

December 03, 2020

Brad Stewart  
Springdale Water Utilities  
2910 Silent Grove Road  
Springdale, AR 72762

RE: Project: WET TEST  
Pace Project No.: 60354489

Dear Brad Stewart:

Enclosed are the analytical results for sample(s) received by the laboratory on November 17, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - SE Kansas

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jeffrey Shopper  
jeff.shopper@pacelabs.com  
1(913)563-1408  
Project Manager

Enclosures



## REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,  
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## CERTIFICATIONS

Project: WET TEST

Pace Project No.: 60354489

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**Pace Analytical Services Southeast Kansas**

808 West McKay, Frontenac, KS 66763

Arkansas Certification #: 18-016-0

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10426

Louisiana Certification #: 03055

Oklahoma Certification #: 9935

Texas Certification #: T104704407

Utah Certification #: KS00021

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## REPORT OF LABORATORY ANALYSIS

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### SAMPLE SUMMARY

Project: WET TEST  
Pace Project No.: 60354489

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Lab ID	Sample ID	Matrix	Date Collected	Date Received
60354489001	SWWTF EFFLUENT	Water	11/16/20 08:00	11/17/20 08:00

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### SAMPLE ANALYTE COUNT

Project: WET TEST

Pace Project No.: 60354489

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60354489001	SWWTF EFFLUENT	EPA 821/R-02/013	MEB	1	PASI-SE

PASI-SE = Pace Analytical Services - SE Kansas

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## ANALYTICAL RESULTS

Project: WET TEST

Pace Project No.: 60354489

Sample: <b>SWWTF EFFLUENT</b>	Lab ID: <b>60354489001</b>	Collected: 11/16/20 08:00	Received: 11/17/20 08:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
<b>Chronic Toxicity</b>								
Analytical Method: EPA 821/R-02/013								
Pace Analytical Services - SE Kansas								
Toxicity, Chronic	<b>Complete</b>		1.0	1		11/17/20 11:40		

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## QUALIFIERS

Project: WET TEST

Pace Project No.: 60354489

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### DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WET TEST

Pace Project No.: 60354489

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<b>Lab ID</b>	<b>Sample ID</b>	<b>QC Batch Method</b>	<b>QC Batch</b>	<b>Analytical Method</b>	<b>Analytical Batch</b>
60354489001	SWWTF EFFLUENT	EPA 821/R-02/013	691874		

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### REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60354489



Client Name: Springdale

Courier: FedEx [ ] UPS [ ] VIA [x] Clay [ ] PEX [ ] ECI [ ] Pace [ ] Xroads [ ] Client [ ] Other [ ]

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes [ ] No [x]

Custody Seal on Cooler/Box Present: Yes [x] No [ ] Seals intact: Yes [x] No [ ]

Packing Material: Bubble Wrap [ ] Bubble Bags [ ] Foam [ ] None [x] Other [ ]

Thermometer Used: T-111 Type of Ice: Wet [x] Blue [ ] None [ ]

Cooler Temperature (°C): As-read 3.2 Corr. Factor -1.2 Corrected 2.0

Date and initials of person examining contents: 11/17/20 ep

Temperature should be above freezing to 6°C

Table with 2 columns: Question and Answer (Yes/No/N/A). Rows include Chain of Custody present, Samples arrived within holding time, Short Hold Time analyses, Rush Turn Around Time requested, Sufficient volume, Correct containers used, Pace containers used, Containers intact, Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?, Filtered volume received for dissolved tests?, Sample labels match COC: Date / time / ID / analyses, Samples contain multiple phases? Matrix, Containers requiring pH preservation in compliance? (HNO3, H2SO4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO), Cyanide water sample checks: Lead acetate strip turns dark? (Record only), Potassium iodide test strip turns blue/purple? (Preserve), Trip Blank present, Headspace in VOA vials (>6mm), Samples from USDA Regulated Area: State, Additional labels attached to 5035A / TX1005 vials in the field?

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_





# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A

**Required Client Information:**  
 Company: Springdale Water Utilities  
 Address: 2910 Silent Grove Road  
 Springdale, AR 72762  
 Email: bstewart@springdalewater.com  
 Phone: 479-756-3657 Fax: \_\_\_\_\_  
 Requested Due Date: \_\_\_\_\_

**Required Project Information:**  
 Report To: Brad Stewart  
 Copy To: \_\_\_\_\_  
 Project Name: WET Test  
 Project #: \_\_\_\_\_  
 Purchase Order #: \_\_\_\_\_

**Attention:** \_\_\_\_\_  
**Company Name:** \_\_\_\_\_  
**Address:** \_\_\_\_\_  
**Pace Project Manager:** jeff.stopper@pacelabs.com  
**Pace Profile #:** 9250, line 1

**Regulatory Agency:** \_\_\_\_\_  
**State / Location:** AR

Section B

**Invoice Information:**  
 Invoice #: \_\_\_\_\_  
 Date: \_\_\_\_\_

Section C

**Requested Analysis Filtered (Y/N)**

Chronic Wet Test	X
Analyses Test	Y
Preservatives	
H2SO4	
HNO3	
HCl	
NaOH	
Na2S2O3	
Methanol	
Other	
# OF CONTAINERS	X
SAMPLE TEMP AT COLLECTION	4°
MATRIX CODE (see valid codes to left)	WW
SAMPLE TYPE (G=GRAB C=COMP)	C

ITEM #	MATRIX CODE <small>MATRIX CODE            Drinking Water DW            Waste Water WW            Product P            SemiSolid SL            Oil OL            Wipe WIP            Air AIR            Other OT            Tissue TS</small>	COLLECTED		DATE	TIME	DATE	TIME	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS	TEMP in C	Received on	Ice (Y/N)	Sealed (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)	
		START	END																		
1	SWWTF EFFLUENT			11/15/20	0800	11/16/20	0800				Sam Haggens pace	11/17/20	800	20	14	14	14				
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

**ADDITIONAL COMMENTS**

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: Travis Piatkowski  
 SIGNATURE of SAMPLER: *Travis Piatkowski*  
 DATE Signed: 11/16/20

REFERENCE #60354489

**CHRONIC TOXICITY TEST FOR  
Springdale Water Utilities**

PERMIT # AR 0022063  
AFIN # 72-00003

PERFORMED ON:

Pimephales promelas

and

Ceriodaphnia dubia

PREPARED FOR:

Springdale Water Utilities  
Brad Stewart  
2910 Silent Grove Road  
Springdale, AR 72762  
479-756-3657

PREPARED BY:  
Pace Analytical Services, Inc.  
808 West McKay  
Frontenac, KS 66763  
1-620-235-0003

November 30, 2020

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## SUMMARY

A Chronic Whole Effluent Toxicity Test using the 7-day chronic fathead minnows (*Pimephales promelas*), static renewal larval survival and growth test, and three brood 7-day chronic Cladoceran (*Ceriodaphnia dubia*), static renewal survival and reproduction test, was conducted on effluent discharge water collected at the Springdale Water Utilities effluent discharge from November 16, 2020 to November 20, 2020. All the test methods followed are as listed in EPA 821-R-02-013, "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms."

Statistically significant ( $p < 0.05$ ) mortality is determined by Dunnet's procedure using average percent survival of each test concentration versus the average survival of the controls. If significant mortality occurs, median lethal concentrations are calculated using effluent concentrations and their corresponding percent mortality data. The 95% confidence intervals are calculated where appropriate by the Spearman-Kärber method. Statistical analysis is accomplished by following steps in EPA 821-R-02-013, February 2002 and by use of Toxstat version 3.4.

In minnow section of testing, it was observed that the effluent had no significant effect on the survival of the larvae at the 97% concentration. No significant mortality was observed in the other effluent concentrations after the 7-day exposure period. The No Observed Effect Concentration (NOEC) was determined to be 97% for survival. No significant reduction in growth was observed in the 97% effluent concentration. The Toxic Units is  $< 1.03$ . The IC25 is  $> 97$ . The NOEC for growth in effluent was determined to be 97%. The PMSD was 24.0. The COV is 15.86

In Cladoceran section of testing, it was observed that the effluent had no significant effect on the survival of the organisms in the 97% effluent concentration. No significant mortality was observed in the other effluent concentrations after the 7-day exposure period. The No Observed Effect Concentration (NOEC) was determined to be 97% for survival. No significant reduction in reproduction was observed in the 97% effluent concentrations. The Toxic Units is  $< 1.03$ . The IC25 is  $> 97$ . The NOEC for reproduction in effluent was determined to be 97%. The PMSD was 18.3. The COV is 23.51.

The chronic toxicity exhibited by the fathead minnows and the *Ceriodaphnia* treated by the effluent sampled from November 16 to November 20 from the Springdale Water Utilities effluent discharge, is acceptable as described in EPA 821-R-02-013.

## INTRODUCTION

Pace Analytical was contracted to perform this chronic toxicity test on effluent from the Springdale Water Utilities effluent discharge. Chronic toxicity was measured using the Pimephales promelas at larval for survival and growth test and the Ceriodaphnia dubia survival and reproduction test described in EPA 821-R-02-013, "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms." The raw data of the study is stored at Pace Analytical Services, INC. 808 West McKay, Frontenac, KS 66763.

## TEST MATERIAL

Springdale Water Utilities personnel collected sampling of the effluent. A sample of the effluent was delivered to Pace by commercial carrier on 11-17-20. Subsequent samples followed by delivery on 11-19-20, and on 11-20-20. All samples were stored at  $\leq 6^{\circ}$  Celsius. Moderately Hard Synthetic Water was used as a control and also to make the required dilutions in the test as described in EPA 821-R-02-013.

## TEST METHODS

Pace used EPA test method 1000.0 for conducting the Fathead Minnow, Pimephales promelas, Larval Survival and Growth Test. EPA test method 1002.0 was used for conducting the Cladoceran, Ceriodaphnia dubia, Survival and Reproduction Test. The tests were conducted to estimate the NOEC, and LOEC for survival, growth, and reproduction of these test species.

The Pimephales and Ceriodaphnia tests were initiated on 11-17-20 and carried out until 11-24-20. The Pimephales tests were conducted in 500 ml plastic jars with 250 ml of test solution. Eight larvae were placed in each of at least 5 replicates to make a total of 40 larvae per sample concentration. The Ceriodaphnia tests were carried out in 35ml vials containing 25 ml of test solution. One Neonate was placed in each of 10 replicates to make a total of 10 neonates per sample concentration.

## TEST ORGANISMS

The organisms used in these tests were cultured at Pace under controlled temperature and photoperiod conditions and/or were purchased from an external supplier. Pace maintains records of all culture techniques used in producing organisms.

REFERENCE #60354489

TABLE 1

Permittee: Springdale Water Utilities Effluent discharge.

Date Sampled	No. 1: 11-16-20	8:00
	No. 2: 11-18-20	8:00
	No. 3: 11-20-20	8:00
Test Initiated: 11:40	Date: 11-17-20	
Test End: 11:15	Date: 11-24-20	

RESULTS

Ceriodaphnia dubia	Results
TLP3B	0
TGP3B	0
TOP3B	97
TPP3B	97
TQP3B	23.51
Pimephales promelas	Results
TLP6C	0
TGP6C	0
TOP6C	97
TPP6C	97
TQP6C	15.86

Dilution Water used: Moderately Hard Synthetic Water

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

DATA TABLE FOR GROWTH OF FATHEAD MINNOWS

Effluent Concentration (%)	Average Dry Weight in Milligrams in Replicate Chambers					Mean Dry Weight (mg)	CV% *
	A	B	C	D	E		
Control 0%	0.361	0.249	0.322	0.342	0.387	0.332	15.75
Dilution 1 31%	0.350	0.349	0.251	0.281	0.362	0.319	15.52
Dilution 2 41%	0.415	0.364	0.298	0.329	0.345	0.350	12.44
Dilution 3 55%	0.411	0.468	0.383	0.384	0.322	0.394	13.43
Dilution 4 73%	0.234	0.371	0.270	0.363	0.352	0.318	19.48
Dilution 5 97%	0.398	0.401	0.273	0.416	0.351	0.368	15.86

\* Coefficient of Variation = Standard Deviation X 100 / Mean

**FATHEAD MINNOW SURVIVAL**

Conc. %	Percent Survival in Replicate Chambers					Mean Percent Survival			CV %
	A	B	C	D	E	24hr	48hr	7 day	
Control 0%	100	75	100	100	100	100	100	95.0	9.30
Dilution 1 31%	100	100	87.5	87.5	100	100	100	95.0	5.99
Dilution 2 41%	100	100	87.5	100	100	100	100	97.5	4.79
Dilution 3 55%	100	100	100	100	87.5	100	100	97.5	4.79
Dilution 4 73%	87.5	100	87.5	100	100	100	100	95.0	5.99
Dilution 5 97%	100	100	87.5	100	100	100	100	97.5	4.79

REFERENCE #60354489

Permittee: Springdale Water Utilities Effluent discharge.

**CERIODAPHNIA SURVIVAL AND REPRODUCTION**

DATA TABLE FOR CERIODAPHNIA YOUNG PRODUCTION

Replicate	Control 0%	Dilution 1 31%	Dilution 2 41%	Dilution 3 55%	Dilution 4 73%	Dilution 5 97%
1	22	19	20	18	22	21
2	20	25	22	21	22	21
3	20	21	25	16	23	18
4	18	17	18	20	16	18
5	16	17	19	23	24	23
6	19	22	17	26	16	10
7	16	23	25	19	27	16
8	20	23	16	22	19	25
9	20	22	17	18	24	25
10	21	19	17	16	26	24
Mean	19.2	20.8	19.6	19.9	21.9	20.1
SD	1.989	2.700	3.340	3.178	3.814	4.725
CV %	10.36	12.98	17.04	15.97	17.41	23.51

**CERIODAPHNIA MEAN PERCENT SURVIVAL**

Percent Effluent (%)						
Time Elapsed	Control 0%	Dilution 1 31%	Dilution 2 41%	Dilution 3 55%	Dilution 4 73%	Dilution 5 97%
24 hrs	100	100	100	100	100	100
48 hrs	100	100	100	100	100	100
7-day	100	100	100	100	100	100
SD	0.000	0.000	0.000	0.000	0.000	0.000
CV %	0.00	0.00	0.00	0.00	0.000	0.000



**TABLE 2**  
**SUMMARY OF TEST CONDITIONS FOR THE FATHEAD MINNOW**  
**(*Pimephales promelas*) LARVAL SURVIVAL AND GROWTH TEST**

1. Test type	Static renewal
2. Temperature	25 degrees Celsius
3. Light quality	Ambient laboratory light
4. Light intensity	Ambient laboratory levels
5. Photoperiod	16 hr light, 8 hr dark
6. Test chamber size	500 ml
7. Test solution volume	250 ml
8. Renewal of test concentrations	Daily
9. Age of test organism	< 24 hours
10. No. larvae/chamber	8
11. No. replicates/concentration	5
12. No. larvae/concentration	40
13. Feeding regime	Feed 0.15 g newly hatched brine shrimp nauplii two times daily. Larvae are not fed 12 hours prior to termination of test.
14. Cleaning	Siphon daily, immediately before test solution renewal
15. Aeration	None
16. Dilution Water	Moderately Hard Synthetic Water prepared with MILLI-Q deionized water and reagent grade chemicals
17. Effluent concentrations	0%, 31%, 41%, 55%, 73%, 97%
18. Test duration	7 days
19. Endpoints	Survival and growth
20. Test acceptability	80% or greater survival in the controls, Average dry weight in controls >0.25 mg, Coefficient of variation in the control must not exceed 40%.

**TABLE 2 (CONT.)  
SUMMARY OF TEST CONDITIONS FOR THE CLADOCERAN  
(Ceriodaphnia dubia) SURVIVAL AND REPRODUCTION TEST**

1. Test type	Static renewal
2. Temperature	25 degrees Celsius
3. Light quality	Ambient laboratory light
4. Light intensity	Ambient laboratory levels
5. Photoperiod	16 hr light, 8 hr dark
6. Test chamber size	30 ml
7. Test solution volume	25 ml
8. Renewal of test concentrations	Daily
9. Age of test organism	< 24 hours
10. No. larvae/chamber	1
11. No. replicates/concentration	10
12. No. larvae/concentration	10
13. Feeding regime	Feed 0.1 ml YCT and 0.1 ml of Algae daily. Larvae are not fed 12 hours prior to termination of test.
14. Cleaning	Siphon daily, immediately before test solution renewal
15. Aeration	None
16. Dilution Water	Moderately Hard Synthetic Water prepared with MILLI-Q deionized water and reagent grade chemicals
17. Effluent concentrations	0%, 31%, 41%, 55%, 73%, 97%
18. Test duration	Until 60% or more surviving control females have three broods or a maximum of 8 days.
19. Endpoints	Survival and Reproduction
20. Test acceptability	80% or greater survival in the controls, Average reproduction rate of 15 young / adult. Coefficient of variation in the control must not exceed 40%.

TABLE 2 (SECTION 2)

BIOMONITORING CHRONIC TOXICITY REPORT  
 FATHEAD MINNOW (Pimephales promelas)  
 CHEMICAL PARAMETERS CHART

Permittee: Springdale Water Utilities Effluent discharge.

ANALYSTS: Pace Analytical Services, Inc.  
 Timothy Harrell  
 Mike Bollin

TABLE 2 (SECTION 2)  
 INITIAL WATER QUALITY  
 EFFLUENT CONCENTRATION

	Control	100%
PH	7.48	7.60
D.O.	8.40	8.00
Temp	25.0	25.0
Alk	58	106
Hard	88	122
Cond	309	700
Chlorine	<0.1	<0.1

\* D.O. is reported as mg/L  
 Alkalinity is reported as mg/L CaCO<sub>3</sub>  
 Hardness is reported as mg/L CaCO<sub>3</sub>  
 Conductance is reported as umhos  
 Ammonia is reported as mg/L  
 Chlorine is reported as mg/L

TEST WATER QUALITY

24-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
0% Control	7.64	7.00	25.2
31% Effluent	7.68	6.80	24.4
41% Effluent	7.68	6.70	24.4
55% Effluent	7.70	6.60	24.4
73% Effluent	7.80	6.50	24.4
97% Effluent	7.87	6.30	24.4

48-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
0% Control	7.63	7.10	25.0
31% Effluent	7.65	6.90	24.6
41% Effluent	7.69	6.60	24.6
55% Effluent	7.70	6.50	24.6
73% Effluent	7.71	6.30	24.6
97% Effluent	7.73	6.10	24.6

FINAL WATER QUALITY

EFFLUENT CONCENTRATION

	Control	97%
pH	7.69	7.92
D.O.	7.30	7.30
Temp	24.8	24.9
Alk	62	102
Hard	88	120
Cond	358	711

- \* D.O. is reported as mg/L
- Alkalinity is reported as mg/L CaCO<sub>3</sub>
- Hardness is reported as mg/L CaCO<sub>3</sub>
- Conductance is reported as umhos

TEST VALIDITY

The Pimephales promelas control survival rate was 95. The mean dry weight (growth) of the Pimephales promelas was determined at 0.332 mg/organism in the controls. The percent coefficient of variation (%CV) values for the fathead minnow control for survival and growth were 9.30 and 15.75. The Ceriodaphnia dubia survival rates were 100 in the control. The Ceriodaphnia in the control produced an average of 19.2 young over the seven-day exposure period. Percent CV values for Ceriodaphnia dubia control survival and reproduction was 0.00 and 10.36. Control data met or exceeded all criteria set out by EPA 8100-R-02-013 for test acceptance.

REFERENCE #60354489

REFERENCE TOXICANTS

The absence of significant control mortality during this test indicated the health of the organisms and indicated that any significant mortality in the test concentrations was not due to contaminants or variations in testing conditions.

Reference toxicity testing is routinely performed by staff members in our biomonitoring - bioassay laboratory.

Start: 11/3/20 13:00                      End: 11/10/20 13:20

Reference Toxicant (NaCl)                      Pimephales promelas

Concentration of Toxicant	Avg. # of Live Organisms/replicate			
	0 hrs	24 hrs	48 hrs	7 days
10 g/l	40	8	3	0
8 g/l	40	37	29	5
6 g/l	40	38	35	24
4 g/l	40	40	40	38
2 g/l	40	40	40	39

IC25 (5.02 g/l Sodium Chloride)

Survival NOEC: 4.0 g/l

Reference Toxicant (NaCl)                      Ceriodaphnia Dubia

Concentration of Toxicant	Avg. # of Live Organisms/replicate			
	0 hrs	24 hrs	48 hrs	7 days
2.5 g/l	10	6	3	0
2.0 g/l	10	10	9	3
1.5 g/l	10	10	10	10
1.0 g/l	10	10	10	10
0.5 g/l	10	10	10	10

IC25 (1.20 g/l Sodium Chloride)

Survival NOEC: 1.5 g/l

Submitted By: \_\_\_\_\_  
 Timothy Harrell, Technical Director

60354489 Springdale FATHEAD SURVIVAL  
File: 6354489A Transform: ARC SINE(SQUARE ROOT(Y))

Chi-square test for normality: actual and expected frequencies

---

INTERVAL	<-1.5	-1.5 to <-0.5	-0.5 to 0.5	>0.5 to 1.5	>1.5
EXPECTED	2.010	7.260	11.460	7.260	2.010
OBSERVED	4	4	16	6	0

---

Calculated Chi-Square goodness of fit test statistic = 7.4613  
Table Chi-Square value (alpha = 0.01) = 13.277

Data PASS normality test. Continue analysis.

60354489 Springdale FATHEAD SURVIVAL  
File: 6354489A Transform: ARC SINE(SQUARE ROOT(Y))

Shapiro - Wilk's test for normality

---

D = 0.104

W = 0.730

Critical W (P = 0.05) (n = 30) = 0.927

Critical W (P = 0.01) (n = 30) = 0.900

---

Data FAIL normality test. Try another transformation.

Warning - The first three homogeneity tests are sensitive to non-normal data and should not be performed.

60354489 Springdale FATHEAD SURVIVAL  
 File: 6354489A Transform: ARC SINE(SQUARE ROOT(Y))

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	5	0.886	1.107	1.063
2	31%	5	0.991	1.107	1.061
3	41%	5	0.991	1.107	1.084
4	55%	5	0.991	1.107	1.084
5	73%	5	0.991	1.107	1.061
6	97%	5	0.991	1.107	1.084

60354489 Springdale FATHEAD SURVIVAL  
 File: 6354489A Transform: ARC SINE(SQUARE ROOT(Y))

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	0.010	0.099	0.044	9.30
2	31%	0.004	0.064	0.028	5.99
3	41%	0.003	0.052	0.023	4.79
4	55%	0.003	0.052	0.023	4.79
5	73%	0.004	0.064	0.028	5.99
6	97%	0.003	0.052	0.023	4.79

60354489 Springdale FATHEAD SURVIVAL  
 File: 6354489A Transform: ARC SINE(SQUARE ROOT(Y))

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	0.004	0.001	0.176
Within (Error)	24	0.104	0.004	
Total	29	0.107		

Critical F value = 2.62 (0.05,5,24)  
 Since  $F < \text{Critical } F$  FAIL TO REJECT  $H_0$ : All equal

60354489 Springdale FATHEAD SURVIVAL  
 File: 6354489A Transform: ARC SINE(SQUARE ROOT(Y))



DUNNETT'S TEST - TABLE 1 OF 2

Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	CONTROL	1.063	0.760		
2	31%	1.061	0.760	0.053	
3	41%	1.084	0.780	-0.506	
4	55%	1.084	0.780	-0.506	
5	73%	1.061	0.760	0.053	
6	97%	1.084	0.780	-0.506	

Dunnett table value = 2.36 (1 Tailed Value, P=0.05, df=24,5)

60354489 Springdale FATHEAD SURVIVAL

File: 6354489A Transform: ARC SINE(SQUARE ROOT(Y))

DUNNETT'S TEST - TABLE 2 OF 2

Ho:Control<Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	CONTROL	5			
2	31%	5	0.088	11.6	0.000
3	41%	5	0.088	11.6	-0.020
4	55%	5	0.088	11.6	-0.020
5	73%	5	0.088	11.6	0.000
6	97%	5	0.088	11.6	-0.020

60354489 Springdale FATHEAD GROWTH  
File: 6354489B Transform: NO TRANSFORMATION

Shapiro - Wilk's test for normality

---

D = 0.068

W = 0.934

Critical W (P = 0.05) (n = 30) = 0.927

Critical W (P = 0.01) (n = 30) = 0.900

---

Data PASS normality test at P=0.01 level. Continue analysis.

60354489 Springdale FATHEAD GROWTH  
File: 6354489B Transform: NO TRANSFORMATION

---

Bartlett's test for homogeneity of variance

Calculated B1 statistic = 0.55

---

Table Chi-square value = 15.09 (alpha = 0.01, df = 5)

Table Chi-square value = 11.07 (alpha = 0.05, df = 5)

---

Data PASS B1 homogeneity test at 0.01 level. Continue analysis.

---

60354489 Springdale FATHEAD GROWTH  
 File: 6354489B Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	5	0.249	0.387	0.332
2	31%	5	0.251	0.362	0.319
3	41%	5	0.298	0.415	0.350
4	55%	5	0.322	0.468	0.394
5	73%	5	0.234	0.371	0.318
6	97%	5	0.273	0.416	0.368

60354489 Springdale FATHEAD GROWTH  
 File: 6354489B Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	0.003	0.052	0.023	15.75
2	31%	0.002	0.049	0.022	15.52
3	41%	0.002	0.044	0.019	12.44
4	55%	0.003	0.053	0.024	13.43
5	73%	0.004	0.062	0.028	19.48
6	97%	0.003	0.058	0.026	15.86

60354489 Springdale FATHEAD GROWTH  
 File: 6354489B Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	0.022	0.004	1.571
Within (Error)	24	0.068	0.003	
Total	29	0.091		

Critical F value = 2.62 (0.05,5,24)  
 Since  $F < \text{Critical } F$  FAIL TO REJECT  $H_0$ : All equal

60354489 Springdale FATHEAD GROWTH  
 File: 6354489B Transform: NO TRANSFORMATION

DUNNETT'S TEST - TABLE 1 OF 2

Ho:Control<Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	CONTROL	0.332	0.332		
2	31%	0.319	0.319	0.403	
3	41%	0.350	0.350	-0.533	
4	55%	0.394	0.394	-1.818	
5	73%	0.318	0.318	0.420	
6	97%	0.368	0.368	-1.054	

Dunnett table value = 2.36 (1 Tailed Value, P=0.05, df=24,5)

60354489 Springdale FATHEAD GROWTH

File: 6354489B Transform: NO TRANSFORMATION

DUNNETT'S TEST - TABLE 2 OF 2

Ho:Control<Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	CONTROL	5			
2	31%	5	0.080	24.0	0.014
3	41%	5	0.080	24.0	-0.018
4	55%	5	0.080	24.0	-0.061
5	73%	5	0.080	24.0	0.014
6	97%	5	0.080	24.0	-0.036

FISHER'S EXACT TEST

IDENTIFICATION	NUMBER OF		
	ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
31%	10	0	10
TOTAL	20	0	20

CRITICAL FISHER'S VALUE (10,10,10) (p=0.05) IS 6. b VALUE IS 10.  
 Since b is greater than 6 there is no significant difference  
 between CONTROL and TREATMENT at the 0.05 level.

FISHER'S EXACT TEST

IDENTIFICATION	NUMBER OF		
	ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
41%	10	0	10
TOTAL	20	0	20

CRITICAL FISHER'S VALUE (10,10,10) (p=0.05) IS 6. b VALUE IS 10.  
 Since b is greater than 6 there is no significant difference  
 between CONTROL and TREATMENT at the 0.05 level.

FISHER'S EXACT TEST

IDENTIFICATION	NUMBER OF		
	ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
55%	10	0	10

TOTAL 20 0 20

CRITICAL FISHER'S VALUE (10,10,10) (p=0.05) IS 6. b VALUE IS 10.  
 Since b is greater than 6 there is no significant difference  
 between CONTROL and TREATMENT at the 0.05 level.

FISHER'S EXACT TEST

IDENTIFICATION	NUMBER OF		
	ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
73%	10	0	10
TOTAL	20	0	20

CRITICAL FISHER'S VALUE (10,10,10) (p=0.05) IS 6. b VALUE IS 10.  
 Since b is greater than 6 there is no significant difference  
 between CONTROL and TREATMENT at the 0.05 level.

FISHER'S EXACT TEST

IDENTIFICATION	NUMBER OF		
	ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
97%	10	0	10
TOTAL	20	0	20

CRITICAL FISHER'S VALUE (10,10,10) (p=0.05) IS 6. b VALUE IS 10.  
 Since b is greater than 6 there is no significant difference  
 between CONTROL and TREATMENT at the 0.05 level.

SUMMARY OF FISHER'S EXACT TESTS

NUMBER NUMBER SIG

GROUP	IDENTIFICATION	EXPOSED	DEAD	(P=.05)
	CONTROL	10	0	
1	31%	10	0	
2	41%	10	0	
3	55%	10	0	
4	73%	10	0	
5	97%	10	0	

60354489 Sprindale CERIODAPHNIA DUBIA SURVIVA  
File: 6354489D Transform: NO TRANSFORM

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

---

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	10	1.000	1.000	1.000
2	31%	10	1.000	1.000	1.000
3	41%	10	1.000	1.000	1.000
4	55%	10	1.000	1.000	1.000
5	73%	10	1.000	1.000	1.000
6	97%	10	1.000	1.000	1.000

---

60354489 Sprindale CERIODAPHNIA DUBIA SURVIVA  
File: 6354489D Transform: NO TRANSFORM

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

---

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	0.000	0.000	0.000	0.00
2	31%	0.000	0.000	0.000	0.00
3	41%	0.000	0.000	0.000	0.00
4	55%	0.000	0.000	0.000	0.00
5	73%	0.000	0.000	0.000	0.00
6	97%	0.000	0.000	0.000	0.00

---



60354489 Springdale CERIODAPHNIA DUBIA REPRODU  
File: 6354489E Transform: NO TRANSFORMATION

Chi-square test for normality: actual and expected frequencies

---

INTERVAL	<-1.5	-1.5 to <-0.5	-0.5 to 0.5	>0.5 to 1.5	>1.5
EXPECTED	4.020	14.520	22.920	14.520	4.020
OBSERVED	5	15	21	15	4

---

Calculated Chi-Square goodness of fit test statistic = 0.4316  
Table Chi-Square value (alpha = 0.01) = 13.277

Data PASS normality test. Continue analysis.

60354489 Springdale CERIODAPHNIA DUBIA REPRODU  
File: 6354489E Transform: NO TRANSFORMATION

---

Bartlett's test for homogeneity of variance  
Calculated B1 statistic = 7.05

---

Table Chi-square value = 15.09 (alpha = 0.01, df = 5)  
Table Chi-square value = 11.07 (alpha = 0.05, df = 5)

Data PASS B1 homogeneity test at 0.01 level. Continue analysis.

60354489 Springdale CERIODAPHNIA DUBIA REPRODU  
 File: 6354489E Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 of 2

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	10	16.000	22.000	19.200
2	31%	10	17.000	25.000	20.800
3	41%	10	16.000	25.000	19.600
4	55%	10	16.000	26.000	19.900
5	73%	10	16.000	27.000	21.900
6	97%	10	10.000	25.000	20.100

60354489 Springdale CERIODAPHNIA DUBIA REPRODU  
 File: 6354489E Transform: NO TRANSFORMATION

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 of 2

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	3.956	1.989	0.629	10.36
2	31%	7.289	2.700	0.854	12.98
3	41%	11.156	3.340	1.056	17.04
4	55%	10.100	3.178	1.005	15.97
5	73%	14.544	3.814	1.206	17.41
6	97%	22.322	4.725	1.494	23.51

60354489 Springdale CERIODAPHNIA DUBIA REPRODU  
 File: 6354489E Transform: NO TRANSFORMATION

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	46.950	9.390	0.812
Within (Error)	54	624.300	11.561	
Total	59	671.250		

Critical F value = 2.45 (0.05,5,40)  
 Since  $F < \text{Critical } F$  FAIL TO REJECT  $H_0$ : All equal

60354489 Springdale CERIODAPHNIA DUBIA REPRODU  
 File: 6354489E Transform: NO TRANSFORMATION

## DUNNETT'S TEST

TABLE 1 OF 2

Ho:Control&lt;Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	CONTROL	19.200	19.200		
2	31%	20.800	20.800	-1.052	
3	41%	19.600	19.600	-0.263	
4	55%	19.900	19.900	-0.460	
5	73%	21.900	21.900	-1.776	
6	97%	20.100	20.100	-0.592	

Dunnett table value = 2.31 (1 Tailed Value, P=0.05, df=40,5)

60354489 Springdale CERIODAPHNIA DUBIA REPRODU  
File: 6354489E Transform: NO TRANSFORMATION

## DUNNETT'S TEST

TABLE 2 OF 2

Ho:Control&lt;Treatment

GROUP	IDENTIFICATION	NUM OF REPS	Minimum Sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	CONTROL	10			
2	31%	10	3.513	18.3	-1.600
3	41%	10	3.513	18.3	-0.400
4	55%	10	3.513	18.3	-0.700
5	73%	10	3.513	18.3	-2.700
6	97%	10	3.513	18.3	-0.900

Conc. ID	1	2	3	4	5	6
Conc. Tested	0	31	41	55	73	97
Response 1	22	19	20	18	22	21
Response 2	20	25	22	21	22	21
Response 3	20	21	25	16	23	18
Response 4	18	17	18	20	16	18
Response 5	16	17	19	23	24	23
Response 6	19	22	17	26	16	10
Response 7	16	23	25	19	27	16
Response 8	20	23	16	22	19	25
Response 9	20	22	17	18	24	25
Response 10	21	19	17	16	26	24

\*\*\* Inhibition Concentration Percentage Estimate \*\*\*

Toxicant/Effluent: Springdale

Test Start Date: 11/17/20 Test Ending Date: 11/24/20

Test Species: Dubia

Test Duration: 7 Day

DATA FILE:

Conc. ID	Number Replicates	Concentration	Response Means	Std. Dev.	Pooled Response Means
1	10	0.000	19.200	1.989	20.280
2	10	31.000	20.800	2.700	20.280
3	10	41.000	19.600	3.340	20.280
4	10	55.000	19.900	3.178	20.280
5	10	73.000	21.900	3.814	20.280
6	10	97.000	20.100	4.725	20.100

\*\*\* No Linear Interpolation Estimate can be calculated from the input data since none of the (possibly pooled) group response means were less than 75% of the control response mean.

Conc. ID	1	2	3	4	5	6
Conc. Tested	0	31	41	55	73	97
Response 1	.361	.350	.415	.411	.234	.398
Response 2	.249	.349	.364	.468	.371	.401
Response 3	.322	.251	.298	.383	.270	.273
Response 4	.342	.281	.329	.384	.363	.416
Response 5	.387	.362	.345	.322	.352	.351

\*\*\* Inhibition Concentration Percentage Estimate \*\*\*

Toxicant/Effluent: Springdale

Test Start Date: 11/10/20 Test Ending Date: 11/17/20

Test Species: Fathead <sup>12</sup>

Test Duration: 7 Day

DATA FILE:

Conc. ID	Number Replicates	Concentration	Response Means	Std. Dev.	Pooled Response Means
1	5	0.000	0.332	0.052	0.349
2	5	31.000	0.319	0.049	0.349
3	5	41.000	0.350	0.044	0.349
4	5	55.000	0.394	0.053	0.349
5	5	73.000	0.318	0.062	0.343
6	5	97.000	0.368	0.058	0.343

\*\*\* No Linear Interpolation Estimate can be calculated from the input data since none of the (possibly pooled) group response means were less than 75% of the control response mean.



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

**Section A**  
**Required Client Information:**  
 Company: Springdale Water Utilities  
 Address: 2910 Silent Grove Road  
 Springdale, AR 72762  
 Email: bstewart@springdalewater.com  
 Phone: 479-756-3657  
 Fax:  
 Requested Due Date

**Section B**  
**Required Project Information:**  
 Report To: Brad Stewart  
 Copy To:  
 Purchase Order #:  
 Project Name: WET Test  
 Project #:

**Section C**  
**Invoice Information:**  
 Attention:  
 Company Name:  
 Address:  
 Pace Quote:  
 Pace Project Manager: jeff.shopper@paceabs.com  
 Pace Profile #: 9250\_line 1

**Regulatory Agency**  
**State / Location**  
 AR

ITEM #	MATRIX	CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		# OF CONTAINERS	PRESERVATIVES		ANALYSES TEST Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)
				START DATE TIME	END DATE TIME		UNPRESERVED	H2SO4			
1	SWWTF EFFLUENT	KW	G	11/15/20 0800	11/16/20 0800	4	X		X		N
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											

**ADDITIONAL COMMENTS**

**RELINQUISHED BY / AFFILIATION** DATE TIME

**ACCEPTED BY / AFFILIATION** DATE TIME

**SAMPLE CONDITIONS**

Received on: 11/16/20  
 Ice (Y/N):  
 Custody (Y/N):  
 Sealed Cooler (Y/N):  
 Samples Intact (Y/N):

**SAMPLER NAME AND SIGNATURE**  
 PRINT Name of SAMPLER: Travis Piatkowski  
 SIGNATURE of SAMPLER: *Travis Piatkowski*  
 DATE Signed: 11/16/20





# Sample Condition Upon Receipt

Client Name: Springdale

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-111 Type of Ice: Wet Blue  None

Cooler Temperature (°C): As-read 3.4 Corr. Factor -1.2 Corrected 2.2

Date and initials of person examining contents: EP

11/19/20 800

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> x/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> x/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_



# CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

<b>Section A</b>		<b>Section B</b>		<b>Section C</b>	
<b>Required Client Information:</b>		<b>Required Project Information:</b>		<b>Invoice Information:</b>	
Company:	Springdale Water Utilities	Report To:	Brad Stewart	Attention:	
Address:	2910 Silent Grove Road	Copy To:		Company Name:	
	Springdale, AR 72762	Purchase Order #	0021719	Address:	
Email:	bstewart@springdalewater.com	Project Name:	WET Test	Pace Quote:	
Phone:	479-756-3657	Project #:		Pace Project Manager:	jeff.shopper@pacelabs.com
Requested Due Date:				Pace Profile #:	9250, line 1
				Slate / Location:	AR
				Regulatory Agency:	

ITEM #	MATRIX CODE Drinking Water Water Waste Water Product Soil/Solid Oil Wipe Air Other Tissue	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample IDs must be unique	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Preservatives						Y/N	Analyses Test	Chronic Wet Test	Residual Chlorine (Y/N)
			START DATE	START TIME				END DATE	END TIME	Unpreserved	H2SO4	HNO3	HCl				
1		SWWTF EFFLUENT	11/19/20	0830	3C	3C	1								X		
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
				<i>Brad Stewart</i>	11/20/20	16:15	1.6 4 4 4

SAMPLER NAME AND SIGNATURE		TEMP in C	Received on	Ice (Y/N)	Custody (Y/N)	Sealed Cooler (Y/N)	Samples Intact (Y/N)
<i>Stephanie Kissack</i>							
PRINT Name of SAMPLER: STEPHANIE KISSACK		DATE Signed: 11/20/20					
SIGNATURE of SAMPLER: <i>Stephanie Kissack</i>							



# Sample Condition Upon Receipt

Client Name: Springdale

Courier: FedEx  UPS  VIA  Clay  PEX  ECI  Pace  Xroads  Client  Other

Tracking #: \_\_\_\_\_ Pace Shipping Label Used? Yes  No

Custody Seal on Cooler/Box Present: Yes  No  Seals intact: Yes  No

Packing Material: Bubble Wrap  Bubble Bags  Foam  None  Other

Thermometer Used: T-111 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 2.8 Corr. Factor -1.2 Corrected 1.6

Date and initials of person examining contents: 11/20/20 16:45

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> x/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Containers requiring pH preservation in compliance? (HNO <sub>3</sub> , H <sub>2</sub> SO <sub>4</sub> , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> x/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Comments/ Resolution: \_\_\_\_\_

Project Manager Review: \_\_\_\_\_ Date: \_\_\_\_\_