



City of Hot Springs
ATTN: Ms. Amanda Cates
320 Davidson Drive
Hot Springs, AR 71901

This report contains the analytical results and supporting information for samples received on May 9, 2022. Attached please find a copy of the Chain of Custody and/or other documents received. Note that any remaining sample will be discarded two weeks from the original report date unless other arrangements are made.

This report is intended for the sole use of the client listed above. Assessment of the data requires access to the entire document.

This report has been reviewed by the Chief Operating Officer or a qualified designee.


_____ by LP
John Overbey
Chief Operating Officer

This document has been distributed to the following:

PDF cc: City of Hot Springs
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ATTN: Ms. Amanda Cates
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320 Davidson Drive
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SAMPLE INFORMATION

Project Description:

Three (3) water sample(s) received on May 9, 2022
Manhole 1750
P.O. No. 2022-247

Receipt Details:

A Chain of Custody was provided. The samples were delivered in one (1) ice chest.

Each sample container was checked for proper labeling, including date and time sampled. Sample containers were reviewed for proper type, adequate volume, integrity, temperature, preservation, and holding times. Any exceptions are noted below:

Sample Identification:

| <u>Laboratory ID</u> | <u>Client Sample ID</u> | <u>Sampled Date/Time</u> | <u>Notes</u> |
|----------------------|-------------------------|--------------------------|--------------|
| 265403-1 | Site 1 | 06-May-2022 1919 | |
| 265403-2 | Site 2 | 06-May-2022 1928 | |
| 265403-3 | Site 3 | 06-May-2022 1911 | |

Qualifiers:

- D Result is from a secondary dilution factor
- H Analytical holding time exceeded regulatory requirements
- Q Analyte is not within quality control limits

References:

"Methods for Chemical Analysis of Water and Wastes", EPA/600/4-79-020 (Mar 1983) with updates and supplements EPA/600/5-91-010 (Jun 1991), EPA/600/R-92-129 (Aug 1992) and EPA/600/R-93-100 (Aug 1993).
"Test Methods for Evaluating Solid Waste Physical/Chemical Methods (SW846)", Third Edition.
"Standard Methods for the Examination of Water and Wastewaters", (SM).
"American Society for Testing and Materials" (ASTM).
"Association of Analytical Chemists" (AOAC).

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ANALYTICAL RESULTS

AIC No. 265403-1

Sample Identification: Site 1 06-May-2022 1919

| Analyte | Result | RL | Units | Qualifier |
|---|-----------------------------------|---------------|---------------|------------------|
| Total Kjeldahl Nitrogen EPA 351.2 | < 0.5 | 0.5 | mg/l | D |
| Prep: 11-May-2022 0825 by 330 | Analyzed: 13-May-2022 0948 by 330 | | Batch: W79515 | Dil: 2 |
| Chlorophyll A SM 10200 H 2011 | < 0.0050 | 0.0050 | mg/l | H |
| | Analyzed: 09-May-2022 1609 by 45 | | Batch: W79494 | |
| Total Dissolved Solids SM 2540 C 2011 | 33 | 25 | mg/l | |
| Prep: 10-May-2022 1409 by 100 | Analyzed: 12-May-2022 1333 by 100 | | Batch: W79506 | |
| Chloride EPA 300.0 | 2.6 | 2 | mg/l | D |
| Prep: 10-May-2022 1517 by 338 | Analyzed: 10-May-2022 2348 by 338 | | Batch: C25303 | Dil: 10 |
| Nitrate + Nitrite as N EPA 300.0 | < 0.5 | 0.5 | mg/l | D |
| Prep: 10-May-2022 1517 by 338 | Analyzed: 10-May-2022 2327 by 338 | | Batch: C25303 | Dil: 10 |

AIC No. 265403-2

Sample Identification: Site 2 06-May-2022 1928

| Analyte | Result | RL | Units | Qualifier |
|---|-----------------------------------|---------------|---------------|------------------|
| Total Kjeldahl Nitrogen EPA 351.2 | < 0.5 | 0.5 | mg/l | D |
| Prep: 11-May-2022 0825 by 330 | Analyzed: 13-May-2022 0950 by 330 | | Batch: W79515 | Dil: 2 |
| Chlorophyll A SM 10200 H 2011 | < 0.0050 | 0.0050 | mg/l | H |
| | Analyzed: 09-May-2022 1609 by 45 | | Batch: W79494 | |
| Total Dissolved Solids SM 2540 C 2011 | 34 | 25 | mg/l | |
| Prep: 10-May-2022 1409 by 100 | Analyzed: 12-May-2022 1333 by 100 | | Batch: W79506 | |
| Chloride EPA 300.0 | 2.5 | 2 | mg/l | D |
| Prep: 10-May-2022 1517 by 338 | Analyzed: 11-May-2022 0009 by 338 | | Batch: C25303 | Dil: 10 |
| Nitrate + Nitrite as N EPA 300.0 | < 0.5 | 0.5 | mg/l | D |
| Prep: 10-May-2022 1517 by 338 | Analyzed: 11-May-2022 0029 by 338 | | Batch: C25303 | Dil: 10 |

AIC No. 265403-3

Sample Identification: Site 3 06-May-2022 1911

| Analyte | Result | RL | Units | Qualifier |
|---|-----------------------------------|---------------|---------------|------------------|
| Total Kjeldahl Nitrogen EPA 351.2 | 0.66 | 0.5 | mg/l | D |
| Prep: 11-May-2022 0825 by 330 | Analyzed: 13-May-2022 0951 by 330 | | Batch: W79515 | Dil: 2 |
| Chlorophyll A SM 10200 H 2011 | < 0.0050 | 0.0050 | mg/l | H |
| | Analyzed: 09-May-2022 1609 by 45 | | Batch: W79494 | |
| Total Dissolved Solids SM 2540 C 2011 | 32 | 25 | mg/l | |
| Prep: 10-May-2022 1409 by 100 | Analyzed: 12-May-2022 1333 by 100 | | Batch: W79506 | |
| Chloride EPA 300.0 | 2.6 | 2 | mg/l | D |
| Prep: 10-May-2022 1517 by 338 | Analyzed: 11-May-2022 0050 by 338 | | Batch: C25303 | Dil: 10 |
| Nitrate + Nitrite as N EPA 300.0 | < 0.5 | 0.5 | mg/l | D |
| Prep: 10-May-2022 1517 by 338 | Analyzed: 11-May-2022 0111 by 338 | | Batch: C25303 | Dil: 10 |

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DUPLICATE RESULTS

| Analyte | AIC No. | Result | RPD | RPD Limit | Preparation Date | Analysis Date | Dil | Qual |
|------------------------|-------------------------|---------------|-------|-----------|---------------------|---------------------|-----|------|
| Chlorophyll A | 265403-1 | < 0.0050 mg/l | | | | 09May22 1609 by 45 | | H |
| | Batch: W79494 Duplicate | < 0.0050 mg/l | 0.00 | 10.0 | | 09May22 1609 by 45 | | H |
| Total Dissolved Solids | 265404-1 | 1000 mg/l | | | 10May22 1409 by 100 | 12May22 1333 by 100 | | |
| | Batch: W79506 Duplicate | 1000 mg/l | 0.589 | 10.0 | 10May22 1409 by 100 | 12May22 1333 by 100 | | |

LABORATORY CONTROL SAMPLE RESULTS

| Analyte | Spike Amount | % | Limits | RPD | Limit | Batch | Preparation Date | Analysis Date | Dil | Qual |
|-------------------------|--------------|------|----------|-----|-------|--------|---------------------|---------------------|-----|------|
| Total Kjeldahl Nitrogen | 1 mg/l | 96.4 | 99.6-146 | | | W79515 | 11May22 0825 by 330 | 13May22 0940 by 330 | | Q |
| Total Dissolved Solids | 2000 mg/l | 96.6 | 85.0-115 | | | W79506 | 10May22 1409 by 100 | 12May22 1333 by 100 | | |
| Chloride | 25 mg/l | 107 | 90.0-110 | | | C25303 | 10May22 1517 by 338 | 10May22 1857 by 338 | | |
| Nitrate + Nitrite as N | 10 mg/l | 103 | 90.0-110 | | | C25303 | 10May22 1517 by 338 | 10May22 1857 by 338 | | |

MATRIX SPIKE SAMPLE RESULTS

| Analyte | Sample | Spike Amount | % | Limits | Batch | Preparation Date | Analysis Date | Dil | Qual | |
|-------------------------|------------------------------|--------------|-------|----------|--------|---------------------|---------------------|-----|------|---|
| Total Kjeldahl Nitrogen | 265364-1 | 1 mg/l | 86.2 | 49.4-153 | W79515 | 11May22 0825 by 330 | 13May22 1016 by 330 | 5 | D | |
| | 265364-1 | 1 mg/l | 58.8 | 49.4-153 | W79515 | 11May22 0825 by 330 | 13May22 1017 by 330 | 5 | D | |
| | Relative Percent Difference: | | 10.8 | 11.6 | W79515 | | | | | D |
| | | | | | | | | | | |
| Chloride | 265430-1 | 25 mg/l | 106 | 80.0-120 | C25303 | 10May22 1517 by 338 | 11May22 1033 by 338 | | | |
| | 265430-1 | 25 mg/l | 105 | 80.0-120 | C25303 | 10May22 1517 by 338 | 11May22 1053 by 338 | | | |
| | Relative Percent Difference: | | 0.690 | 10.0 | C25303 | | | | | |
| Nitrate + Nitrite as N | 265430-1 | 10 mg/l | 102 | 80.0-120 | C25303 | 10May22 1517 by 338 | 11May22 1033 by 338 | | | |
| | 265430-1 | 10 mg/l | 102 | 80.0-120 | C25303 | 10May22 1517 by 338 | 11May22 1053 by 338 | | | |
| | Relative Percent Difference: | | 0.589 | 10.0 | C25303 | | | | | |

LABORATORY BLANK RESULTS

| Analyte | Result | RL | LOQ | QC Sample | Preparation Date | Analysis Date | Qual |
|-------------------------|---------------|--------|-------|-----------|---------------------|---------------------|------|
| Total Kjeldahl Nitrogen | < 0.5 mg/l | 0.5 | 0.5 | W79515-1 | 11May22 0825 by 330 | 13May22 0938 by 330 | D |
| Chlorophyll A | < 0.0050 mg/l | 0.0050 | 0.005 | W79494-1 | | 09May22 1609 by 352 | |
| Total Dissolved Solids | < 25 mg/l | 25 | 25 | W79506-1 | 10May22 1409 by 100 | 12May22 1333 by 100 | |
| Chloride | < 0.2 mg/l | 0.2 | 0.2 | C25303-1 | 10May22 1517 by 338 | 10May22 1837 by 338 | |
| Nitrate + Nitrite as N | < 0.03 mg/l | 0.03 | 0.05 | C25303-1 | 10May22 1517 by 338 | 10May22 1837 by 338 | |



CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

| | | | | | | | |
|--|--|---------------------------|--|------------------------------|--|-------------------------|--|
| Client: City of Hot Springs | | PO No.: 2022-247 | | ANALYSES REQUESTED | | AIC CONTROL NO.: 265403 | |
| Project Reference: Marhole 1750 | | MATRIX: | | NO OF BOTTLES | | AIC PROPOSAL NO.: | |
| Project Manager: Harold Mauldin | | WATER | | Total Dissolved Solids | | Carrier: | |
| Sampled By: AC | | COMPOUND | | Chloride | | Received Temperature C | |
| AIC No. | | GRA B | | Nitrate + Nitrite | | Remarks | |
| Sample Identification | | V | | TKN | | | |
| Date/Time Collected | | V | | Chlorophyll A | | | |
| 5-6-22 @ 1919 | | V | | | | | |
| 5-6-22 @ 1988 | | V | | | | | |
| 5-6-22 @ 1911 | | V | | | | | |
| Container Type | | | | | | | |
| Preservative | | | | | | | |
| G = Glass | | | | | | | |
| NO = none | | | | | | | |
| P = Plastic | | | | | | | |
| S = Sulfuric acid pH2 | | | | | | | |
| V = VOA vials | | | | | | | |
| N = Nitric acid pH2 | | | | | | | |
| H = HCl to pH2 | | | | | | | |
| B = NaOH to pH12 | | | | | | | |
| T = Sodium Thiosulfate | | | | | | | |
| Z = Zinc acetate | | | | | | | |
| Turnaround Time Requested: (Please circle) 7 DAYS | | Relinquished By: A. Cates | | Received By: B. Hamer | | Date/Time: 5-9-22 | |
| Expedited results requested by: 5-16-22 @ 1500 (3:00 PM) | | Relinquished By: B. Hamer | | Received in Lab By: D. Brown | | Date/Time: 5-9-22 | |
| Who should AIC contact with questions: Amanda Cates | | Comments: | | | | | |
| Phone: 501-621-5899 | | | | | | | |
| Report Attention to: 501-621-5899 | | | | | | | |
| Report Address to: | | | | | | | |
| Email Address: | | | | | | | |

SSO WATER QUALITY ASSESSMENT

Date of overflow: 5/5/22-5/6/22

Sample collection date: 5/6/22

Sample collection time at Site #1: 1919
 Site #2: 1928
 Site #3: 1911

| | Overflow location Site 1 | Upstream Site 2 | Downstream Site 3 |
|-----------------------|-----------------------------|--------------------|----------------------|
| pH SU | 7.25 | 7.1 | 7.21 |
| Temperature C | 18.6 | 18.5 | 20 |
| DO ppm | 9.21 | 9.32 | 8.87 |
| Conductivity uS/cm | 43.56 | 42.33 | 43.7 |
| Turbidity NTU | 9.84 | 11.3 | 13 |
| Alkalinity mg/L | 2 | 4 | 4 |
| BOD mg/L | 1.02 | 0.48 | 0.62 |
| TSS mg/L | 3.1 | 3.4 | 5.9 |
| Ammonia mg/L | 0.02 | 0.01 | 0.03 |
| Total Phosphorus mg/L | 0.04 | 0.04 | 0.01 |
| Ortho-phosphate mg/L | 0.02 | 0.01 | 0.03 |
| Sulfate mg/L | 14.5 | 15.3 | 15.2 |
| TDS mg/L | 33 | 34 | 32 |
| Chloride mg/L | 2.6 | 2.5 | 2.6 |
| Nitrate/Nitrite mg/L | <0.5 | <0.5 | <0.5 |
| TKN mg/L | <0.5 | <0.5 | 0.66 |
| Chlophyll A mg/L | <0.0050 | <0.0050 | <0.0050 |
| Fecal Coliforms/100ml | 0 | 37.5 | 6.25 |
| E. Coli cfu/100ml | 172.6 | 178.9 | 285.1 |