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NAS JACKSONVILLE
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MEMORANDUM REGARDING FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION and UNIVERSITY OF FLORIDA COMMENTS ON DRAFT REMEDIAL INVESTIGATION ADDENDUM FOR OPERABLE UNIT 3 NAS JACKSONVILLE FL
8/22/2014
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
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RICK SCOTT
GOVERNOR

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LT. GOVERNOR

HERSCHEL T. VINYARD JR.
SECRETARY

MEMORANDUM

TO: Jennifer Conklin, Environmental Manager
DoD and Brownfields Partnerships Section, WCP

THROUGH: Brian Dougherty, Administrator
Office of District and Business Support, DWM

8/27/2014
X
BJD
Signed by: Brian Dougherty

FROM: Ligia Mora-Applegate
Office of District and Business Support, DWM

8/22/2014
X
Signed by: MoraApplegate_L

SUBJECT: Remedial Investigation Report Addendum for Operable Unit 3
NAS Jacksonville, Jacksonville, Duval County, Florida
Dated June, 2014
DOD_7_3513

DATE: August 22, 2014

At your request, the University of Florida and I have reviewed the *Draft Remedial Investigation Report Addendum for Operable Unit 3, Naval Air Station Jacksonville,* located in Jacksonville, Florida. This report which included a human health and ecological risk assessment was prepared by Tetra Tech and is dated June 2014. We focused our review on the human health and ecological risk assessment updates. This revised human health risk assessment included a potential future exposure risk scenario of a resident to soil and groundwater, a utility worker to contaminants in a newly identified storm sewer, and vapor intrusion into commercial and residential buildings. The updated ecological risk assessment examined two additional scenarios, including groundwater contaminant plume recharge of surface water and storm sewers discharging into surface water. I have the following comments regarding these assessments.

If a residential scenario is going to be considered children (not just adults) must also be included unless the residential scenario is based on an adult only community with institutional controls to prevent children exposures due to living in that community.

Additional contaminants besides arsenic will be contaminants of potential concern (COPCs) if a residential scenario is now included, therefore Table 6-1 in appendix H will need to be modified to include these COPCs.

If a residential land use were to be realized, the most probable scenario is that pavement and buildings would be demolished to allow for the new residential development in which case a new exposure point concentration would be need to be calculated which will probably necessitate more soil sampling to

determine contaminant concentration (and consequently a relevant exposure point concentration) in the "now" not capped soils.

In the ecological risk assessment please include the Surface Water Cleanup target Levels promulgated in Chapter 62-777 F.A.C., as the top of the Hierarchy of screening values.

The University of Florida's detailed comments are attached. I concur with them.

If you have any questions, please contact me at 245-8992.

UF UNIVERSITY of FLORIDA

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August 22, 2014

Ligia Mora-Applegate
Office of District and Business Support
Division of Waste Management
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Re: Human and ecological risk assessment for NAS Jacksonville OU3

Dear Ms. Mora-Applegate:

At your request, we have reviewed the *Draft Remedial Investigation Report Addendum for Operable Unit 3, Naval Air Station, Jacksonville, Jacksonville, Florida.* This report was prepared by Tetra Tech and is dated June 2014. This review focused on the human health and ecological risk assessment updates. The human health risk assessment update examined the potential future exposure risk of a resident to soil and groundwater, a utility worker to contaminants in a newly identified storm sewer, and vapor intrusion into commercial and residential buildings. The ecological risk assessment update examined two additional scenarios, including groundwater contaminant plume recharge of surface water and storm sewers discharging into surface water. We have the following comments regarding these assessments.

Human Health Risk Assessment Update

1. Under a newly considered scenario in which OU3 becomes a residential area, it is concluded that arsenic in subsurface soil exceeds FDEP and EPA target risks (FDEP cancer risk limit of 1E-06 and the EPA non-cancer risk limit of a HI = 1). The analysis considered both FDEP and EPA approaches for determining soil cleanup levels, which is a positive aspect of the analysis, and we agree that arsenic in soil exceeds risk targets under a residential scenario. However, we have the following concerns about the approach taken in the analysis:

    a. The residential scenario selected considers only exposure by adults (see Table 6-4 of the main text). Unless there is a compelling reason why future residential use of this site could not possibly include children, the exposure assumptions should exposure by both children and adults.

    b. Because arsenic was the only COPC in soil under a maintenance or utility worker scenario previously, it is assumed to be the only COPC under a residential exposure scenario (page 6-3). The screening criteria used to identify COPCs in subsurface soil for a maintenance or utility worker were

for a commercial/industrial scenario (see Table 6-1 in Appendix H), which is not appropriate for identifying COPCs for residential land use. We re-screened the maximum concentrations of analytes in soil presented in Table 6-1 in Appendix H using the FDEP default residential soil cleanup target levels (SCTLs) and the EPA Regional Screening Levels (RSLs) for residential land use. We found that only arsenic exceeded its SCTL, but a number of other chemicals exceeded their residential RSL (e.g., DDD, DDE, chromium (hexavalent), and others).

c. The exposure point concentrations for residential exposure were derived from subsurface soil concentrations. We recognize that conversion of this site to residential land use would likely entail removing most or all of the structures (buildings, pavement) that now block direct exposure to surface soil, but it is unclear from the report that samples taken at depth are a reasonable representation of the concentrations that will exist at the surface when removal activities are completed. This seems to be an important source of uncertainty in the analysis that bears further discussion.

2. Risks associated with potable use of groundwater under a residential scenario were also evaluated using both FDEP and EPA methodologies. We agree with the conclusion that potable groundwater use by a resident would result in risks well outside FDEP and EPA acceptable limits.

3. The evaluation of potential risks associated with the second storm sewer used the same approach as in the original analysis. We agree that screening for COPCs using EPA tap water RSL and Maximum Contaminant Level values is conservative, as is the use of the maximum detected concentration of each chemical in sewer water samples. There are two weaknesses in this aspect of the analysis, however.

   a. The only exposure route considered is dermal contact. Given that the COPCs are volatile chemicals, inhalation exposure needs to be included in the risk estimate as well.

   b. Exposure to contaminated water in the storm sewer by a maintenance worker is assumed to take place 8 hours a day for 10 days. This seems very limited, but might be justified depending upon maintenance scenarios envisioned [which, unfortunately, are not described in the report]. Presumably these 10 days of exposure would occur together, perhaps over a two or three week period. This is a very short-term exposure. We agree with the use of sub-chronic rather than chronic toxicity values as a better match for this scenario. Our concern, however, is with the averaging time (AT) selected — 365 days (page 6-9). This implies that the 10-day exposure is spread out over the course of a year, which seems unlikely. A more appropriate AT, in our opinion, would be 14 or 21 days.

   c. The conclusion that risks posed by the three COPCs in sewer water are within acceptable limits may or may not be correct, pending re-analysis addressing the points in a) and b).

Ecological Risk Assessment Update

4. In Tables 7-2 and 7-3, the order of preference for screening level sources (Region 4, NOAA, and Region 3) does not include FDEP screening values. The surface water screening levels promulgated in Chapter 62-302, FAC and Chapter 62-777, FAC should be included in the screening assessment. This is a concern for benzene and chlorobenzene in pore water and 1,1-dichloroethene in storm sewers.

    a. The marine surface water criterion for benzene is 71.28 μg/L (annual average; Chapter 62-302, FAC). This value is lower than the proposed screening value of 109 μg/L and should be used at the site. It does not alter the conclusion that benzene is not a contaminant of potential ecological concern (COPEC) in pore water.

    b. The marine surface water criterion for 1,1-dichloroethene is 3.2 μg/L (annual average; Chapter 62-302, FAC). The overall average concentration for 1,1-dichloroethene is 1.99 μg/L. Use of the FDEP surface water cleanup target level (SWCTL) does not alter the conclusion that 1,1-dichloroethene is not a COPEC in storm sewer surface water.

    c. The marine surface water criterion for chlorobenzene is 17 μg/L (Chapter 62-777, FAC). This value is lower than the proposed screening value of 105 μg/L and should be used at the site. Chlorobenzene remains a COPEC in pore water.

5. The refinement of COPECs excluded chlorobenzene from further consideration because it was only detected once above the proposed screening level of 105 μg/L (270 μg/L), which could not be confirmed (subsequent sampling produced a concentration of 9.7 μg/L). It was also detected 0.5 feet below surface in pore water at 31.9 μg/L. Based on the 0.5 ft sample in pore water, chlorobenzene exceeds its SWCTL of 17 μg/L and should remain a COPEC for the site.

As requested, we have reviewed the reference citations, tables, figures, Table of Contents, List of Tables, and List of Figures for accuracy. All of these elements were correctly represented in the document. No typographical, formatting, or other editorial errors were noted. Conclusions and recommendations were inherent in the document and are addressed in the above comments. Please let us know if you have any questions regarding this review.

Sincerely,

Stephen M. Roberts, Ph.D.

Leah D. Stuchal, Ph.D.