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NAS PENSACOLA
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LETTER REGARDING REGULATORY REVIEW AND COMMENTS ON DRAFT REMEDIAL
INVESTIGATION FOR SITE 46 NAS PENSACOLA FL
3/28/2008
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION



Florida Department of Environmental Protection

Bob Martinez Center
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March 28, 2008

Patty Whittemore
OPG6
NAVFACSOUTHEAST
NAS Jacksonville Building 103
Jacksonville, FL 32212

**Re: Draft Remedial Investigation Report for Site 46 (Former Building 72), Naval Air Station
Pensacola, Florida**

Dear Ms. Whittemore,

The Department has completed the technical review of the above referenced document dated March 2007 (received March 23, 2007) and has the following comments:

- 1. Page 4-45, Section 4.4, Surface Water and Sediments, 1st paragraph, 1st sentence:** The following sentence states, "Surface water and sediment samples were not collected for the site characterization investigation at Site 46 because no surface water bodies are present at the site." In the next sentence Pensacola Bay is referred to and Pensacola Bay is a marine surface water body and it is located downgradient from the site on the Southern boundary. Please clarify.
- 2. Chapters 6 and 7:** The Department supports and concurs with the attached comments on Chapter 6 "Human Health Risk Assessment" and Chapter 7 "Screening Level Ecological and Risk Assessment" which were reviewed by the University of Florida.
- 3. Page 8-3, Section 8.3, Groundwater Assessment, 2nd paragraph:** This paragraph discusses groundwater analytical results for pesticides, PCBs and TRPH and says lab analyses for those analytes had results that were below the laboratory detection limits. Please explain whether the "laboratory detection limits" cited are method detection limits (MDLs) or Practical Quantitation Limits (PQLs). Also, it should be stated whether those "laboratory detection limits" are below the applicable groundwater cleanup target levels (GCTLs) or below the concentrations listed in Table C, in the guidance document entitled, "Guidance for the Selection of Analytical Methods and for the Evaluation of Practical Quantitation Limits". If the "laboratory detection limit" for a particular analyte exceeds the GCTL for that analyte, and the PQL in the guidance document for that analyte, it may be required to have groundwater reanalyzed by a different EPA Method or by another laboratory in order to get data verifying the absence of that analyte.

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4. **Page 8-4, Figure 8-2, Extent of Impact to Site Groundwater Site 46:** What does the shading in this figure indicate? Please clarify and make the necessary changes to the figure.

5. **Section 8.3, Groundwater Assessment:** Contaminants of Concern (COC) detected in the groundwater and their impact on the Pensacola Bay surface water body are discussed in this section. The COCs that exceed Marine Surface Water Cleanup Target Levels (MWSWCTLs) are listed below:

- Vinyl Chloride
- Bis(2-Ethylhexyl)phthalate
- Naphthalene
- Beryllium
- Nickel

The COCs listed above have been detected in concentrations that exceed MWSWCTL in sentry monitoring wells located adjacent to the Pensacola Bay. This contamination is a violation per Chapter 62-780, F.A.C.. The Department recommends the following to determine if groundwater is contaminating Pensacola Bay:

- Install additional sentry monitoring wells closer to Pensacola Bay to determine if the groundwater contamination is affecting Pensacola Bay or
- conduct a Trident probe study to determine the same thing.

6. **Section 8.8 "Conclusions":** In this section, the proposed remedy for this site is Monitored Natural Attenuation. The Department will consider this option after the issues explained in the previous comments have been addressed. In addition, an explanation on how the inorganic groundwater contamination naturally attenuates needs to be included when discussing this remedy.

If I can be of any further assistance with this matter, please contact me at (850) 245-8998.

Sincerely



Tracie L. Bolanos
Remedial Project Manager

 JJC ESN ESN

September 25, 2007

Ligia Mora-Applegate
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Re: Remedial Investigation Report and Risk Assessment for Site 46, NAS Pensacola

Dear Ms. Mora-Applegate:

At your request we have reviewed the *Remedial Investigation Report for Site 46 (Former Building 72), Naval Air Station Pensacola, Pensacola, Florida*. Our review focused on the risk assessment. The report was written by Tetra Tech NUS, Inc. and is dated March 2007. Former Building 72 was used from the 1930s to the 1970s for aircraft paint stripping and painting. This report defines the nature and extent of contamination present in surface soil, subsurface soil, and groundwater resulting from Site activities. It assesses risk to current maintenance workers and adult and adolescent trespassers/recreational users. The report also calculates risk for future construction workers, occupational workers, and residents. We have the following comments regarding the risk assessment:

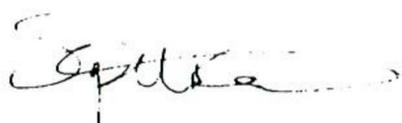
1. Bromodichloromethane and chlorodibromomethane were detected in groundwater samples (PEN-46-01 and PEN-46-14) at concentrations greater than their GCTLs. They are subsequently dropped as COPCs for groundwater without explanation. Bromodichloromethane and chlorodibromomethane should remain COPCs for groundwater.
2. The report describes surface soil as soil from zero to six inches below land surface (bls) and subsurface soil as greater than six inches bls. Chapter 62-780, FAC defines surface soil as soil located from zero to two feet bls and subsurface soil as soil greater than two feet bls.
3. Page 6-6 of the report states that screening levels for sodium are not available in the FDEP CTL tables. This is incorrect for groundwater. Sodium has a GCTL of 160,000 µg/L (a secondary standard) (Chapter 62-777, FAC) and should be identified as a COPC for groundwater.
4. We recommend adding the incidental ingestion of groundwater to the construction worker scenario due to the likely exposure to shallow groundwater during construction activities.

5. An exposure frequency of 30 d/y for the site maintenance worker (based on professional judgment) seems low given the Pensacola area climate. Some documentation from NAS Pensacola regarding the expected frequency of groundskeeping and maintenance events for this part of the base will be important in helping to justify this exposure assumption.
6. Adult and adolescent recreational users and trespassers were assumed to be exposed to on-site soil for 45 d/y based on professional judgment. Although 45 d/y may be an appropriate exposure frequency for a trespasser, it is low for recreational users. We recommend using an exposure frequency of 200 d/y for the recreational scenario. This value has been used by the FDEP for recreational scenarios at other sites.
7. The IEUBK Model for lead was used to assess exposure to lead in children from groundwater. The average groundwater lead concentration was used as the exposure point concentration in the model. Receptors are usually exposed to groundwater from only one well. Averaging contaminant concentrations across wells would not accurately represent potential exposure scenarios. The exposure point concentration for lead in groundwater should be the maximum detected concentration.
8. It is assumed that the grounds maintenance worker will spend at least part of the day outdoors. Therefore, we recommend using the US EPA default outdoor worker soil ingestion rate of 100 mg/d for this scenario (US EPA, 2002).
9. Future adult recreational users/trespassers under the same conditions as the adolescent (95th percentile value for soccer players in moist conditions) have a skin adherence factor of 0.08 mg/cm² (US EPA, 2004). We recommend changing the adult skin adherence factor to reflect the same conditions as the adolescent.
10. The list of COPCs in surface soil is incomplete. Phenol (Table 6-9), aluminum (Table 4-4), lead (Table 4-4), and methylene chloride (Table 4-6) exceed their SCTLs for leachability to groundwater.
11. The list of COPCs in subsurface soil is incomplete. Methylene chloride (Table 6-13) and lead (Table 4-4) remain of concern for leachability to groundwater.
12. The list of COPCs for groundwater is incomplete. Arsenic (Table 6-14) and sodium (Table 4-8) exceed their GCTLs.
13. Page 6-60 states the 95% UCL is "...a representation of the upper limit that potential receptors would be exposed to over the entire exposure period". The 95% UCL is an upper limit on the mean concentration receptors would be exposed to, not the upper limit of the exposure concentration.
14. Section 8.0 Summary and Conclusions is incomplete:
 - a. Based on Table 4-6, chloromethane, methylene chloride, PCE, and cis-1,2-dichloroethene were detected above their SCTLs for leachability to groundwater. These chemicals should be added as COPCs.

- b. Based on Table 4-7, chlorodibromomethane and bromodichloromethane were detected in wells above their GCTLs. In Table 4-8, sodium was detected above its GCTL. These constituents should be added as COPCs for groundwater.
15. In Table 4-5, the SCTL for TRPH leachability to groundwater should be 340 mg/kg.
16. In Table 6-8 the simple apportionment for the recreational scenario was performed incorrectly. TCE, Aroclor-1260, and arsenic are carcinogens and had a maximum concentration greater than 1/10th their non-apportioned SCTLs. Therefore, the SCTLs for these chemicals would be divided by three and the SCTL for TCE would be 40,000 µg/kg. The TCE exposure point concentration of 38,000 µg/kg is below the correctly apportioned SCTL for direct contact.
17. Comments concerning Table 7-1:
- a. The minimum detected PCE concentration was compared to the US EPA Region 4 soil screening values. The maximum concentration should be used for comparison and PCE should remain a COPEC.
 - b. An ecological soil screening level was developed for total PAHs in June 2007. This new value (1.1 mg/kg) is based on protection of mammals exposed to high molecular weight PAHs and is very similar to the US EPA Region 4 screening value of 1 mg/kg.
 - c. An ecological soil screening level was derived for manganese (220 mg/kg for the protection of plants) in April 2007. This value should be added to the Table. The conclusion that manganese is not a COPEC at this site remains valid.
 - d. The Canadian Soil Quality Guidelines (2006) recommends using a soil screening value of 0.1 mg/kg for benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene for the protection of the environment and human health. This value is the same as the US EPA Region 4 surface soil screening value for benzo(a)pyrene. Based on site concentrations, these constituents can be excluded as COPECs.
18. In Section 4.3.2.4 the word "cadmium" should be changed to "chromium" for all occurrences.

Please let us know if you have any questions regarding this review.

Sincerely,



Stephen M. Roberts, Ph.D.



Leah D. Stuchal, Ph.D.

References:

- US EPA (2002) *Supplemental guidance for developing soil screening levels for superfund sites*. Solid Waste and Emergency Response. OSWER 9355.4-24.
- US EPA (2004) *Risk Assessment guidance for superfund volume I: Human health evaluation manual (Part E, supplemental guidance for dermal risk assessment)*. Office of Superfund Remediation and Technology Innovation, Washington, DC.