



MSD

Louisville and Jefferson County Metropolitan Sewer District
700 West Liberty Street
Louisville Kentucky 40203-1911
502-540-6000
www.msdlouky.org

October 24, 2007

Ms. Kathy Thurman
Kentucky Division of Water
14 Reilly Road
Frankfort, Kentucky 40601

RE: Cedar Creek Treatment Plant, KPDES No: KY0098540
Discharge Monitoring Report
September 2007

Dear Ms. Thurman:

Attached are the Discharge Monitoring Report (DMR) and the Monthly Operating Report (MOR) report for the Cedar Creek Wastewater Treatment Plant, for the month of September 2007. There was one exception this month for Total Phosphorus. This was a result of high influent Phosphorus levels entering the plant. Chemical addition and reduced levels of influent Total Phosphorus have corrected the problem. There was also one exception this month for exceeding daily fecal limits. This was a result of a rain event on the 9th of more than one inch of rain.

Also included are the quarterly Biomonitoring DMR for Cedar Creek WTP.
If you have any questions concerning the attached DMR's, please contact me at (502) 239-7695).

Sincerely,

James E. Porter Jr.
Process Supervisor Central Region

JEP/Cedar Creek 0907.doc

Enclosures

cc: C. Roth (DOW Louisville)
P. Burgin
E. Brady
T. Singleton
R. Shaw



Beneficial Use of Louisville's Biosolids
www.louisvillegreen.com

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

MAJOR
(SUBR LV)
F -- FINAL

JEFFE

METALS/BIO-MONITORING/QUARTERLY
EFFLUENT

*** NO DISCHARGE 1 1 ***

NOTE: Read Instructions before completing this form.

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME MSD CEDAR CREEK STP
ADDRESS 8405 CEDAR CREEK RD.
LOUISVILLE KY 40291

FACILITY MSD CEDAR CREEK STP
LOCATION LOUISVILLE
ATTN: DEBBIE NEWTON

KY0098540
PERMIT NUMBER

001 Y
DISCHARGE NUMBER

MONITORING PERIOD

FROM	YEAR	MO.	DAY	TO	YEAR	MO.	DAY

PARAMETER	SAMPLE MEASUREMENT / PERMIT REQUIREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
HARDNESS, TOTAL (AS CaCO3) 00900 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT					274	274	(17)	0	Y91	COMB
	PERMIT REQUIREMENT					MD AVG	DAILY MX	MG/L			
CADMIUM, DISSOLVED (AS CD) 01025 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT					0.0004	0.0004	(17)	0	Y91	COMB
	PERMIT REQUIREMENT					MD AVG	DAILY MX	MG/L			
COPPER, DISSOLVED (AS CU) 01040 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT					0.018	0.018	(17)	0	Y91	COMB
	PERMIT REQUIREMENT					MD AVG	DAILY MX	MG/L			
LEAD, DISSOLVED (AS PB) 01049 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT					<0.005	<0.005	(17)	0	Y91	COMB
	PERMIT REQUIREMENT					MD AVG	DAILY MX	MG/L			
ZINC, DISSOLVED (AS ZN) 01090 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT					0.0506	0.0506	(17)	0	Y91	COMB
	PERMIT REQUIREMENT					MD AVG	DAILY MX	MG/L			
ZINC, TOTAL RECOVERABLE 01094 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT					0.0506	0.0506	(17)	0	Y91	COMB
	PERMIT REQUIREMENT					MD AVG	DAILY MX	MG/L			
CADMIUM, TOTAL RECOVERABLE 01113 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT					0.0004	0.0004	(17)	0	Y91	COMB
	PERMIT REQUIREMENT					MD AVG	DAILY MX	MG/L			

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
H. J. SCHROEDER JR
EXECUTIVE DIRECTOR
TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT
James E. Potts

TELEPHONE
502-410-6000
DATE
07 10 85
AREA CODE NUMBER YEAR MO DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

MAJOR (SUBR LV)
F - FINAL JEFFE
METALS/B IOMONITORING/QUARTERLY
EFFLUENT
*** NO DISCHARGE I [] ***

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)
NAME MSD CEDAR CREEK STP
ADDRESS B405 CEDAR CREEK RD
LOUISVILLE KY 40291

KY0075540
001 Y
PERMIT NUMBER DISCHARGE NUMBER

FACILITY MSD CEDAR CREEK STP
LOCATION LOUISVILLE KY
ATTN: DEBBIE NEWTON

MONITORING PERIOD						
YEAR	MO.	DAY	TO	YEAR	MO.	DAY

NOTE: Read Instructions before completing this form.

PARAMETER	X	QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
LEAD TOTAL RECOVERABLE 01114 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT					<0.005	<0.005	(17)		1/91	COMPL
	PERMIT REQUIREMENT					NO AVG	DAILY MX	MG/L			
COPPER TOTAL RECOVERABLE 01119 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT					0.013	0.013	(17)		1/91	COMPL
	PERMIT REQUIREMENT					NO AVG	DAILY MX	MG/L			
TOXICITY: FINAL CONC TOXICITY UNITS 01405 1 0 0 EFFLUENT GROSS VALUE	SAMPLE MEASUREMENT						<1.0	(20)		1/91	COMPL
	PERMIT REQUIREMENT						DAILY MX	TOXCTY			
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
H. E. ...
TYPED OR PRINTED

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[Signature]
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE DATE
505 540-0000 07 10 25
AREA CODE NUMBER YEAR MO DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME MSD CEDAR CREEK STP
ADDRESS 8405 CEDAR CREEK RD
LOUISVILLE KY 40291

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

KY00078540
PERMIT NUMBER

0012
DISCHARGE NUMBER

MAJOR (SUBR LV)
F - FINAL
NEW EXPANSION
EFFLUENT

JEFFE

MONITORING PERIOD						
YEAR	MO.	DAY	TO	YEAR	MO.	DAY

FROM

TO

*** NO DISCHARGE () ***

NOTE: Read Instructions before completing this form.

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
OXYGEN, DISSOLVED (DO)					7.8					3/7	3000
00300 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT				INST MIN			MG/L		WEEK	
PH					7.2		7.4			3/7	3000
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT				MINIMUM		MAXIMUM	SU		WEEK	
SOLIDS, TOTAL SUSPENDED		3336.0	3583.5	(20)		166	198			3/7	COMB
00500 0 0 0 RAW SEW/INFLUENT	PERMIT REQUIREMENT	REPORT MD AVG	REPORT MX WK AV	LBS/DY		REPORT MD AVG	REPORT MX WK AV	MG/L		WEEK	
SOLIDS, TOTAL SUSPENDED		20.4	22.07	(20)		1.00	1.00			3/7	COMB
00500 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MD AVG	REPORT MX WK AV	LBS/DY		REPORT MD AVG	REPORT MX WK AV	MG/L		WEEK	
NITROGEN, AMMONIA TOTAL (AS N)		620.45	745.13	(20)		31.2	38.7			3/7	COMB
00600 0 0 0 RAW SEW/INFLUENT	PERMIT REQUIREMENT	REPORT MD AVG	REPORT MX WK AV	LBS/DY		REPORT MD AVG	REPORT MX WK AV	MG/L		WEEK	
NITROGEN, AMMONIA TOTAL (AS N)		4.95	8.17	(20)		0.25	0.37			3/7	COMB
00610 1 1 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MD AVG	REPORT MX WK AV	LBS/DY		REPORT MD AVG	REPORT MX WK AV	MG/L		WEEK	
PHOSPHORUS, TOTAL (AS P)		13.57	32.18	(20)		0.69	1.67			3/7	COMB
00660 1 1 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MD AVG	REPORT MX WK AV	LBS/DY		REPORT MD AVG	REPORT MX WK AV	MG/L		WEEK	

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
H. J. SCHAFERMAN JR.
EXECUTIVE DIRECTOR
TYPED OR PRINTED

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SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT
James E. Porter Jr.

TELEPHONE 502-540-6000
DATE 07 10 22
AREA CODE NUMBER YEAR MO DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME NSO CEDAR CREEK STP
ADDRESS 8405 CEDAR CREEK RD
LOUISVILLE KY 40291

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

1470078540
PERMIT NUMBER

0012
DISCHARGE NUMBER

MAJOR

(SUBR LV)

F - FINAL

NEW EXPANSION

EFFLUENT

*** NO DISCHARGE [] ***

JEFFE

FACILITY NSO CEDAR CREEK STP

LOCATION LOUISVILLE KY

ATTN: DEBBIE NEWTON

MONITORING PERIOD						
YEAR	MO.	DAY	TO	YEAR	MO.	DAY

FROM

TO

NOTE: Read Instructions before completing this form.

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
FLOW IN CONDUIT OR THRU TREATMENT PLANT	2.34	2.44	(03)	*****	*****	*****	*****				
EFFLUENT GROSS VALUE	REPORT	REPORT	MGD	*****	*****	*****	*****				
GENERAL											
EFFLUENT GROSS VALUE											
500 CARBONACEOUS 5 DAY, SOC	2360.5	3228.61	(26)		121	170	MG/L				
RAW SEW/INFLUENT	REPORT	REPORT	LBS/DY	*****	*****	*****	*****				
500 CARBONACEOUS 5 DAY, SOC	47.52	70.56	(26)		2	3	MG/L				
EFFLUENT GROSS VALUE	REPORT	REPORT	LBS/DY	*****	*****	*****	*****				
500 CARBONACEOUS 5 DAY, SOC											
PERCENT REMOVAL					91.3		PERCENT				
PERCENT REMOVAL					98.2		PERCENT				

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
H. J. SCARLETT JR
EXECUTIVE DIRECTOR
TYPED OR PRINTED

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT
James E. Hart

TELEPHONE DATE
502 510-6000 07 10 22
AREA CODE NUMBER YEAR MO DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

NAME OF TREATMENT PLANT CEDAR CREEK WTP
 KPDES PERMIT NUMBER KY0098540

COUNTY JEFFERSON
 PLANT CAPACITY 7.5 MGD

MONTH OF: September 2007
 RECEIVING STREAM CEDAR CREEK

DATE	TOTAL FLOW (MILLION GALLONS)	RAW SEWAGE		pH		SETTLEABLE SOLIDS (mg/L)			DISSOLVED OXYGEN (mg/L)			SUSPENDED SOLIDS (mg/L)			5 DAY CBOD (mg/L)			ACTIVATED SLUDGE			AERATION BASIN						SLUDGE HANDLING				FINAL					
		GRIT REMOVED (CUBIC FEET)	SCREENINGS (CUBIC FEET)	RAW	FINAL	RAW	PRIMARY EFFLUENT	FINAL EFFLUENT	STREAM ABOVE	FINAL EFFLUENT	STREAM BELOW	RAW	PRIMARY EFFLUENT	FINAL EFFLUENT	RAW	PRIMARY EFFLUENT	FINAL EFFLUENT	GAL/DAY X 1000	MLSS X 1000	GAL/DAY X 1000	WAST ED	DISSOLVED OXYGEN (mg/L)	MLSS (mg/L) x 1000	MLVSS (mg/L) X 1000	SETTLED SLUDGE VOLUME		RAW		HAULED		NH3-N (mg/L)	FECAL COLIFORM (COLONIES/100ML)				
																									30 MIN.	60 MIN.	GALLONS X 1000	% DRY SOLIDS	% VOLATILE SOLIDS	% DRY SOLIDS			% VOLATILE SOLIDS	WITHDRAWN GALLONS X 1000		
1	2.21																2009		500					340	290											
2	1.96																2055		509					340	300											
3	2.12												212	1	158	2	2146		525					350	300							0.56	3			
4	2.84			7.2	7.2				8.0			127	1	128	2	1961	4830	555	2.8	3010	2445		360	300							0.10	18				
5	1.65			7.3	7.4				8.0			255	1	160	2	1998	4760	600	3	3205	2580		400	300							0.28	165				
6	1.86	3	3	7.2	7.2				7.8							1954	4545	600	3	3060	2430		390	310												
7	2.49															1886	4980	550	3.4	2975	2420		400	350												
8	2.76															1954		500					390	350												
9	2.66											150	1	77	2	1880		500					380	340							0.28	795				
10	2.70			7.2	7.4				8.0			176	1	116	2	1770	5050	560	3.4	3355	2655		380	320						0.22	67					
11	2.58			7.4	7.3				8.6			126	1	79	2	1901	4860	600	3.6	3125	2525		380	320						0.62	57					
12	1.83			7.2	7.2				8.4							2079	4470	600	3.6	3145	2515		400	350												
13	2.15	3	3													1966	5240	550	3.2	3000	2465		390	350										93		
14	2.09															2021	5110	450	3.2	3260			350	300												
15	2.33															2089		495					380	330												
16	2.68											166	1	69	6	2165		560					350	310							0.10	90				
17	1.40			7.2	7.4				9.2			55	1	66	2	1990	4660	460	3.6	2890	2310		360	310						0.10	86					
18	3.25			7.3	7.2				8.6			172	1	84	2	1931	4960	630	3.2	2910	2345		350	300						0.10	40					
19	2.62			7.3	7.2				8.8							2174	4490	500	3	3035	2430		360	300												
20	1.75	3	3													2053	4630	550	3.4	2880	2310		350	290												
21	1.98															2059	4550	550	3.2	3170	2550		330	300												
22	2.13															2045		500					340	300												
23	2.37											184	1	108	2	2182		500					330	350							0.10	3				
24	2.21			7.2	7.3				8.4			194	1	281	2	2130	4330	520	3	3130	2625		450	360						0.10	3					
25	2.37			7.3	7.2				8.8			179	1	120	2	2660	4580	620	3.6	3245	2545		520	320						0.45	3					
26	2.20			7.4	7.4				8.6							1816	3940	510	3.4	2755	2220		360	310												
27	3.65	3	3													1989	4840	560	3	2700	2135		360	300												
28	2.15															1605	4610	500	3.4	2775	2215		400	310												
29	2.18															2116		500					390	310												
30	2.98															1603		520					400	300												
31																																				
Tot.	70.15	12	12													60187																				
Avg.	2.34	3	3	7.3	7.3				8.4			166	1	121	2	2006	4707	535.8	3.263	3033	2429		376	316								0.25	31			

RESIDENTIAL
 COMMERCIAL
 INDUSTRIAL

INDUSTRIAL WASTE POPULATION EQUIVALENT
 22270
 FLOW

13823
 CBOD

15447
 TSS

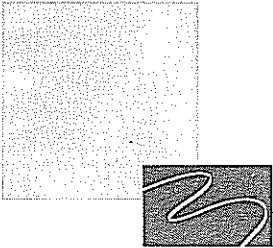
OPERATOR

CERT. NO.

TOTAL NUMBER OF SEWER CONNECTIONS

SEWER CONNECTIONS 0 X 4 = 0 SEWERED POPULATION

PLANT TELEPHONE



**Chronic Toxicity Evaluation
for the
MSD - Cedar Creek
Wastewater Treatment Plant**

September 2007

Prepared by:

Beckmar Environmental Laboratory
Biomonitoring Department
3251 Ruckriegel Parkway
Louisville, KY. 40299
(502) 266-6533

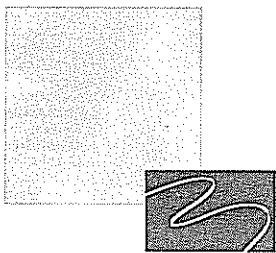
Submitted to:

Mr. Jim Porter
Cedar Creek Wastewater Treatment Plant
700 West Liberty St.
Louisville, KY. 40203

Released by:

Amanda L. Spalding
Biomonitoring QA Officer

10-19-07/10-22-07



Summary

Ceriodaphnia dubia chronic, definitive, toxicity testing was performed on final effluent samples collected September 10 through 15, 2007 from the MSD – Cedar Creek Wastewater Treatment Plant. Testing was performed September 12 through 19, 2007 and upon termination, the following conclusions were reached:

For the 7 day *Ceriodaphnia dubia* survival and reproduction test, the IC₂₅ for reproduction was greater than 100%, yielding less than 1.0 chronic toxicity units (TU_c=100/IC₂₅).

Introduction

At the request of Mr. Jim Porter, chronic, definitive, toxicity testing was performed on 24 hour composite effluent samples collected September 10 through 15, 2007 from the MSD - Cedar Creek Wastewater Treatment Plant in Louisville, KY. Metals analyses were also performed on effluent samples collected during the same time period. Information concerning plant and laboratory conditions can be found on the following pages.

The chronic toxicity testing was performed in accordance with the US EPA methodology as defined in the US EPA manual “Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms” fourth edition, 2002 (EPA-821-R-02-013). The actual methods used were “Daphnid, *Ceriodaphnia dubia*, Survival and Reproduction Test Method 1002.0”. The chronic toxicity test was performed in order to ascertain the IC₂₅ values for *Ceriodaphnia dubia* reproduction.



Date of Issue: September 18, 2007

Page 1 of 1

Metropolitan Sewer District c/o Mr. Jim Porter
700 West Liberty St.
Louisville, KY 40203-1913

RE: Analysis results for: Cedar Creek WWTP: Biomonitoring metals/hardness.

BECKMAR CERTIFICATE OF ANALYSIS # 189507

Sample Date: 9/11/2007

Sample Time: 8:00

Sampled by: Client

Parameter	Results	Units	Type	Method	Analized Date / Time	Analyst
Hardness (T)	274	mg/l	C	EPA 130.2	9/14/2007 11:00	PJB
Cadmium (GFAA)	0.0004	mg/l	C	SM3113b	9/14/2007 15:10	ALS
Copper (TR)	0.013	mg/l	C	EPA 200.7	9/14/2007 13:00	ALS
Copper (D)	0.013	mg/l	C	EPA 200.7	9/14/2007 13:00	ALS
Lead (TR)	< 0.005	mg/l	C	EPA 200.7	9/14/2007 13:00	ALS
Lead (D)	< 0.005	mg/l	C	EPA 200.7	9/14/2007 13:00	ALS
Zinc (TR)	0.0506	mg/l	C	EPA 200.7	9/14/2007 13:00	ALS
Zinc (D)	0.0506	mg/l	C	EPA 200.7	9/14/2007 13:00	ALS

Remarks:

If you have any questions please call.

Thank you,

Joe P. Carney
Quality Control Officer

JPC:dwt

ENVIRONMENTAL
LABORATORY

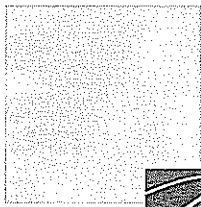
Jeffersontown Business Park

3251 Ruckriegel Parkway

Jeffersontown, KY 40299

502.266.6533

FAX 502.266.6446



Test Type: Acute Screen
 Chronic X Definitive X

TOXICITY TEST REPORT SHEET

- 1) Facility/Discharger: Cedar Creek WWTP
 Report Date: 10/16/2007
- 2) Address: 8405 Cedar Creek Rd. Louisville, KY.
- 3) NPDES Permit #: KY0098540 4) Receiving Stream: Cedar Creek - mile point 11.9
- 5) Facility contact: Mr. Jim Porter 6) Phone #: (502) 239-7695
- 7) Consultant/Testing Lab Name: Beckmar Environmental Laboratory
- 8) Lab Contact: Becky Barker Phone #: (502) 266-6533
- 9) Outfalls Tested: 1
- 10) Average Daily flow on day sampled (MGD) 1) 2.7 2) 1.83
 3) 2.09 4) 5) 6) 7)
- 11) Test Species: 1) Ceriodaphnia dubia 2)
- 12) Species Age: 1) 16-23 hours old 2)
- 13) Organism Source: 1) brood board 091107 2)
- 14) Acclimation Procedures: 1) Reared at test conditions in synthetic water
 2)
- 15) Test Conditions: Static: Static-Renewal: X
- 16) Dilution Water Type (Synthetic, Receiving Stream) synthetic - mhs
- 17) Aeration? (Before Test/During Test/None): no
- 18) Dechlorination? no Original Chlorine Level: <0.01 mg/L

Rhonda Baker

(Signature of person filling out form)

10/16/2007

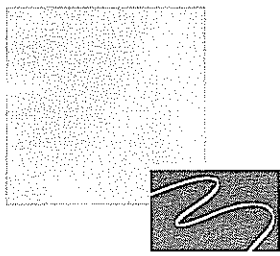
Date

Rhonda Baker

Name (Typed or Printed)

Biologist

Title



Materials and Methods

Sampling

Composite effluent samples were collected once every other 24 hours (Table I) and delivered to Beckmar Environmental Laboratory. Upon receipt, each sample went through standard log in procedures.

Control/Dilution Water

All chemicals used are reagent grade, obtained from Aldrich. 1.20 grams of CaSO_4 , 1.2 grams of MgSO_4 , 1.92 grams of NaHCO_3 , and 0.080 grams of KCl were dissolved in distilled water provided by a Barnstead Thermolyne distillation system and aerated for a minimum of 24 hours.

Test Containers

C. dubia tests were performed in 1 ounce plastic cups obtained from Plastics Inc. (St. Paul, MN).

Toxicity Testing

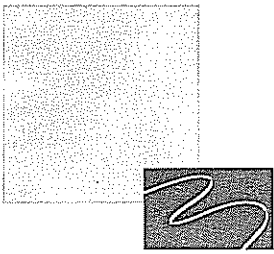
Samples were allowed to warm to room temperature (25°C) and were tested for residual chlorine immediately prior to dilution. Testing was then performed in accordance with US EPA methodology. Data was recorded on Beckmar generated lab sheets (Appendix I).

Chemical Analysis

All test dilutions as well as control/dilution water were tested to determine initial dissolved oxygen, temperature, and pH. At the end of 24 hours, the control/dilution water and test dilutions were again tested to determine final dissolved oxygen, temperature and pH. Also, specific conductance, hardness, and alkalinity analyses were performed on the initial control/dilution water and 100% effluent samples. Data was recorded on Beckmar generated lab sheet (Appendix I).

Statistical Analysis

Statistical data was generated using ToxCalc 5.0[®] (Tidepool Scientific software, McKinleyville, CA) and ToxStat[®] (USEPA, Cincinnati, OH) on a Pentium IV[®], computer using Windows 98[®] Operating System.



Additional Toxicity Test Information

- 1) Submit copies of all bench sheets and statistical calculations/printouts obtained during the test(s). Data must be presented in tabular form and must include all physical and/or chemical measurements recorded during the test (e.g. temperature, conductivity, total residual chlorine, dissolved oxygen, etc.).
- 2) Methods/Instrumentation used in chemical analysis:

Dissolved Oxygen:	YSI Model 52
PH:	Thermo-Orion 720
Conductivity:	Cole-Palmer Conductivity Meter 1481-60
Alkalinity:	Standard Methods Titration
Hardness:	Standard Methods Titration
Total Chlorine Residual:	Fisher-Porter Titration
EPA Acute/Chronic Manual:	4 th Chronic Edition, 2002
- 3) Indicate below any other relevant information that may aid in the evaluation of this report. Include any deviations from EPA methodology that was necessary for these tests as well as any sample manipulations that were performed, such as aeration, dechlorination with sodium thiosulfate, etc., and the justification for such manipulations or deviations. Attach additional pages as needed.
- 4) Sample temperature upon receipt may be greater than 4°C. Samples are picked up immediately after the 24 hours composite is completed. The sampler is cooled and the samples are refrigerated, however it may be impossible to rapidly drop the effluent to 4°C.

TABLE I
Sampling Summary

Outfall	Sample Type	Volume	Collection Period	Rainfall	Sample Temp
1	Composite	1 gallon	09/10/07 @ 8:00 a.m. = 09/11/07 @ 8:00 a.m.	0.00"	4.0 degrees C
	Composite	1 gallon	09/12/07 @ 8:00 a.m. = 09/13/07 @ 8:00 a.m.	0.00"	2.5 degrees C
	Composite	2 gallon	09/14/07 @ 6:00 a.m. = 09/15/07 @ 6:00 a.m.	0.00"	4.0 degrees C

Dates/Times of Test Performance

Species #1: *Ceriodaphnia dubia*

Initiated: 09/12/07 @ 2:00 P.M.

Renewed daily @ 2:00 P.M.

Terminated 09/19/07 @ 2:00 P.M.



Results

Ceriodaphnia dubia exhibited 90% survival in the control, 70% survival in the 20% dilution, 70% survival in the 40% dilution, 66.7% survival in the 60% dilution, 90% survival in the 80% dilution, and 70% survival in the 100% dilution with reproduction occurring in all of the dilutions (Table II).

For the 7-day *Ceriodaphnia dubia* survival and reproduction test, the IC₂₅ for reproduction was greater than 100%, generating a chronic toxicity value of less than 1.0 TUc.

Table II: *Ceriodaphnia dubia* Reproduction Results

<u>C</u>	<u>20%</u>	<u>40%</u>	<u>60%</u>	<u>80%</u>	<u>100%</u>
25	28	30	*	27	24
27	28	32	24	36	34
21	7	6	15	21	23
25	29	28	30	19	39
13	23	15	30	35	17
21	18	5	11	32	14
13	24	22	7	26	30
24	23	25	26	32	31
21	4	29	31	31	31
17	32	28	29	33	38
<u>207</u>	<u>216</u>	<u>220</u>	<u>203</u>	<u>292</u>	<u>281</u>

* Organism was squashed during transfer and was not used during statistical analysis.



Appendix I

Ceriodaphnia dubia Data Sheets

Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 9/12/2007 Test ID: cc0907 Sample ID: cc0907
 End Date: 9/19/2007 Lab ID: 0044:beckmar environmental Sample Type: EFF1-POTW
 Sample Date: 9/11/2007 Protocol: EPAF 94-EPA Freshwater Test Species: CD-Ceriodaphnia dubia
 Comments: cedar creek cerio chronic sept 2007

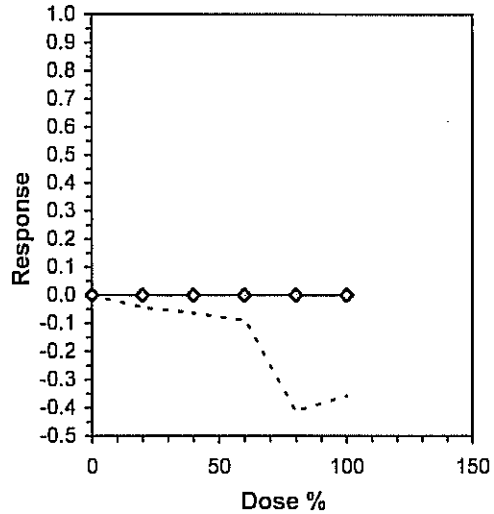
Conc-%	1	2	3	4	5	6	7	8	9	10
B-Control	25.000	27.000	21.000	25.000	13.000	21.000	13.000	24.000	21.000	17.000
20	28.000	28.000	7.000	29.000	23.000	18.000	24.000	23.000	4.000	32.000
40	30.000	32.000	6.000	28.000	15.000	5.000	22.000	25.000	29.000	28.000
60	24.000	15.000	30.000	30.000	11.000	7.000	26.000	31.000	29.000	
80	27.000	36.000	21.000	19.000	35.000	32.000	26.000	32.000	31.000	33.000
100	24.000	34.000	23.000	39.000	17.000	14.000	30.000	31.000	31.000	38.000

Conc-%	Mean	N-Mean	Transform: Untransformed					Isotonic	
			Mean	Min	Max	CV%	N	Mean	N-Mean
B-Control	20.700	1.0000	20.700	13.000	27.000	23.890	10	24.026	1.0000
20	21.600	1.0435	21.600	4.000	32.000	43.386	10	24.026	1.0000
40	22.000	1.0628	22.000	5.000	32.000	45.150	10	24.026	1.0000
60	22.556	1.0896	22.556	7.000	31.000	40.580	9	24.026	1.0000
80	29.200	1.4106	29.200	19.000	36.000	19.759	10	24.026	1.0000
100	28.100	1.3575	28.100	14.000	39.000	29.937	10	24.026	1.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Kolmogorov D Test indicates non-normal distribution (p <= 0.01)	1.2815	1.035	-0.797	-0.3741
Bartlett's Test indicates equal variances (p = 0.29)	6.20517	15.0863		

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



Grab #



Toxicity Test Results

Results of *Ceriodaphnia dubia* 7 day chronic definitive Toxicity Test
 (Genus) (Species) (Type / Duration)

Conducted: 09/12/07 -- 09/19/07 Using Effluent from Outfall # 1
 (mm/dd/yy) (mm/dd/yy)

Test Solution	Percent Survival (time intervals used:- DAY)								# of Young		Dry Weight	
	1	2	3	4	5	6	7	8	Total	Mean	Total	Mean
Control	100	100	100	100	100	100	90		207	20.7		
20% Effluent	100	100	100	90	90	80	70		216	21.6		
40% Effluent	100	100	100	90	70	70	70		220	22		
60% Effluent	100	100	100	100	77.8	66.7	66.7		203	22.5		
80% Effluent	100	100	100	100	100	100	90		292	29.2		
100% Effluent	100	100	100	100	100	90	70		281	28.1		
LC ₅₀ / IC ₂₅ Value: <u>> 100%</u> 95% Confidence Limits UL: <u>NA</u> LL: <u>NA</u> UL = Upper Limit LL = Lower Limit					Calculated TU Estimate * <u>< 1.0 Tuc</u> (indicate Acute / Chronic) Permit Limits: <u>1.0 TUc</u> (Indicate TU _a / TU _c) If acute test, method used to determine LC50 and Confidence Limit Valued: <u> </u>							

Note: TU_a = 100/LC₅₀; TU_c = 100/IC₂₅

Reference Toxicant Test Results

Species	Date	Time	Duration	Toxicant	Results (LC ₅₀ / IC ₂₅)
<i>Ceriodaphnia dubia</i>	08/19/07	11:00 A.M.	<u>7 days</u>	<u>NaCl</u>	<u>IC25=0.8765g/l</u>

Client: Cedar CreekAnalyst: RBH, B. BarkerTest Start -- Date/Time: 9-12-07 2pTest Stop -- Date/Time: 9-19-07 2pBrood Board Batch: 091107Neonate Age: 16-20 hrs oldData form for *Ceriodaphia dubia* survival and reproduction test

Control	Replicate										No. Of Young	No. Of Adults	Analyst	
	Day	1	2	3	4	5	6	7	8	9				10
	1	0	0	0	0	0	0	0	0	0	0	0	10	RB
	2	0	0	0	0	0	0	0	0	0	0	0	10	RB
	3	0	0	0	0	0	0	0	0	0	0	0	10	RB
	4	6	6	6	7	6	6	6	4	5	0	48	10	RB
	5	0	10	0	10	0	0	0	2	9	9	44	10	BB
	6	8	0	7	0	7	7	7	7	0	0	43	10	BB
	7	11	11	8	8	X0	8	0	11	7	8	72	9	BB
	8													
	Total	25	27	21	25	13	21	13	24	21	17	207	9	BB

= 1 brood

Conc.	Replicate										No. Of Young	No. Of Adults	Analyst	
	Day	1	2	3	4	5	6	7	8	9				10
	1	0	0	0	0	0	0	0	0	0	0	0	10	RB
	2	0	0	0	0	0	0	0	0	0	0	0	10	RB
	3	0	0	0	0	0	0	0	0	0	0	0	10	RB
	4	6	6	3	7	4	6	6	5	4X	7	54	9	RB
	5	11	11	4	10	0	6	0	0	X	11	53	9	BB
	6	0	0	X0	0	6	0	7	7	X	0	20	8	BB
	7	11	11	X	12	13	X6	11	11	X	14	89	7	BB
	8													
	Total	28	28	7	29	23	18	24	23	4	32	216	7	BB

20%

Conc.	Replicate										No. Of Young	No. Of Adults	Analyst	
	Day	1	2	3	4	5	6	7	8	9				10
	1	0	0	0	0	0	0	0	0	0	0	0	10	RB
	2	0	0	0	0	0	0	0	0	0	0	0	10	RB
	3	0	0	0	0	0	0	0	0	0	0	0	10	RB
	4	6	5	6	6	6	5X	5	4	4	8	55	9	RB
	5	11	12	X0	14	X9	X	4	9	10	8	77	7	BB
	6	0	0	X0	0	X	X	0	0	0	0	0	7	BB
	7	13	15	X0	8	X	X	13	12	15	12	88	7	BB
	8													
	Total	30	32	6	28	15	5	22	25	29	28	220	7	BB

40%



Client: Cedar Creek Analyst: W. Baker, B. Barker
 Test Start -- Date/Time: 9-12-07 2p
 Test Stop -- Date/Time: 9-19-07 2p

Data form for *Ceriodaphnia dubia* survival and reproduction test

60%

Conc.	Replicate										No. Of Young	No. Of Adults	Analyst	
	Day	1	2	3	4	5	6	7	8	9				10
	1	0	0	0	0	0	0	0	0	0	0	0	10	BB
	2	0	0	0	0	0	0	0	0	0	0	0	10	BB
	3	0	0	0	0	0	0	0	0	0	0	0	19	BB
	4	X* ₅ 5	4	5	6	6	5	5	6	6	48	*5 daphnias used	13	BB
	5	5	11	11	11	X5	2	9	12	11	77	7 dph	BB	
	6	5	0	X	0	0	X	X0	0	0	0	0	6 dph	BB
	7	7	14	X	14	13	X	X0	12	13	12	78	6 dph	BB
	8												22.5	
Total		—	24	15	30	30	11	7	26	31	29	203	6 of 9	BB

80%

Conc.	Replicate										No. Of Young	No. Of Adults	Analyst	
	Day	1	2	3	4	5	6	7	8	9				10
	1	0	0	0	0	0	0	0	0	0	0	0	10	BB
	2	0	0	0	0	0	0	0	0	0	0	0	10	BB
	3	0	0	0	0	0	0	0	0	0	0	0	10	BB
	4	7	7	8	6	6	7	6	7	6	7	67	10	BB
	5	12	12	13	13	14	11	11	11	10	13	120	10	BB
	6	0	0	0	0	0	0	0	0	0	0	0	10	BB
	7	8	17	X0	0	15	14	9	14	15	13	105	9	BB
	8													
Total		27	36	21	19	35	32	24	32	31	33	292	9	BB

100%

Conc.	Replicate										No. Of Young	No. Of Adults	Analyst	
	Day	1	2	3	4	5	6	7	8	9				10
	1	0	0	0	0	0	0	0	0	0	0	0	10	BB
	2	0	0	0	0	0	0	0	0	0	0	0	10	BB
	3	0	0	0	0	0	0	0	0	0	0	0	10	BB
	4	9	6	8	7	6	6	6	6	5	6	65	10	BB
	5	12	12	15	14	11	8	11	13	13	16	125	10	BB
	6	0	0	0	0	0	X0	0	0	0	0	0	9	BB
	7	3	16	0	18	X0	X	13	12	13	X16	91	7	BB
	8													
Total		24	34	23	39	17	14	30	31	31	38	281	7	BB

O = daphnid Alive, no reproduction
 # = number of neonates released

X = Daphnid dead
 X# = Daphnid dead but (#) of neonates released
 ND = near death

Data form for the *Ceriodaphnia dubia* survival and reproduction test.
 Routine chemical and physical determinations.



Client: CEDAR CREEK
 Test Start: 9-12-07 7P
 Test Stop: 9-19-07 2P

Analyst: B. Becker
 Analyst: W. Sah
 Analyst: _____

Conc. <u>60%</u>	Day							Remarks
	1	2	3	4	5	6	7	
Temp. Initial	24.0	24.0	24.0	24.0	24.0	24.0	24.0	
Degree C. Final	24.0	24.1	24.0	24.0	24.0	24.0	24.0	
D. O. Initial	9.0	9.5	8.8	9.3	9.0	9.01 ^{BS}	9.1	
mg/l Final	9.9	9.6	8.9	9.5	9.3	9.4	9.1	
pH Initial	7.62	7.70	7.84	7.91	8.12	8.07	8.07	
S.U. Final	8.68	8.41	8.44	8.49	8.23	8.28	8.32	
Analyst (init.)	BS	BS/MS	MS	MS	MS/BS	BS		

Conc. <u>80%</u>	Day							Remarks
	1	2	3	4	5	6	7	
Temp. Initial	24.0	24.0	24.0	24.0	24.0	24.0	24.0	
Degree C. Final	24.0	24.2	24.0	24.0	24.0	24.0	24.0	
D. O. Initial	9.2	9.9	9.1	9.7	9.0	9.4	9.5	
mg/l Final	10.3	9.6	9.3	9.2	9.3	9.4	9.1	
pH Initial	7.59	7.62	7.76	7.81	8.08	8.00	8.01	
S.U. Final	8.63	8.40	8.43	8.39	8.22	8.27	8.30	
Analyst (init.)	BS	BS/MS	MS	MS	MS/BS	BS		

Conc. <u>100%</u>	Day							Remarks
	1	2	3	4	5	6	7	
Temp. Initial	24.0	24.0	25.0	24.0	24.0	24.0	24.0	
Degree C. Final	24.0	24.2	24.0	24.0	24.0	24.0	24.0	
D. O. Initial	9.7	10.6	9.8	10.0	9.2	9.8	9.8	
mg/l Final	9.9	9.3	9.4	9.6	9.2	9.3	9.0	
pH Initial	7.50	7.50	7.63	7.68	7.98	7.93	7.95	
S.U. Final	8.52	8.33	8.37	8.34	8.18	8.22	8.27	
Alkalinity (mg/l)	223.6	220.8	221.6	230	223.2	236	240	
Hardness (mg/l)	287.0	289.5	269.3	288	312.9	275.0	331.2	
Conductivity (µmhos)	893	887	935	940	947	949	950	
Chlorine (mg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Analyst (init.)	BS/MS	MS/MS	MS	MS	MS/BS	BS/MS	MS	

Beckman Saylor # 189506 189506 189660 189660 189668 189668 189668



Appendix II

Chain of Custody Data Sheets

