

CERTIFIED--RETURN
RECEIPT REQUESTED
#P241 411 248

July 13
~~June 25~~, 1990

VISTA

Ms. Evelyn Rosoborough (6W-PS)
Permit Branch
Water Management Division
EPA Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

Re: Section 308 Letter of June 9, 1989
Requiring Chronic Biototoxicity Testing
NPDES Permit No. LA000336

Dear Ms. Rosoborough:

Please find enclosed the summary reports, Table I data,
and the formal reports for the monthly sampling for May *June*
initiated ~~May 14~~, 1990.
June 12

If you have any questions concerning this data, please
contact Paul Fetzner at (318)494-5067.

Sincerely,

M. G. Hayes
Director of Environmental Control
Lake Charles Chemical Complex

CWH 000010361

PERMITTEE:
 PERMIT NO:
 OUTFALL NO:

ENCLOSURE 1 (PAGE 5 OF 11)

TABLE 1

BIOMONITORING REPORTING

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION

Date composite collected: #1: FROM 0700 6-10-1990 TO 0700 6-11-1990
 #2: FROM 0700 6-12-1990 TO 0700 6-13-1990
 #3: FROM 0700 6-14-1990 TO 0700 6-15-1990

Date test initiated: 6-12-1990

Dilution water used: _____ Receiving water ☒ Reconstituted water

NUMBER OF YOUNG PRODUCED PER FEMALE @ 7 DAYS

Percent effluent (%)

REP	0%	52%	59%	67%	76%	86%	13%	26%
A	13	0	0	0	0	0	7	0
B	23	0	0	0	0	0	11	3
C	33	0	0	0	0	0	5	5
D	19	0	0	0	0	0	4	7
E	28	0	0	0	0	0	11	8
F	27	0	0	0	0	0	11	0
G	24	0	0	0	0	0	8	3
H	24	0	0	0	0	0	11	0
I	23	0	0	0	0	0	0	7
J	22	0	0	0	0	0	0	7
Total	238	0	0	0	0	0	68	33
GV%*	21						32	94

* coefficient of variation = standard deviation x 100/mean

CWH 000010362

PERMITTEE:
PERMIT NO:
OUTFALL NO:

ENCLOSURE 1 (PAGE 6 OF 11)

TABLE 1

CERIODAPHNIA DUBIA SURVIVAL AND REPRODUCTION TEST

1. Dunnett's Procedure or Steel's Many-One Rank Test as appropriate:

Is the mean number of young produced per female significantly less ($p=0.05$) than the control's mean number of young female for the % effluent corresponding to (significant non-lethal effects):

- a.) LOW FLOW OR CRITICAL DILUTION (76 %): ✓ YES NO

PERCENT SURVIVAL

Percent Effluent

Time of Reading	0%	52%	59%	67%	76%	86%	13%	26%
24h	100	100	100	100	90	100	100	100
48h	100	100	70	40	0	0	90	100
7 day	100	90	10	0	0	0	80	100
CV%*								

* coefficient of variation = standard deviation X 100/mean

2. Fisher's Exact Test:

Is the mean survival at 7 days significantly less ($p=0.05$) than the mean control survival for the % effluent corresponding to (lethality):

- a.) LOW FLOW OR CRITICAL DILUTION (76 %): ✓ YES NO

3. Enter percent effluent corresponding to each NOEL below and circle lowest number:

a.) NOEL survival = 52 % effluent

b.) NOEL reproduction = < 13 % effluent

4. If you answered NO to 1.a) and 2.a) enter [P] otherwise enter [F]: F

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PERMITTEE:
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ENCLOSURE 1 (PAGE 7 OF 11)

TABLE 1
 BIOMONITORING REPORTING

FATHEAD MINNOW LARVAE GROWTH AND SURVIVAL
 (*Pimephales promelas*)

Date composite collected: #1: FROM 0700 6-10-90 TO 0700 6-11-90
 #2: FROM 0700 6-12-90 TO 0700 6-13-90
 #3: FROM 0700 6-14-90 TO 0700 6-15-90

Date test initiated: 6-12-90

Dilution water used: _____ Receiving water ☒ Reconstituted water

DATA TABLE FOR GROWTH OF FATHEAD MINNOWS

Effluent Conc (%)	Average Dry Weight in milligrams in replicate chambers				MEAN DRY WEIGHT (mg)	CV%*
	A	B	C	D		
0%	0.40	0.44	0.44	0.39	0.42	5
52%	0.21	0.12	0.16	0.28	0.20	31
59%	0.14	0.10	0.10	0.05	0.10	33
67%	0.05	0.07	0.12	-	0.09	40
76%	0.05	0.10	0.10	0.10	0.08	25
86%	-	-	-	-	-	-
13 %	0.38	0.38	0.32	0.32	0.35	7
26 %	0.40	0.46	0.34	0.38	0.40	11

* coefficient of variation = standard deviation x 100/mean

1. Dunnett's Procedure:

Is the mean dry weight (growth) at 7 days effluent significantly less (p=0.05) than the control's mean dry weight (growth) for the % effluent corresponding to (significant non-lethal effects):

a.) LOW FLOW OR CRITICAL DILUTION (76%): ☒ YES ☐ NO

PERMITTEE:
 PERMIT NO:
 OUTFALL NO:

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TABLE 1

BIOMONITORING REPORTING
 FATHEAD MINNOW GROWTH AND SURVIVAL TEST

DATA TABLE FOR FATHEAD MINNOWS SURVIVAL

Effluent Conc (%)	Percent Survival in Replicate Chambers				MEAN PERCENT SURVIVAL			CV%*
	A	B	C	D	24h	48h	7 days	
0%	100	100	100	100	100	100	100	0
52%	70	50	80	60	100	100	65	17
59%	50	20	20	40	95	95	33	40
67%	20	30	40	0	85	83	23	66
76%	20	10	20	20	90	90	18	25
86%	0	0	0	0	100	98	0	-
13	90	50	40	80	100	100	65	32
26	40	50	70	50	100	100	53	21

* coefficient of variation = standard deviation x 100/mean

2. Dunnett's Procedure or Steel's Many-One Rank Test as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the mean control survival for the % effluent corresponding to:

a.) LOW FLOW OR CRITICAL DILUTION (76%): ☒ YES ☐ NO

3. Enter percent effluent corresponding to each NOEL below and circle lowest number:

a.) NOEL survival = <13 % effluent
 b.) NOEL reproduction = _____ % effluent

4. If you answered NO to 1.a) and 2.a) enter [P] otherwise enter [F]: F

CWH 000010365

PERMITTEE:
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TABLE 1

BIOMONITORING REPORTING
 FATHEAD MINNOW GROWTH AND SURVIVAL TEST

DATA TABLE FOR FATHEAD MINNOWS SURVIVAL

Effluent Conc (%)	Percent Survival in Replicate Chambers				MEAN PERCENT SURVIVAL			CV%*
	A	B	C	D	24h	48h	7 days	
0%	100	90	100	100	100	100	98	4
52%	40	20	40	40	100	100	35	25
59%	20	30	30	10	100	100	23	37
67%	30	30	50	30	100	100	35	25
76%	20	30	13	20	100	100	21	35
86%	20	0	10	10	100	100	10	71
13	70	80	80	80	100	100	80	4
26	80	80	70	60	100	100	73	11

* coefficient of variation = standard deviation x 100/mean

2. Dunnett's Procedure or Steel's Many-One Rank Test as appropriate:

Is the mean survival at 7 days significantly less ($p=0.05$) than the mean control survival for the % effluent corresponding to:

a.) LOW FLOW OR CRITICAL DILUTION (76%): ☒ YES ☐ NO

3. Enter percent effluent corresponding to each NOEL below and circle lowest number:

a.) NOEL survival = 13 % effluent

b.) NOEL reproduction = NA % effluent

4. If you answered NO to 1.a) and 2.a) enter [P] otherwise enter [F]: F

* the EPA recommends (EPA/600/4-89/001 PG 2 Section 12.3.1)
 that concentrations above NOEC be excluded from the
 hypothesis for growth Test

CWH 000010366

ANALYTICAL PROCEDURES

Refer to Tables 1, 2, 3, 4, 5, and 6 for the EPA-approved analytical and sample preservation procedures to be followed during this project.

DATA REDUCTION, VALIDATION AND REPORTING

For data reduction, validation and reporting, the contracted laboratories will be asked to supply a brief description for each major measurement parameter. The description should include: data reduction scheme planned for collected data; principle criteria to be used in validating data integrity from collection through final reporting; methods used to identify and treat outliers; and, the data flow reporting scheme from collection of raw data through storage of validated concentrations.

Quality control samples routinely included during analytical activities will be used to set up a system of data validation, based on control limits established for each analyte such that these limits will reflect the 95% confidence limit to be obtained by using the results of all the quality control samples of that analyte. All quality control samples are compared to the upper control limits (UCL) and flagged if they exceed the limits.

If any quality control samples exceed the control limits, all data from the analytical run are examined in detail. If more than one quality control sample is out of limits or if any unusual instrument response is observed on the strip chart, all samples are reanalyzed. If only one out of three or four quality control samples is out of limits and all other parameters indicate that the analytical run is normal, the data are released.