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LETTER REGARDING REGULATOR REVIEW AND COMMENTS TO THE DRAFT REMEDIAL  
INVESTIGATION REPORT FOR OPERABLE UNIT 2 (OU 2), MCCOY ANNEX LANDFILL NTC  
ORLANDO FL  
9/8/2000  
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION



# Department of Environmental Protection

09.01.02.0008

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Jeb Bush  
Governor

Twin Towers Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

David B. Struhs  
Secretary

September 8, 2000

Mr. Wayne Hansel  
Code 18B7  
Southern Division  
Naval Facilities Engineering Command  
P.O. Box 190010  
North Charleston, South Carolina 29419-0068

RE: Draft Remedial Investigation Report for Operable Unit 2,  
McCoy Annex Landfill, McCoy Annex, Naval Training Center,  
Orlando, Florida

Dear Mr. Hansel:

I have completed my review of the Draft Remedial Investigation Report for Operable Unit 2, McCoy Annex, Naval Training Center, Orlando, dated March 2000 (received March 14, 2000), prepared and submitted by the Tetra Tech NUS, Inc. Overall, I felt the document was very well written and the data presented in an easily understood manner. I do have the following comments that should be addressed along with the attached comments from FDEP's contracted risk assessors:

- (1) I cannot reconcile the acreages that are specified in Sections 1.2 and 1.3. Section 1.2 has the McCoy Annex property as situated on 877 acres. Section 1.3 has the McCoy Annex landfill situated on 1114 acres.
- (2) In section 5.2.3 on page 5-51, it is reported that the dioxin octa-chlorodibenzodioxin (OCDD) was detected at a concentration of 18  $\mu\text{g}/\text{kg}$  (13  $\mu\text{g}/\text{kg}$  in the duplicate), below its screening criteria, in the only sample analyzed for dioxins. These reported concentrations are well above the screening criteria for OCDD and if correct would require further delineation of the extent of dioxin concentrations at the landfill. However, OCDD was reported at .18  $\mu\text{g}/\text{kg}$  (.13  $\mu\text{g}/\text{kg}$  in the duplicate) in Table 5-2A. I believe these are the correct concentrations, which should be verified.
- (3) The Total Petroleum Hydrocarbon groundwater analytical results in Table 5-3C are mistakenly reported in units of  $\mu\text{g}/\text{L}$ , while the same results in Appendix B are in units of  $\text{mg}/\text{L}$ . This same error occurs in section 5.3.1.5 on page 5-101.

- (4) On page 5-174, the FDEP primary groundwater standard for radium (226 and 228 combined) is 5 µg/L, not 15 µg/L. It is assumed that the screening criteria mentioned in the paragraph is the primary standard. A check needs to be made that groundwater did not exceed this criterion.
- (5) I do not think it appropriate to disregard Phase III monitoring well data from the risk calculations for groundwater based on the fact that turbidity in these wells could not be reduced below 150 NTU. Several measures were used during Phase III sampling to specifically reduce turbidity. The measures included microflow purging, additional well development and the installing of prepacked microwells inside the wells. For those wells where turbidity could not be reduced, the turbid water is considered to be representative of groundwater conditions at the well location. Because of this, there is the likelihood that people could be exposed to the inorganic contaminants detected in the turbid wells should a supply well be located in the vicinity.
- (6) In section 6.3.2, Identification of Potential Receptors and Exposure Pathways, the most probable future use of the property should be considered and emphasized in determining future potential receptors and exposure pathways. The anticipated future use of the area is located on the City of Orlando's web page at:
- [http://www.ci.orlando.fl.us/departments/planning\\_and\\_development/ntcpbog.html](http://www.ci.orlando.fl.us/departments/planning_and_development/ntcpbog.html)
- The proposed reuse of the southern wooded portion of the landfill area will consist of soccer fields, softball/baseball diamonds, a picnic area and recreational trails. Exposure of off-site residents or visitors to surface soils would be expected to be a completed exposure pathway as the sports complex will not be restricted solely to recreational golfers.
- (7) USEPA Region 4 has issued a paper, "Ammended Guidance on Ecological Risk Assessment at Military Bases: Process Considerations, Timing of Activities, and Inclusion of Stakeholders", dated June 23, 2000. Recommended ecological screening values for soil, freshwater surface water and sediments may be found in Attachments 2, 3 and 5 to this guidance memorandum. These screening values are the latest known to have been recommended by EPA Region 4 and should be used in the ecological risk assessment. Please disregard if these screening values have not changed from previous EPA Region 4 guidance.

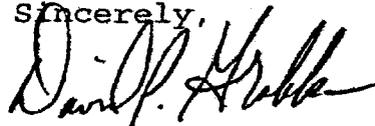
- (8) In sections 7.11 and 7.12, the overall ecological risks for the site are summarized, conclusions are presented, and a qualitative assessment of the Phase III data is discussed. Some important issues have been left out of the discussion in light of the only pervasive risks tentatively identified. It is stated that groundwater discharge to the canals is the most probable source of elevated metals concentrations in the canals. These canals are correctly identified as being marginal to poor aquatic habitats due to their configuration, intermittent flow and because they are periodically dredged. However, no mention of the surface water body, Lake Gillooly, to which these canals discharge is made in this section. Lake Gillooly could contain desirable habitat that may be affected by the surface water discharge of contaminants identified in the canals. The surface water and sediment analytical results from downgradient sample point SW021/SD021 and Lake Gillooly sample point SW022/SD022 from the various sampling rounds should be discussed in either this section of the RI or in the contaminant fate and transport section as to whether additional ecological study or remedial action based on ecological risk concerns to Lake Gillooly are warranted.
- (9) Hazard quotients greater than 1.0 were calculated using maximum detected concentrations for every species for which food chain modelling was conducted. Using average chemical concentrations and LOAELs in the food chain modelling still predicted adverse impacts to several species. It is stated that on the whole, most of the terrestrial risks are driven by hot-spots of contamination, primarily in one or two adjacent samples. Figures of the site should be provided showing where those hot-spots are located and which contaminants in which media are contributing to the ecological risks to which species.
- (10) "Northern" should be changed to "central" in section 7.6.2.4.
- (11) Human health and ecological risks from exposure to radioactive contaminants should be discussed. While it has been shown through isotopic analysis that the isotopes detected are consistent with naturally occurring isotopes, it has not been shown that the levels detected are similar to those detected in the Orlando area. It has been hypothesized that landfill processes may have caused the radioactive isotopes to have become soluble in groundwater and mobile. While the presumptive remedy for this site would include groundwater restrictions, because groundwater at the site is discharging to the canals and ultimately to

Mr. Wayne Hansel  
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Lake Gillooly, there is a potential risk that radioactive isotopes mobilized by landfill processes have been concentrated in Lake Gillooly.

If I can be of any further assistance with this matter, please contact me at (850)488-3693.

Sincerely,



David P. Grabka  
Remedial Project Manager

cc: Barbara Nwokike, Navy SouthDiv  
Nancy Rodriguez, USEPA Region 4  
Richard Allen, HLA, Jacksonville  
~~Steve McCoy, Tetradtech, HHS, Oak Ridge~~  
Steve Tsangaris, CH2M Hill, Tampa  
Bill Bostwick, FDEP Central District

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April 24, 2000

Ligia Mora-Applegate  
Bureau of Waste Cleanup  
Florida Department of Environmental Protection  
Room 471A, Twin Towers Office Building  
2600 Blair Stone Rd.  
Tallahassee, FL 32399

Dear Ms. Mora-Applegate:

At your request, we have reviewed the Remedial Investigation (RI) for Operable Unit 2 (OU2), McCoy Annex Landfill, Naval Training Center, Orlando, Florida. The RI, which includes the human health risk assessment, was prepared by Tetra Tech NUS, Inc (TTN) and is dated March 2000. We have the following comments based on our review of the document.

The human health portion of the risk assessment appears to be reasonably well done. Risks from site contaminants associated with future residential use of the property are likely to be unacceptable to FDEP, necessitating some form of institutional controls absent additional remediation. Arsenic and carcinogenic PAHs combine to pose an excess cancer risk modestly above  $10^{-6}$  for the current and future maintenance worker, although we note that neither the carcinogenic PAH (in the form of benzo(a)pyrene equivalents) or arsenic concentrations exceed their individual respective FDEP SCTLs based on industrial/commercial land use. Risks to the "recreator" (golfer) were within limits usually acceptable to FDEP. Exposure to bis(2-ethylhexyl)phthalate in sediment and surface water was calculated to result in excess cancer risks greater than  $10^{-6}$ . Some of the exposure assumptions used to derive this risk estimate were very conservative (e.g., an exposure frequency of 100 days/year) while other assumptions were rather un-conservative (e.g., an incidental ingestion rate of 5 mg/day). Human exposure to sediment exposure is difficult to evaluate, since there are really no good data on the subject. We are aware that U.S. EPA Region 4 currently does not recommend quantitative risk estimates for sediment exposure in human health risk assessment.

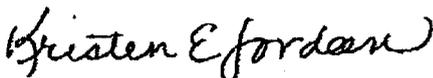
There are a few technical aspects of the human health risk assessment that merit comment. When an inhalation toxicity value was missing in IRIS for a chemical, no attempt was made to evaluate risk from inhalation exposure. This was the case for a number of chemicals, notably including trichloroethene and 1,1,2,2-tetrachloroethane. For volatile chemicals such as these in soils, the inhalation route is dominant, and failure to include this route in the quantitative assessment can result in substantial underestimation of risk. While it does not seem to have made much difference at this particular site (the concentrations of these VOCs in soils were rather small), we usually recommend that route-to-route extrapolation be used to develop inhalation toxicity values.

We commented previously on an earlier version of the ecological risk assessment for this site. Unfortunately, problems with the ecological risk assessment identified in our review have not been corrected. These problems include the following:

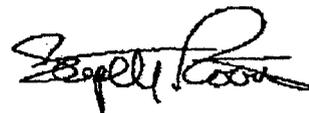
- In *Section 7.3.1 Region 4 Screening Levels*, TTN indicates that the lowest value of surface soil screening levels from several sources [Friday, 1998; Beyer, 1990; ORNL (Efroymsen et al., 1997); the Netherlands (MHSP&E, 1994)] was used for the selection of chemicals of potential concern. The Dutch Soil Cleanup Levels used by TTN are out of date. Risks from many contaminants may be substantially underestimated if the updated values are not employed. For example, the Dutch Intervention value of 4000  $\mu\text{g}/\text{kg}$  is presented for dieldrin. The optimum value from the updated Dutch list is 0.5  $\mu\text{g}/\text{kg}$ .
- TTN uses Region 4 Recommended Ecological Screening Values for soil to screen for COPCs at OU2. TTN states that screening values for alpha-chlordane and gamma-chlordane are not available. Values for both chemicals are, in fact, included in Region 4 guidance (0.0025 and 0.00005 mg/kg for alpha- and gamma-chlordane, respectively). This is addressed again (pages 7-72, 76, 79) when alpha and gamma-chlordane contamination at the site is dismissed because screening values are not available.
- In estimating chemical intake from food ingestion, TTN reported on page 7-23 that input parameters were obtained from USEPA's Wildlife Exposure Factors Handbook (WEFH, 1993). Values of some of the inputs presented on Table 7-4 (page 7-25) do not match the values in the WEFH. For example, a body weight of 0.021 kg for deer mice was used as a surrogate for the Cotton mouse instead of using the numbers (28-51 g) reported for this species in deriving a mean body weight. Assuming a mean body weight of 0.0395 kg the revised food ingestion rate for the Cotton Mouse would be 0.0048 kg/day rather than 0.0029 kg/day presented in Table 7-4. The former number is more conservative and should be used in the risk equation. Also, the food ingestion rates for other species including the Great Blue Heron, American Woodcock and the Red Fox do not match the values presented in Table 7-4.

We hope that these comments are helpful. Should you have any further questions, please do not hesitate to contact us.

Sincerely,



Kristen E. Jordan, Ph.D.



Stephen M. Roberts, Ph.D.

cc: David Grabke