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August 30, 2023

Jim Knocke  
Corrosion Innovations LLC  
3500 South Richey Street, Suite 320  
Houston, TX 77017

Biomonitoring Results  
Pace National Identification #: L1537884-01

Attached are the results for toxicity test performed: September 21-23, 2022

A summary of the findings is presented below:

Test Species	<i>Ceriodaphnia dubia</i>	<i>Pimephales promelas</i>
EPA Method	EPA Method 2002.0	EPA Method 2000.0
Test Concentrations	0.0001%, 0.001%, 0.01%, 0.1%, 1.0%	0.0001%, 0.001%, 0.01%, 0.1%, 1.0%
Test Endpoint	48-hr LC50	48-hr LC50
Test Result	<b>0.0197</b>	<b>0.0251</b>
	Report Only	Report Only
Next Test Date	<b>Contact the lab if further testing is needed.</b>	
Comments	Corrosion Innovations (CHLOR * RID SP8 Rinse)  Revision 2	

If you have any questions or comments concerning the enclosed report, please do not hesitate to contact us.




**Aquatic Biology Lab**  
615.773.6359  
615.773.7544



Acute or Chronic? Acute  
 Screen or Definitive? Definitive  
 Test Date: September 21-23, 2022  
 Lab Identification #: L1537884-01

## TOXICITY TEST REPORT SHEET

- |  |   |                               |                                    |  |  |
|--|---|-------------------------------|------------------------------------|--|--|
| 1). Facility/Discharger                                | Corrosion Innovations LLC                       |                               |                                    |  |  |
| 2). Contact Person                                     | Jim Knocke                                      |                               |                                    |  |  |
|  | email 1 jim@corrinnovations.com                 |                               |                                    |  |  |
| 3). Permit # or Project ID                             | CHLOR * RID SP8 Rinse                           |                               | 4). Report Address                 |  |  |
| 5). Receiving Stream                                   |   |                               | 3500 South Richey Street, Suite320 |  |  |
|  |   |                               | Houston, TX 77017                  |  |  |
| 6). Laboratory Name                                    | Pace National                                   |                               |                                    |  |  |
| 7). Laboratory Contact (phone)                         | Cody Medley, Biology Supervisor<br>615.773.6359 |                               |                                    |  |  |
| 8). Outfall(s) Tested                                  | CHLOR * RID SP8 Rinse                           |                               |                                    |  |  |
| 9). Test Species                                       | #1 <i>Ceriodaphnia dubia</i>                    | #2 <i>Pimephales promelas</i> |                                    |  |  |
| 10). Species Age                                       | #1 Neonates, <24-hr                             | #2 9 days old                 |                                    |  |  |
| 11). Test Conditions (Screen or Definitive?)           | #1 Definitive                                   | #2 Definitive                 |                                    |  |  |
| 12). Dilution Water Type (synthetic, receiving stream) | Moderately Hard SDW                             |                               |                                    |  |  |
| 13). Aeration? (Before/During Test)                    | none  |                               |                                    |  |  |
| 14). Dechlorination?                                   | none  |                               |                                    |  |  |
| 15). Original Chlorine Level                           | <0.2mg/L  |                               |                                    |  |  |
| 16). Report prepared by                                | Mike Lowe, Scientist 2                          |                               |                                    |  |  |

 _____ <small>signature of person performing final review</small>	8-30-2023 _____ <small>date</small>
Brandon Etheridge _____ <small>name (typed or printed)</small>	Sr. Biologist _____ <small>title</small>



Facility/Discharger: Corrosion Innovations, LLC

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### SAMPLING SUMMARY

Sample	Sample Type Grab or Composite	Volume Collected	Sample Collection		Flow Rate (at collection)	Sample Temperature (when received at lab)
			Begin (MM/DD/Time)	End (MM/DD/Time)		
1		2 gallons		9/20/2022		deg C

Comments:

### TEST PERFORMANCE

#### Species #1

*Ceriodaphnia dubia* (water flea)  
9/21/2022 @ 16:30 to 9/23/2022 @ 15:31

#### Species Age

< 24 hrs old

#### Organism Source

Pace National, in-house cultures

#### Acclimation Procedure

cultured in Moderately Hard SDW at 25 deg C

#### Test Duration

48 hours

#### Feeding Regime

Fed YCT and *Selenastrum* while holding prior to the test. Newly released young have food available a minimum of 2 hrs prior to use in the test. For 96-hr tests, 0.15mL each of YCT and *Selenastrum* are added 2 hrs prior to test solution renewal at 48 hrs.

#### Type of Test Chamber

polystyrene cup

#### Volume of Test Chamber

30 mL

#### Volume of Solution Used Per Test Chamber

15 mL

#### Number of Test Organisms Per Test Chamber

five (5)

#### Number of Replicates Per Treatment

four (4)

#### Species #2

*Pimephales promelas* (fathead minnow)  
9/21/2022 @ 16:50 to 9/23/2022 @ 15:32

Species Age	Hatch Date	Pace National Lot #
9 days old	9/12/2022	091222HD

#### Organism Source

Aquatic Bio Systems - Fort Collins, CO

#### Acclimation Procedure

acclimated in 20% DMW at 25 deg C for about 2 hrs

#### Test Duration

48 hours

#### Feeding Regime

*Artemia* nauplii are made available while holding prior to the test. For 96 hr tests, minnows are fed 0.15mL -0.2mL *Artemia* nauplii concentrate 2 hrs prior to test solution renewal at 48 hrs.

#### Type of Test Chamber

polypropylene beaker

#### Volume of Test Chamber

500 mL

#### Volume of Solution Used Per Test Chamber

250 mL

#### Number of Test Organisms Per Test Chamber

ten (10)

#### Number of Replicates Per Treatment

two (2)





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## ADDITIONAL TOXICITY TEST INFORMATION

Copies of all bench sheets and statistical calculations and printouts obtained during the test are attached in the Appendix. Electronically entered data is entered in real time and digitally tracked to ensure traceability.

Methods/Instrumentation used in chemical analysis:

Dissolved Oxygen: YSI 5000 DO Meter/Probe (serial #01L0435)

pH: Beckman 390pH/Temp/mV/ISE Meter

pH/RDO/Conductivity: Thermo Scientific Orion VersaStar (serial #V 02105)

Water Bath: Lindberg/Blue, Model WB1140A-1 (serial #S01M-580360-SM)

Temperature: Thermometers calibrated to NIST certified thermometer

Alkalinity: Lachat

Hardness: Lachat

Total Residual Chlorine: Hach Pocket Colorimeter, Model #DR300 (serial #19110A002361)

Environmental Chambers: 25 degrees C + 1.0 degree - Thermo-Kool

Environmental Chambers (for Colorado tests): 20 degrees C  $\pm$  1.0 degree - Thermo Scientific Model 3759

Light Quality: Ambient Lab Illumination

Light Intensity: 50-100 ft-c - VWR Traceable Dual-Range Light Meter- Model 62344-944 (S/N 210158976)

Photoperiod: 16 hours light, 8 hours dark

Drying: Overnight at greater than 60 degrees Celsius in a Fisher Scientific Isotemp Oven, Model 655F

Mean Dry Weight: Determined using Mettler Toledo Balance, AT261 Delta Range

Reference Weights (Set #1): Class 1, TREOMNER, Inc., serial number 85035

Reference Weights (Set #2): Class 1, TREOMNER, Inc., serial number 67812

EPA Acute Manual Edition and Date: EPA-821-02-012 October 2002, Fifth Edition

EPA Chronic Manual Edition and Date: EPA-821-R-02-013 October 2002, Fourth Edition

This method is performed only by Assistant Biologists, Biologists, and Senior Biologists that have experience with aquatic toxicity testing. Laboratory Technicians, Chemists, and any other laboratory personnel that are not experienced with toxicity testing will not handle test organisms during a toxicity evaluation. Lab Techs, Chemists, and others may assist (under supervision) with the gathering of data during the evaluation (pH, DO, conductivity, alkalinity, hardness, etc.), but will not be allowed to do any work with the test organisms themselves. The following analysts have met Technical Training Qualifications and their initials (in parenthesis) can be found on the bench sheets in this report: **Brandon Etheridge (BE); Cody Medley (CM);**

**Clarissa Moore (CGM); Nadiar Yakob (NY); Anthony Grist (AG); Cheyenne Wagoner (KCW);**

**Hunter Holden (HH); Nalini Lamichhane (NL); Lizzie Orcutt (EO); Taylor Eustaquio (TE);**

**Mike Lowe (ML); Nathan Hawkins (NH); Ashwaq Albeladi (AA); Rubaiya Jesmin (RJ);**

Indicate below any other relevant information that may aid in the evaluation of this report. Include any deviations from EPA Methodology that were necessary for these tests as well as any sample manipulations which were performed, such as aeration, dechlorination with sodium thiosulfate (etc) and the justification for such manipulations or deviations. Attach additional pages as needed.

< no deviations to report >



Facility/Discharger: Corrosion Innovations LLC

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### Toxicity Test Results

Results of a Ceriodaphnia dubia 48-hour static acute  
 (Genus) (Species) (Type/Duration)

Conducted 9/21/2022 to 9/23/2022 Using Effluent from Outfall:  
CHLOR \* RID SP8 Rinse

Test Solution	Percent Surviving (time intervals used - days)								# of Young	
	0	1	2	3	4	5	6	7	Total	Mean
Control	100	95	95						not applicable	
0.0001%	100	100	100						not applicable	
0.001%	100	90	90						not applicable	
0.01%	100	85	80						not applicable	
0.1%	100	0	0						not applicable	
1.0%	100	0	0						not applicable	

Permit Limit: Report Only      **LC<sub>50</sub> Value:** 0.0197      Statistical methods used to determine LC50:  
 Confidence Limits  
 Upper Limit: 0.03062  
 Lower Limit: 0.0127      Trimmed Spearman-Kärber

### INTERPRETATION OF RESULTS

*Ceriodaphnia dubia* (water flea) - **Acute toxicity was demonstrated.** At the end of the 48-hour exposure period, 100% mortality was demonstrated at the 0.1% and 1.0% concentrations. Spearman-Kärber was used to calculate the 48-hour LC50 (concentration that will cause mortality to 50% of the organisms). The LC50 value being reported is 0.0197% of CHLOR \* RID SP8 Rinse.



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### Toxicity Test Results

Results of a Pimephales promelas 48-hour static acute  
 (Genus) (Species) (Type/Duration)

Conducted 9/21/2022 to 9/23/2022 Using Effluent from Outfall:  
CHLOR \* RID SP8 Rinse

Test Solution	Percent Surviving (time intervals used - days)								Dry Weight (mg)	
	0	1	2	3	4	5	6	7	Total	Mean
Control	100	100	100						not applicable	
0.0001%	100	100	95						not applicable	
0.001%	100	95	95						not applicable	
0.01%	100	95	95						not applicable	
0.1%	100	0	0						not applicable	
1.0%	100	0	0						not applicable	

Permit Limit:  **LC<sub>50</sub> Value:** 0.0251 statistical methods used to determine LC50:

Confidence Limits  
 Upper Limit: 0.0345  
 Lower Limit: 0.01829 no statistical analysis required

### INTERPRETATION OF RESULTS

*Pimephales promelas* (fathead minnow) - **Acute toxicity was demonstrated.** At the end of the exposure period, 100% mortality was demonstrated at the 0.1% and 1.0% concentrations. Spearman-Kärber was used to calculate the 48-hour LC50 (concentration that will cause mortality to 50% of the organisms). The LC50 value being reported is 0.0251% of CHLOR \* RID SP8 Rinse.