MIDWEST TESTING LABORATORIES

2645 Gravois Avenue. St. Louis, MO 63118. (314) 773-3035 . FAX (314) 773-3519

ANALYTE	EFFLUENT # 004	MDL
Benzo(g,h,I)perylene	ND	0.010
Benzo(k)fluoranthene	ND	0.010
Bis(2-chloroethoxy)methane	ND	0.010
Bis(2-chloroethyl)ether	ND	0.010
Bis(2-chloroisopropyl)ether	ND	0.010
Bis(2-ethylhexyl)phthalate	ND	0.010
Butyl benzyl phthalate	ND	0.010
Chrysene	ND	0.010
Dibenzo(a,h)anthracene	ND	0.010
Diethyl phthalate	ND	0.010
Dimethyl phthalate	ND	0.010
Di-n-butyl phthalate	ND	0.010
Di-n-octyl phthalate	ND	0.010
Fluoranthene	ND	0.010
Fluorene	ND	0.010
Hexachlorobenzene	ND	0.010
Hexachlorobutadiene	ND	0.010
Hexachlorocyclopentadiene	ND	0.021
Hexachloroethane	ND	0.010
Indeno(1,2,3-cd)pyrene	ND	0.010
Isophorone	ND	0.010
Naphthalene	ND	0.010
Nitrobenzene	ND	0.010
N-Nitrosodimethylamine	ND	0.021
N-Nitroso-di-n-propylamine	ND	0.010
N-Nitrosodiphenylamine	ND	0.010
Pentachlorophenol	ND	0.021
Phenanthrene	ND	0.010
Phenol	ND	0.010
Pyrene	ND	0.010

ND: Not Detected / MDL: Method Dection Limit
Identification of tested specimens provided by the client.

MIDWEST TESTING LABORATORIES

DINESH N. SHAH
Laboratory Manager

MIDWEST TESTING LABORATORIES

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Date: September 1, 2015
Lab. No.: 2015MT0434
Invoice No.: 215304

CITY OF EUREKA
City Hall, P.O. Box 125
100 City Hall Drive
Eureka, Missouri 63025

ATTENTION: Mr. Bob Wade

REPORT OF TESTS

SAMPLE MATRIX : Water
SAMPLE I.D. : Effluent # 004
SAMPLE TAKEN : 8-18-15
DATE RECEIVED : 8-18-15
DATE ANALYZED : 8-24-15
RESULTS: ug/L OR PARTS PER BILLION (PPB)

VOLATILE ORGANICS EPA 600 METHOD 624 BY GC/MS

ANALYTE	EFFLUENT # 004	MDL
1,1,1-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2-Chloroethyl vinyl ether	ND	20.0
Acrolein	ND	100
Acrylonitrile	ND	5.0
Benzene	ND	2.0
Bromodichloromethane	ND	5.0
Bromoform	ND	5.0
Bromomethane	ND	10
Carbon tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	10
Chloroform	ND	5.0
Chloromethane	ND	10
Cis-1,3-Dichloropropene	ND	5.0
Dibromochloromethane	ND	5.0
Ethylbenzene	ND	5.0
M,p-Xylenes	ND	5.0

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ANALYTE	EFFLUENT # 004	MDL
Methylene chloride	ND	5.0
o-Xylene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
Vinyl chloride	ND	2.0
Xylenes, Total	ND	5.0

ND: Not Detected / MDL: Method Detection Limit

Identification of tested specimens provided by the client.

MIDWEST TESTING LABORATORIES

DINESH N. SHAH
Laboratory Manager

Pace Analytical
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PACE # 60198426

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

July 20, 2015

Dinesh Shah
Midwest Testing Lab, Inc
2645 Gravois Ave.
St. Louis, MO 63118

Re: Lab Project Number: 60198426
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 NELAC 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
Tim.Harrell@pacelabs.com
Technical Director

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.

808 West McKay, Frontenac, KS 66763

LABORATORY REPORT:

CLIENT: Dinesh Shah Midwest Testing Lab, Inc 2645 Gravois Ave. St. Louis, MO 63118 1-314-773-3035	Date Reported: 7-20-15 Date Initiated: 7-15-15 Time Set: 11:30 Date Terminated: 7-17-15

BIOMONITORING STUDY

ACUTE TOXICITY

Permit # MO-0039659

FINDING AND CONCLUSIONS:

Acute toxicity testing was performed on duplicate samples of effluent collected from City of Eureka effluent discharge. Acute toxicity, as defined by significant mortality for at least one of two aquatic test species during a 48 hour period of exposure, was not detected in Ceriodaphnia exposed to the 100% effluent (AEC), and was not detected in fathead minnows exposed to the 100% effluent. The LC50 for the Ceriodaphnia was >100% and >100% for the Pimephales. The test species utilized in this test were the water flea, Ceriodaphnia dubia and the fathead minnow, Pimephales promelas. Detailed results of the toxicity testing are provided in the Acute Toxicity Reports. In addition to the acute toxicity testing, water temperature, pH, dissolved oxygen, total hardness, total alkalinity, conductivity, and chlorine determinations were performed on the effluent and control samples

SAMPLING PROCEDURES:

City of Eureka personnel collected a sample at City of Eureka effluent discharge. The sample was preserved with ice and transported to Pace Analytical by commercial carrier.

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INTRODUCTION:

The purpose of this test was to determine the acute toxicity of City of Eureka effluent on the freshwater invertebrate, Ceriodaphnia dubia and the fathead minnow, Pimephales promelas. These tests were conducted at Pace Analytical Services, Inc., Frontenac, KS.

TEST ORGANISMS:

Ceriodaphnia dubia - The genetic stock of Ceriodaphnia dubia used in this acute toxicity Test were originally obtained from a private breeder. Ceriodaphnia are cultured in house at Pace Analytical Services Inc. Culture methods of Ceriodaphnia were obtained from EPA821-C-02-006 November 2002.

Pimephales promelas - The fathead minnows used in this acute toxicity test were cultured in-house at Pace Analytical Services, Inc., Frontenac, KS and/or were obtained from a private breeder. Fathead minnows are maintained at Pace Analytical Services until use for acute toxicity between the ages of 1 and 14 days. Information for culturing fathead minnows was taken from EPA821-C-02-006 November 2002.

MATERIALS AND METHODS:

Procedures used in the acute toxicity tests are described in Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (USEPA, 2002).

City of Eureka personnel collected the effluent tested from City of Eureka discharge. Testing was performed using a 100% effluent, a series of dilutions, an upstream, and a synthetic control. **The toxicity test was initiated within 36 hours of sample collection.**

Effluent and synthetic control test solutions were not aerated during the testing period.

Ceriodaphnia *ACUTE METHODS:*

This static test was ran using 40 ml glass vials containing 25 ml of test solution. Food was administered before the test. Five Ceriodaphnia neonates (<24 hr old) were randomly selected and placed in each of 4 replicates of test solution. A total of 20 organisms per concentration were tested. Observations of mortality were made at 24 and 48 hours of exposure.

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Pimephales *ACUTE METHODS:*

This static toxicity test was conducted using 500 ml polypropylene container as test chambers containing 250 ml of test solution. Food was administered prior to test initiation, but not during the testing period. Ten Pimephales, 1 – 14 days old, from a single spawn, were randomly selected and placed in each of 4 test chambers. A total of 40 organisms were exposed to each test concentration. Observations of mortality were made at 24 and 48 hours of exposure.

WATER QUALITY METHODS:

Prior to test initiation, temperature, dissolved oxygen, pH, total alkalinity, total hardness, and total residual chlorine were measured in the effluent and in the controls At 24 and 48 hours of exposure, temperature, dissolved oxygen, pH, and conductance were measured in the effluent sample and the controls.

DATA ANALYSIS:

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 (LC50) are calculated using effluent concentrations and their corresponding percent mortality data. The LC50's and the 95% confidence intervals are calculated where appropriate by the Spearman-Karber method. Statistical analysis is accomplished by following steps in EPA/600/4-90/027F, August 1993 and by use of Toxstat version 3 4.

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RESULTS:

THE Ceriodaphnia MORTALITY RESULTS - There was no significant mortality observed of the freshwater invertebrate, Ceriodaphnia dubia, during the 48 hour exposure period to the 100% effluent concentrations. There was no significant mortality in the synthetic control. The LC50 value of the sample to Ceriodaphnia is approximately >100%

Ceriodaphnia MORTALITY DATA

 # ALIVE

CONC	REP #	0 HOURS	24 HOURS	48 HOURS	% MORT
SYNTHETIC	1	5	5	5	0
"	2	5	5	5	0
"	3	5	5	5	0
"	4	5	5	5	0
Upstream	1	5	5	5	0
"	2	5	5	5	0
"	3	5	5	5	0
"	4	5	5	5	0
6.25%	1	5	5	5	0
"	2	5	5	5	0
"	3	5	5	5	0
"	4	5	5	5	0
12.5%	1	5	5	5	0
"	2	5	5	5	0
"	3	5	5	5	0
"	4	5	5	5	0
25%	1	5	5	5	0
"	2	5	5	5	0
"	3	5	5	5	0
"	4	5	5	5	0
34%	1	5	5	5	0
"	2	5	5	5	0
"	3	5	5	5	0
"	4	5	5	5	0
50%	1	5	5	5	0
"	2	5	5	5	0
"	3	5	5	5	0
"	4	5	5	5	0
100%	1	5	5	5	0
"	2	5	5	5	0
"	3	5	5	5	0
"	4	5	5	5	0

AVG. MORTALITY @ AEC (100% EFFLUENT) =0.0%

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THE Pimephales RESULTS - Minnows exposed to effluent collected at City of Eureka effluent discharge exhibited no significant mortality in the 100% effluent concentration during the 48 hr exposure period. The synthetic control showed no significant mortality during the testing period. The LC50 value of the effluent to fathead minnows is estimated to be >100%.

CONC.	REP #	0 HOURS	24 HOURS	48 HOURS	% MORTALITY
SYNTHETIC	1	10	10	10	0
"	2	10	10	10	0
"	3	10	10	10	0
"	4	10	10	10	0
Upstream	1	10	10	10	0
"	2	10	10	10	0
"	3	10	10	10	0
"	4	10	10	10	0
6.25%	1	10	10	10	0
"	2	10	10	10	0
"	3	10	10	10	0
"	4	10	10	10	0
12.5%	1	10	10	10	0
"	2	10	10	10	0
"	3	10	10	10	0
"	4	10	10	10	0
25%	1	10	10	10	0
"	2	10	10	10	0
"	3	10	10	10	0
"	4	10	10	10	0
34%	1	10	10	10	0
"	2	10	10	10	0
"	3	10	10	10	0
"	4	10	10	10	0
50%	1	10	10	10	0
"	2	10	10	10	0
"	3	10	10	10	0
"	4	10	10	10	0
100%	1	10	10	10	0
"	2	10	10	10	0
"	3	10	10	10	0
"	4	10	10	10	0

AVG. MORTALITY @ AEC (100% EFFLUENT) =0.0%

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WATER CHEMISTRY RESULTS:

Total residual chlorine (Cl2) - The effluent sample from City of Eureka discharge had <0.1 mg/l detectable level of total residual chlorine upon receipt in the laboratory.

Dissolved Oxygen (D.O.) - Dissolved oxygen reading of the 100% effluent sample was 7.80 mg/l after being raised to the test temperature of 25° C. At termination D.O. was 7.60 mg/l in the 100% effluent, which falls into acceptable limits. Aeration was not required in this test.

pH - The pH of the 100% effluent was 7.75 upon receipt in the laboratory and the synthetic control had a 7.72. At termination the pH measurement in the 100% effluent sample was 8.78

Conductance - The conductance of the effluent sample was 1217 umhos and the synthetic control was 316 umhos.

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INITIAL WATER QUALITY:

Initial Measurements Synthetic Water

pH	D.O. (mg/l)	Cond. (umhos)	Cl2 (mg/l)	Temp (C)	Hard (mg/l)	Alk (mg/l)
7.72	8.10	316	<0.1	25.0	96	62

Initial Measurements of Upstream

PH	D.O. (mg/l)	Cond. (umhos)	Cl2 (mg/l)	Temp (C)	Hard (mg/l)	Alk (mg/l)
7.68	8.50	267	<0.1	25.0	146	128

Initial Measurements of 100% Effluent

PH	D.O. (mg/l)	Cond. (umhos)	Cl2 (mg/l)	Temp (C)	Hard (mg/l)	Alk (mg/l)
7.75	7.80	1217	<0.1	25.0	448	252

TEST WATER QUALITY:

24-hour Water Quality Measurements

EFFLUENT CONC (%)	PH	D.O. (mg/l)	TEMP (C)	COND. (umhos)
Synthetic	7.82	7.40	25.1	362
Upstream	8.11	7.70	25.1	289
6.25%	8.11	7.70	25.1	369
12.5%	8.10	7.70	25.1	408
25%	8.07	7.70	25.1	586
34%	8.06	7.70	25.1	689
50%	8.04	7.70	25.1	847
100%	8.01	7.70	25.1	1465

48-hour Water Quality Measurements

EFFLUENT CONC (%)	PH	D.O. (mg/l)	TEMP (C)	COND. (umhos)
Synthetic	7.97	7.30	25.1	388
Upstream	8.52	7.50	25.1	397
6.25%	8.59	7.50	25.1	416
12.5%	8.63	7.50	25.1	438
25%	8.66	7.50	25.1	612
34%	8.69	7.50	25.1	698
50%	8.72	7.50	25.1	866
100%	8.78	7.60	25.1	1515

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QUALITY ASSURANCE:

The absence of control mortality during this test indicated the health of the organisms and indicated that any significant mortality in the test concentrations is not due to contaminants or variations in test conditions. Reference toxicity tests are routinely performed by staff members of our Toxicology Department.

REFERENCE TOXICANT (NaCl)
Ceriodaphnia
 # OF LIVE ORGANISMS

CONC OF TOXICANT	TEST INITIATION	24 HOUR EXPOSURE	48 HOUR EXPOSURE
3.0 g/l	20	2	0
2.5 g/l	20	16	10
2.0 g/l	20	20	20
1.5 g/l	20	20	20
1.0 g/l	20	20	20

LC50 = 2.50 g/l NaCl

REFERENCE TOXICANT (NaCl)
Pimephales
 # OF LIVE ORGANISMS

CONC OF TOXICANT	TEST INITIATION	24 HOUR EXPOSURE	48 HOUR EXPOSURE
10.0 g/l	40	2	0
8.0 g/l	40	34	22
6.0 g/l	40	38	37
4.0 g/l	40	40	40
2.0 g/l	40	40	40

LC50 = 8.31 g/l NaCl

Submitted By: Tim Harrell
Timothy Harrell
Technical Director

REPORT OF LABORATORY ANALYSIS

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

WHOLE EFFLUENT TOXICITY (WET) TEST REPORT

(TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

PART A – TO BE COMPLETED IN FULL BY PERMITTEE

FACILITY NAME	DATE AND TIME COLLECTED EFFLUENT ____ UPSTREAM ____
PERMIT NUMBER	PERMIT OUTFALL NUMBER
COLLECTOR'S NAME	
RECEIVING STREAM COLLECTION SITE AND DESCRIPTION	
PERMIT ALLOWABLE EFFLUENT CONCENTRATION (AEC)	EFFLUENT SAMPLE TYPE (CHECK ONE) ☐ 24 HR COMPOSITE ☐ GRAB ☐ OTHER ____
SAMPLE NUMBER EFFLUENT ____ UPSTREAM ____	UPSTREAM SAMPLE TYPE (CHECK ONE) ☐ 24 HR COMPOSITE ☐ GRAB ☐ OTHER ____
PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR CHLORINE ____ mg/L	PERMITTED EFFLUENT DAILY MAXIMUM LIMITATION FOR AMMONIA ____ mg/L

PART B – TO BE COMPLETED IN FULL BY PERFORMING LABORATORY

PERFORMING LABORATORY PACE ANALYTICAL SERVICES	TEST TYPE Acute	
FINAL REPORT NUMBER 60198426	TEST DURATION 48 HOURS	
DATE OF LAST REFERENCE TOXICANT TEST(S) 6/17/15	TEST METHOD EPA 2000 AND 2002	
DATE AND TIME SAMPLES RECEIVED AT LABORATORY 7/15/15 10:35	TEST START DATE AND TIME 7/15/15 11:30	TEST END DATE AND TIME 7/17/15 12:00
SAMPLE DECHLORINATED PRIOR TO ANALYSIS[1] ☐ YES ☒ NO EFFLUENT ____ UPSTREAM ____	TEST ORGANISM #1 AND AGE DUBIA <24 HOURS	TEST ORGANISM #2 AND AGE FATHEAD 8 DAYS
SAMPLE FILTERED[1] PRIOR TO ANALYSIS? ☐ YES ☒ NO EFFLUENT ____ UPSTREAM ____	90 PERCENT OR GREATER SURVIVAL IN SYNTHETIC CONTROL? ☒ YES ☐ NO	DILUTION WATER USED TO ACHIEVE AEC
FILTER MESH SIEVE SIZE[2]	EFFLUENT ORGANISM #1 PERCENT MORTALITY AT AEC 0	EFFLUENT ORGANISM #2 PERCENT MORTALITY AT AEC 0
SAMPLE AERATED DURING TESTING? ☐ YES ☒ NO	UPSTREAM ORGANISM #1 PERCENT MORTALITY 0	UPSTREAM ORGANISM #2 PERCENT MORTALITY 0
pH ADJUSTED[1] ☐ YES ☒ NO EFFLUENT ____ UPSTREAM ____	TEST RESULT AT AEC FOR ORGANISM #1 ☒ PASS ☐ FAIL	TEST RESULT AT AEC FOR ORGANISM #2 ☒ PASS ☐ FAIL

PART A – TO BE COMPLETED IN FULL BY PERMITTEE

PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature °C	25	SM 2550B	7/15/15
pH Standard Units	7.75	SM 4500-H+ B	7/15/15
Conductance µMohs	1217	82EPA 120.1	7/15/15
Dissolved Oxygen mg/L	7.80	SM 4500-O G	7/15/15
Total Residual Chlorine mg/L	< 1	SM 4500-CL G	7/15/15
Unionized Ammonia mg/L			
* Total Alkalinity mg/L	252	SM 2320 B	7/15/15
* Total Hardness mg/L	448	SM2340 C	7/15/15

* Recommended by EPA guidance, not a required analysis.

[1] Samples shall only be filtered if indigenous organisms are present that may be confused with, or attack the test organisms.
[2] Filters shall have a sieve size of 60 microns or greater.

MO 780-1898 (07-09) CONTINUED ON PAGE 2

WHOLE EFFLUENT TOXICITY (WET) TEST REPORT (Continued)

(TO BE ATTACHED TO WET TESTS FOR SUBMISSION TO THE REGULATORY AUTHORITY)

MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100 PERCENT UPSTREAM SAMPLE[3]

PARAMETER	RESULT	METHOD	WHEN ANALYZED
Temperature -C	25	SM 2550B	7/15/15
pH Standard Units	7.68	SM 4500-H+ B	7/15/15
Conductance µMohs	267	EPA 120.1	7/15/15
Dissolved Oxygen mg/L	8.50	SM 4500-O G	7/15/15
Total Residual Chlorine mg/L	<.1	SM 4500-CL G	7/15/15
Unionized Ammonia mg/L			
* Total Alkalinity mg/L	128	SM 2320 B	7/15/15
* Total Hardness mg/L	146	SM2340 C	7/15/15

* Recommended by EPA guidance, not a required analysis

PRELIMINARY TEST ACCEPTABILITY MATRIX (FOR USE BY PERMITTEE IN DETERMINING TEST VALIDITY)
MINIMUM REQUIRED ANALYTICAL RESULTS FOR THE 100 PERCENT UPSTREAM SAMPLE[3]

PERMIT ALLOWABLE EFFLUENT CONCENTRATION, or AEC: As indicated on permit. Test is invalid otherwise.

EFFLUENT SAMPLE TYPE: As indicated on permit. Test is invalid otherwise.

TEST TYPE: Acute Static Non-Renewal Test or other as indicated on permit Test is invalid otherwise.

TEST DURATION: Forty-eight hours or as indicated on permit. Test is invalid otherwise.

TEST ORGANISMS: As indicated on permit. Test is invalid otherwise.

DILUTION WATER USED TO ACHIEVE AEC: Upstream receiving water required if available.

TEST METHOD: The only acceptable method is the most current edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, or other as specifically assigned by EPA for determining National Pollutant Discharge Elimination System, or NPDES, compliance. Test is invalid otherwise.

TEST START DATE AND TIME: Unless otherwise specified in writing by EPA, if >36 hours lapse between collection and initiation, test is invalid.

FILTER MESH SIEVE SIZE: Unless otherwise specified in writing by EPA, if sieve size is smaller than 60 microns, test is invalid.

90 PERCENT OR GREATER SURVIVAL IN LABORATORY CONTROL(S) (Y/N): If no, test is invalid.

PARAMETER	RESULT	NOTES	WHEN ANALYZED
Temperature -C	0 – 6	Unless received by the laboratory on the same day as collected, values outside this range invalidate the test.	Upon receipt

[3] Where no upstream control is available, enter results from laboratory or synthetic control.

MAKE ADDITIONAL COPIES OF THIS FORM FOR EACH OUTFALL

FACILITY NAME	PERMIT NO.	OUTFALL NO.
	MO-	

PART E – TOXICITY TESTING DATA

17. TOXICITY TESTING DATA

Refer to the APPLICATION OVERVIEW to determine whether Part E applies to the treatment works.

Publicly owned treatment works, or POTWs, meeting one or more of the following criteria must provide the results of whole effluent toxicity tests for acute or chronic toxicity for each of the facility's discharge points.

A. POTWs with a design flow rate greater than or equal to 1 million gallons per day

B. POTWs with a pretreatment program (or those that are required to have one under 40 CFR Part 403)

C. POTWs required by the permitting authority to submit data for these parameters

- At a minimum, these results must include quarterly testing for a 12-month period within the past one year using multiple species (minimum of two species), or the results from four tests performed at least annually in the four and one-half years prior to the application, provided the results show no appreciable toxicity, and testing for acute or chronic toxicity, depending on the range of receiving water dilution. Do not include information about combined sewer overflows in this section. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136.
- If EPA methods were not used, report the reason for using alternative methods. If test summaries are available that contain all of the information requested below, they may be submitted in place of Part E. If no biomonitoring data is required, do not complete Part E. Refer to the application overview for directions on which other sections of the form to complete.

Indicate the number of whole effluent toxicity tests conducted in the past four and one-half years: _____ chronic _____ acute

Complete the following chart for the last three whole effluent toxicity tests. Allow one column per test. Copy this page if more than three tests are being reported.

	Most Recent	2nd Most Recent	3rd Most Recent
A. Test Information			
Test Method Number			
Final Report Number			
Outfall Number			
Dates Sample Collected			
Date Test Started			
Duration			
B. Toxicity Test Methods Followed			
Manual Title			
Edition Number and Year of Publication			
Page Number(s)			
C. Sample collection method(s) used. For multiple grab samples, indicate the number of grab samples used			
24-Hour Composite			
Grab			
D. Indicate where the sample was taken in relation to disinfection. (Check all that apply for each)			
Before Disinfection	☐	☐	☐
After Disinfection	☐	☐	☐
After Dechlorination	☐	☐	☐
E. Describe the point in the treatment process at which the sample was collected			
Sample Was Collected:			
F. Indicate whether the test was intended to assess chronic toxicity, acute toxicity, or both			
Chronic Toxicity	☐	☐	☐
Acute Toxicity	☐	☐	☐
G. Provide the type of test performed			
Static	☐	☐	☐
Static-renewal	☐	☐	☐
Flow-through	☐	☐	☐
H. Source of dilution water. If laboratory water, specify type; if receiving water, specify source			
Laboratory Water	☐	☐	☐
Receiving Water	☐	☐	☐

NPDES DISCHARGE MONITORING REPORT
WASTEWATER AND/OR STORMWATER

cility Name	Eureka WWTF	TYPE OF REPORT: MONTHLY	
rmit Number	MO-0039659	DUE MONTHLY	
unty	ST. LOUIS		
charge Type			
is report covers the	MONTH of	2015 jan-aug	

DMR Sampling Summary for Outfall #004

Parameter	Units	Daily Minimum	Daily Maximum	Weekly Average	Monthly Average	Percent Removal
EFFLUENT						
Flow	MGD		2.39		1.46	
Biochemical Oxygen Demand (B0D)	mg/L			19.54	19.54	
Total Suspended Solids (TSS)	mg/L			17.78	17.78	
***E.coli*	#/100 ml			30.81	30.81	
pH - Units	SU	7.68	7.94			
Ammonia as N	mg/L		12.58		2.96	
Oil & Grease	mg/L		6.5		5.43	
INFLUENT						
Biochemical Oxygen Demand (B0D)	mg/L					
Total Suspended Solids (TSS)	mg/L					

heck Following Box if **No Discharge** Occurred during this reporting period ☐

ples Collected by:	Date	Phone number	Email Address
ature and Title of individual preparing report	Date	Phone number	Email Address
rt Approval by Owner or Continuing Authority	Date	Phone number	Email Address
yses Preformed by (lab)		Phone number	Email Address

turn this form to:
IR - St. Louis Regional Office, 7545 South Lindbergh, Suite 210, St. Louis MO 63125
Applicable only during the recreational season from April 1 through October 31.
IS FACILITY REQURIES A WHOLE EFFLUENT TOXICITY (WET) TEST TWICE/YEAR (APR-MAY)(JULY-AUGUST)

2015

		Flow	BOD	TSS	Fecal	Low PH	High PH	Am	o.g
1	Jan	.91	28	14.5	20	7.8	7.89	5.23	5
2	Feb	.71	35.25	14	20	7.68	7.94	12.58	6.5
3	Mar	1.31	28.5	17.5	20	7.63	7.86	14.44	6
4	April	1.43	17.8	17.6	128	7.55	7.76	3.35	5.5
5	May	1.5	15.25	17.25	50	7.65	7.94	.5	5
6	June	2.39	12.25	16	36.5	7.53	7.68	.5	5
7	July	2.07	21.8	34.4	32	7.56	7.8	.5	5
8	Aug	1.36	6.5	10.5	0	7.65	7.84	.5	5
9									
10	Averages:	Avg	Avg	Avg	Avg	Avg	Avg	Avg	Avg
11		17.67	19.54	17.78	30.81	7.63	7.84	4.71	5.29
12									
13									
14									
15									
16									
17									
18									
19									
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21									
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40									

NPDES DISCHARGE MONITORING REPORT
WASTEWATER AND/OR STORMWATER

cility Name	Eureka WWTF	TYPE OF REPORT: MONTHLY	
rmit Number	MO-0039659	DUE MONTHLY	
unty	ST. LOUIS		
charge Type			
is report covers the MONTH of	Jan-dec 2014		

DMR Sampling Summary for Outfall #004

Parameter	Units	Daily Minimum	Daily Maximum	Weekly Average	Monthly Average	Percent Removal
EFFLUENT						
Flow	MGD		2.03		1.56	
Biochemical Oxygen Demand (B0D)	mg/L			43.53	43.53	
Total Suspended Solids (TSS)	mg/L			14.55	14.55	
***E.coli*	#/100 ml			36.55	36.55	
pH - Units	SU	7.52	8.24			
Ammonia as N	mg/L		23.15		6.51	
Oil & Grease	mg/L		6		5.2	
INFLUENT						
Biochemical Oxygen Demand (B0D)	mg/L			119.4	119.4	
Total Suspended Solids (TSS)	mg/L			121.4	121.4	
heck Following Box if **No Discharge** Occurred during this reporting period			☐			

les Collected by:	Date	Phone number	Email Address
ture and Title of individual preparing report	Date	Phone number	Email Address
rt Approval by Owner or Continuing Authority	Date	Phone number	Email Address
yses Preformed by (lab)		Phone number	Email Address

turn this form to:
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IS FACILITY REQURIES A WHOLE EFFLUENT TOXICITY (WET) TEST TWICE/YEAR (APR-MAY)(JULY-AUGUST)

2d4

		1	2					
		004						
		Flow	BOD	TSS	Ecoli	pH Low	pH High	Amon	Oil
1	Jan	.99	19.8	194	Ø	737	794	19.84	6
2	Feb	1.59	23.5	24.5	Ø	7.39	8.15	23.15	5.5
3	Mar	1.51	21.5	20	160	744	788	19.68	5
4	April								
5	May	1.42	24.5	21	59	737	775	21.1	6
6	June	2.03	13.75	9.75	Ø	753	7.68	1.02	5
7	July	151	14	10.8	21.8	754	787	.5	5
8	Aug	1.92	12	8.25	1	755	752	.5	5
9	Sep	1.6	9.5	8.75	58	763	783	.5	5
10	oct	189	13.8	12.2	99.2	745	785	.83	5
11	Nov	139	12.5	12	Ø	746	824	.5	5
12	Dec	127	31.4	13.4	Ø	758	776	2.98	5.5
13									
14									
15									
16									
17			007 inlet						
18									
19			BOD	TSS					
20	Inflows		~~153.25~~	~~176~~					
21	1		144.6	180					
22	2		133.25	126					
23	3		129	1025					
24	4								
25	5		108.25	157.25					
26	6		103	94.5					
27	7		118	85.2					
28	8		85.25	122					
29	9		98.75	98					
30	10		131.6	132.8					
31	11		118.75	117.5					
32	12		143	124.2					
33									
34									
35									
36									
37									
38									
39									
40									

NPDES DISCHARGE MONITORING REPORT
WASTEWATER AND/OR STORMWATER

cility Name	Eureka WWTF	TYPE OF REPORT: MONTHLY
rmit Number	MO-0039659	DUE MONTHLY
unty	ST. LOUIS	
charge Type		

s report covers the MONTH of Jan-dec 2013

DMR Sampling Summary for Outfall #004

Parameter	Units	Daily Minimum	Daily Maximum	Weekly Average	Monthly Average	Percent Removal
EFFLUENT						
Flow	MGD		2.08		1.48	
Biochemical Oxygen Demand (B0D)	mg/L			16.94	16.94	
Total Suspended Solids (TSS)	mg/L			14.23	14.23	
***E.coli*	#/100 ml			48.08	48.08	
pH - Units	SU	7.38	795			
Ammonia as N	mg/L		23.83		6.8	
Oil & Grease	mg/L		7		5.58	
INFLUENT						
Biochemical Oxygen Demand (B0D)	mg/L			136.76	136.76	
Total Suspended Solids (TSS)	mg/L			102.25	102.25	

heck Following Box if **No Discharge** Occurred during this reporting period ☐

ples Collected by:	Date	Phone number	Email Address
ature and Title of Individual preparing report	Date	Phone number	Email Address
rt Approval by Owner or Continuing Authority	Date	Phone number	Email Address
yses Preformed by (lab)		Phone number	Email Address

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IS FACILITY REQURIES A WHOLE EFFLUENT TOXICITY (WET) TEST TWICE/YEAR (APR-MAY)(JULY-AUGUST)

2013

		1		2					
		004							
		Flow	BOD	TSS	Fecal	Low pH	High pH	Am Nit	Oil
1		1	21.2	13		701	792	12.6	6.5
2		1.11	20.	18.75		774	795	16.98	7
3		2.08	32.25	22.5	378	760	779	23.63	633
4		1.65	26.5	12.25	108.5	738	754	10.47	6
5		1.86	19.4	17.6	61.8	7.4	759	4.58	5.25
6		2.01	7.5	17	40.25	708	773	.05	5
7		1.81	14.6	9.4	ø	676	738	.76	5
8		1.84	7.25	16.5	ø	764	798	.5	5
9		1.29	5.25	6	2	772	793	.088	5
10		1.09	7.8	9	22.4	755	786	.77	5
11		1.15	14.5	12.25	ø	7.69	782	1.13	5.5
12		[illegible]1.87	20	11.5	ø	7.15	786	8.64	5
13									
14									
15									
16									
17									
18									
19			INLET	(007)					
20			BOD	TSS					
21			131.8	68.6					
22			159.5	97.5					
23			156.75	87.75					
24			125.75	87.75					
25			~~140~~ 140.4	94.6					
26			123.4	105.6					
27			133.75	172.25					
28			113.25	97.75					
29			165.25	100.5					
30			130.8	168.5					
31			165.25	100.5					
32			164.25	91.5					
33									
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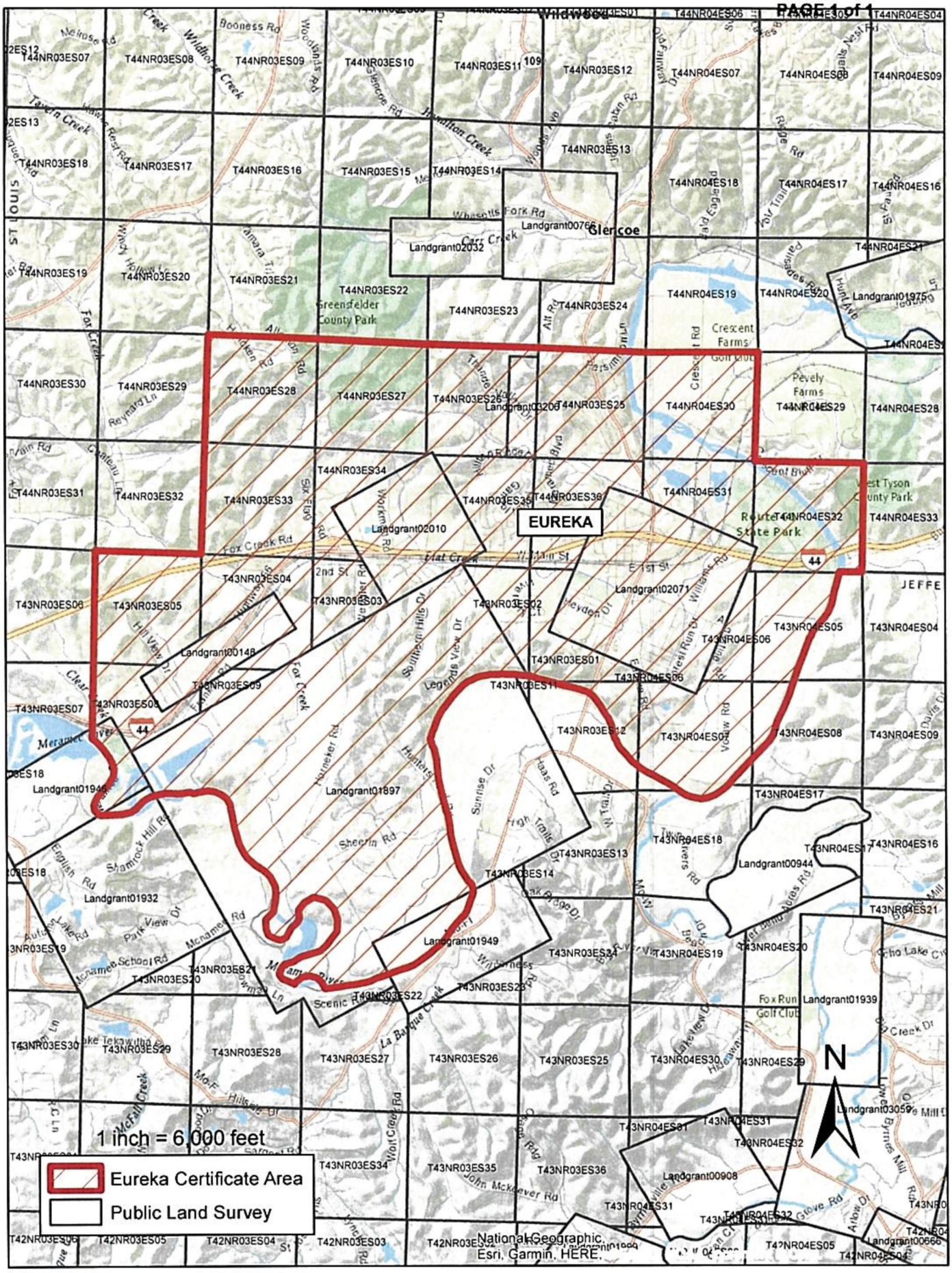
40									


EUREKA
Wildwood
Glencoe
Crescent Farms Golf Club
Pevely Farms
Greensfelder County Park
West Tyson County Park
Route 66 State Park
Fox Run Golf Club
Meramec River
Fox Creek
Carr Creek
Landgrant02032
Landgrant00766
Landgrant02010
Landgrant02071
Landgrant00148
Landgrant01946
Landgrant01897
Landgrant01932
Landgrant01949
Landgrant00944
Landgrant01939
Landgrant03059
Landgrant00908
Landgrant01975
Landgrant02061
Landgrant00666
1 inch = 6,000 feet
Eureka Certificate Area
Public Land Survey
N
National Geographic, Esri, Garmin, HERE,

APPENDIX A

Legal Description

A tract of land in part of Land grants 148, 1932, 1946, 1949, 2010, 3206, 1897, 2071, Sections 1, 2, 3, 4, 5, 8, 9 and 12, Township 43 North, Range 3 East and Part of Sections 25, 26, 27, 28, 33, 35 and 36, Townships 44 North, Range 3 East and Sections 30, 31, 32 and 33 Township 44 North, Range 4 East and Part of Sections 5, 6 and 7, Township 43 North, Range 4 East, City of Eureka, St. Louis County, Missouri and being more particularly described as follows:

Beginning at the Northwest corner of **Section 28, Township 44 North, Range 3 East**; thence East along the North line of said Section 28 to the Northeast corner thereof, being also the Northwest corner of Section 27; thence continuing East, along the North line of said Section 27 to the Northeast corner thereof, being also the Northwest corner of Section 26; thence continuing East along the North line of said Section 26 to the Northeast corner thereof, being also the Northwest corner of Section 25; thence continuing East along the North line of said Section 25 to the Northeast corner thereof, being also the Northwest corner of **Section 30, Township 44 North, Range 4 East**; thence continuing East, along the North line of said Section 30 to the Northeast corner thereof, being also the Northwest corner of **Section 29, Township 44 North, Range 4 East**; thence South, along the East line of said Section 30 to the Southeast corner thereof, being the common corner of Sections 29, 30, 31 and 32; thence East, along the North line of said Section 32 to the Northeast corner thereof, being also the common corner of Section 28, 29, 32 and 33, thence South, along the East line of said Section 32 to the Southeast corner thereof, being also the Northeast corner of Fractional **Section 5, Township 43 North, Range 4 East**; thence West, along the North line of said Section 5 to its intersection with the centerline of the Meramec River; thence Southwest, along said center line to its intersection with the South line of said Section 5, being also the North line of Section 8; thence continuing, along said centerline, Southwest to its intersection with the West line of **Section 8,** being also the East line of **Fractional Section 7 of Township 43 North, Range 4 East**; thence continuing, along said centerline, Southwest and through said Fractional Section 7 to its intersection with the South line of said Fractional Section 7; thence continuing along said centerline South, West and then Northwest to again intersect with the South line of said Fractional Section 7; thence continuing with said center line, Northwesterly and through said Fractional Section 7 to its intersection with the West line of said Section 7 and the East line of **Fractional Section 12, Township 43 North, Range 3 East**; thence continuing Northwest, along said centerline of the Meramec River and through said Fractional Section 12 to its intersection with the South line of said Section 1, being also the North line of Section 12; thence continuing Northwest along centerline to its intersection with the East line of **Fractional Section 11, Township 43 North, Range 3**; thence continuing Northwest, along centerline of Meramec River to the Northwest line of said Fractional Section 11, being also the Northeast line of Land Grant 1897; thence continuing with said centerline Southwest and South through the Land grant 1897 and following the meanders of the Meramec River to a point of intersection with the North line of Land Grant 1949, being also the South line of Lang Gant 1897; thence continuing Southwest along said centerline to a point of intersection with the West line of Land Grant 1949, being also the East line of Land Grant 1897; thence continuing Southwest along centerline of the Meramec River through the Land grant 1897 and following the meanders of the Meramec River to a point of intersection with the Northeast line of Land Grant 1932, being also the Southwest line of Land Grant 1897 thence Southwest along said centerline to a point of intersection with the North line of land Grant 1932,

being also the Southeast line of Land Grant 1946; thence through said Land Grant Northwardly, Northeastwardly and Northwestwardly along said centerline to a point of intersection with the South projection of the West line of **Section 8, Township 43 North, Range 3 East;** thence North, along said South projection to the intersection of the West line of said Section 8 and the Northwest line of Land Grant 1946, being also the East line of **Section 7, Township 43 North, Range 3 East**; thence North and along the West line of said Section 8 to the Northwest corner thereof, being also the Southwest cornerof **Section 5, Township 43 North, Range 3 East**; thence continuing North, along the West line of said Section 5 to the Northwest corner thereof; thence East, along the North line of said Section 5 tothe Northeast corner thereof, being also the Southwest corner of **Section 33, Township 44 North, Range 3 East**; thence North, along the West line of said Section 33 to the Northwest corner thereof,being also the Southwest corner of Section 28; thence continuing North, along the West line of said Section 28 to the Northwest corner thereof and the POINT OF BEGINNING.

SCHEDULE BWE-5 HAS BEEN MARKED CONFIDENTIAL IN ITS ENTIRETY