



REPORT OF LABORATORY ANALYSIS
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cc: Mike Cole, Environmental Enterprise Group, Inc.
Stacy Ness, EEG
Stacy Ness-copy invoice, EEG, Inc.

Enclosures

Jamie Church
jamie.church@paceelabs.com
314-838-7223
Project Manager

Sincerely,

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

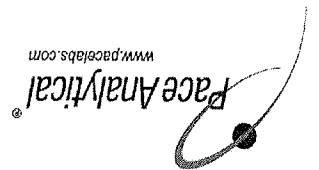
Dear Mike Cole:
Enclosed are the analytical results for sample(s) received by the laboratory on July 30, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

RE: Project: CITY CORPORATION
Pace Project No.: 60310245

Mike Cole
EEG
220 N Knoxville Avenue
Russellville, AR 72801

August 12, 2019





Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: CITY CORPORATION
Pace Project No.: 60310245

Southeast Kansas Certification IDs
 808 West McKay, Frontenac, KS 66763
 Arkansas Certification #: 18-016-0
 Iowa Certification #: 118
 Kansas/NE LAP Certification #: E-10426
 Louisiana Certification #: 03055
 Oklahoma Certification #: 9935
 Texas Certification #: T104704407
 Utah Certification #: KS00021

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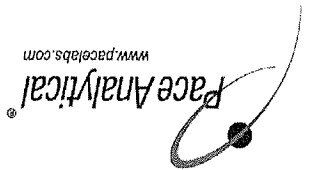
SAMPLE SUMMARY

Project: CITY CORPORATION
Pace Project No.: 60310245

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60310245001	OUTFALL 001	Water	07/29/19 07:11	07/30/19 08:00

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SAMPLE ANALYTE COUNT

Project: CITY CORPORATION
 Pace Project No.: 60310245

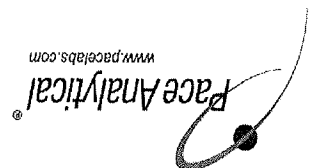
Lab ID	Sample ID	Method	Analysts	Reported	Laboratory
60310245001	OUTFALL 001	EPA 821/R-02/013	TDH	1	PASI-SE

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REPORT OF LABORATORY ANALYSIS

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Chronic Toxicity Toxicity, Chronic	Complete		1.0	1		07/30/19 11:00		
Analytical Method: EPA 821/R-02/013								
Sample: OUTFALL 001								
Lab ID: 60310245001								
Collected: 07/29/19 07:11								
Received: 07/30/19 08:00								
Matrix: Water								
Project: CITY CORPORATION								
Pace Project No.: 60310245								

ANALYTICAL RESULTS





Face Analytical Services, LLC
 9608 Lotet Blvd.
 Lenexa, KS 66219
 (913)599-5665

QUALIFIERS

Project: CITY CORPORATION
 Pace Project No.: 60310245

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 NELAP Institute.

LABORATORIES


PASI-SE Pace Analytical Services - SE Kansas

REPORT OF LABORATORY ANALYSIS

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Date: 08/12/2019 12:43 PM

Sample Condition Upon Receipt

MO#: 60310245

 60310245

Client Name: ETG
 Courier: FedEx UPS VIA Clay PEX ECI Face Xroads Client Other

Tracking #: _____
 Packed Shipping Label Used? Yes No Other
 Custody Seal on Cooler/Box Present: Yes No Other
 Seals Intact: Yes No Other
 Packing Material Used: Bubble Wrap Bubble Bags Foam None Other
 Thermometer Used: T-243
 Type of Ice: Wal Blue None

Date and initials of person examining contents: 7/30/19
8.00

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 checked="" type="checkbox"/> Yes <input 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
Face 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 checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/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 ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) Exceptions: VOA, Micro, O&G, KS TPH, OK-DR0)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Cyanide water sample checks: Lead acetate strip turns dark? (Record only) Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Strip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

James Clark

Date: 8/12/19

Project Manager Review: _____

EEEG
 Environmental Enterprise Group, Inc.
 PROVIDING CUSTOMIZED SERVICES NATIONWIDE

1246-055357

Environmental Enterprise Group, Inc.
 220 North Knoxville
 Russellville, Arkansas 72801
 (479) 968-6767 Fax (479) 968-1956

Company Name: _____ Phone #: _____

City Corporation _____ (479) 968-4989
 Address: _____ Fax #: _____

P. O. Box 3186 Russellville, AR 72811-3186 (479) 968-3430
 Project Name or Number: _____ Purchase Order #: _____

WET Testing

Sampling Personnel Signature(s): Brooks

Printed : Brooks Teeter

Sample I.D.	Date	Time	24hrComp	Grab	Cont. Type		# of Containers	Method Preserved										Sample Matrix	Requested Analysis			Laboratory Control Number	Remarks (Please note special detection limits below.)										
					Plast.	Glass		H2SO4	HNO3	NAOH	HCL	Ice	None	Water	Soil	Air	Sludge							Other									
Outfall 001	on 7/28/19 off 7/29/19	on 7:15 off 7:11	X		X		1								X															0719189 Lab-001	100310245		
Relinquished by:	<u>Brooks</u>			Date:	<u>7/29/19</u>	Time:	<u>8:27</u>	Received by:										Date:		Time:													
Received by:	<u>Snee</u>			Date:	<u>7/29/19</u>	Time:	<u>08:21</u>	Relinquished by:										Date:		Time:													
Relinquished by:	<u>Snee</u>			Date:	<u>7/29/19</u>	Time:	<u>1400</u>	Received by Laboratory:	<u>Environmental Enterprise fees</u>									Date:	<u>7/30/19</u>	Time:	<u>8:00</u>												
Comments:																																	

REFERENCE #60310245

August 8, 2019

Environmental Enterprise Group, Inc.
220 North Knoxville
Russellville, AR 72801

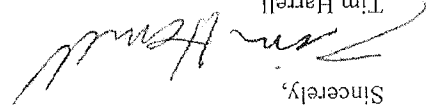
Re: Lab Project Number: 60310245
Client Project ID: Wet Test

Dear:

Enclosed are the analytical results for sample(s) received by the laboratory. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,



Tim Harrell

Tim.Harrell@paeclabs.com

Technical Director

Enclosures

REFERENCE #60310245

CHRONIC TOXICITY TEST FOR
CITY CORPORATION

PERMIT # AR 0021768
AFIN # 58-00105

PERFORMED ON:

Pimephales promelas

and

Ceriodaphnia dubia

PREPARED FOR:

Environmental Enterprise Group Inc.
220 North Knoxville
Russellville, AR 72801
479-968-6767

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

August 8, 2019

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
SUMMARY	4
INTRODUCTION	5
TEST MATERIAL	5
TEST METHODS	5
TEST ORGANISMS	5
RESULTS	6
TEST CONDITIONS	11
TEST VALIDITY	17
CONCLUSIONS	17
APPENDIX A - STATISTICAL ANALYSIS	
APPENDIX B - CHAIN OF CUSTODY FORMS	
APPENDIX C - REFERENCE TOXICANT SUMMARY	

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 City Corp effluent discharge from July 29, 2019 to August 2, 2019. 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 Dunnett'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 100% 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 100% for survival. No significant reduction in the 100% effluent concentration. The Toxic Units is < 1 . The IC25 is > 100 . The NOEC for growth in effluent was determined to be 100%. The PMSD was 22.2.

In Cladoceran section of testing, it was observed that the effluent had no significant effect on the survival of the organisms in the 100% 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 100% for survival. No significant reduction in reproduction was observed in the 100% effluent concentrations. The Toxic Units is < 1 . The IC25 is > 100 . The NOEC for reproduction in effluent was determined to be 100%. The PMSD was 16.4.

The chronic toxicity exhibited by the fathead minnows and the Ceriodaphnia treated by the effluent sampled from July 29 to August 2 from the City Corp 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 City Corp 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

A sample of the effluent. City Corp personnel collected sampling of the effluent. A sample of the effluent was delivered to Pace by commercial carrier on 7-30-19. Subsequent samples followed by delivery on 8-1-19 and on 8-3-19. 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 7-30-19 and carried out until 8-6-19. 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.

Results	Ceriodaphnia dubia
0	TLP3B
0	TGP3B
100	TOP3B
100	TPP3B
17.10	TQP3B
Results	Pimephales promelas
0	TLP6C
0	TGP6C
100	TOP6C
100	TPP6C
11.99	TQP6C

RESULTS

TABLE 1

Permittee: City Corp Effluent discharge.

Date Sampled No. 1: 7-29-19 7:11
 No. 2: 7-31-19 7:21
 No. 3: 8-2-19 7:20
 Test Initiated: 11:00
 Date: 7-30-19
 Dilution Water used: Moderately Hard Synthetic Water

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

DATA TABLE FOR GROWTH OF FATHEAD MINNOWS

Effluent Concentration (%)	A	B	C	D	E	Mean Dry Weight (mg)	CV%*
Control 0%	0.349	0.401	0.382	0.429	0.367	0.386	8.01
Dilution 1 32%	0.454	0.281	0.301	0.334	0.387	0.351	19.92
Dilution 2 42%	0.273	0.420	0.308	0.440	0.392	0.367	19.80
Dilution 3 56%	0.296	0.306	0.306	0.410	0.374	0.338	14.99
Dilution 4 75%	0.279	0.398	0.340	0.369	0.446	0.366	17.09
Dilution 5 100%	0.365	0.320	0.375	0.424	0.432	0.383	11.99

* Coefficient of Variation = Standard Deviation X 100 / Mean

Permittee: City Corp Effluent discharge.

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	100	100	100	100	100	100	100	0.00
Dilution 1 32%	100	87.5	100	100	100	100	100	97.5	4.79
Dilution 2 42%	87.5	100	100	100	100	100	100	97.5	4.79
Dilution 3 56%	100	100	100	100	100	100	100	100	0.00
Dilution 4 75%	87.5	100	100	100	100	100	100	97.5	4.79
Dilution 5 100%	100	87.5	100	100	100	100	100	97.5	4.79

Permittee: City Corp Effluent discharge.

CERIODAPHNIA SURVIVAL AND REPRODUCTION

DATA TABLE FOR CERIODAPHNIA YOUNG PRODUCTION

Replicate	Control	Dilution 1	Dilution 2	Dilution 3	Dilution 4	Dilution 5
1	20	25	23	23	24	23
2	21	17	26	28	20	28
3	26	21	24	22	26	21
4	19	23	22	23	23	18
5	21	23	23	25	27	22
6	24	27	20	19	20	28
7	21	28	27	23	17	17
8	22	22	25	21	31	22
9	17	19	22	25	24	26
10	18	25	29	25	19	27
Mean	20.9	23.0	24.1	23.4	23.1	23.2
SD	2.685	3.432	2.685	2.503	4.228	3.967
CV %	12.85	14.92	11.14	10.70	18.30	17.10

REFERENCE #60310245

Permittee: City Corp Effluent discharge.

CERIODAPHNIA MEAN PERCENT SURVIVAL

Percent Effluent (%)						
Time Elapsed	Control	Dilution 1	Dilution 2	Dilution 3	Dilution 4	Dilution 5
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%, 32%, 42%, 56%, 75%, 100%
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.)

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

TABLE 2 (CONT.)

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%, 32%, 42%, 56%, 75%, 100%
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: City Corp Effluent discharge.

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

SAMPLE NO. 1 COLLECTED: DATE: 7-29-18
 SAMPLE NO. 2 COLLECTED: DATE: 7-31-18
 SAMPLE NO. 3 COLLECTED: DATE: 8-2-18

**TABLE 2 (SECTION 2)
 INITIAL WATER QUALITY
 EFFLUENT CONCENTRATION**

	Control	100%
PH	7.61	7.66
D.O.	8.00	7.90
Temp	25.0	25.0
Alk	62	74
Hard	90	64
Cond	329	755
Chlorine	<0.1	<0.1

* D.O. is reported as mg/L

Alkalinity is reported as mg/L CaCO₃
 Hardness is reported as mg/L CaCO₃
 Conductance is reported as umhos
 Ammonia is reported as mg/L
 Chlorine is reported as mg/L

REFERENCE #60310245

TEST WATER QUALITY

24-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
100% Effluent	7.98	7.10	24.9
75% Effluent	7.94	7.10	24.9
56% Effluent	7.92	7.20	24.9
42% Effluent	7.88	7.20	24.9
32% Effluent	7.84	7.20	24.9
0% Control	7.73	7.30	24.7

48-Hour Water Quality Measurements

Effluent Concentration (%)	PH	D.O. (mg/l)	Temperature (C)
100% Effluent	8.06	7.30	24.8
75% Effluent	8.04	7.20	24.8
56% Effluent	8.01	7.20	24.8
42% Effluent	7.96	7.10	24.8
32% Effluent	7.89	7.10	24.8
0% Control	7.78	7.10	24.9

REFERENCE #60310245

FINAL WATER QUALITY

EFFLUENT CONCENTRATION

	Control	100%
pH	7.84	8.11
D.O.	7.10	7.00
Temp	25.1	25.0
Alk	60	72
Hard	94	68
Cond	426	913

* D.O. is reported as mg/L
Alkalinity is reported as mg/L CaCO3
Hardness is reported as mg/L CaCO3
Conductance is reported as umhos

TEST VALIDITY

The Pimephales promelas control survival rate was 100%. The mean dry weight (growth) of the Pimephales promelas was determined at 0.386 mg/organism in the controls. The percent coefficient of variation (%CV) values for the fathead minnow control for survival and growth were 0.00 and 8.01. The Ceriodaphnia dubia survival rates were 100 in the control. The Ceriodaphnia dubia produced an average of 20.9 young over the seven-day exposure period. Percent CV values for Ceriodaphnia dubia control survival and reproduction was 0.00 and 12.85. Control data met or exceeded all criteria set out by EPA 821-R-02-013 for test acceptance.

CONCLUSIONS

The No Observed Effect Concentration (NOEC) for Pimephales promelas was 100% for survival and 100% for growth. The No Observed Effect Concentration (NOEC) for Ceriodaphnia dubia was 100% for Survival and 100% for reproduction. The tests were ran using a synthetic control against effluent concentrations of 32%, 42%, 56%, 75%, and 100%. The effluent sampled on 7-29-19, 7-31-19, and 8-2-19 exhibited acceptable chronic toxicity in Pimephales promelas and in Ceriodaphnia dubia during the exposure period as described in EPA 821-R-02-013.

APPENDIX C

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: 7/23/19 13:00 End: 7/30/19 12:00

Reference Toxicant (NaCl) *Pimephales promelas*

IC25 (5.15 g/l Sodium Chloride)

Survival NOEC: 4.0 g/l

Concentration of Toxicant	0 hrs	24 hrs	48 hrs	7 days
10 g/l	40	7	2	0
8 g/l	40	34	29	6
6 g/l	40	37	33	25
4 g/l	40	40	40	40
2 g/l	40	40	40	40

Avg. # of Live Organisms/replicate

Reference Toxicant (NaCl) *Ceriodaphnia Dubia*

IC25 (1.18 g/l Sodium Chloride)

Survival NOEC: 1.5 g/l

Concentration of Toxicant	0 hrs	24 hrs	48 hrs	7 days
2.5 g/l	10	4	0	0
2.0 g/l	10	10	8	2
1.5 g/l	10	10	10	10
1.0 g/l	10	10	10	10
0.5 g/l	10	10	10	10

Avg. # of Live Organisms/replicate

Submitted By:

Timothy Harrell
 Timothy Harrell, Technical Director

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

Data FAIL normality test. Try another transformation.

Critical W (P = 0.05) (n = 30) = 0.927
Critical W (P = 0.01) (n = 30) = 0.900

W = 0.596

D = 0.043

Shapiro - Wilk's test for normality

60310245 ECG FATHEAD SURVIVAL
File: 6310245A Transform: ARC SINE(SQUARE ROOT(Y))

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

Data FAIL normality test. Try another transformation.

Calculated Chi-square goodness of fit test statistic = 36.9480
Table Chi-square value (alpha = 0.01) = 13.277

INTERVAL	EXPECTED	OBSERVED
<-1.5	2.010	4
-1.5 to <-0.5	7.260	0
-0.5 to 0.5	11.460	26
>0.5 to 1.5	7.260	0
>1.5	2.010	0

Chi-square test for normality: actual and expected frequencies

60310245 ECG FATHEAD SURVIVAL
File: 6310245A Transform: ARC SINE(SQUARE ROOT(Y))

60310245 EEG FATHEAD SURVIVAL File: 6310245A Transform: ARC SINE(SQUARE ROOT(Y))

Critical F value = 2.62 (0.05,5,24) Since F > Critical F FAIL TO REJECT Ho: All equal

SOURCE	DF	SS	MS	F
Between	5	0.004	0.001	0.400
Within (Error)	24	0.043	0.002	
Total	29	0.047		

ANOVA TABLE

60310245 EEG FATHEAD SURVIVAL File: 6310245A Transform: ARC SINE(SQUARE ROOT(Y))

GRP IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1 CONTROL	0.000	0.000	0.000	0.00
2 32%	0.003	0.052	0.023	4.79
3 42%	0.003	0.052	0.023	4.79
4 56%	0.000	0.000	0.000	0.00
5 75%	0.003	0.052	0.023	4.79
6 100%	0.003	0.052	0.023	4.79

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 OF 2

60310245 EEG FATHEAD SURVIVAL File: 6310245A Transform: ARC SINE(SQUARE ROOT(Y))

GRP IDENTIFICATION	N	MIN	MAX	MEAN
1 CONTROL	5	1.107	1.107	1.107
2 32%	5	0.991	1.107	1.084
3 42%	5	0.991	1.107	1.084
4 56%	5	1.107	1.107	1.107
5 75%	5	0.991	1.107	1.084
6 100%	5	0.991	1.107	1.084

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 OF 2

60310245 EEG FATHEAD SURVIVAL File: 6310245A 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	1.107	0.800	0.866	
2	32%	1.084	0.780	0.866	
3	42%	1.084	0.780	0.866	
4	56%	1.107	0.800	0.000	
5	75%	1.084	0.780	0.866	
6	100%	1.084	0.780	0.866	

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

60310245 EEG FATHEAD SURVIVAL
 File: 6310245A
 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	0.053	6.6	0.020
2	32%	5	0.053	6.6	0.020
3	42%	5	0.053	6.6	0.020
4	56%	5	0.053	6.6	0.000
5	75%	5	0.053	6.6	0.020
6	100%	5	0.053	6.6	0.020

60310245 EEG FATHAD GROWTH
File: 6310245B Transform: NO TRANSFORMATION

Shapiro, - Wilk's test for normality

D = 0.079

W = 0.973

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.

60310245 EEG FATHAD GROWTH
File: 6310245B Transform: NO TRANSFORMATION

Bartlett's test for homogeneity of variance
Calculated B1 statistic = 3.20

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.

60310245 EEG FATHEAD GROWTH
 File: 6310245B
 Transform: NO TRANSFORMATION

Critical F value = 2.62 (0.05,5,24)
 Since F < Critical F FAIL TO REJECT Ho: All equal

SOURCE	DF	SS	MS	F
Between	5	0.008	0.002	0.503
Within (Error)	24	0.079	0.003	
Total	29	0.087		

ANOVA TABLE

60310245 EEG FATHEAD GROWTH
 File: 6310245B
 Transform: NO TRANSFORMATION

GRP IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1 CONTROL	0.001	0.031	0.014	8.01
2 32%	0.005	0.070	0.031	19.92
3 42%	0.005	0.073	0.032	19.80
4 56%	0.003	0.051	0.023	14.99
5 75%	0.004	0.063	0.028	17.09
6 100%	0.002	0.046	0.021	11.99

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 OF 2

60310245 EEG FATHEAD GROWTH
 File: 6310245B
 Transform: NO TRANSFORMATION

GRP IDENTIFICATION	N	MIN	MAX	MEAN
1 CONTROL	5	0.349	0.429	0.386
2 32%	5	0.281	0.454	0.351
3 42%	5	0.273	0.440	0.367
4 56%	5	0.296	0.410	0.338
5 75%	5	0.279	0.446	0.366
6 100%	5	0.320	0.432	0.383

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 OF 2

60310245 EEG FATHEAD GROWTH
 File: 6310245B
 Transform: NO TRANSFORMATION

GROUP	IDENTIFICATION	NUM OF REPS	Minimum sig Diff (IN ORIG. UNITS)	% of CONTROL	DIFFERENCE FROM CONTROL
1	CONTROL	5	0.086	22.2	0.034
2	32%	5	0.086	22.2	0.019
3	42%	5	0.086	22.2	0.047
4	56%	5	0.086	22.2	0.019
5	75%	5	0.086	22.2	0.019
6	100%	5	0.086	22.2	0.002

DUNNETT'S TEST - TABLE 2 OF 2 Ho:control>Treatment

60310245 EEG PATHRAD GROWTH File: 6310245B Transform: NO TRANSFORMATION

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	CONTROL	0.386	0.386	0.943	
2	32%	0.351	0.351	0.524	
3	42%	0.367	0.367	1.302	
4	56%	0.338	0.338	0.529	
5	75%	0.366	0.366	0.066	
6	100%	0.383	0.383		

DUNNETT'S TEST - TABLE 1 OF 2 Ho:control>Treatment

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

FISHER'S EXACT TEST

IDENTIFICATION	ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
TOTAL	20	0	20

NUMBER OF

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	ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
TOTAL	20	0	20

NUMBER OF

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	ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10
TOTAL	20	0	20

NUMBER OF

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		ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10	
75%	10	0	10	
TOTAL	20	0	20	

NUMBER OF

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		ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10	
75%	10	0	10	
TOTAL	20	0	20	

NUMBER OF

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		ALIVE	DEAD	TOTAL ANIMALS
CONTROL	10	0	10	
75%	10	0	10	
TOTAL	20	0	20	

NUMBER OF

SUMMARY OF FISHER'S EXACT TESTS

NUMBER NUMBER SIG

GROUP	IDENTIFICATION	EXPOSED	DEAD
1	CONTROL	10	0
2	32%	10	0
3	42%	10	0
4	56%	10	0
5	75%	10	0
	100%	10	0

(P=.05)

GRP	IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1	CONTROL	0.000	0.000	0.000	0.00
2	32%	0.000	0.000	0.000	0.00
3	42%	0.000	0.000	0.000	0.00
4	56%	0.000	0.000	0.000	0.00
5	75%	0.000	0.000	0.000	0.00
6	100%	0.000	0.000	0.000	0.00

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 OF 2

60310245 EEG CERIODAPHNIA DUBIA SURVIVA
 File: 6310245D
 Transform: NO TRANSFORM

GRP	IDENTIFICATION	N	MIN	MAX	MEAN
1	CONTROL	10	1.000	1.000	1.000
2	32%	10	1.000	1.000	1.000
3	42%	10	1.000	1.000	1.000
4	56%	10	1.000	1.000	1.000
5	75%	10	1.000	1.000	1.000
6	100%	10	1.000	1.000	1.000

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 OF 2

60310245 EEG CERIODAPHNIA DUBIA SURVIVA
 File: 6310245D
 Transform: NO TRANSFORM

60310245 EEG CERIODAPHNIA DUBIA REPROD
File: 6310245E
Transform: NO TRANSFORMATION

Chi-square test for normality: actual and expected frequencies

INTERVAL	EXPECTED	OBSERVED
<-1.5	4.020	4
-1.5 to <-0.5	14.520	15
-0.5 to 0.5	22.920	21
>0.5 to 1.5	14.520	16
>1.5	4.020	4

Calculated Chi-Square goodness of fit test statistic = 0.3278
Table Chi-Square value (alpha = 0.01) = 13.277

Data PASS normality test. Continue analysis.

60310245 EEG CERIODAPHNIA DUBIA REPROD
File: 6310245E
Transform: NO TRANSFORMATION

Bartlett's test for homogeneity of variance
Calculated B1 statistic = 4.33

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.

60310245 EEG CERIODAPHNIA DUBIA REPROD
 File: 6310245E Transform: NO TRANSFORMATION

Critical F value = 2.45 (0.05,5,40)
 Since F > Critical F FAIL TO REJECT Ho: All equal

SOURCE	DF	SS	MS	F
Between	5	58.150	11.630	1.056
Within (Error)	54	594.700	11.013	
Total	59	652.850		

ANOVA TABLE

60310245 EEG CERIODAPHNIA DUBIA REPROD
 File: 6310245E Transform: NO TRANSFORMATION

GRP IDENTIFICATION	VARIANCE	SD	SEM	C.V. %
1 CONTROL	7.211	2.685	0.849	12.85
2	11.778	3.432	1.085	14.92
3	7.211	2.685	0.849	11.14
4	6.267	2.503	0.792	10.70
5	17.878	4.228	1.337	18.30
6	15.733	3.967	1.254	17.10

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 2 OF 2

60310245 EEG CERIODAPHNIA DUBIA REPROD
 File: 6310245E Transform: NO TRANSFORMATION

GRP IDENTIFICATION	N	MIN	MAX	MEAN
1 CONTROL	10	17.000	26.000	20.900
2	10	17.000	28.000	23.000
3	10	20.000	29.000	24.100
4	10	19.000	28.000	23.400
5	10	17.000	31.000	23.100
6	10	17.000	28.000	23.200

SUMMARY STATISTICS ON TRANSFORMED DATA TABLE 1 OF 2

60310245 EEG CERIODAPHNIA DUBIA REPROD
 File: 6310245E 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	20.900	20.900		
2	32%	23.000	23.000	-1.415	
3	42%	24.100	24.100	-2.156	
4	56%	23.400	23.400	-1.685	
5	75%	23.100	23.100	-1.482	
6	100%	23.200	23.200	-1.550	

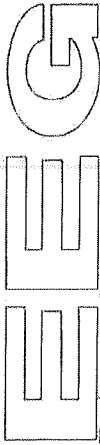
Dunnnett table value = 2.31 (1 Tailed Value, P=0.05, df=40,5)

60310245 EEG CERIODAPHNIA DUBIA REPROD
 File: 6310245E
 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	10	3.428	16.4	-2.100
2	32%	10	3.428	16.4	-3.200
3	42%	10	3.428	16.4	-2.500
4	56%	10	3.428	16.4	-2.200
5	75%	10	3.428	16.4	-2.300
6	100%	10	3.428	16.4	-2.300



Environmental Enterprise Group, Inc.
PROVIDING CUSTOMIZED SERVICES NATIONWIDE

L246-055357

Environmental Enterprise Group, Inc.
220 North Knoxville
Russellville, Arkansas 72801
(479) 968-6767 Fax (479) 968-1956

Company Name:		Phone #:		Requested Analysis									
City Corporation		(479) 968-4989											
Address:		Fax #:											
P.O. Box 3186 Russellville, AR 72811-3186		(479) 968-3430											
Project Name or Number:		Purchase Order #:											
WET Testing													
Sampling Personnel Signature(s): <i>Brooks Teeter</i>		Printed: Brooks Teeter											
Sample I.D.	Date	Time	Cont Type	Grab	24hComp	Plast	Glass	# of Containers	Method Preserved	Sample Matrix	WET Testing	Laboratory Control Number	Remarks (Please note special detection limits below.)
Outfall 001	on 7/28/19 off 7/29/19	on 7:15 off 7:11			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		1	H2SO4 HNO3 NaOH HCL Ice None Water	Soil Air Sudge Other	<input checked="" type="checkbox"/>	0719189	600310845 7/19/19 Sub-001
Relinquished by:	<i>Brooks Teeter</i>			Date:	7/29/19	Time:	8:27	Received by:		Date:		Time:	
Received by:	<i>Soner</i>			Date:	7/29/19	Time:	0827	Relinquished by:		Date:		Time:	
Relinquished by:	<i>Soner</i>			Date:	7/29/19	Time:	1400	Received by Laboratory:	<i>Ethel Cofeno</i>	Date:	7/30/19	Time:	8:00
Comments:													

Sample Condition Upon Receipt

Face Analytical
www.facelabs.com

Client Name: EE6 Courier: Fedex UPS VIAL Clay PEX ECI Pace Xroads Client Other

Packing #: _____ Face 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
 Type of Ice: Wet Blue None

Refrigerant Used: _____ As-read 33 Corr. Factor .9 Corrected 24

Cooler Temperature (°C): _____ (°C) should be above freezing to 6°C

Chain of Custody present: Yes No N/A

Chain of Custody relinquished: Yes No N/A

Samples arrived within holding time: Yes No N/A

Short Hold Time analyses (<72hr): Yes No N/A

Rush Turn Around Time requested: Yes No N/A

Sufficient volume: Yes No N/A

Correct containers used: Yes No N/A

Face containers used: Yes No N/A

Containers intact: Yes No N/A

Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs? Yes No N/A

Filtered volume received for dissolved tests? Yes No N/A

Sample labels match COC: Date / time / ID / analyses Yes No N/A

Samples contain multiple phases? Matrix: Yes No N/A

Containers requiring pH preservation in compliance? Yes No N/A

Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) Yes No N/A

Cyanide water sample checks: Yes No N/A

Lead acetate strip turns dark? (Record only) Yes No N/A

Potassium iodide test strip turns blue/purple? (Preserve) Yes No N/A

Trip Blank present: Yes No N/A

Headspace in VOA vials (>6mm): Yes No N/A

Samples from USDA Regulated Area: State: Yes No N/A

Additional labels attached to 5035A / TX1005 vials in the field? Yes No N/A

Client Notification/ Resolution:	Copy COC to Client?	Y	N	Field Data Required?	Y	N
Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A					
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input 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					
Face 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 checked="" type="checkbox"/> No <input type="checkbox"/> N/A					
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A					
Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A					
Cyanide water sample checks:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A					
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A					
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A					
Trip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A					
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A					
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A					
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A					

Date and initials of person examining contents: 8/1/19 MP3

MP3 8/1/19



Environmental Enterprise Group, Inc.
PROVIDING CUSTOMIZED SERVICES NATIONWIDE

L246-055357

Environmental Enterprise Group, Inc.
220 North Knoxville
Russellville, Arkansas 72801
(479) 968-6767 Fax (479) 968-1956

Company Name:		Phone #:		Requested Analysis		Laboratory Control Number		Remarks (Please note special detection limits below.)															
City Corporation		(479) 968-4989																					
Address:		Fax #:																					
P. O. Box 3186 Russellville, AR 72811-3186		(479) 968-3430																					
Project Name or Number:		Purchase Order #:																					
WET Testing																							
Sampling Personnel Signature(s): <i>Brooks</i>				Printed: Brooks Teeter																			
Sample I.D.	Date	Time	24hrComp.	Cont. Type		# of Containers	Method Preserved						Sample Matrix	WET Testing									
				Grab	Plast.		Glass	H2SO4	HNO3	NAOH	HCL	Ice			None	Water	Soil	Air	Sludge	Other			
Outfall 001	on 8/1/19 off 8/2/19	on 719 off 720	x	x		1							x						0719189	Field Col			
Relinquished by:		Date:		Time:		Received by:		Date:		Time:		Relinquished by:		Date:		Time:		Received by Laboratory:		Date:		Time:	
Received by:		8/2/19		906		Brooks		8/2/19				Received by:		8/2/19				Sharon Coleman		8/2/19		14:00	
Relinquished by:		8/2/19		1000		Smeu		8/2/19				Received by:		8/2/19				Smeu		8/2/19		14:00	
Comments:																							

Sample Condition Upon Receipt

Client Name: FTG Courier: Fedex UPS VIA Clay PEX ECI Pace Xroads Client Other

Tracking #: _____ Face Shipping Label Used? Yes No

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

Packaging Material: Bubble Wrap Bubble Bags Foam None Other
Thermometer Used: T-243 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 2.9 Cor. Factor -0.9 Corrected 2.0
Temperature should be above freezing to 6°C

Chain of Custody Present: Yes No N/A

Chain of Custody Relinquished: Yes No N/A

Samples Arrived within Holding Time: Yes No N/A

Short Hold Time Analyses (<72hr): Yes No N/A

Rush Turn Around Time Requested: Yes No N/A

Sufficient Volume: Yes No N/A

Correct Containers Used: Yes No N/A

Pace Containers Used: Yes No N/A

Containers Intact: Yes No N/A

Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs? Yes No N/A

Filtered Volume Received for Dissolved Tests? Yes No N/A

Sample Labels Match COC: Date / Time / ID / Analyses Yes No N/A

Samples Contain Multiple Phases? Matrix: Yes No N/A

Containers Requiring pH Preservation in Compliance? (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) (HNO₃, H₂SO₄, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) List sample IDs, volumes, lot #'s of preservative and the date/time added. Yes No N/A

Cyanide Water Sample Checks: Lead acetate strip turns dark? (Record only) Yes No Potassium Iodide test strip turns blue/purple? (Preserve) Yes No

Trip Blank Present: Yes No Headspace in VOA Vials (>6mm): Yes No Samples from USDA Regulated Area: State: Yes No Additional Labels Attached to 5035A / TX1005 vials in the field? Yes No

Client Notification/Resolution: Copy COC to Client? Y / N Field Data Required? Y / N Person Contacted: _____ Date/Time: _____ Comments/Resolution: _____ Project Manager Review: _____ Date: _____