysis of a "future recreational child" for Site 26.)

¶5, Col 1: Delete the paragraph ("A baseline human health..."). It is redundant.

¶6, Col 1: Change to read, "...associated with future residential receptors exposed to groundwater exceeded...." According the Risk Assessment summarized in RI table 25-19, there is no appreciable risk with respect to soil.

¶7, Col 1: In this paragraph, state that volatile organics (TCE and DCE) are the primary risk drivers.

Last ¶, Col 2: Delete the last paragraph.

- 10 ¶3, Col 1: Change "affiliated" to "associated."

¶4, Col 1: Change to read, "Risk analysis of the RI data and comparison with the State...."

Bullets, Col 2: The second bullet is a repeat. Delete it.

- 12 Table 1, Alternative 4- effectiveness: If the pumping wells are placed in the most concentrated portion of the plume and pumped at a reasonable rate (as recommended previously by EPA) this would "actively reduce TCE concentrations in the plume," similar to Alternative 5.

Table 1, Alternative 5 - comments: How would this technology compare to a pump and treat alternative in which the wells were placed *in* the plume for quicker, more efficient remediation. Also, we don't consider the air sparging alternative as "intrusive" as the Navy states. We have seen no evidence of TCE contaminating the vadose zone as it migrates in the gaseous phase towards the surface. Additionally, in-well aeration would alleviate this perceived concern.

- 13 Table 1, Alternative 6 - comments: The text references “another active treatment technology.” There are actually two active treatment technologies: air sparging and pump/treat.
- 14 ¶2, Col 1: Delete reference to surface water and sediments. These media were not sampled at this site.
- ¶2, Col 2: See our comments on the feasibility study with regard to cleanup time-period assumptions. We believe 45 years is overly optimistic for the source removal/no further action scenario.
- 15 ¶3, Col 1: Alternative 2B includes disposing of non-hazardous waste in an on-base landfill. We suggest that the Navy reconsider the off-base disposal action. For the small cost savings, the potential future liability of keeping this small amount of soil on base may be substantial.
- ¶2, Col 2: Change to read, “...FS concluded its application **should be successful.**”
- 16 ¶1, Col 1: Again, regarding the 45 year cleanup timeframe, we consider this number too optimistic. See our comments on the FS.
- ¶5, Col 1: See comment above for page 15, ¶3.
- Last ¶, Col 2: The text states that a “significant portion of the groundwater contaminants would naturally attenuate” prior to being captured by the pump and treat system. First, we believe that the Navy’s natural attenuation assumptions are overly optimistic. Second, a more efficient pumping scheme, with wells in the plume itself, would appreciably speed the cleanup process.
- Where would treated water be discharged?
- 17 ¶2, Col 1: Change to read, “Alternative 4 would employ source removal and groundwater extraction and treatment to provide long-term protection....” The next sentence should be changed to read, “...prevent off-site migration of contaminated groundwater as well as actively treat the VOC plume. Upon completion of the extraction system....”

The “45 year” treatment duration scenario assumes the placement of pumping wells at the downgradient edge of the plume. A more efficient pumping scenario (with wells *in* the plume) as well as higher pumping rates should significantly decrease this cleanup timeframe.

¶3, Col 2: See comment above for page 15, ¶3 regarding off-base disposal of non-hazardous waste.

Last ¶, Col 2: What would the VOCs be collected in? The text leaves this part out.

18 ¶4, Col 2: See comment above for page 15, ¶3 regarding off-base disposal of non-hazardous waste.

19 ¶2, Col 1: This information is redundant. (See the “Preferred Alternative Summary” provided on page 21.)

¶3, Col 1: So to make the text more concise, we suggest that the paragraph be changed to read, “Because no actions are conducted, Alternative 1 would not reduce contaminant migration from the source area to groundwater and groundwater contamination may increase with time. Although Alternative 2 would remove the source, groundwater contamination would continue to migrate unabated. Because no activities would be taken under Alternatives 1 and 2 to contain or remediate groundwater, potential health risks would remain for an extended period of time.”

Compliance with ARARs, Col 2: State that 5-year reviews would be necessary until ARARs are met.

Long-Term Effectiveness, Col 2 : Change to read, “All three would result in permanent reduction in risks from exposure to site groundwater in a reasonable timeframe.” (The Navy may wish to put revised time estimates here.)

Last ¶, Col 2: Change to read, “Alternatives 3 and 4 initially would provide....” Later in the ¶, change to read, “...would be expected to be achieved in a shorter period for Alternatives 4 and 5, as compared with Alternative 3.” (The Navy may wish to put revised time estimates here.)

20 ¶2, Col 2: Spell out “PPE” on first usage.

¶4, Col 2: We consider the 50 year timeframe for Alternative 2 to be too optimistic. The cleanup timeframe for Alternative 4 should be significantly shorter than 45 years if a more active remediation approach is taken.

21 Cost, Col 2: We have not seen the background cost information associated with the air-sparge system. It should be supplied to EPA as soon as possible. On first glance, we are surprised by the large cost difference with the pump and treat alternative.

22 ¶1, Col 1: Change “remetiatio” to “remediation.” No mention has been made as to how or where treated groundwater will be discharged.

¶2, Col 2: It would be helpful to include a phone number.

24 The following definitions of terms should be added or changed:

*Hazard Quotient*: a comparison of the level of exposure to a substance in contact with the body per unit time to a chemical-specific Reference Dose to evaluate potential non-cancer health effects. Exceedence of a Hazard Quotient of 1 is associated with an increased level of concern about adverse non-cancer health effects.

*Hazard Index*: the sum of chemical-specific Hazard Quotients. A Hazard Index of greater than 1 is associated with an increased level of concern about adverse non-cancer health effects.

*Reference dose*: an estimate with an uncertainty spanning an order of magnitude or greater of a daily exposure level for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of deleterious effects during a portion of a lifetime.