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MEMORANDUM AND COMMENTS FROM FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REGARDING ECOLOGICAL RISK ASSESSMENT FOR SOLID WASTE MANAGEMENT UNITS 6, 7, 8, 9, 10, 11, 12, 15 AND 16 NS MAYPORT FL
7/7/1995
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Florida Department of

Memorandum **Environmental Protection**

TO: James Cason, DOD Facilities Technical Review

THROUGH: Jim Crane, Bureau of Waste Cleanup JC

FROM: Jane Fugler, Hazardous Waste Sites Technical Review JF

DATE: July 7, 1995

SUBJECT: Review of Ecological Risk Assessments for SWMUs 6, 7, 8, 9, 10, 11, 12, 15 and 16 at Mayport Naval Station

I have reviewed the ecological risk assessment portions for the SWMUs 6, 7, 8, 9, 10, 11, 12, 15, and 16 in the June, 1995 document 'RCRA RFI Draft for Mayport Naval Station' and the February, 1995 document 'RCRA Facility Investigation General Information Report' (GIR). Items of concern are discussed below.

1. It is not clearly stated that the FDEP criteria and guidance concentrations were used for screening ecological chemicals of potential concern (ECPC) in section 2.4.1, page 2-51 in the GIR; however, it was evident later during the review of the assessment that the FDEP values were used. In future assessments, the use of FDEP criteria and guidance concentrations should be more clearly stated.

2. It is inappropriate to calculate the 95% Upper Confidence Limit (UCL) for a chemical with less than five samples; however, a minimum of 10 samples is preferred for this calculation. When there are insufficient samples available, the highest detected concentration should be used as the maximum exposure point concentration. This process was not used in numerous situations. One example of this is demonstrated in Table 6-24 for Antimony: one sample in eight had a concentration of 2.8 ppm, the 95% UCL was calculated as 1.8 ppm and the 1.8 value was used as the maximum exposure point concentration. The exposure point concentrations should be reevaluated.

3. FDEP does not allow the use of dilution of groundwater entering a surface water body in determining exposure concentrations. The benthic organisms are not protected nor the species that ingest these organisms, sediments and water. Also, these discharges are unregulated non-point sources. The conclusions in section 8 state that because of dilution of contaminated groundwater entering into the St. John's River, no risk for aquatic receptors is expected. These conclusions should be reexamined.

4. In several tables for these risk assessments, ECPC exposure concentrations are compared to benchmarks. These benchmarks include values from FDEP and EPA ambient water quality criteria and AQUIRE data. In Table 4-27 (page 4-108), the conclusion for Acenapthene is that the benchmark was not exceeded and therefore no longer an ECPC because the AQUIRE value

was higher than the detected concentrations and the FDEP criteria were establish for human health. FDEP has established an aquatic toxicity value for Acenapthene of 3.0 ug/l, which the detected concentrations exceed. This value was also taken from the AQUIRE database. This raises a concern that AQUIRE values used in these assessments may not represent the most sensitive species tested and listed in the AQUIRE database. FDEP recommends the following when determining aquatic toxicity values from the AQUIRE database:

- review data with codes 1, 2 or 5;
- use only LC_{50} data;
- eliminate data from salmonid fish;
- select the test and organism showing the greatest sensitivity to the toxicant; and
- apply a factor of 5% to the LC_{50} value to generate a recommended criteria (62-302.200(4)(a), F.A.C.).

5. Some of the maximum exposure point concentrations should be recalculated in Table 6-25 (page 6-68), some of the values appear exceedingly small, such as 2.9×10^{-80}. Also, no explanation is provided for the use of the asterisk in Tables 6-24 and 6-25.

6. Threatened and endangered species were listed for these SWMUs, including 15. The Florida Gopher Frog and the Gopher Tortoise were included in this list for SWMU 15. However, these two species were not accounted for during the assessment for terrestrial species in SWMU 15. The Green Frog and the Eastern Box Turtle are recommended to be used as representative species. Uncertainty factors may be added for the turtle to account for size difference and skin exposure during burrowing.

7. For this and future assessments, the contaminant concentrations of the media used for toxicity testing should be provided. This information was not available for the soil toxicity tests conducted for SWMU 15.

8. Toxicity tests should be conducted in sediments collected along the shoreline of the St. Johns River adjacent to Group II SWMUs. These samples should not be composited, but tested and analyzed individually.

9. Toxicity tests should be conducted in groundwater collected from the monitoring wells:

MPT-8-MW17S	MPT-9-MW02S
MPT-8-MW16S	MPT-9-MW03S
MPT-S-MW02S	MPT-11-MW02S
MPT-S-MW03S	MPT-11-MW03S

These samples should not be composited, but tested and analyzed individually.

10. No data was available pertaining to the projection of groundwater plume movements. The appendix only discusses the model used. Therefore, it was difficult to project what the future groundwater/surface water contaminant levels would be.
/jf

cc: Ligia Mora-Applegate