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LETTER REGARDING FINAL REMEDIAL INVESTIGATION FEASIBILITY STUDY
RESPONSES TO REGULATORY COMMENTS AT OPERABLE UNIT 4 (OU 4) NTC
ORLANDO FL
1/29/1998
ABB ENVIRONMENTAL

PROJECT REVIEW COMMENTS

**Final Remedial Investigation and Feasibility Study Work Plan
Operable Unit 4, Study Areas 12, 13, and 14 - Area C
NTC Orlando, Florida**

Department of Environmental Protection - John W. Mitchell

1. On page 2-12 and page 3-7, the document indicates that there is no surface water standard for cis-DCE. The Florida Surface Water Quality Standard for this constituent is the minimum criteria specified in Chapter 62-302.500, F.A.C. The text should be amended accordingly.

As stated by ABB-ES at the November 1997 Partnering Team meeting, cis-DCE is not regulated under Chapter 62-302.500 FAC, Minimum Criteria for Surface Waters. Chapter 62-302.500 FAC applies to (1) domestic, industrial, agricultural, or other man-induced discharges, (2) thermal discharges, or (3) silver. Although it appears that cis-DCE might be regulated under (1), the FAC is very specific under what conditions the minimum criteria apply:

"All surface waters of the State shall be at all places and at all times be free from:
(1) Domestic, industrial, agricultural, or other man-induced non-thermal components of discharges which, alone or in combination with other substances or in combination with other components of discharges (whether thermal or non-thermal):

SURFACE WATER QUALITY STANDARD 62-302.500 MINIMUM CRITERIA	APPLIES TO CIS-DCE?
(a) Settle to form putrescent deposits or otherwise create a nuisance; or	No
(b) Float as debris, scum, oil, or other matter in such amounts as to form nuisances; or	No
(c) Produce color, odor, taste, turbidity, or other conditions in such degree as to create a nuisance; or	No
(d) Are acutely toxic; or	No
(e) Are present in concentrations which are carcinogenic, mutagenic, or teratogenic to human beings or to significant, locally occurring, wildlife or aquatic species, unless specific standards are established for such components in Rules 62-302.530; or	No*
(f) Pose a serious danger to the public health, safety, or welfare.	No

*Based on review of ATSDR ToxFAQs, NIOSH Pocket Guide to Chemical Hazards, and IRIS.

This position is supported by FDEP's approach at other sites within Florida. One example is the Final ROD for Operable Unit 1 at NAS Jacksonville. At this site, chlorinated solvents in groundwater (including TCE, cis-1,2-DCE, and vinyl chloride) are potentially discharging to a drainage ditch leading to the St. John's River. The drainage ditch has been established as

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the compliance point. The Final Remedy includes monitoring of groundwater for continued natural attenuation of the plume. Surface water in the drainage ditch is also monitored for conditions that would trigger collection and treatment of water in the ditch.

In both the ROD (dated September 1997) and in the selection of RAO's in the risk assessment, no criteria were identified for cis-DCE in surface water. Treatment of water in the drainage ditch would potentially be triggered only by the repeated detection of compounds with published numeric surface water standards, and not cis-DCE.

At NTC Orlando OU4, cis-DCE will be retained as a human health and ecological CPC in the risk assessment for surface water and sediment. The results of the risk assessment will be used to establish risk-based cleanup criteria (if necessary) for cis-DCE in Lake Druid surface water and sediment.

2. In Section 6.1.2 (Exposure Assessment) indicates that the potential future area resident exposure assessment for groundwater will be for incidental ingestion and inhalation of volatiles while showering. As the aquifer is classified G-II and is potentially potable, exposure assessment needs to be determined for regular ingestion. If one is using water to shower, they would also most likely be using it as drinking water.

We agree that the text in question in Section 6.1.2 is unclear. An exposure assessment for use of the surficial aquifer as a drinking water source by a potential future area resident will be performed, along with the incidental ingestion and inhalation while showering scenario.

3. In Table 6-1, I do not agree that reduction in population of small mouth bass and benthic invertebrates are assessment endpoints which can be measured through literature. This would require some form of population comparison of the populations in Lake Druid with populations in a similar lake in the area. It also would have many uncertainties. More accurate assessment endpoints which could be compared with the measurement endpoints shown in the table would be: 1) growth and survival of small mouth bass or brim; and 2) growth and survival of benthic macro-invertebrates. The assessment endpoints could be qualitatively measured from literature toxicity data. Also, the decision points are shown as exceedences of the toxicity benchmarks. However, there is no indication of how to proceed should exceedences be present. Previous investigations have already found exceedences of surface water quality standards and ambient water quality criteria showing that the indicated decision points have already been reach. It seems that the decision now is whether, based from the literature derived measurement endpoints, actual toxicity tests need to be performed with the sediment and surface water at the site. Any affects of this comment also need to be addressed in Sections 6.2.3.2, 6.2.3.3 and 6.2.4.

PROJECT REVIEW COMMENTS (Continued)

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The assessment endpoints in Table 6-1 will be revised to include growth and survival of small mouth bass or brim; and growth and survival of benthic macroinvertebrates. Although previous investigations have already found exceedences of surface water quality standards and ambient water quality criteria, recirculation wells have since been installed at OU4, and detected concentrations of contaminants in the surface water and sediment of Lake Druid may be lower than the historical data and their respective benchmarks. Recent surface water and sediment data collected from Lake Druid following installation of the recirculation wells will be compared to literature-derived toxicity data; therefore, the measurement endpoints listed in Table 6-1 will not be revised. If detected concentrations of contaminants in Lake Druid still exceed the benchmarks, further evaluation including site-specific toxicity testing of the surface water and sediment will be considered. The revised Table 6-1 is attached.

4. In Section 6.2.3.1, Hazard Assessment and Selection of Ecological CPCs, the workplan states that the CPC selection process will screen against USEPA Region IV surface water and sediment screening criteria. Potential CPCs should also be screened against Florida Surface Water Quality Standards and Florida Sediment Quality Assessment Guidelines (SQAGs). The lowest concentration of all the criteria should be used in selection of CPCs. (Note: This comment was provided verbally by John Mitchell at the OPT meeting on November 19, 1997.)

Potential CPCs will also be screened against the Florida Surface Water Quality Standards and the Florida Sediment Quality Assessment Guidelines. With the addition of these standards and guidelines to the CPC selection process, it is no longer appropriate to state that these sources will be considered for identifying benchmark values for aquatic organisms. Please disregard their use in Section 6.2.3.3, Ecological Effects Assessment. The remaining sources referenced for benchmark identification are still appropriate.

**Table 6-1
Endpoints for Ecological Assessment**

RI/FS Workplan, Operable Unit 4
Study Area 12, 13, and 14 - Area C
Naval Training Center
Orlando, Florida

Assessment Endpoint	Endpoint Species	Ecological CPCs	Measurement Endpoint	Decision Point
Survival of terrestrial soil invertebrate populations	Earthworms	Chlorinated VOCs	Literature-reported invertebrate Reference Toxicity Values (RTVs)	Exceedance of RTV by study area surface soil concentrations
Growth and survival of small mouth bass or brim populations	Small mouth bass	Chlorinated VOCs	Aquatic toxicity data specific to bass species	Exceedance of aquatic toxicity benchmarks by contaminant concentrations measured in surface water and groundwater discharging to Lake Druid
Growth and survival of benthic macroinvertebrate populations that represent a food source for fish	Freshwater benthic macroinvertebrates	Chlorinated VOCs	Freshwater invertebrate aquatic toxicity data (i.e., sediment benchmark values)	Exceedance of sediment benchmark values by contaminant concentrations measured in sediment from Lake Druid
Notes: RI/FS = remedial investigation and feasibility study. CPC = chemical of potential concern. VOC = volatile organic compound.				