DATA EVALUATION REPORT

1. **Chemical**: Abamectin (Major soil metabolite of Avermectin B1a.)
   Sha. No.: 122804

2. **Test Material**: 8α-Hydroxy Avermectin B1a with Daphnia magna

3. **Study/Action Type**: 48-Hour LC50 with Daphnia magna


5. **Reviewed by**: Daniel Rieder
   Wildlife Biologist
   EEB/HED
   Signature: Daniel Rieder
   Date: 2/13/98

6. **Approved by**: Norm Cook
   Section Head, Section 2
   EEB/HED
   Signature: Norm Cook
   Date: 2/18/98

7. **Conclusions**:
   This study is scientifically sound. LC50 = 25.5 ppb
   95% C.L. = 18 to 32 ppb. This study will fulfill the Guideline requirement for an aquatic invertebrate LC50 with a soil degrade of Abamectin.

8. **Recommendation**: N/A

9. **Background**:
   This study was submitted to support registration.

10. **Discussion of Individual Tests**: N/A
11. Methods and Materials:

a. Test Materials: 8α-hydroxy Avermectin B₁₅a, a soil degrade.
   Percent active ingredient: 99+ %

b. Test Organism: Water flea
   Species: Daphnia magna
   Age/Stage: < 24 hrs
   Number per concentration: 20
   Source: ABC Laboratory Stock

b. Test Organizations: Glass
   Size: 250 mL
   Aerated: No
   Organisms per container: 10
   Replicates: 2

d. Test Conditions: Static
   Photoperiod: 16 hours per day
   Temperature: 20 °C
   Controls: Solvent and Untreated
   Test Solution: Aged wellwater
   Solvent: Acetone

Protocol References:
Committee on Methods for Toxicity Tests With Aquatic Organisms.
Methods of Acute Toxicity Tests with Fish, Macroinvertebrates and

American Public Health Association (1980) Standard Methods for the

b. Statistics:

Reference: Stephan, C.E.; Busch, K.A.;
Smith, R.; Burke, J.; and Andrews, R.W.
(1978) A Computer Program for
Calculating an LC₅₀. U.S. Environ-
mental Protection Agency, Duluth,
Minnesota, prepublication manuscript,
August 1978.

12. Reported Results:

48-hour LC₅₀ = 25.54 ppb  95% C.L. = 18 to 32 ppb.
<table>
<thead>
<tr>
<th>CONCENTRATION PPB Nominal</th>
<th>24 hours</th>
<th>48 hours</th>
<th>CONDITIONS</th>
<th>DO</th>
<th>pH</th>
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<td>7.8</td>
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</table>

13. Study Authors' Conclusions:

The 24-hour LC$_{50}$ is greater than 32 ppb. The 48-hour LC$_{50}$ is 25.5 ppb. The 48-hour NOEL is 3.2 ppb. Abnormal effects were observed at 5.6, 10, 18, and 32 ppb.

14. Reviewer Discussion:

a. Methods/Procedure: The test procedure was acceptable.

b. Statistics: The statistical results are compatible with the raw mortality data.

c. Discussion/Results: 8α-hydroxy Avermectin B$_{1a}$ (a soil degrade of Avermectin) is very highly toxic to aquatic invertebrates.

d. Adequacy: Core

15. Completion of One-liner: One-liner completed.

16. CBI Appendix: N/A
<table>
<thead>
<tr>
<th>CONC.</th>
<th>NUMBER EXPOSED</th>
<th>NUMBER DEAD</th>
<th>PERCENT DEAD</th>
<th>BINOMIAL PROB. (PERCENT)</th>
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<tr>
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</table>

The binomial test shows that 18 and 32 can be used as statistically sound conservative 95 percent confidence limits, because the actual confidence level associated with these limits is greater than 95 percent.

An approximate LC50 for this set of data is 25.54447

When there are less than two concentrations at which the percent dead is between 0 and 100, neither the moving average nor the probit method can give any statistically sound results.