

Arkansas Analytical, Inc.

Toxicity Test Results

CITY OF HELENA
NPDES Permit # AR0043389
Outfall 001
First Quarter 2020

Pimephales promelas, Acute Toxicity, EPA-821-R-02-012, October 2002

Daphnia pulex, Acute Toxicity, EPA-821-R-02-012, October 2002

Prepared for: **Mr. Matt Bienvenu**
McClelland Consulting Engineers
1311 West 2ND Street
Little Rock, AR 72201

Prepared by: Arkansas Analytical, Inc.
8100 National Drive
Little Rock, Arkansas 72209
Lab Number K2003004

Thursday, March 12, 2020

Plant Location

The facility is located as follows: The facility's access road is approximately 300 feet east-southeast from the intersection of State Hwy 44 and Phillips Road 301 and 0.22 mile west from the intersection of State Hwy 44 and Long Lake Road. From State Hwy 44 travel north approximately 0.3 mile on the facility's access road to reach the treatment lagoon in Phillips County, Arkansas.

Test Method

EPA Method 821-R-02-012, October 2002 *Pimephales promelas* 48-hour survival test

- Test chambers: 500 ml plastic cups
- Test solution volume: 250 milliliters
- Number of test organisms per chamber: 10
- Number of replicates per concentration: 5
- Test temperature: 25°C ± 1°C
- Test concentrations: 0%, 0.042%, 0.056%, 0.075%, 0.100%, 0.133%
- Dilution water: Moderately Hard Synthetic
- No deviation from the method

EPA Method 821-R-02-012, October 2002 *Daphnia pulex* 48-hour survival test

- Test chambers: 30 ml plastic cups
- Test solution volume: 15 milliliters
- Number of test organisms per chamber: 8
- Number of replicates per concentration: 5
- Test temperature: 25°C ± 1°C
- Test concentrations: 0%, 0.042%, 0.056%, 0.075%, 0.100%, 0.133%
- Dilution water: Moderately Hard Synthetic
- No deviation from the method

Reference Toxicant Data

| | <i>Pimephales promelas</i> | <i>Daphnia pulex</i> |
|--|----------------------------|----------------------|
| Reference Toxicant: Potassium Chloride | 2/4/20-2/6/20 | 2/4/20-2/6/20 |
| LC50, ppm | 1023 | 795 |
| NOEC, ppm | 500 | 500 |
| Dilution water used: | Moderately Hard | Moderately Hard |
| Physical, chemical methods used: | 821-R-02-012 | 821-R-02-012 |

Summary of Results

City of Helena

| <i>Daphnia pulex</i> | | <i>Pimephales promelas</i> | |
|--|--------|--|--------|
| NOEC Survival Parameter: TOM3D | 0.133% | NOEC Survival Parameter: TOM6C | 0.133% |
| LC50 | NA | LC50 | NA |
| Statistical comparison to control Parameter: TEM3D | Pass | Statistical comparison to control Parameter: TEM6C | Pass |
| Coefficient of Variation Parameter: TQM3D | 5.73% | Coefficient of Variation Parameter: TQM6C | 0% |

Conclusion

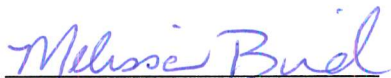
Pimephales promelas, (Method 821-R-02-012, October 2002): The permit issued to the City of Helena specifies that the **critical dilution is 0.100% effluent**. The effluent samples **did not** exhibit lethal effects at the critical dilution, and, as such, **passed**.

Daphnia pulex, (Method 821-R-02-012, October 2002): The permit issued to the City of Helena, specifies the **critical dilution is 0.100% effluent**. The effluent samples **did not** exhibit lethal effects at the critical dilution, and, as such, **passed**.

Biomonitoring Analysts:

Melissa Bird, Emily Nichols, Jettie Parnell

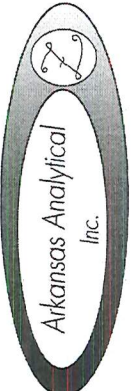
Reviewed by:



Melissa Bird







Appendices

| | |
|-----------------|--|
| Appendix A..... | Chains of custody |
| Appendix B..... | Fathead minnow data & statistics |
| Appendix C..... | <i>Daphnia pulex</i> data & statistics |
| Appendix D..... | Water chemistry data |
| Appendix E..... | Reference toxicant control charts |



8100 National Dr.
 Little Rock, AR 72209
 PHONE: 501-455-3233
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CHAIN OF CUSTODY RECORD

| CLIENT INFORMATION | | | Project Description | | | Turnaround Time | | | Preservation Codes: | | | | | | | | | | | | |
|--|-------------------|-----------|--|-------------------|---------------|---|----------------|-----------------|---|--|--|--|--|--|--|--|--|--|--|--|--|
| McClelland Consulting Engineers | | | Acute Toxicity | | | 1 Day (100%) | | | 1. Cool, 6 Degrees Centigrade | | | | | | | | | | | | |
| 7302 Kanis Rd. | | | City of Helena | | | 2 Day (50%) | | | 2. Sulfuric Acid (H ₂ SO ₄), pH < 2 | | | | | | | | | | | | |
| Little Rock, AR 72204 | | | Reporting Information | | | 3 Day (25%) | | | 3. Nitric Acid (HNO ₃), pH < 2 | | | | | | | | | | | | |
| Attn: Matt Bienvenu | | | Telephone: 501-378-7808 | | | Routine | | | 4. Thiosulfate for Dechlorination | | | | | | | | | | | | |
| | | | Fax: 501-376-4677 | | | Preservative Code: 1 | | | 5. Hydrochloric Acid(HCl) | | | | | | | | | | | | |
| | | | Email: mbienvnu@mccllelland-engrs.com | | | Bottle Type: P | | | 6. Sodium Hydroxide (NaOH), pH > 12 | | | | | | | | | | | | |
|  Sampler(s) Signature | | |  Sampler(s) Printed | | | | | | Bottle Type Code G = Glass; P = Plastic V = Septum; A = Amber | | | | | | | | | | | | |
| Field Number | SAMPLE COLLECTION | | Grab | Number of Bottles | Sample Matrix | IDENTIFICATION / DESCRIPTION | Acute Toxicity | TEST PARAMETERS | | | | | | | | | | | | | |
| | Date/s | Time/s | | | | | | Comp | | | | | | | | | | | | | |
| | 3/1/2020 | 8:00 A.M. | | 1 | Water | Day 1 AR0043389 | X | | | | | | | | | | | | | | |
| | 3/2/2020 | 8:00 A.M. | | 1 | Water | Day 2 AR0043389 | X | | | | | | | | | | | | | | |
| | 3/2/2020 | 8:00 A.M. | | | | | | | | | | | | | | | | | | | |
| | 3/3/2020 | 8:00 A.M. | | | | | | | | | | | | | | | | | | | |
|  1. Relinquished by: (Signature) | | | Date/Time | | | 2. Received by: (Signature) | | | SAMPLE CONDITION UPON RECEIPT IN LAB | | | | | | | | | | | | |
| | | | 3-3-2020 | | |  Kyle Jackson | | | 1. CUSTODY SEALS: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 2. CONTAINERS CORRECT: <input type="checkbox"/> Yes <input type="checkbox"/> No 3. COC/LABELS AGREE: <input type="checkbox"/> Yes <input type="checkbox"/> No 4. RECEIVED ON ICE: <input type="checkbox"/> Yes <input type="checkbox"/> No 5. TEMPERATURE ON RECEIPT: 1 °C 6. TEMPERATURE GUN ID: HHT# 2 | | | | | | | | | | | | |
|  3. Relinquished by: (Signature) | | | Date/Time | | | 4. Received by: (Signature) | | | REMARKS / SAMPLE COMMENTS | | | | | | | | | | | | |
| | | | 3-3-2020 | | |  Sydney Jans | | | | | | | | | | | | | | | |
| | | | 1600 | | | FOR COMPLETION BY LAB ONLY | | | | | | | | | | | | | | | |

CETIS Summary Report

Report Date: 12 Mar-20 09:34 (p 1 of 1)
 Test Code/ID: K2003004FH / 19-6619-1957

Fathead Minnow 48-h Acute Survival Test

Arkansas Analytical

| | | |
|-------------------------------|-----------------------------------|---|
| Batch ID: 05-8819-2950 | Test Type: Survival (48h) | Analyst: Emily Nichols |
| Start Date: 04 Mar-20 13:40 | Protocol: EPA/821/R-02-012 (2002) | Diluent: Mod-Hard Synthetic Water |
| Ending Date: 06 Mar-20 11:55 | Species: Pimephales promelas | Brine: Not Applicable |
| Test Length: 46h | Taxon: Actinopterygii | Source: Aquatox, AR Age: 8 d |
| Sample ID: 09-1374-3764 | Code: K2003004FH | Project: WET Quarterly Compliance Test (1Q) |
| Sample Date: 03 Mar-20 08:00 | Material: POTW Effluent | Source: Helena (AR0043389) |
| Receipt Date: 03 Mar-20 16:00 | CAS (PC): | Station: |
| Sample Age: 30h (1 °C) | Client: Helena | |

Sample Renewals

| Renewal | Sample Code | Sample Date | Receive Date | Renewal Date | Temp °C |
|---------|-------------|-----------------|-----------------|-----------------|---------|
| 1 | K2003004A | 02 Mar-20 08:00 | 03 Mar-20 16:00 | 05 Mar-20 00:00 | 1 |

Multiple Comparison Summary

| Analysis ID | Endpoint | Comparison Method | ✓ NOEL | LOEL | TOEL | TU | PMSD | S |
|--------------|-------------------|------------------------------|--------|--------|------|-------|-------|---|
| 07-6822-4290 | 48h Survival Rate | Steel Many-One Rank Sum Test | 0.133 | >0.133 | n/a | 751.9 | 6.27% | 1 |

48h Survival Rate Summary

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect |
|--------|------|-------|--------|---------|---------|--------|--------|---------|---------|-------|---------|
| 0 | L | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | 0.00% | 0.00% |
| 0.042 | | 5 | 0.9800 | 0.9245 | 1.0000 | 0.9000 | 1.0000 | 0.0200 | 0.0447 | 4.56% | 2.00% |
| 0.056 | | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | 0.00% | 0.00% |
| 0.075 | | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | 0.00% | 0.00% |
| 0.1 | | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | 0.00% | 0.00% |
| 0.133 | | 5 | 0.9600 | 0.8489 | 1.0000 | 0.8000 | 1.0000 | 0.0400 | 0.0894 | 9.32% | 4.00% |

48h Survival Rate Detail

| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 |
|--------|------|--------|--------|--------|--------|--------|
| 0 | L | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 0.042 | | 1.0000 | 1.0000 | 1.0000 | 0.9000 | 1.0000 |
| 0.056 | | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 0.075 | | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 0.1 | | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 0.133 | | 0.8000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |

48h Survival Rate Binomials

| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 |
|--------|------|-------|-------|-------|-------|-------|
| 0 | L | 10/10 | 10/10 | 10/10 | 10/10 | 10/10 |
| 0.042 | | 10/10 | 10/10 | 10/10 | 9/10 | 10/10 |
| 0.056 | | 10/10 | 10/10 | 10/10 | 10/10 | 10/10 |
| 0.075 | | 10/10 | 10/10 | 10/10 | 10/10 | 10/10 |
| 0.1 | | 10/10 | 10/10 | 10/10 | 10/10 | 10/10 |
| 0.133 | | 8/10 | 10/10 | 10/10 | 10/10 | 10/10 |

CETIS Summary Report

Report Date: 12 Mar-20 09:27 (p 1 of 1)
 Test Code/ID: K2003004DP / 10-0788-2206

Daphnia pulex 48-h Acute Survival Test

Arkansas Analytical

Batch ID: 00-2826-4444 Test Type: Survival (48h) Analyst: Emily Nichols
 Start Date: 04 Mar-20 09:30 Protocol: EPA/821/R-02-012 (2002) Diluent: Mod-Hard Synthetic Water
 Ending Date: 06 Mar-20 08:37 Species: Daphnia pulex Brine: Not Applicable
 Test Length: 47h Taxon: Branchiopoda Source: In-House Culture Age: <24

Sample ID: 15-6158-3376 Code: K2003004DP Project: WET Quarterly Compliance Test (1Q)
 Sample Date: 03 Mar-20 08:00 Material: POTW Effluent Source: Helena (AR0043389)
 Receipt Date: 03 Mar-20 16:00 CAS (PC): Station:
 Sample Age: 26h (1 °C) Client: Helena

Sample Renewals

| Renewal | Sample Code | Sample Date | Receive Date | Renewal Date | Temp °C |
|---------|-------------|-----------------|-----------------|-----------------|---------|
| 1 | K2003004A | 02 Mar-20 08:00 | 03 Mar-20 16:00 | 05 Mar-20 00:00 | 1 |

Multiple Comparison Summary

| Analysis ID | Endpoint | Comparison Method | ✓ NOEL | LOEL | TOEL | TU | PMSD | S |
|--------------|-------------------|------------------------------|--------|--------|------|-------|-------|---|
| 04-9534-3852 | 48h Survival Rate | Steel Many-One Rank Sum Test | 0.133 | >0.133 | n/a | 751.9 | 6.05% | 1 |

Test Acceptability

| Analysis ID | Endpoint | Attribute | Test Stat | TAC Limits | | Overlap | Decision |
|--------------|-------------------|--------------|-----------|------------|-------|---------|-----------------|
| | | | | Lower | Upper | | |
| 04-9534-3852 | 48h Survival Rate | Control Resp | 1 | 0.9 | >> | Yes | Passes Criteria |

48h Survival Rate Summary

| Conc-% | Code | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std Err | Std Dev | CV% | %Effect |
|--------|------|-------|--------|---------|---------|--------|--------|---------|---------|-------|---------|
| 0 | L | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | 0.00% | 0.00% |
| 0.042 | | 5 | 0.9750 | 0.9056 | 1.0000 | 0.8750 | 1.0000 | 0.0250 | 0.0559 | 5.73% | 2.50% |
| 0.056 | | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | 0.00% | 0.00% |
| 0.075 | | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | 0.00% | 0.00% |
| 0.1 | | 5 | 0.9750 | 0.9056 | 1.0000 | 0.8750 | 1.0000 | 0.0250 | 0.0559 | 5.73% | 2.50% |
| 0.133 | | 5 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 | 0.0000 | 0.00% | 0.00% |

48h Survival Rate Detail

| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 |
|--------|------|--------|--------|--------|--------|--------|
| 0 | L | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 0.042 | | 1.0000 | 1.0000 | 1.0000 | 0.8750 | 1.0000 |
| 0.056 | | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 0.075 | | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 0.1 | | 0.8750 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| 0.133 | | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |

48h Survival Rate Binomials

| Conc-% | Code | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 |
|--------|------|-------|-------|-------|-------|-------|
| 0 | L | 8/8 | 8/8 | 8/8 | 8/8 | 8/8 |
| 0.042 | | 8/8 | 8/8 | 8/8 | 7/8 | 8/8 |
| 0.056 | | 8/8 | 8/8 | 8/8 | 8/8 | 8/8 |
| 0.075 | | 8/8 | 8/8 | 8/8 | 8/8 | 8/8 |
| 0.1 | | 7/8 | 8/8 | 8/8 | 8/8 | 8/8 |
| 0.133 | | 8/8 | 8/8 | 8/8 | 8/8 | 8/8 |

Biomonitoring Report
Acute 24/48 Hour Static Test

| | |
|--|------------------------------------|
| Lab Number: <u>K2003004</u> | Test Organism: <u>Promelas</u> |
| Client: <u>Helena</u> | Age of Organism: <u>8 days</u> |
| Date/ Time Started: <u>3-4-2020/1340</u> | Source of Organism: <u>Aquatic</u> |
| Date/ Time Ended: <u>3-6-20/1155</u> | Dilution Water: <u>M+S 020</u> |

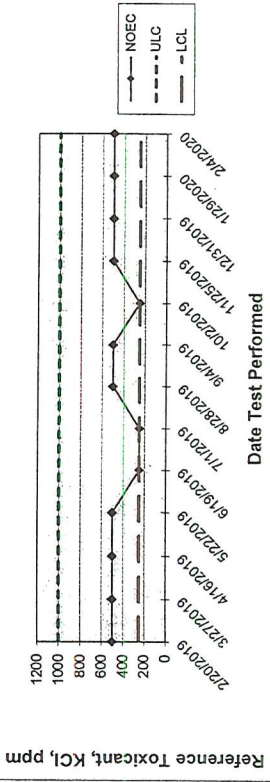
| Conc. | Rep # | # Live Organisms | | | pH/Temp. | | Dissolved O ₂ mg/L | | Alkalinity mg/L | | Hardness mg/L | | Conductivity | | T Res Cl mg/L | |
|--------|-------|------------------|-------|-------|-----------|-----------|-------------------------------|-----------|-----------------|-------|-----------------------------|-------|--------------|-------|---------------|-------|
| | | 0 hr | 24 hr | 48 hr | 24 hr | 48 hr | 24 hr | 48 hr | 24 hr | 48 hr | 24 hr | 48 hr | 24 hr | 48 hr | 24 hr | 48 hr |
| D1% | A | 10 | 10 | 10 | 8.2 / 7.8 | 8.2 / 7.9 | 8.7 / 6.6 | 8.7 / 8.5 | 100 | — | 100 | — | 383 | — | 405 | — |
| | B | ↓ | ↓ | ↓ | 20 / 25 | 20 / 25 | | | | | | | | | | |
| | C | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | D | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | E | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| D.042% | A | 10 | 10 | 10 | 8.2 / 7.8 | 8.2 / 7.3 | 8.8 / 6.3 | 8.7 / 8.4 | | | 100% effluent concentration | | | | | |
| | B | ↓ | ↓ | ↓ | 20 / 25 | 21 / 25 | | | | | | | | | | |
| | C | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | D | ↓ | 9 | 9 | | | | | B | A | B | A | B | A | B | A |
| | E | ↓ | 10 | 10 | | | | | 292 | 288 | 158 | 170 | 1621 | 1617 | 0.26 | 0.32 |
| D.056% | A | 10 | 10 | 10 | 8.2 / 7.8 | 8.2 / 8.1 | 8.9 / 6.2 | 8.7 / 8.4 | | | | | | | | |
| | B | ↓ | ↓ | ↓ | 20 / 25 | 21 / 25 | | | | | | | | | | |
| | C | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | D | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | E | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| D.075% | A | 10 | 10 | 10 | 8.2 / 7.8 | 8.2 / 8.1 | 8.9 / 6.7 | 8.7 / 8.2 | | | | | | | | |
| | B | ↓ | ↓ | ↓ | 20 / 25 | 21 / 25 | | | | | | | | | | |
| | C | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | D | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | E | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| D.1% | A | 10 | 10 | 10 | 8.2 / 7.8 | 8.2 / 8.1 | 8.9 / 6.3 | 8.6 / 8.1 | | | | | | | | |
| | B | ↓ | ↓ | ↓ | 20 / 25 | 21 / 25 | | | | | | | | | | |
| | C | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | D | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | E | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| D.133% | A | 10 | 9 | 8 | 8.2 / 7.8 | 8.2 / 8.0 | 8.9 / 6.5 | 8.7 / 8.2 | | | | | | | | |
| | B | ↓ | 10 | 10 | 20 / 25 | 21 / 25 | | | | | | | | | | |
| | C | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | D | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | E | ↓ | ↓ | ↓ | | | | | | | | | | | | |

Biomonitoring Report
Acute 24/48 Hour Static Test

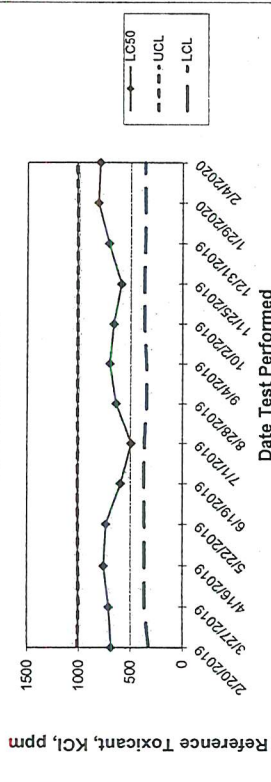
| | |
|------------------------------------|--------------------------------------|
| Lab Number: K2003004 | Test Organism: <i>D. pulex</i> |
| Client: Helena | Age of Organism: <24h |
| Date/ Time Started: 3-24-2020/0930 | Source of Organism: in-house culture |
| Date/ Time Ended: 3-6-20/0837 | Dilution Water: MHS deO |

| Conc. | Rep # | # Live Organisms | | | pH/Temp. | | Dissolved O ₂ mg/L | | Alkalinity mg/L | | Hardness mg/L | | Conductivity | | T Res Cl mg/L | |
|--------|-------|------------------|-------|-------|----------|---------|-------------------------------|---------|-----------------|-------|-----------------------------|-------|--------------|-------|---------------|-------|
| | | 0 hr | 24 hr | 48 hr | 24 hr | 48 hr | 24 hr | 48 hr | 24 hr | 48 hr | 24 hr | 48 hr | 24 hr | 48 hr | 24 hr | 48 hr |
| 0% | A | 8 | 8 | 8 | 8.2/8.3 | 8.2/8.2 | 8.7/8.3 | 8.7/8.1 | 60 | — | 100 | — | 383 | — | 20.05 | — |
| | B | ↓ | ↓ | ↓ | 20/21 | 20/25 | | | | | | | | | | |
| | C | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | D | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | E | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| 0.042% | A | 8 | 8 | 8 | 8.2/8.3 | 8.2/8.2 | 8.8/8.3 | 8.7/8.3 | | | 100% effluent concentration | | | | | |
| | B | ↓ | ↓ | ↓ | 20/21 | 21/25 | | | | | | | | | | |
| | C | ↓ | ↓ | ↓ | | | | | B | A | B | A | B | A | B | A |
| | D | ↓ | ↓ | 7 | | | | | 292 | 288 | 158 | 170 | 1621 | 1617 | 0.26 | 0.32 |
| | E | ↓ | ↓ | 7 | | | | | | | | | | | | |
| 0.056% | A | 8 | 8 | 8 | 8.0/8.3 | 8.2/8.2 | 8.9/8.4 | 8.7/8.3 | | | | | | | | |
| | B | ↓ | ↓ | ↓ | 20/21 | 21/25 | | | | | | | | | | |
| | C | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | D | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | E | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| 0.075% | A | 8 | 8 | 8 | 8.2/8.2 | 8.2/8.1 | 8.9/8.4 | 8.7/7.9 | | | | | | | | |
| | B | ↓ | ↓ | ↓ | 20/21 | 21/25 | | | | | | | | | | |
| | C | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | D | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | E | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| 0.1% | A | 8 | 8 | 7 | 8.2/8.2 | 8.2/8.2 | 8.9/8.4 | 8.6/8.3 | | | | | | | | |
| | B | ↓ | ↓ | 8 | 20/21 | 21/25 | | | | | | | | | | |
| | C | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | D | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | E | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| 0.133% | A | 8 | 8 | 8 | 8.2/8.3 | 8.1/8.1 | 8.9/8.4 | 8.7/8.1 | | | | | | | | |
| | B | ↓ | ↓ | ↓ | 20/21 | 21/25 | | | | | | | | | | |
| | C | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | D | ↓ | ↓ | ↓ | | | | | | | | | | | | |
| | E | ↓ | ↓ | ↓ | | | | | | | | | | | | |

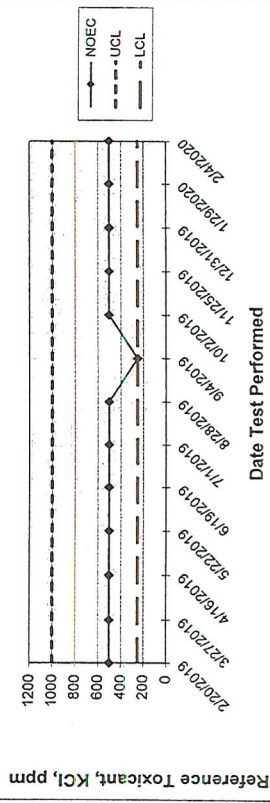
ARKANSAS ANALYTICAL, INC.
DAPHNIA PULEX NOEC
QUALITY ASSURANCE
48 HOUR ACUTE



ARKANSAS ANALYTICAL, INC.
DAPHNIA PULEX LC50
QUALITY ASSURANCE
48 HOUR ACUTE



ARKANSAS ANALYTICAL, INC.
FATHEAD MINNOW NOEC
QUALITY ASSURANCE
48 HOUR ACUTE



ARKANSAS ANALYTICAL, INC.
FATHEAD MINNOW LC50
QUALITY ASSURANCE
48 HOUR ACUTE

