

CITY OF CLINTON
CLINTON WATER AND SEWER DEPARTMENT
P.O. BOX 277
CLINTON, AR 72031
TELEPHONE (501) 745-4320
FAX (501) 745-2164

William Hinchey, Manager

Richard McCormac, Mayor

June 28, 2021

Gavin Gray
Enforcement Analyst
Division of Environmental Quality
Office of Water Quality
5301 Northshore Drive
North Little Rock, AR 72118

Mr. Gray:

The Clinton Water and Sewer Department hired ESC, Inc. to do the testing for the Whole Effluent Toxicity (WET) Limitations for the cladoceran, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas* chronic toxicity limits. Three composite samples of Outfall 001 were collected by ESC personnel on March 8, 10 and 12, 2021, at 0900 hours.

The results of the *Ceriodaphnia dubia* test can be found in Table 1. One hundred percent survival occurred in the control and in all the effluent dilutions after eight days of exposure. The average number of neonates per female after three broods in the control and in the 100.0 percent critical dilution was 19.3 and 17.6, respectively. The NOEC for survival and reproduction in this test was 100.0 percent effluent ($p=.05$).

The fathead minnow test results can be found in Table 2. After seven days of exposure, 97.5 percent survival occurred in the control and in the 100.00 percent critical dilution. The average weight gained per minnow in the control and in the 100.0 percent critical dilution was 0.413 milligram (mg), and 0.395 mg, respectively. The NOEC for survival and growth in this test was 100.0 percent effluent ($p=.05$).

Table 1: Results of the Chronic Definitive Ceriodaphnia dubia Test

| Percent Effluent | Percent Survival | Sig.* | Mean # Neonates-Surviving | Mean # Neonates-Total | Sig.* |
|------------------|------------------|-------|---------------------------|-----------------------|-------|
| Control | 100.00 | | 19.3 | 19.3 | |
| 32.0 | 100.00 | | 18.1 | 18.1 | |
| 42.0 | 100.00 | | 18.0 | 18.0 | |
| 56.0 | 100.00 | | 18.1 | 18.1 | |
| 75.0 | 100.00 | | 20.3 | 20.3 | |
| 100.0 | 100.00 | | 17.6 | 17.6 | |

*significant when compared to the control (p=.05). Test validity based on mean number of neonates per surviving female. NOEC value based on total mean number of neonates.


Table 2: Results of the Chronic Definitive Fathead Minnow Test

| Percent Effluent | Percent Survival | Sig.* | Mean Dry Weight (mg) | Sig.* |
|------------------|------------------|-------|----------------------|-------|
| Control | 97.5 | | 0.413 | |
| 32.0 | 92.5 | | 0.298 | |
| 42.0 | 100.0 | | 0.408 | |
| 56.0 | 90.0 | | 0.413 | |
| 75.0 | 100.0 | | 0.435 | |
| 100.0 | 97.5 | | 0,395 | |

*significant when compared to the control (p=.05).

The three composite samples of Outfall 001 collected from the East Wastewater Treatment Facility serving the city of Clinton, Arkansas, on March 8, 10, and 12, 2021, were not found to be lethally toxic to the Pimephales promelas test organisms nor the Ceriodaphnia dubia test organisms in the 100.0 percent critical dilution after seven and eight days of exposure, respectively (p=.05). Sub-lethal effects (i.e., lack of reproduction or growth) were not noted in the 100.0 percent critical dilution in either test (p=.05).

Sincerely,



Jackie William Hinchey, Jr., Manager
Clinton Water and Sewer Department