

# SSO WATER QUALITY ASSESSMENT

Date of overflow: 3/23/22

Sample collection date: 3/24/22

Sample collection time at  
 Site #1: 0745  
 Site #2: 0736  
 Site #3: 0804

	Overflow location Site 1	Upstream Site 2	Downstream Site 3
pH SU	6.94	6.98	6.94
Temperature C	9.7	9.2	9.3
DO ppm	10.87	11.1	10.56
Conductivity uS/cm	54.31	53.3	54.73
Turbidity NTU	10	8.07	9.4
Alkalinity mg/L	10	<5	<5
BOD mg/L	0.99	0.71	1.03
TSS mg/L	2.9	2.5	3.7
Ammonia mg/L	0.01	0.01	0.01
Total Phosphorus mg/L	0.05	0.05	0.01
Ortho-phosphate mg/L	0.01	0.01	0.01
Sulfate mg/L	14.9	14.9	15.1
TDS mg/L	29	28	31
Chloride mg/L	2.9	3	2.8
Nitrate/Nitrite mg/L	<0.5	<0.5	<0.5
TKN mg/L	<0.5	0.89	0.57
Chlophyll A mg/L	<0.0050	<0.0050	<0.0050
Fecal Coliforms/100ml	50	62.5	175
E. Coli cfu/100ml	178.2	158.5	218.7




City of Hot Springs  
ATTN: Mr. Harold Mauldin  
320 Davidson Drive  
Hot Springs, AR 71901

This report contains the analytical results and supporting information for samples received on March 24, 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.



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John Overbey  
Chief Operating Officer

This document has been distributed to the following:

PDF cc: City of Hot Springs  
ATTN: Mr. Dennis Brunson  
dbrunson@cityhs.net

City of Hot Springs  
ATTN: Mr. Harold Mauldin  
wwlab@cityhs.net

City of Hot Springs  
ATTN: Ms. Mandy King  
mking@cityhs.net



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Hot Springs, AR 71901

**SAMPLE INFORMATION**

**Project Description:**

Three (3) water sample(s) received on March 24, 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>
264064-1	Site 1	24-Mar-2022 0745	
264064-2	Site 2	24-Mar-2022 0736	
264064-3	Site 3	24-Mar-2022 0804	

**Qualifiers:**

D Result is from a secondary dilution factor

**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.** 264064-1

**Sample Identification:** Site 1 24-Mar-2022 0745

<b>Analyte</b>	<b>Result</b>	<b>RL</b>	<b>Units</b>	<b>Qualifier</b>
<b>Total Kjeldahl Nitrogen</b> EPA 351.2	<b>&lt; 0.5</b>	<b>0.5</b>	<b>mg/l</b>	<b>D</b>
Prep: 28-Mar-2022 1447 by 352	Analyzed: 30-Mar-2022 1108 by 347		Batch: W79072	Dil: 2
<b>Chlorophyll A</b> SM 10200 H 2011	<b>&lt; 0.0050</b>	<b>0.0050</b>	<b>mg/l</b>	
	Analyzed: 24-Mar-2022 1631 by 45		Batch: W79040	
<b>Total Dissolved Solids</b> SM 2540 C 2011	<b>29</b>	<b>25</b>	<b>mg/l</b>	
Prep: 25-Mar-2022 1541 by 100	Analyzed: 29-Mar-2022 0711 by 100		Batch: W79055	
<b>Chloride</b> EPA 300.0	<b>2.9</b>	<b>0.2</b>	<b>mg/l</b>	
Prep: 24-Mar-2022 1339 by 330	Analyzed: 26-Mar-2022 0301 by 330		Batch: C25197	
<b>Nitrate + Nitrite as N</b> EPA 300.0	<b>&lt; 0.5</b>	<b>0.5</b>	<b>mg/l</b>	<b>D</b>
Prep: 24-Mar-2022 1339 by 330	Analyzed: 26-Mar-2022 0238 by 330		Batch: C25197	Dil: 10

**AIC No.** 264064-2

**Sample Identification:** Site 2 24-Mar-2022 0736

<b>Analyte</b>	<b>Result</b>	<b>RL</b>	<b>Units</b>	<b>Qualifier</b>
<b>Total Kjeldahl Nitrogen</b> EPA 351.2	<b>0.89</b>	<b>0.5</b>	<b>mg/l</b>	<b>D</b>
Prep: 28-Mar-2022 1447 by 352	Analyzed: 30-Mar-2022 1116 by 347		Batch: W79072	Dil: 2
<b>Chlorophyll A</b> SM 10200 H 2011	<b>&lt; 0.0050</b>	<b>0.0050</b>	<b>mg/l</b>	
	Analyzed: 24-Mar-2022 1631 by 45		Batch: W79040	
<b>Total Dissolved Solids</b> SM 2540 C 2011	<b>28</b>	<b>25</b>	<b>mg/l</b>	
Prep: 25-Mar-2022 1541 by 100	Analyzed: 29-Mar-2022 0711 by 100		Batch: W79055	
<b>Chloride</b> EPA 300.0	<b>3.0</b>	<b>0.2</b>	<b>mg/l</b>	
Prep: 24-Mar-2022 1339 by 330	Analyzed: 26-Mar-2022 0347 by 330		Batch: C25197	
<b>Nitrate + Nitrite as N</b> EPA 300.0	<b>&lt; 0.5</b>	<b>0.5</b>	<b>mg/l</b>	<b>D</b>
Prep: 24-Mar-2022 1339 by 330	Analyzed: 26-Mar-2022 0324 by 330		Batch: C25197	Dil: 10

**AIC No.** 264064-3

**Sample Identification:** Site 3 24-Mar-2022 0804

<b>Analyte</b>	<b>Result</b>	<b>RL</b>	<b>Units</b>	<b>Qualifier</b>
<b>Total Kjeldahl Nitrogen</b> EPA 351.2	<b>0.57</b>	<b>0.5</b>	<b>mg/l</b>	<b>D</b>
Prep: 28-Mar-2022 1447 by 352	Analyzed: 30-Mar-2022 1118 by 347		Batch: W79072	Dil: 2
<b>Chlorophyll A</b> SM 10200 H 2011	<b>&lt; 0.0050</b>	<b>0.0050</b>	<b>mg/l</b>	
	Analyzed: 24-Mar-2022 1631 by 45		Batch: W79040	
<b>Total Dissolved Solids</b> SM 2540 C 2011	<b>31</b>	<b>25</b>	<b>mg/l</b>	
Prep: 25-Mar-2022 1541 by 100	Analyzed: 29-Mar-2022 0711 by 100		Batch: W79055	
<b>Chloride</b> EPA 300.0	<b>2.8</b>	<b>0.2</b>	<b>mg/l</b>	
Prep: 24-Mar-2022 1339 by 330	Analyzed: 26-Mar-2022 0518 by 330		Batch: C25197	
<b>Nitrate + Nitrite as N</b> EPA 300.0	<b>&lt; 0.5</b>	<b>0.5</b>	<b>mg/l</b>	<b>D</b>
Prep: 24-Mar-2022 1339 by 330	Analyzed: 26-Mar-2022 0410 by 330		Batch: C25197	Dil: 10

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**DUPLICATE RESULTS**

Analyte	AIC No.	Result	RPD	RPD Limit	Preparation Date	Analysis Date	Dil	Qual
Chlorophyll A	264064-1	< 0.0050 mg/l				24Mar22 1631 by 45		
	Batch: W79040 Duplicate	< 0.0050 mg/l	0.00	10.0		24Mar22 1631 by 45		
Total Dissolved Solids	263982-2	1100 mg/l			25Mar22 1541 by 100	29Mar22 0711 by 100		
	Batch: W79055 Duplicate	1100 mg/l	0.368	10.0	25Mar22 1542 by 100	29Mar22 0711 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	126	102-150			W79072	28Mar22 1447 by 352	30Mar22 1106 by 347		
Total Dissolved Solids	2000 mg/l	99.4	85.0-115			W79055	25Mar22 1542 by 100	29Mar22 0711 by 100		
Chloride	25 mg/l	99.1	90.0-110			C25197	24Mar22 1340 by 330	25Mar22 1622 by 330		
Nitrate + Nitrite as N	10 mg/l	98.4	90.0-110			C25197	24Mar22 1340 by 330	25Mar22 1622 by 330		

**MATRIX SPIKE SAMPLE RESULTS**

Analyte	Sample	Spike Amount	%	Limits	Batch	Preparation Date	Analysis Date	Dil	Qual
Total Kjeldahl Nitrogen	264064-1	1 mg/l	115	44.7-152	W79072	28Mar22 1447 by 352	30Mar22 1109 by 347		
	264064-1	1 mg/l	123	44.7-152	W79072	28Mar22 1447 by 352	30Mar22 1111 by 347		
	Relative Percent Difference:			5.88	11.6	W79072			
Chloride	263997-5	25 mg/l	89.7	80.0-120	C25197	24Mar22 1340 by 330	25Mar22 1040 by 330		
	263997-5	25 mg/l	90.3	80.0-120	C25197	24Mar22 1340 by 330	25Mar22 1102 by 330		
	Relative Percent Difference:			0.517	10.0	C25197			
Nitrate + Nitrite as N	263997-5	10 mg/l	99.0	80.0-120	C25197	24Mar22 1340 by 330	25Mar22 1040 by 330		
	263997-5	10 mg/l	99.0	80.0-120	C25197	24Mar22 1340 by 330	25Mar22 1102 by 330		
	Relative Percent Difference:			0.0502	10.0	C25197			

**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	W79072-1	28Mar22 1447 by 352	30Mar22 1104 by 347	D
Chlorophyll A	< 0.0050 mg/l	0.0050	0.005	W79040-1		24Mar22 1631 by 347	
Total Dissolved Solids	< 25 mg/l	25	25	W79055-1	25Mar22 1542 by 100	29Mar22 0711 by 100	
Chloride	< 0.1 mg/l	0.1	0.2	C25197-1	24Mar22 1340 by 330	25Mar22 0954 by 330	
Nitrate + Nitrite as N	< 0.03 mg/l	0.03	0.05	C25197-1	24Mar22 1340 by 330	25Mar22 0954 by 330	



CHAIN OF CUSTODY / ANALYSIS REQUEST FORM

PAGE OF

2022-247

Client: City of Hot Springs  
 Project Reference: Manhole 1750  
 Project Manager: Harold Mauldin  
 Sampled By: JM

PO No. 2022-247  
 SAMPLE MATRIX: WATER, SOIL

AIC No.	Sample Identification	Date/Time Collected	GRA B			COM P			WATER			SOIL			NO OF BOTTLES	ANALYSES REQUESTED	Remarks
			1	2	3	1	2	3	1	2	3	1	2	3			
1	Site 1	3-24-22 @ 0745	✓			✓			✓			✓			Chlorophyll A		
2	Site 2	3-24-22 @ 0732	✓			✓			✓			✓			Nitrate+Nitrite		
3	Site 3	3-24-22 @ 0804	✓			✓			✓			✓			TKN		

Carriage: BLS  
 Received Temperature C: 0.9

Field pH calibration on @  
 Buffer:

T = Sodium Thiosulfate  
 Z = Zinc acetate

H = HCl to pH2  
 B = NaOH to pH12

V = VOA vials  
 N = Nitric acid pH2

G = Glass  
 NO = none  
 P = Plastic  
 S = Sulfuric acid pH2

Relinquished By: A. Catte  
 Relinquished By: B. Mann  
 Comments:

Received By: B. Mann  
 Received in Lab By: V. Brown

Date/Time 3-24-22 @ 0907  
 Date/Time 3-24-22 @ 1025

Turnaround Time Requested: (Please circle) 9 DAYS  
 Expedited results requested by: 4-2-22  
 Who should AIC contact with questions:  
 Phone: 501-621-5897 fax:  
 Report Attention to:  
 Report Address to:

FORM 0060

WS 5981 8/02

5/01