



NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

PERMITTEE: Mobile Area Water and Sewer System
Post Office Box 180249
Mobile, Alabama 36618

FACILITY LOCATION: Clifton C. Williams WWTP (28 MGD)
1600 Yeend Street
Mobile, Alabama
Mobile County

PERMIT NUMBER: AL0023086

RECEIVING WATERS: Mobile Bay

In accordance with and subject to the provisions of the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§1251-1388 (the "FWPCA"), the Alabama Water Pollution Control Act, as amended, Code of Alabama 1975, §§ 22-22-1 to 22-22-14 (the "AWPCA"), the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-17, and rules and regulations adopted thereunder, and subject further to the terms and conditions set forth in this permit, the Permittee is hereby authorized to discharge into the above-named receiving waters.

ISSUANCE DATE:

EFFECTIVE DATE:

EXPIRATION DATE:

Draft

Alabama Department of Environmental Management

**MUNICIPAL SECTION
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
PERMIT**

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PART I

DISCHARGE LIMITATIONS, CONDITIONS, AND REQUIREMENTS

DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

1. Outfall 0011 Discharge Limits

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the Permittee is authorized to discharge from Outfall 0011, which is described more fully in the Permittee's application. Such discharge shall be limited and monitored by the Permittee as specified below:

Parameter	Discharge Limitations*							Monitoring Requirements**			
	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Daily Minimum	Daily Maximum	Percent Removal	(1) Sample Location	(2) Sample Type	(3) Measurement Frequency	(4) Seasonal
Oxygen, Dissolved (DO) 00300 1 0 0	*****	*****	*****	*****	3.0 mg/l	*****	*****	E	GRAB	B	*****
pH 00400 1 0 0	*****	*****	*****	*****	6.0 S.U.	9.0 S.U.	*****	E	GRAB	B	*****
Solids, Total Suspended 00530 1 0 0	7005 lbs/day	10508 lbs/day	30.0 mg/l	45.0 mg/l	*****	*****	*****	E	COMP24	B	*****
Solids, Total Suspended 00530 G 0 0	REPORT lbs/day	REPORT lbs/day	REPORT mg/l	REPORT mg/l	*****	*****	*****	I	COMP24	B	*****
Nitrogen, Ammonia Total (As N) 00610 1 0 0	4670 lbs/day	7005 lbs/day	20.0 mg/l	30.0 mg/l	*****	*****	*****	E	COMP24	B	*****
Nitrogen, Kjeldahl Total 00625 1 0 0	REPORT lbs/day	REPORT lbs/day	REPORT mg/l	REPORT mg/l	*****	*****	*****	E	COMP24	G	*****
Nitrite Plus Nitrate Total (As N) 00630 1 0 0	REPORT lbs/day	REPORT lbs/day	REPORT mg/l	REPORT mg/l	*****	*****	*****	E	COMP24	G	*****
Phosphorus, Total 00665 1 0 0	REPORT lbs/day	REPORT lbs/day	REPORT mg/l	REPORT mg/l	*****	*****	*****	E	COMP24	G	*****
Enterococci: Group D MF Trans, M-E, EIA 31639 1 0 0	*****	*****	35 col/100mL	*****	*****	158 col/100mL	*****	E	GRAB	B	ECS
Enterococci: Group D MF Trans, M-E, EIA 31639 1 0 0	*****	*****	REPORT col/100mL	*****	*****	275 col/100mL	*****	E	GRAB	B	ECW
Flow, In Conduit or Thru Treatment Plant 50050 1 0 0	REPORT MGD	*****	*****	*****	*****	REPORT MGD	*****	E	CONTIN	A	*****
Chlorine, Total Residual See note (5)(6) 50060 1 0 0	*****	*****	0.036 mg/l	*****	*****	0.04 mg/l	*****	E	GRAB	B	*****
BOD, Carbonaceous 05 Day, 20C 80082 1 0 0	5838 lbs/day	8757 lbs/day	25.0 mg/l	37.5 mg/l	*****	*****	*****	E	COMP24	B	*****
BOD, Carbonaceous 05 Day, 20C 80082 G 0 0	REPORT lbs/day	REPORT lbs/day	REPORT mg/l	REPORT mg/l	*****	*****	*****	I	COMP24	B	*****
BOD, Carb-5 Day, 20 Deg C, Percent Remvl 80091 K 0 0	*****	*****	*****	*****	*****	*****	85.0%	K	CALCTD	G	*****
Solids, Suspended Percent Removal 81011 K 0 0	*****	*****	*****	*****	*****	*****	85.0%	K	CALCTD	G	*****

* See Part II.C.1. (Bypass); Part II.C.2. (Upset)

** Monitoring Requirements

(1) Sample Location

- I - Influent
- E - Effluent
- X - End Chlorine Contact Chamber
- K - Percent Removal of the Monthly Avg. Influent Concentration from the Monthly Avg. Effluent Concentration.
- RS - Receiving Stream
- US - Upstream
- DS - Downstream

(2) Sample Type:

- CONTIN - Continuous
- INSTAN - Instantaneous
- COMP-8 - 8-Hour Composite
- COMP24 - 24-Hour Composite
- GRAB - Grab
- CALCTD - Calculated

(3) Measurement Frequency: See also Part I.B.2.

- A - 7 days per week
- B - 5 days per week
- C - 3 days per week
- D - 2 days per week
- E - 1 day per week
- F - 2 days per month
- G - 1 day per month
- H - 1 day per quarter
- J - Annual
- Q - For Effluent Toxicity Testing, see Provision IV.B.

(4) Seasonal Limits:

- S = Summer (May - November)
- W = Winter (December - April)
- ECS = Enterococci Summer (May - October)
- ECW = Enterococci Winter (November - April)

(5) See Part IV.C. for Total Residual Chlorine (TRC). Monitoring for TRC is applicable if chlorine is utilized for disinfection purposes. If monitoring is not applicable during the monitoring period, enter “*9” or “NODI=9” (if hard copy) on the monthly DMR.
 (6) A measurement of Total Residual Chlorine below 0.05 mg/L shall be considered in compliance with the permit limitations above and should be reported as NODI=B or *B on the discharge monitoring reports.

2. Outfall 001T Discharge Limits

This is an administrative outfall designation. Outfall 001T is the same physical outfall as Outfall 0011. Discharges from this outfall shall be limited and monitored by the Permittee as specified below:

Parameter	Discharge Limitations*							Monitoring Requirements**			
	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Daily Minimum	Daily Maximum	Percent Removal	(1) Sample Location	(2) Sample Type	(3) Measurement Frequency	(4) Seasonal
P/F Statre 7 Day Chr Arbacia (5) TGP3A 1 0 0	*****	*****	*****	*****	Pass = 0 Fail = 1	*****	*****	E	COMP24	Q	*****
P/F Statre 7 Day Chr Cyprinodon (5) TGP6A 1 0 0	*****	*****	*****	*****	Pass = 0 Fail = 1	*****	*****	E	COMP24	Q	*****

* See Part II.C.1. (Bypass); Part II.C.2. (Upset)

** Monitoring Requirements

(1) Sample Location

- I - Influent
- E - Effluent
- X - End Chlorine Contact Chamber
- K - Percent Removal of the Monthly Avg. Influent Concentration from the Monthly Avg. Effluent Concentration.
- RS - Receiving Stream
- US - Upstream
- DS - Downstream
- MW - Monitoring Well
- SW - Storm Water

(2) Sample Type:

- CONTIN - Continuous
- INSTAN - Instantaneous
- COMP-8 - 8-Hour Composite
- COMP24 - 24-Hour Composite
- GRAB - Grab
- CALCTD - Calculated

(3) Measurement Frequency: See also Part I.B.2.

- A - 7 days per week
- B - 5 days per week
- C - 3 days per week
- D - 2 days per week
- E - 1 day per week
- F - 2 days per month
- G - 1 day per month
- H - 1 day per quarter
- J - Annual
- Q - For Effluent Toxicity Testing, see Provision IV.B.

(4) Seasonal Limits:

- S = Summer (May - November)
- W = Winter (December - April)
- ECS = E. coli Summer (May - October)
- ECW = E. coli Winter (November - April)

(5) Should results from four consecutive testing periods indicate that Outfall 0011 effluent does not exhibit chronic toxicity, the Permittee may request that toxicity testing be reduced. Should monitoring become not applicable during the monitoring period, “*9” or “NODI=9” (if hard copy) should be entered on the DMR.

3. Outfall 002S Discharge Limits

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the Permittee is authorized to discharge from Outfall 002S, which is described more fully in the Permittee's application. Such discharge shall be limited and monitored by the Permittee as specified below:

Parameter	Discharge Limitations*							Monitoring Requirements**			
	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Daily Minimum	Daily Maximum	Percent Removal	(1) Sample Location	(2) Sample Type	(3) Measurement Frequency	(4) Seasonal
pH 00400 SW 0 0	*****	*****	*****	*****	REPORT S.U.	REPORT S.U.	*****	SW	GRAB	J	*****
Solids, Total Suspended 00530 SW 0 0	*****	*****	*****	*****	*****	REPORT mg/l	*****	SW	GRAB	J	*****
Oil & Grease 00556 SW 0 0	*****	*****	*****	*****	*****	15 mg/l	*****	SW	GRAB	J	*****
Nitrogen, Ammonia Total (As N) 00610 SW 0 0	*****	*****	*****	*****	*****	REPORT mg/l	*****	SW	GRAB	J	*****
Nitrogen, Kjeldahl Total 00625 SW 0 0	*****	*****	*****	*****	*****	REPORT mg/l	*****	SW	GRAB	J	*****
Nitrite Plus Nitrate Total (As N) 00630 SW 0 0	*****	*****	*****	*****	*****	REPORT mg/l	*****	SW	GRAB	J	*****
Phosphorus, Total 00665 SW 0 0	*****	*****	*****	*****	*****	REPORT mg/l	*****	SW	GRAB	J	*****
Enterococci: Group D MF Trans, M-E, EIA 31639 SW 0 0	*****	*****	*****	*****	*****	REPORT col/100mL	*****	SW	GRAB	J	*****
Flow, In Conduit or Thru Treatment Plant 50050 SW 0 0	*****	*****	*****	*****	*****	REPORT MGD	*****	SW	CALCTD or MEASURED	J	*****
BOD, Carbonaceous 05 Day, 20C 80082 SW 0 0	*****	*****	*****	*****	*****	REPORT mg/l	*****	SW	GRAB	J	*****

* See Part II.C.1. (Bypass); Part II.C.2. (Upset)

** Monitoring Requirements

(1) Sample Location

- I – Influent
- E – Effluent
- X – End Chlorine Contact Chamber
- K – Percent Removal of the Monthly Avg. Influent Concentration from the Monthly Avg. Effluent Concentration.
- RS - Receiving Stream
- US – Upstream
- DS – Downstream
- MW – Monitoring Well
- SW – Storm Water

(2) Sample Type:

- CONTIN - Continuous
- INSTAN - Instantaneous
- COMP-8 - 8-Hour Composite
- COMP24 - 24-Hour Composite
- GRAB – Grab
- CALCTD – Calculated
- MEASURED - Measured

(3) Measurement Frequency: See also Part I.B.2.

- A - 7 days per week
- B - 5 days per week
- C - 3 days per week
- D - 2 days per week
- E - 1 day per week
- F - 2 days per month
- G - 1 day per month
- H - 1 day per quarter
- J - Annual
- Q - For Effluent Toxicity Testing, see Provision IV.B.

(4) Seasonal Limits:

- S = Summer (May – November)
- W = Winter (December - April)
- ECS = E. coli Summer (May – October)
- ECW = E. coli Winter (November – April)

4. Outfall 003S Discharge Limits

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the Permittee is authorized to discharge from Outfall 003S, which is described more fully in the Permittee's application. Such discharge shall be limited and monitored by the Permittee as specified below:

Parameter	Discharge Limitations*							Monitoring Requirements**			
	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Daily Minimum	Daily Maximum	Percent Removal	(1) Sample Location	(2) Sample Type	(3) Measurement Frequency	(4) Seasonal
pH 00400 SW 0 0	*****	*****	*****	*****	REPORT S.U.	REPORT S.U.	*****	SW	GRAB	J	*****
Solids, Total Suspended 00530 SW 0 0	*****	*****	*****	*****	*****	REPORT mg/l	*****	SW	GRAB	J	*****
Oil & Grease 00556 SW 0 0	*****	*****	*****	*****	*****	15 mg/l	*****	SW	GRAB	J	*****
Nitrogen, Ammonia Total (As N) 00610 SW 0 0	*****	*****	*****	*****	*****	REPORT mg/l	*****	SW	GRAB	J	*****
Nitrogen, Kjeldahl Total 00625 SW 0 0	*****	*****	*****	*****	*****	REPORT mg/l	*****	SW	GRAB	J	*****
Nitrite Plus Nitrate Total (As N) 00630 SW 0 0	*****	*****	*****	*****	*****	REPORT mg/l	*****	SW	GRAB	J	*****
Phosphorus, Total 00665 SW 0 0	*****	*****	*****	*****	*****	REPORT mg/l	*****	SW	GRAB	J	*****
Enterococci: Group D MF Trans, M-E, EIA 31639 SW 0 0	*****	*****	*****	*****	*****	REPORT col/100mL	*****	SW	GRAB	J	*****
Flow, In Conduit or Thru Treatment Plant 50050 SW 0 0	*****	*****	*****	*****	*****	REPORT MGD	*****	SW	CALCTD or MEASURED	J	*****
BOD, Carbonaceous 05 Day, 20C 80082 SW 0 0	*****	*****	*****	*****	*****	REPORT mg/l	*****	SW	GRAB	J	*****

* See Part II.C.1. (Bypass); Part II.C.2. (Upset)

** Monitoring Requirements

(1) Sample Location

- I - Influent
- E - Effluent
- X - End Chlorine Contact Chamber
- K - Percent Removal of the Monthly Avg. Influent Concentration from the Monthly Avg. Effluent Concentration.
- RS - Receiving Stream
- US - Upstream
- DS - Downstream
- MW - Monitoring Well
- SW - Storm Water

(2) Sample Type:

- CONTIN - Continuous
- INSTAN - Instantaneous
- COMP-8 - 8-Hour Composite
- COMP24 - 24-Hour Composite
- GRAB - Grab
- CALCTD - Calculated
- MEASURED - Measured

(3) Measurement Frequency: See also Part I.B.2.

- A - 7 days per week
- B - 5 days per week
- C - 3 days per week
- D - 2 days per week
- E - 1 day per week
- F - 2 days per month
- G - 1 day per month
- H - 1 day per quarter
- J - Annual
- Q - For Effluent Toxicity Testing, see Provision IV.B.

(4) Seasonal Limits:

- S = Summer (May - November)
- W = Winter (December - April)
- ECS = E. coli Summer (May - October)
- ECW = E. coli Winter (November - April)

B. DISCHARGE MONITORING AND RECORD KEEPING REQUIREMENTS

1. Representative Sampling

Sample collection and measurement actions shall be representative of the volume and nature of the monitored discharge and shall be in accordance with the provisions of this permit. The effluent sampling point shall be at the nearest accessible location just prior to discharge and after final treatment, unless otherwise specified in the permit.

2. Measurement Frequency

Measurement frequency requirements found in Provision I.A. shall mean:

- a. Seven days per week shall mean daily.
- b. Five days per week shall mean any five days of discharge during a calendar weekly period of Sunday through Saturday.
- c. Three days per week shall mean any three days of discharge during a calendar week.
- d. Two days per week shall mean any two days of discharge during a calendar week.
- e. One day per week shall mean any day of discharge during a calendar week.
- f. Two days per month shall mean any two days of discharge during the month that are no less than seven days apart. However, if discharges occur only during one seven-day period in a month, then two days per month shall mean any two days of discharge during that seven day period.
- g. One day per month shall mean any day of discharge during the calendar month.
- h. Quarterly shall mean any day of discharge during each calendar quarter.
- i. The Permittee may increase the frequency of sampling, listed in Provisions I.B.2.a through I.B.2.h; however, all sampling results are to be reported to the Department.

3. Test Procedures

For the purpose of reporting and compliance, Permittees shall use one of the following procedures:

- a. For parameters with an EPA established Minimum Level (ML), report the measured value if the analytical result is at or above the ML and report "0" for values below the ML. Test procedures for the analysis of pollutants shall conform to 40 CFR Part 136 and guidelines published pursuant to Section 304(h) of the FWPCA, 33 U.S.C. Section 1314(h). If more than one method for analysis of a substance is approved for use, a method having a minimum level lower than the permit limit shall be used. If the minimum level of all methods is higher than the permit limit, the method having the lowest minimum level shall be used and a report of less than the minimum level shall be reported as zero and will constitute compliance, however should EPA approve a method with a lower minimum level during the term of this permit the Permittee shall use the newly approved method.
- b. For pollutants parameters without an established ML, an interim ML may be utilized. The interim ML shall be calculated as 3.18 times the Method Detection Level (MDL) calculated pursuant to 40 CFR Part 136, Appendix B.

Permittees may develop an effluent matrix-specific ML, where an effluent matrix prevents attainment of the established ML. However, a matrix specific ML shall be based upon proper laboratory method and technique. Matrix-specific MLs must be approved by the Department, and may be developed by the Permittee during permit issuance, reissuance, modification, or during compliance schedule.

In either case the measured value should be reported if the analytical result is at or above the ML and "0" reported for values below the ML.
- c. For parameters without an EPA established ML, interim ML, or matrix-specific ML, a report of less than the detection limit shall constitute compliance if the detection limit of all analytical methods is higher than the permit limit. For the purpose of calculating a monthly average, "0" shall be used for values reported less than the detection limit.

The Minimum Level utilized for procedures a and b above shall be reported on the Permittee's DMR. When an EPA approved test procedure for analysis of a pollutant does not exist, the Director shall approve the procedure to be used.

4. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the Permittee shall record the following information:

- a. The facility name and location, point source number, date, time and exact place of sampling;

- b. The name(s) of person(s) who obtained the samples or measurements;
 - c. The dates and times the analyses were performed;
 - d. The name(s) of the person(s) who performed the analyses;
 - e. The analytical techniques or methods used, including source of method and method number; and
 - f. The results of all required analyses.
5. Records Retention and Production
- a. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the above reports or the application for this permit, for a period of at least three years from the date of the sample measurement, report or application. This period may be extended by request of the Director at any time. If litigation or other enforcement action, under the AWPCA and/or the FWPCA, is ongoing which involves any of the above records, the records shall be kept until the litigation is resolved. Upon the written request of the Director or his designee, the Permittee shall provide the Director with a copy of any record required to be retained by this paragraph. Copies of these records should not be submitted unless requested.
 - b. All records required to be kept for a period of three years shall be kept at the permitted facility or an alternate location approved by the Department in writing and shall be available for inspection.
6. Reduction, Suspension or Termination of Monitoring and/or Reporting
- a. The Director may, with respect to any point source identified in Provision I.A. of this permit, authorize the Permittee to reduce, suspend or terminate the monitoring and/or reporting required by this permit upon the submission of a written request for such reduction, suspension or termination by the Permittee, supported by sufficient data which demonstrates to the satisfaction of the Director that the discharge from such point source will continuously meet the discharge limitations specified in Provision I.A. of this permit.
 - b. It remains the responsibility of the Permittee to comply with the monitoring and reporting requirements of this permit until written authorization to reduce, suspend or terminate such monitoring and/or reporting is received by the Permittee from the Director.
7. Monitoring Equipment and Instrumentation
- All equipment and instrumentation used to determine compliance with the requirements of this permit shall be installed, maintained, and calibrated in accordance with the manufacturer's instructions or, in the absence of manufacturer's instructions, in accordance with accepted practices. At a minimum, flow measurement devices shall be calibrated at least once every 12 months.

C. DISCHARGE REPORTING REQUIREMENTS

1. Reporting of Monitoring Requirements
- a. The Permittee shall conduct the required monitoring in accordance with the following schedule:
 - (1) **MONITORING REQUIRED MORE FREQUENTLY THAN MONTHLY AND MONTHLY** shall be conducted during the first full month following the effective date of coverage under this permit and every month thereafter.
 - (2) **QUARTERLY MONITORING** shall be conducted at least once during each calendar quarter. Calendar quarters are the periods of January through March, April through June, July through September, and October through December. The Permittee shall conduct the quarterly monitoring during the first complete calendar quarter following the effective date of this permit and is then required to monitor once during each quarter thereafter. Quarterly monitoring should be reported on the last DMR due for the quarter (i.e., March, June, September and December DMRs).
 - (3) **SEMIANNUAL MONITORING** shall be conducted at least once during the period of January through June and at least once during the period of July through December. The Permittee shall conduct the semiannual monitoring during the first complete calendar semiannual period following the effective date of this permit and is then required to monitor once during each semiannual period thereafter. Semiannual monitoring may be done anytime during the semiannual period, unless restricted elsewhere in this permit, but it should be reported on the last DMR due for the month of the semiannual period (i.e., June and December DMRs).
 - (4) **ANNUAL MONITORING** shall be conducted at least once during the period of January through December. The Permittee shall conduct the annual monitoring during the first complete calendar annual period following the effective date of this permit and is then required to monitor once during each annual period thereafter.

Annual monitoring may be done anytime during the year, unless restricted elsewhere in this permit, but it should be reported on the December DMR.

- b. The Permittee shall submit discharge monitoring reports (DMRs) on the forms approved by the Department and in accordance with the following schedule:
- (1) **REPORTS OF MORE FREQUENTLY THAN MONTHLY AND MONTHLY TESTING** shall be submitted on a monthly basis. The first report is due on the 28th day of the month following the month the permit becomes effective. The reports shall be submitted so that they are received by the Department no later than the 28th day of the month following the reporting period, unless otherwise directed by the Department.
 - (2) **REPORTS OF QUARTERLY TESTING** shall be submitted on a quarterly basis. The first report is due on the 28th day of the month following the month the permit becomes effective. The reports shall be submitted so that they are received by the Department no later than the 28th day of the month following the reporting period, unless otherwise directed by the Department.
 - (3) **REPORTS OF SEMIANNUAL TESTING** shall be submitted on a semiannual basis. The reports are due on the 28th day of JANUARY and the 28th day of JULY. The reports shall be submitted so that they are received by the Department no later than the 28th day of the month following the reporting period, unless otherwise directed by the Department.
 - (4) **REPORTS OF ANNUAL TESTING** shall be submitted on an annual basis. Unless specified elsewhere in the permit, the first report is due on the 28th day of JANUARY. The reports shall be submitted so that they are received by the Department no later than the 28th day of the month following the reporting period, unless otherwise directed by the Department.
- c. Except as allowed by Provision I.C.1.c.(1) or (2), the permittee shall submit all Discharge Monitoring Reports (DMRs) required by Provision I.C.1.b. by utilizing the Department's web-based Electronic Environmental (E2) Reporting System.
- (1) If the permittee is unable to complete the electronic submittal of DMR data due to technical problems originating with the Department's E2 Reporting System (this could include entry/submittal issues with an entire set of DMRs or individual parameters), the permittee is not relieved of their obligation to submit DMR data to the Department by the date specified in Provision I.C.1.b., unless otherwise directed by the Department.

If the E2 Reporting System is down on the 28th day of the month in which the DMR is due or is down for an extended period of time, as determined by the Department, when a DMR is required to be submitted, the permittee may submit the data in an alternate manner and format acceptable to the Department. Preapproved alternate acceptable methods include faxing, e-mailing, mailing, or hand-delivery of data such that they are received by the required reporting date. Within five calendar days of the E2 Reporting System resuming operation, the permittee shall enter the data into the E2 Reporting System, unless an alternate timeframe is approved by the Department. An attachment should be included with the E2 DMR submittal verifying the original submittal date (date of the fax, copy of dated e-mail, or hand-delivery stamped date), if applicable.
 - (2) The permittee may submit a request to the Department for a temporary electronic reporting waiver for DMR submittals. The waiver request should include the permit number; permittee name; facility/site name; facility address; name, address, and contact information for the responsible official or duly authorized representative; a detailed statement regarding the basis for requesting such a waiver; and the duration for which the waiver is requested. Approved electronic reporting waivers are not transferrable.

A permittee with an approved electronic reporting waiver for DMRs may submit hard copy DMRs for the period that the approved electronic reporting waiver request is effective. The permittee shall submit the Department-approved DMR forms to the address listed in Provision I.C.1.e.
 - (3) If a permittee is allowed to submit a hard copy DMR, the DMR must be legible and bear an original signature. Photo and electronic copies of the signature are not acceptable and shall not satisfy the reporting requirements of this permit.
 - (4) If the permittee, using approved analytical methods as specified in Provision I.B.2, monitors any discharge from a point source for a limited substance identified in Provision I.A. of this permit more frequently than required by this permit, the results of such monitoring shall be included in the calculation and reporting of values on the DMR and the increased frequency shall be indicated on the DMR.
 - (5) In the event no discharge from a point source identified in Provision I.A. of this permit and described more fully in the permittee's application occurs during a monitoring period, the permittee shall report "No Discharge" for such period on the appropriate DMR.
- d. All reports and forms required to be submitted by this permit, the AWPCA and the Department's Rules and Regulations, shall be electronically signed (or, if allowed by the Department, traditionally signed) by a "responsible

official" of the permittee as defined in ADEM Administrative Code Rule 335-6-6-.09 or a "duly authorized representative" of such official as defined in ADEM Administrative Code Rule 335-6-6-.09 and shall bear the following certification:

"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 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."

- e. Discharge Monitoring Reports required by this permit, the AWPCA, and the Department's Rules that are being submitted in hard copy shall be addressed to:

**Alabama Department of Environmental Management
Environmental Data Section, Permits & Services Division
Post Office Box 301463
Montgomery, Alabama 36130-1463**

Certified and Registered Mail containing Discharge Monitoring Reports shall be addressed to:

**Alabama Department of Environmental Management
Environmental Data Section, Permits & Services Division
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2400**

- f. All other correspondence and reports required to be submitted by this permit, the AWPCA, and the Department's Rules shall be addressed to:

**Alabama Department of Environmental Management
Municipal Section, Water Division
Post Office Box 301463
Montgomery, Alabama 36130-1463**

Certified and Registered Mail shall be addressed to:

**Alabama Department of Environmental Management
Municipal Section, Water Division
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2400**

- g. If this permit is a reissuance, then the permittee shall continue to submit DMRs in accordance with the requirements of their previous permit until such time as DMRs are due as discussed in Part I.C.1.b. above.

2. Noncompliance Notifications and Reports

- a. The Permittee shall notify the Department if, for any reason, the Permittee's discharge:
- (1) Does not comply with any daily minimum or maximum discharge limitation for an effluent characteristic specified in Provision I.A. of this permit which is denoted by an "(X)";
 - (2) Potentially threatens human health or welfare;
 - (3) Threatens fish or aquatic life;
 - (4) Causes an in-stream water quality criterion to be exceeded;
 - (5) Does not comply with an applicable toxic pollutant effluent standard or prohibition established under Section 307(a) of the FWPCA, 33 U.S.C. Section 1317(a);
 - (6) Contains a quantity of a hazardous substance that may be harmful to public health or welfare under Section 311(b)(4) of the FWPCA, 33 U.S.C. Section 1321(b)(4);
 - (7) Exceeds any discharge limitation for an effluent parameter listed in Part I.A. as a result of an unanticipated bypass or upset; or
 - (8) Is an unpermitted direct or indirect discharge of a pollutant to a water of the state. (Note that unpermitted discharges properly reported to the Department under any other requirement are not required to be reported under this provision.)

The Permittee shall orally or electronically provide notification of any of the above occurrences, describing the circumstances and potential effects, to the Director or Designee within 24-hours after the Permittee becomes aware of the occurrence of such discharge. In addition to the oral or electronic notification, the Permittee shall submit a report to the Director or Designee, as provided in Provision I.C.2.c. or I.C.2.e., no later than five days after becoming aware of the occurrence of such discharge or occurrence.

- b. If, for any reason, the Permittee's discharge does not comply with any limitation of this permit, then the Permittee shall submit a written report to the Director or Designee, as provided in Provision I.C.2.c below. This report must be submitted with the next Discharge Monitoring Report required to be submitted by Provision I.C.1 of this permit after becoming aware of the occurrence of such noncompliance.
- c. Except for notifications and reports of notifiable SSOs which shall be submitted in accordance with the applicable Provisions of this permit, the Permittee shall submit the reports required under Provisions I.C.2.a. and b. to the Director or Designee on ADEM Form 421, available on the Department's website (<http://www.adem.state.al.us/DeptForms/Form421.pdf>). The completed Form must document the following information:
 - (1) A description of the discharge and cause of noncompliance;
 - (2) The period of noncompliance, including exact dates, times, and duration of the noncompliance. If the noncompliance is not corrected by the due date of the written report, then the Permittee shall provide an estimated date by which the noncompliance will be corrected; and
 - (3) A description of the steps taken by the Permittee and the steps planned to be taken by the Permittee to reduce or eliminate the noncompliant discharge and to prevent its recurrence.
- d. Immediate notification

The Permittee shall provide notification to the Director, the public, the county health department, and any other affected entity such as public water systems, as soon as possible upon becoming aware of any notifiable sanitary sewer overflow. Notification to the Director shall be completed utilizing the Department's web-based electronic environmental SSO reporting system in accordance with Provision I.C.2.e.

- e. The Department is utilizing a web-based electronic environmental (E2) reporting system for notification and submittal of SSO reports. **If the Permittee is not already participating in the E2 Reporting System for SSO reports, the Permittee must apply for participation in the system within 30 days of coverage under this permit unless the Permittee submits in writing valid justification as to why it cannot participate and the Department approves in writing utilization of verbal notifications and hard copy SSO report submittals.** Once the Permittee is enrolled in the E2 Reporting System for SSO reports, the Permittee must utilize the system for notification and submittal of all SSO reports unless otherwise allowed by this permit. The Permittee shall include in the SSO reports the information requested by ADEM Form 415. In addition, the Permittee shall include the latitude and longitude of the SSO in the report except when the SSO is a result of an extreme weather event (e.g., hurricane). To participate in the E2 Reporting System for SSO reports, the Permittee Participation Package may be downloaded online at <https://e2.adem.alabama.gov/npdes>. If the E2 Reporting System is down (i.e., electronic submittal of SSO data cannot be completed due to technical problems originating with the Department's system), the Permittee is not relieved of its obligation to notify the Department or submit SSO reports to the Department by the required submittal date, and the Permittee shall submit the data in an alternate manner and format acceptable to the Department. Preapproved alternate acceptable methods include verbal reports, reports submitted via the SSO hotline, or reports submitted via fax, e-mail, mail, or hand-delivery such that they are received by the required reporting date. Within five calendar days of the E2 Reporting System resuming operation, the Permittee shall enter the data into the E2 Reporting System, unless an alternate timeframe is approved by the Department. For any alternate notification, records of the date, time, notification method, and person submitting the notification should be maintained by the Permittee. If a Permittee is allowed to submit SSO reports via an alternate method, the SSO report must be in a format approved by the Department and must be legible.
- f. The Permittee shall maintain a record of all known wastewater discharge points that are not authorized as permitted outfalls, including but not limited to SSOs. The Permittee shall include this record in its Municipal Water Pollution Prevention (MWPP) Annual Reports, which shall be submitted to the Department each year by May 31st for the prior calendar year period beginning January 1st and ending December 31st. The MWPP Annual Reports shall contain a list of all known wastewater discharge points that are not authorized as permitted outfalls and any discharges that occur prior to the headworks of the wastewater treatment plant covered by this permit. The Permittee shall also provide in the MWPP Annual Reports a list of any discharges reported during the applicable time period in accordance with Provision I.C.2.a. The Permittee shall include in its MWPP Annual Reports the following information for each known unpermitted discharge that occurred:
 - (1) The cause of the discharge;

- (2) Date, duration and volume of discharge (estimate if unknown);
- (3) Description of the source (e.g., manhole, lift station);
- (4) Location of the discharge, by latitude and longitude (or other appropriate method as approved by the Department);
- (5) The ultimate destination of the flow (e.g., surface waterbody, municipal separate storm sewer to surface waterbody). Location should be shown on a USGS quad sheet or copy thereof; and
- (6) Corrective actions taken and/or planned to eliminate future discharges.

D. OTHER REPORTING AND NOTIFICATION REQUIREMENTS

1. Anticipated Noncompliance

The Permittee shall give the Director written advance notice of any planned changes or other circumstances regarding a facility which may result in noncompliance with permit requirements.

2. Termination of Discharge

The Permittee shall notify the Director, in writing, when all discharges from any point source(s) identified in Provision I. A. of this permit have permanently ceased. This notification shall serve as sufficient cause for instituting procedures for modification or termination of the permit.

3. Updating Information

- a. The Permittee shall inform the Director of any change in the Permittee's mailing address or telephone number or in the Permittee's designation of a facility contact or office having the authority and responsibility to prevent and abate violations of the AWPCA, the Department's Rules and the terms and conditions of this permit, in writing, no later than ten (10) days after such change. Upon request of the Director or his designee, the Permittee shall furnish the Director with an update of any information provided in the permit application.
- b. If the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information with a written explanation for the mistake and/or omission.

4. Duty to Provide Information

The Permittee shall furnish to the Director, within a reasonable time, any information which the Director or his designee may request to determine whether cause exists for modifying, revoking and re-issuing, suspending, or terminating this permit, in whole or in part, or to determine compliance with this permit.

E. SCHEDULE OF COMPLIANCE

1. Compliance with discharge limits

The Permittee shall achieve compliance with the discharge limitations specified in Provision I. A. in accordance with the following schedule:

COMPLIANCE SHALL BE ATTAINED ON THE EFFECTIVE DATE OF THIS PERMIT

2. Schedule

No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

PART II OTHER REQUIREMENTS, RESPONSIBILITIES, AND DUTIES

A. OPERATIONAL AND MANAGEMENT REQUIREMENTS

1. Facilities Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities only when necessary to achieve compliance with the conditions of the permit.

2. Best Management Practices (BMP)

- a. Dilution water shall not be added to achieve compliance with discharge limitations except when the Director or his designee has granted prior written authorization for dilution to meet water quality requirements.
- b. The Permittee shall prepare, implement, and maintain a Spill Prevention, Control and Countermeasures (SPCC) Plan in accordance with 40 C.F.R. Section 112 if required thereby.
- c. The Permittee shall prepare, submit for approval and implement a BMP Plan for containment of any or all process liquids or solids, in a manner such that these materials do not present a significant potential for discharge, if so required by the Director or his designee. When submitted and approved, the BMP Plan shall become a part of this permit and all requirements of the BMP Plan shall become requirements of this permit.

3. Certified Operator

The Permittee shall not operate any wastewater treatment plant unless the competency of the operator to operate such plant has been duly certified by the Director pursuant to AWPCA, and meets the requirements specified in ADEM Administrative Code, Rule 335-10-1.

B. OTHER RESPONSIBILITIES

1. Duty to Mitigate Adverse Impacts

The Permittee shall promptly take all reasonable steps to mitigate and minimize or prevent any adverse impact on human health or the environment resulting from noncompliance with any discharge limitation specified in Provision I. A. of this permit, including such accelerated or additional monitoring of the discharge and/or the receiving waterbody as necessary to determine the nature and impact of the noncomplying discharge.

2. Right of Entry and Inspection

The Permittee shall allow the Director, or an authorized representative, upon the presentation of proper credentials and other documents as may be required by law to:

- (1) Enter upon the Permittee's premises where a regulated facility or activity or point source is located or conducted, or where records must be kept under the conditions of the permit;
- (2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permits;
- (3) Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under the permit; and
- (4) Sample or monitor, for the purposes of assuring permit compliance or as otherwise authorized by the AWPCA, any substances or parameters at any location.

C. BYPASS AND UPSET

1. Bypass

- a. Any bypass is prohibited except as provided in b. and c. below:
- b. A bypass is not prohibited if:
 - (1) It does not cause any discharge limitation specified in Provision I. A. of this permit to be exceeded;
 - (2) It enters the same receiving stream as the permitted outfall; and
 - (3) It is necessary for essential maintenance of a treatment or control facility or system to assure efficient operation of such facility or system.
- c. A bypass is not prohibited and need not meet the discharge limitations specified in Provision I. A. of this permit if:
 - (1) It is unavoidable to prevent loss of life, personal injury, or severe property damage;

- (2) There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime (this condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance); and
 - (3) The Permittee submits a written request for authorization to bypass to the Director at least ten (10) days prior to the anticipated bypass (if possible), the Permittee is granted such authorization, and the Permittee complies with any conditions imposed by the Director to minimize any adverse impact on human health or the environment resulting from the bypass.
- d. The Permittee has the burden of establishing that each of the conditions of Provision II. C. 1. b. or c. have been met to qualify for an exception to the general prohibition against bypassing contained in a. and an exemption, where applicable, from the discharge limitations specified in Provision I. A. of this permit.

2. Upset

- a. A discharge which results from an upset need not meet the discharge limitations specified in Provision I. A. of this permit if:
- (1) No later than 24-hours after becoming aware of the occurrence of the upset, the Permittee orally reports the occurrence and circumstances of the upset to the Director or his designee; and
 - (2) No later than five (5) days after becoming aware of the occurrence of the upset, the Permittee furnishes the Director with evidence, including properly signed, contemporaneous operating logs, or other relevant evidence, demonstrating that:
 - (i) An upset occurred;
 - (ii) The Permittee can identify the specific cause(s) of the upset;
 - (iii) The Permittee's facility was being properly operated at the time of the upset; and
 - (iv) The Permittee promptly took all reasonable steps to minimize any adverse impact on human health or the environment resulting from the upset.
- b. The Permittee has the burden of establishing that each of the conditions of Provision II C. 2. a. of this permit have been met to qualify for an exemption from the discharge limitations specified in Provision I. A. of this permit.

D. DUTY TO COMPLY WITH PERMIT, RULES, AND STATUTES

1. Duty to Comply

- a. The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the AWPCA and the FWPCA and is grounds for enforcement action, for permit termination, revocation and reissuance, suspension, modification, or denial of a permit renewal application.
- b. The necessity to halt or reduce production or other activities in order to maintain compliance with the conditions of the permit shall not be a defense for a Permittee in an enforcement action.
- c. The discharge of a pollutant from a source not specifically identified in the permit application for this permit and not specifically included in the description of an outfall in this permit is not authorized and shall constitute noncompliance with this permit.
- d. The Permittee shall take all reasonable steps, including cessation of production or other activities, to minimize or prevent any violation of this permit or to minimize or prevent any adverse impact of any permit violation.
- e. Nothing in this permit shall be construed to preclude or negate the Permittee's responsibility to apply for, obtain, or comply with other Federal, State, or Local Government permits, certifications, or licenses or to preclude from obtaining other federal, state, or local approvals, including those applicable to other ADEM programs and regulations.

2. Removed Substances

Solids, sludges, filter backwash, or any other pollutant or other waste removed in the course of treatment or control of wastewaters shall be disposed of in a manner that complies with all applicable Department Rules.

3. Loss or Failure of Treatment Facilities

Upon the loss or failure of any treatment facilities, including but not limited to the loss or failure of the primary source of power of the treatment facility, the Permittee shall, where necessary to maintain compliance with the discharge limitations specified in Provision I. A. of this permit, or any other terms or conditions of this permit, cease, reduce, or otherwise control production and/or all discharges until treatment is restored. If control of discharge during loss or failure of the

primary source of power is to be accomplished by means of alternate power sources, standby generators, or retention of inadequately treated effluent, the Permittee must furnish to the Director within six months a certification that such control mechanisms have been installed.

4. Compliance With Statutes and Rules

- a. This permit has been issued under ADEM Administrative Code, Chapter 335-6-6. All provisions of this chapter, that are applicable to this permit, are hereby made a part of this permit. A copy of this chapter may be obtained for a small charge from the Office of General Counsel, Alabama Department of Environmental Management, 1400 Coliseum Boulevard Montgomery, Alabama 36110-2059.
- b. This permit does not authorize the noncompliance with or violation of any Laws of the State of Alabama or the United States of America or any regulations or rules implementing such laws. FWPCA, 33 U.S.C. Section 1319, and Code of Alabama 1975, Section 22-22-14.

E. PERMIT TRANSFER, MODIFICATION, SUSPENSION, REVOCATION, AND REISSUANCE

1. Duty to Reapply or Notify of Intent to Cease Discharge

- a. If the Permittee intends to continue to discharge beyond the expiration date of this permit, the Permittee shall file a complete permit application for reissuance of this permit at least 180 days prior to its expiration. If the Permittee does not intend to continue discharge beyond the expiration of this permit, the Permittee shall submit written notification of this intent which shall be signed by an individual meeting the signatory requirements for a permit application as set forth in ADEM Administrative Code Rule 335-6-6-.09.
- b. Failure of the Permittee to apply for reissuance at least 180 days prior to permit expiration will void the automatic continuation of the expiring permit provided by ADEM Administrative Code Rule 335-6-6-.06 and should the permit not be reissued for any reason any discharge after expiration of this permit will be an unpermitted discharge.

2. Change in Discharge

Prior to any facility expansion, process modification or any significant change in the method of operation of the Permittee's treatment works, the Permittee shall provide the Director with information concerning the planned expansion, modification or change. The Permittee shall apply for a permit modification at least 180 days prior to any facility expansion, process modification, any significant change in the method of operation of the Permittee's treatment works or other actions that could result in the discharge of additional pollutants or increase the quantity of a discharged pollutant or could result in an additional discharge point. This condition applies to pollutants that are or that are not subject to discharge limitations in this permit. No new or increased discharge may begin until the Director has authorized it by issuance of a permit modification or a reissued permit.

3. Transfer of Permit

This permit may not be transferred or the name of the Permittee changed without notice to the Director and subsequent modification or revocation and reissuance of the permit to identify the new Permittee and to incorporate any other changes as may be required under the FWPCA or AWPCA. In the case of a change in name, ownership or control of the Permittee's premises only, a request for permit modification in a format acceptable to the Director is required at least 30 days prior to the change. In the case of a change in name, ownership or control of the Permittee's premises accompanied by a change or proposed change in effluent characteristics, a complete permit application is required to be submitted to the Director at least 180 days prior to the change. Whenever the Director is notified of a change in name, ownership or control, he may decide not to modify the existing permit and require the submission of a new permit application.

4. Permit Modification and Revocation

- a. This permit may be modified or revoked and reissued, in whole or in part, during its term for cause, including but not limited to, the following:
 - (1) If cause for termination under Provision II. E. 5. of this permit exists, the Director may choose to revoke and reissue this permit instead of terminating the permit;
 - (2) If a request to transfer this permit has been received, the Director may decide to revoke and reissue or to modify the permit; or
 - (3) If modification or revocation and reissuance is requested by the Permittee and cause exists, the Director may grant the request.
- b. This permit may be modified during its term for cause, including but not limited to, the following:
 - (1) If cause for termination under Provision II. E. 5. of this permit exists, the Director may choose to modify this permit instead of terminating this permit;

- (2) There are material and substantial alterations or additions to the facility or activity generating wastewater which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit;
- (3) The Director has received new information that was not available at the time of permit issuance and that would have justified the application of different permit conditions at the time of issuance;
- (4) A new or revised requirement(s) of any applicable standard or limitation is promulgated under Sections 301(b)(2)(C), (D), (E), and (F), and 307(a)(2) of the FWPCA;
- (5) Errors in calculation of discharge limitations or typographical or clerical errors were made;
- (6) To the extent allowed by ADEM Administrative Code, Rule 335-6-6-.17, when the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued;
- (7) To the extent allowed by ADEM Administrative Code, Rule 335-6-6-.17, permits may be modified to change compliance schedules;
- (8) To agree with a granted variance under 301(c), 301(g), 301(h), 301(k), or 316(a) of the FWPCA or for fundamentally different factors;
- (9) To incorporate an applicable 307(a) FWPCA toxic effluent standard or prohibition;
- (10) When required by the reopener conditions in this permit;
- (11) When required under 40 CFR 403.8(e) (compliance schedule for development of pretreatment program);
- (12) Upon failure of the state to notify, as required by Section 402(b)(3) of the FWPCA, another state whose waters may be affected by a discharge permitted by this permit;
- (13) When required to correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions; or
- (14) When requested by the Permittee and the Director determines that the modification has cause and will not result in a violation of federal or state law, regulations or rules.

5. Termination

This permit may be terminated during its term for cause, including but not limited to, the following:

- a. Violation of any term or condition of this permit;
- b. The Permittee's misrepresentation or failure to disclose fully all relevant facts in the permit application or during the permit issuance process or the Permittee's misrepresentation of any relevant facts at any time;
- c. Materially false or inaccurate statements or information in the permit application or the permit;
- d. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge;
- e. The Permittee's discharge threatens human life or welfare or the maintenance of water quality standards;
- f. Permanent closure of the facility generating the wastewater permitted to be discharged by this permit or permanent cessation of wastewater discharge;
- g. New or revised requirements of any applicable standard or limitation that is promulgated under Sections 301(b)(2)(C), (D), (E), and (F), and 307(a)(2) of the FWPCA that the Director determines cannot be complied with by the Permittee; or
- h. Any other cause allowed by the ADEM Administrative Code, Chapter 335-6-6.

6. Suspension

This permit may be suspended during its term for noncompliance until the Permittee has taken action(s) necessary to achieve compliance.

7. Stay

The filing of a request by the Permittee for modification, suspension or revocation of this permit, in whole or in part, does not stay any permit term or condition.

F. COMPLIANCE WITH TOXIC POLLUTANT STANDARD OR PROHIBITION

If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the FWPCA, 33 U.S.C. Section 1317(a), for a toxic pollutant discharged by the Permittee, and such standard or prohibition is more stringent than any discharge limitation on the pollutant specified in Provision I. A. of this permit or controls a pollutant not limited in Provision I. A. of this permit, this permit shall be modified to conform to the toxic pollutant effluent standard or prohibition, and the Permittee shall be notified of such modification. If this permit has not been modified to conform to the toxic pollutant effluent standard or prohibition before the effective date of such standard or prohibition, the Permittee shall attain compliance with the requirements of the standard or prohibition within the time period required by the standard or prohibition and shall continue to comply with the standard or prohibition until this permit is modified or reissued.

G. NOTICE TO DIRECTOR OF INDUSTRIAL USERS

1. The Permittee shall not allow the introduction of wastewater, other than domestic wastewater, from a new direct discharger prior to approval and permitting, if applicable, of the discharge by the Department.
2. The Permittee shall not allow an existing indirect discharger to increase the quantity or change the character of its wastewater, other than domestic wastewater, prior to approval and permitting, if applicable, of the increased discharge by the Department.
3. The Permittee shall report to the Department any adverse impact caused or believed to be caused by an indirect discharger on the treatment process; quality of discharged water, or quality of sludge. Such report shall be submitted within seven days of the Permittee becoming aware of the adverse impacts.

H. PROHIBITIONS

The Permittee shall not allow, and shall take effective enforcement action to prevent and terminate, the introduction of any of the following into its treatment works by industrial users:

1. Pollutants which create a fire or explosion hazard in the treatment works;
2. Pollutants which will cause corrosive structural damage to the treatment works, or dischargers with a pH lower than 5.0 s.u., unless the works are specifically designed to accommodate such discharges;
3. Solid or viscous pollutants in amounts which will cause obstruction of flow in sewers, or other interference with the treatment works;
4. Pollutants, including oxygen demanding pollutants, released in a discharge of such volume or strength as to cause interference in the treatment works;
5. Heat in amounts which will inhibit biological activity in the treatment plant resulting in interference or in such quantities that the temperature of the treatment plant influent exceeds 40°C (104° F) unless the treatment plant is designed to accommodate such heat; and
6. Pollutants in amounts which exceed any applicable pretreatment standard under Section 307 of FWPCA or any approved revisions thereof.

PART III ADDITIONAL REQUIREMENTS, CONDITIONS, AND LIMITATIONS**A. CIVIL AND CRIMINAL LIABILITY**

1. Tampering

Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained or performed under the permit shall, upon conviction, be subject to penalties as provided by the AWPCA.

2. False Statements

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be subject to penalties as provided by the AWPCA.

3. Permit Enforcement

a. Any NPDES permit issued or reissued by the Department is a permit for the purpose of the AWPCA and the FWPCA, and as such, any terms, conditions, or limitations of the permit are enforceable under state and federal law.

b. Any person required to have a NPDES permit pursuant to ADEM Administrative Code Chapter 335-6-6 and who discharges pollutants without said permit, who violates the conditions of said permit, who discharges pollutants in a manner not authorized by the permit, or who violates applicable orders of the Department or any applicable rule or standard of the Department, is subject to any one or combination of the following enforcement actions under applicable state statutes:

- (1) An administrative order requiring abatement, compliance, mitigation, cessation, clean-up, and/or penalties;
- (2) An action for damages;
- (3) An action for injunctive relief; or
- (4) An action for penalties.

c. If the Permittee is not in compliance with the conditions of an expiring or expired permit the Director may choose to do any or all of the following provided the Permittee has made a timely and complete application for reissuance of the permit:

- (1) Initiate enforcement action based upon the permit which has been continued;
- (2) Issue a notice of intent to deny the permit reissuance. If the permit is denied, the owner or operator would then be required to cease the activities authorized by the continued permit or be subject to enforcement action for operating without a permit;
- (3) Reissue the new permit with appropriate conditions; or
- (4) Take other actions authorized by these rules and AWPCA.

4. Relief from Liability

Except as provided in Provision II. C. 1. (Bypass) and Provision II. C. 2. (Upset), nothing in this permit shall be construed to relieve the Permittee of civil or criminal liability under the AWPCA or FWPCA for noncompliance with any term or condition of this permit.

B. OIL AND HAZARDOUS SUBSTANCE LIABILITY

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities or penalties to which the Permittee is or may be subject under Section 311 of the FWPCA, 33 U.S.C. Section 1321.

C. PROPERTY AND OTHER RIGHTS

This permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to persons or property or invasion of other private rights, or any infringement of federal, state, or local laws or regulations, nor does it authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any waters of the state or of the United States.

D. AVAILABILITY OF REPORTS

Except for data determined to be confidential under Code of Alabama 1975, Section 22-22-9(c), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. Effluent data shall not be considered confidential.

E. EXPIRATION OF PERMITS FOR NEW OR INCREASED DISCHARGES

1. If this permit was issued for a new discharger or new source, this permit shall expire eighteen months after the issuance date if construction of the facility has not begun during the eighteen-month period.
2. If this permit was issued or modified to allow the discharge of increased quantities of pollutants to accommodate the modification of an existing facility and if construction of this modification has not begun during the eighteen month period after issuance of this permit or permit modification, this permit shall be modified to reduce the quantities of pollutants allowed to be discharged to those levels that would have been allowed if the modification of the facility had not been planned.
3. Construction has begun when the owner or operator has:
 - a. Begun, or caused to begin as part of a continuous on-site construction program:
 - (1) Any placement, assembly, or installation of facilities or equipment; or
 - (2) Significant site preparation work including clearing, excavation, or removal of existing buildings, structures, or facilities which are necessary for the placement, assembly, or installation of new source facilities or equipment; or
 - b. Entered into a binding contractual obligation for the purpose of placement, assembly, or installation of facilities or equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility, engineering, and design studies do not constitute a contractual obligation under this paragraph.
4. Final plans and specifications for a waste treatment facility at a new source or new discharger, or a modification to an existing waste treatment facility must be submitted to and examined by the Department prior to initiating construction of such treatment facility by the Permittee.
5. Upon completion of construction of waste treatment facilities and prior to operation of such facilities, the Permittee shall submit to the Department a certification from a registered professional engineer, licensed to practice in the State of Alabama, that the treatment facilities have been built according to plans and specifications submitted to and examined by the Department.

F. COMPLIANCE WITH WATER QUALITY STANDARDS

1. On the basis of the Permittee's application, plans, or other available information, the Department has determined that compliance with the terms and conditions of this permit should assure compliance with the applicable water quality standards.
2. Compliance with permit terms and conditions notwithstanding, if the Permittee's discharge(s) from point sources identified in Provision I. A. of this permit cause or contribute to a condition in contravention of state water quality standards, the Department may require abatement action to be taken by the Permittee in emergency situations or modify the permit pursuant to the Department's Rules, or both.
3. If the Department determines, on the basis of a notice provided pursuant to this permit or any investigation, inspection or sampling, that a modification of this permit is necessary to assure maintenance of water quality standards or compliance with other provisions of the AWPCA or FWPCA, the Department may require such modification, and, in cases of emergency, the Director may prohibit the discharge until the permit has been modified.

G. GROUNDWATER

Unless specifically authorized under this permit, this permit does not authorize the discharge of pollutants to groundwater. Should a threat of groundwater contamination occur, the Director may require groundwater monitoring to properly assess the degree of the problem, and the Director may require that the Permittee undertake measures to abate any such discharge and/or contamination.

H. DEFINITIONS

1. Average monthly discharge limitation – means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month (zero discharge days shall not be included in the number of "daily discharges" measured and a less than detectable test result shall be treated as a concentration of zero if the most sensitive EPA approved method was used).
2. Average weekly discharge limitation - means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week (zero discharge days shall not be included in the number of "daily discharges" measured and a less than detectable test result shall be treated as a concentration of zero if the most sensitive EPA approved method was used).

3. Arithmetic Mean – means the summation of the individual values of any set of values divided by the number of individual values.
4. AWPCA – means the Alabama Water Pollution Control Act.
5. BOD – means the five-day measure of the pollutant parameter biochemical oxygen demand.
6. Bypass – means the intentional diversion of waste streams from any portion of a treatment facility.
7. CBOD – means the five-day measure of the pollutant parameter carbonaceous biochemical oxygen demand.
8. Daily discharge – means the discharge of a pollutant measured during any consecutive 24-hour period in accordance with the sample type and analytical methodology specified by the discharge permit.
9. Daily maximum – means the highest value of any individual sample result obtained during a day.
10. Daily minimum – means the lowest value of any individual sample result obtained during a day.
11. Day – means any consecutive 24-hour period.
12. Department – means the Alabama Department of Environmental Management.
13. Director – means the Director of the Department.
14. Discharge – means "[t]he addition, introduction, leaking, spilling or emitting of any sewage, industrial waste, pollutant or other waste into waters of the state". Code of Alabama 1975, Section 22-22-1(b)(9).
15. Discharge Monitoring Report (DMR) – means the form approved by the Director to accomplish reporting requirements of an NPDES permit.
16. DO – means dissolved oxygen.
17. 8HC – means 8-hour composite sample, including any of the following:
 - a. The mixing of at least 8 equal volume samples collected at constant time intervals of not more than 1 hour over a period of not less than 8 hours between the hours of 6:00 a.m. and 6:00 p.m. If the sampling period exceeds 8 hours, sampling may be conducted beyond the 6:00 a.m. to 6:00 p.m. period.
 - b. A sample continuously collected at a constant rate over period of not less than 8 hours between the hours of 6:00 a.m. and 6:00 p.m. If the sampling period exceeds 8 hours, sampling may be conducted beyond the 6:00 a.m. to 6:00 p.m. period.
18. EPA – means the United States Environmental Protection Agency.
19. FC – means the pollutant parameter fecal coliform.
20. Flow – means the total volume of discharge in a 24-hour period.
21. FWPCA – means the Federal Water Pollution Control Act.
22. Geometric Mean – means the Nth root of the product of the individual values of any set of values where N is equal to the number of individual values. The geometric mean is equivalent to the antilog of the arithmetic mean of the logarithms of the individual values. For purposes of calculating the geometric mean, values of zero (0) shall be considered one (1).
23. Grab Sample – means a single influent or effluent portion which is not a composite sample. The sample(s) shall be collected at the period(s) most representative of the discharge.
24. Indirect Discharger – means a nondomestic discharger who discharges pollutants to a publicly owned treatment works or a privately owned treatment facility operated by another person.
25. Industrial User – means those industries identified in the Standard Industrial Classification manual, Bureau of the Budget 1967, as amended and supplemented, under the category "Division D – Manufacturing" and such other classes of significant waste producers as, by regulation, the Director deems appropriate.
26. MGD – means million gallons per day.
27. Monthly Average – means the arithmetic mean of all the composite or grab samples taken for the daily discharges collected in one month period. The monthly average for flow is the arithmetic mean of all flow measurements taken in a one month period.
28. New Discharger – means a person, owning or operating any building, structure, facility or installation:
 - a. From which there is or may be a discharge of pollutants;
 - b. From which the discharge of pollutants did not commence prior to August 13, 1979, and which is not a new source; and

- c. Which has never received a final effective NPDES permit for dischargers at that site.
29. NH₃-N – means the pollutant parameter ammonia, measured as nitrogen.
30. Notifiable sanitary sewer overflow – means an overflow, spill, release or diversion of wastewater from a sanitary sewer system that:
- Reaches a surface water of the State; or
 - May imminently and substantially endanger human health based on potential for public exposure including but not limited to close proximity to public or private water supply wells or in areas where human contact would be likely to occur.
31. Permit application – means forms and additional information that is required by ADEM Administrative Code Rule 335-6-6-.08 and applicable permit fees.
32. Point source – means "any discernible, confined and discrete conveyance, including but not limited to any pipe, channel, ditch, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, . . . from which pollutants are or may be discharged." Section 502(14) of the FWPCA, 33 U.S.C. Section 1362(14).
33. Pollutant – includes for purposes of this permit, but is not limited to, those pollutants specified in Code of Alabama 1975, Section 22-22-1(b)(3) and those effluent characteristics specified in Provision I. A. of this permit.
34. Privately Owned Treatment Works – means any devices or system which is used to treat wastes from any facility whose operator is not the operator of the treatment works, and which is not a "POTW".
35. Publicly Owned Treatment Works – means a wastewater collection and treatment facility owned by the State, municipality, regional entity composed of two or more municipalities, or another entity created by the State or local authority for the purpose of collecting and treating municipal wastewater.
36. Receiving Stream – means the "waters" receiving a "discharge" from a "point source".
37. Severe property damage – means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
38. Significant Source – means a source which discharges 0.025 MGD or more to a POTW or greater than five percent of the treatment work's capacity, or a source which is a primary industry as defined by the U.S. EPA or which discharges a priority or toxic pollutant.
39. TKN – means the pollutant parameter Total Kjeldahl Nitrogen.
40. TON – means the pollutant parameter Total Organic Nitrogen.
41. TRC – means Total Residual Chlorine.
42. TSS – means the pollutant parameter Total Suspended Solids.
43. 24HC – means 24-hour composite sample, including any of the following:
- The mixing of at least 8 equal volume samples collected at constant time intervals of not more than 2 hours over a period of 24 hours;
 - A sample collected over a consecutive 24-hour period using an automatic sampler composite to one sample. As a minimum, samples shall be collected hourly and each shall be no more than one twenty-fourth (1/24) of the total sample volume collected; or
 - A sample collected over a consecutive 24-hour period using an automatic composite sampler composited proportional to flow.
44. Upset – means an exceptional incident in which there is an unintentional and temporary noncompliance with technology-based permit discharge limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
45. Waters – means "[a]ll waters of any river, stream, watercourse, pond, lake, coastal, ground, or surface water, wholly or partially within the state, natural or artificial. This does not include waters which are entirely confined and retained completely upon the property of a single individual, partnership, or corporation unless such waters are used in interstate commerce." Code of Alabama 1975, Section 22-22-1(b)(2). Waters "include all navigable waters" as defined in Section 502(7) of the FWPCA, 22 U.S.C. Section 1362(7), which are within the State of Alabama.
46. Week – means the period beginning at twelve midnight Saturday and ending at twelve midnight the following Saturday.

47. Weekly (7-day and calendar week) Average – is the arithmetic mean of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. The calendar week is defined as beginning on Sunday and ending on Saturday. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for the calendar week shall be included in the data for the month that contains the Saturday.

I. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

PART IV SPECIFIC REQUIREMENTS, CONDITIONS, AND LIMITATIONS

A. SLUDGE MANAGEMENT PRACTICES

1. Applicability
 - a. Provisions of Provision IV.A. apply to a sewage sludge generated or treated in treatment works that is applied to agricultural and non-agricultural land, or that is otherwise distributed, marketed, incinerated, or disposed in landfills or surface disposal sites.
 - b. Provisions of Provision IV.A. do not apply to:
 - (1) Sewage sludge generated or treated in a privately owned treatment works operated in conjunction with industrial manufacturing and processing facilities and which receive no domestic wastewater.
 - (2) Sewage sludge that is stored in surface impoundments located at the treatment works prior to ultimate disposal.
2. Submitting Information
 - a. If applicable, the Permittee must submit annually with its Municipal Water Pollution Prevention (MWPP) report the following:
 - (1) Type of sludge stabilization/digestion method;
 - (2) Daily or annual sludge production (dry weight basis);
 - (3) Ultimate sludge disposal practice(s).
 - b. The Permittee shall provide sludge inventory data to the Director as requested. These data may include, but are not limited to, sludge quantity and quality reported in Provision IV.A.2.a as well as other specific analyses required to comply with State and Federal laws regarding solid and hazardous waste disposal.
 - c. The Permittee shall give prior notice to the Director of at least 30 days of any change planned in the Permittee's sludge disposal practices.
3. Reopener or Modification
 - a. Upon review of information provided by the Permittee as required by Provision IV.A.2. or, based on the results of an on-site inspection, the permit shall be subject to modification to incorporate appropriate requirements.
 - b. If an applicable "acceptable management practice" or if a numerical limitation for a pollutant in sewage sludge promulgated under Section 405 of FWPCA is more stringent than the sludge pollutant limit or acceptable management practice in this permit. This permit shall be modified or revoked or reissued to conform to requirements promulgated under Section 405. The Permittee shall comply with the limitations no later than the compliance deadline specified in applicable regulations as required by Section 405 of FWPCA.

B. EFFLUENT TOXICITY LIMITATIONS AND BIOMONITORING REQUIREMENTS FOR CHRONIC TOXICITY

1. Chronic Toxicity Test
 - a. The permittee shall perform short-term chronic toxicity tests on the wastewater at Outfall 0011.
 - b. The samples shall be diluted using appropriate control water to the Instream Waste Concentration (IWC) which is **21 percent** effluent. The IWC is the actual concentration of effluent at the edge of the mixing zone based on the most recent Mixing Zone Analysis.
 - c. Any test result that shows a statistically significant reduction in survival, growth, or reproduction between the control and test samples at the 95% confidence level indicates chronic toxicity and shall constitute noncompliance with this permit.
2. General Test Requirements
 - a. A minimum of three (3) 24-hour composite samples shall be obtained for use in the above biomonitoring tests. Samples shall be collected every other day so that the laboratory receives water samples on the first, third, and fifth day of the seven-day test period. The holding time for each composite sample shall not exceed 36 hours. The control water shall be a water prepared in the laboratory in accordance with the EPA procedure described in EPA 821-R-02-014 (most current edition) or another control water selected by the Permittee and approved by the Department.
 - b. Test results shall be deemed unacceptable and the Permittee shall rerun the tests as soon as practical within the monitoring period for the following:
 - (1) For testing with *Cyprinodon variegatus* (sheepshead minnow);, effluent toxicity tests with control survival of less than 80%, and either the average dry weight per surviving unpreserved control larvae is less than 0.60 mg,

or the average dry weight per surviving preserved (no more than 7 days in 4% formalin or 70% ethanol) control larvae is less than 0.50 mg. The minimum weights presume that the age of the larvae at the start of the test is less than or equal to 24 hours.

- (2) For testing with *Arbacia punctulata* (purple sea urchin); if the egg fertilization in control chambers is less than 70% or greater than 90%; or
 - (3) If the other requirements of the EPA Test Procedure are not met.
- c. In the event of an invalid test, upon subsequent completion of a valid test, the results of all tests, valid and invalid, are to be reported to the Department along with an explanation of the tests performed and the test results.
 - d. Toxicity tests shall be conducted for the duration of this permit in the months of March, June, September, and December. Should results from four consecutive testing periods indicate that Outfall 0011 effluent does not exhibit chronic toxicity, the Permittee may request that toxicity testing be reduced. Should the toxicity test indicate that Outfall 0011 exhibits chronic toxicity, then the Permittee must conduct the follow-up testing described in Part IV.B.4.a.
3. Reporting Requirements
 - a. The Permittee shall notify the Department in writing within 48 hours after toxicity has been demonstrated by the scheduled test(s).
 - b. Biomonitoring test results obtained during each monitoring period shall be summarized and reported using the appropriate Discharge Monitoring Report (DMR) form approved by the Department. In accordance with Section 2 of this part, an effluent toxicity report containing the information in Sections 2 and 6 shall be included with the DMR. Two copies of the test results must be submitted to the Department no later than 28 days after the month that tests were performed.
 4. Additional Testing Requirements
 - a. If chronic toxicity is indicated (i.e., noncompliance with permit limit), then the Permittee must perform two additional valid chronic toxicity tests in accordance with these procedures to determine the extent and duration of the toxic condition. The toxicity tests shall run consecutively beginning on the first calendar week following the date that the Permittee became aware of the permit noncompliance. The results of these follow-up tests shall be submitted to the Department no later than 28 days following the month the tests were performed.
 - b. After evaluation of the results of the follow-up tests, the Department will determine if additional action is appropriate and may require additional testing and/or toxicity reduction measures. The permittee may be required to perform a Toxicity Identification Evaluation (TIE) and/or a Toxicity Reduction Evaluation (TRE). The TIE/TRE shall be performed in accordance with the most recent protocols and guidance outlined by EPA (e.g., EPA/600/2-88/062, EPA/600/R-92/080, EPA/600/R-91-003, EPA/600/R-92/081, EPA/833/B-99/022, and/or EPA/600/6-91/005F)
 5. Test Methods

The tests shall be performed in accordance with the latest edition of the "EPA Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms." Larval Survival and Growth Test Method 1004.0, described in Section 11, shall be used for the *Cyprinodon variegatus* (sheepshead minnow) test, and Fertilization Test Method 1008.0, described in Section 15, shall be used for the *Arbacia punctulata* (purple sea urchin) test.
 6. Effluent Toxicity Testing Reports

The following information shall be submitted with each DMR unless otherwise directed by the Department. The Department may at any times suspend or reinstate this requirement or may decrease or increase the frequency of submittals.

 - a. Introduction
 - (1) Facility name, location and county
 - (2) Permit number
 - (3) Toxicity testing requirements of permit
 - (4) Name of receiving water body
 - (5) Contract laboratory information (if tests are performed under contract)
 - (a) Name of firm
 - (b) Telephone number
 - (c) Address
 - (6) Objective of test

- b. Plant Operations
 - (1) Discharge Operating schedule (if other than continuous)
 - (2) Volume of discharge during sample collection to include Mean daily discharge on sample collection dates (MGD, CFS, GPM)
 - (3) Design flow of treatment facility at time of sampling
- c. Source of Effluent and Dilution Water
 - (1) Effluent samples
 - (a) Sampling point
 - (b) Sample collection dates and times (to include composite sample start and finish times)
 - (c) Sample collection method
 - (d) Physical and chemical data of undiluted effluent samples (water temperature, pH, alkalinity, hardness, specific conductance, total residual chlorine (if applicable), etc.)
 - (e) Lapsed time from sample collection to delivery
 - (f) Lapsed time from sample collection to test initiation
 - (g) Sample temperature when received at the laboratory
 - (2) Dilution Water
 - (a) Source
 - (b) Collection/preparation date(s) and time(s)
 - (c) Pretreatment (if applicable)
 - (d) Physical and chemical characteristics (water temperature, pH, alkalinity, hardness, specific conductance, etc.)
- d. Test Conditions
 - (1) Toxicity test method utilized
 - (2) End point(s) of test
 - (3) Deviations from referenced method, if any, and reason(s)
 - (4) Date and time test started
 - (5) Date and time test terminated
 - (6) Type and volume of test chambers
 - (7) Volume of solution per chamber
 - (8) Number of organisms per test chamber
 - (9) Number of replicate test chambers per treatment
 - (10) Test temperature, pH, and dissolved oxygen as recommended by the method (to include ranges)
 - (11) Specify if aeration was needed
 - (12) Feeding frequency, amount, and type of food
 - (13) Specify if (and how) pH control measures were implemented
 - (14) Light intensity (mean)
- e. Test Organisms
 - (1) Scientific name
 - (2) Life stage and age
 - (3) Source
 - (4) Disease(s) treatment (if applicable)
- f. Quality Assurance
 - (1) Reference toxicant utilized and source
 - (2) Date and time of most recent chronic reference toxicant test(s), raw data, and current control chart(s). (The most recent chronic reference toxicant test shall be conducted within 30 days of the routine.)
 - (3) Dilution water utilized in reference toxicant test
 - (4) Results of reference toxicant test(s) (NOEC, IC25, etc.); report concentration-response relationship and evaluate test sensitivity
 - (5) Physical and chemical methods utilized
- g. Results
 - (1) Provide raw toxicity data in tabular form, including daily records of affected organisms in each concentration (including controls) and replicate
 - (2) Provide table of endpoints: NOECs, IC25s, PASS/FAIL, etc. (as required in the applicable NPDES permit)
 - (3) Indicate statistical methods used to calculate endpoints
 - (4) Provide all physical and chemical data required by method.

- (5) Results of test(s) (NOEC, IC25, PASS/FAIL, etc.), report concentration-response relationship (definitive test only), report percent minimum significant difference (PMSD) calculated for sublethal endpoints determined by hypothesis testing.

h. Conclusions and Recommendations

- (1) Relationship between test endpoints and permit limits
- (2) Actions to be taken

1/ Adapted from "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms", Third Edition, October 2002 (EPA 821-R-02-014), Section 10, Report Preparation.

C. TOTAL RESIDUAL CHLORINE (TRC) REQUIREMENTS

1. If chlorine is not utilized for disinfection purposes, TRC monitoring under Part I of this Permit is not required. If TRC monitoring is not required (conditional monitoring), "*9" or "NODI = 9" (if hard copy) should be reported on the DMR forms.
2. Testing for TRC shall be conducted according to either the amperometric titration method or the DPD colorimetric method as specified in Section 408(C) or (E), Standards Methods for the Examination of Water and Wastewater, 18th edition. If chlorine is not detected prior to actual discharge to the receiving stream using one of these methods (i.e., the analytical result is less than the detection level), the Permittee shall report on the DMR form "*B", "NODI = B" (if hard copy), or "0". The Permittee shall then be considered to be in compliance with the daily maximum concentration limit for TRC.
3. This permit contains a maximum allowable TRC level in the effluent. The Permittee is responsible for determining the minimum TRC level needed in the chlorine contact chamber to comply with E.coli limits. The effluent shall be dechlorinated if necessary to meet the maximum allowable effluent TRC level.
4. The sample collection point for effluent TRC shall be at a point downstream of the chlorine contact chamber (downstream of dechlorination if applicable). The exact location is to be approved by the Director.

D. PLANT CLASSIFICATION

The Permittee shall report to the Director within 30 days of the effective date of this permit, the name, address and operator number of the certified wastewater operator in responsible charge of the facility. Unless specified elsewhere in this permit, this facility shall be classified in accordance with ADEM Admin. Code R. 335-10-1-.03.

E. POLLUTANT SCANS

The Permittee shall sample and analyze for the pollutants listed in 40 CFR 122 Appendix J Table 2. The Permittee shall provide data from a minimum of three samples collected within the four and one half years prior to submitting a permit application. Samples must be representative of the seasonal variation in the discharge from each outfall.

F. STORM WATER REQUIREMENTS

1. Prohibitions
 - a. The Permittee shall not allow the discharge of non-storm water into permitted storm water outfall(s) unless said discharge is already subject to an NPDES permit.
 - b. Pollutants removed in the course of treatment or control shall be disposed in a manner that complies with all applicable Department rules and regulations.

2. Operational and Management Practices

The permittee shall prepare and implement a Storm Water Pollution Prevention (SWPP) Plan within one year of the effective date of this permit.

- a. In the SWPP Plan, the Permittee shall:
 - (1) Assess the treatment plant site by developing and presenting site drainage maps, materials inventory, and best management operational practices. The plan shall also include a description of all spill or leak sources;
 - (2) Describe mechanisms and procedures to prevent the contact of sewage sludge, screenings, raw or partially treated wastewater, or any other waste product or pollutant with storm water discharged from the facility;
 - (3) Provide for daily inspection on workdays of any structures that function to prevent storm water pollution or that remove pollutants from storm water;
 - (4) Provide for daily inspection of the facility in general to ensure that the SWPP Plan is continually implemented and effective;

- (5) Include a Best Management Practices (BMP) Plan that, as a minimum, addresses housekeeping, preventative maintenance, spill prevention and response, and non-storm water discharges;
 - (6) Describe mechanisms and procedures to provide sediment control sufficient to prevent or control storm water pollution storm water by particles resulting from soil or sediment migration from the site due to significant clearing, grading, or excavation activities;
 - (7) Designate by position or name the person or persons responsible for the day to day implementation of the SWPP Plan; and
 - (8) Bear the signature of an individual meeting signatory requirements as defined in ADEM Administrative Code, Rule 335-6-6-.09.
- b. The Director or his designee may notify the permittee at any time that the SWPP Plan is deficient and will require correction of the deficiency. The permittee shall correct any SWPP Plan deficiency identified by the Director or his designee within 30 days of receipt of notification and shall certify to the Department that the correction has been made and implemented.
 - c. Administrative Procedures
 - (1) A copy of the SWPP Plan shall be maintained at the facility and shall be available for inspection by the Department.
 - (2) A log of daily inspections required by Provision IV.F.2.a.(3.) of the permit shall be maintained at the facility and shall be made available for inspection by the Department upon request. The log shall contain records of all inspections performed and each daily entry shall be signed by the person performing the inspection.
 - (3) The Permittee shall provide training for any personnel required to implement the SWPP Plan and shall retain documentation of such training at the facility. Training records for all personnel shall be available for inspection by the Department. Training shall be performed prior to the date implementation is required.
3. Monitoring Requirements
 - a. Storm water discharged through each storm water outfall shall be sampled once per calendar year, using first flush grab samples (FFGS) collected during the first 30 minutes of discharge.
 - b. The total volume of storm water discharged for the event must be monitored, including the date and duration (in hours) and rainfall (in inches) for the storm event(s) sampled. The duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event must be a minimum of 72 hours. This information must be recorded as part of the sampling procedure and records retained in accordance with Provision I.B.5. of this permit. The volume may be measured using flow measurement devices or may be estimated using any method approved in writing by the Department.

G. DISCHARGE INFORMATION ZONE (DIZ) REQUIREMENTS

1. Prior to permit renewal, the Permittee shall perform a background sediment and benthic community characterization study at sampling locations defined in a DIZ Study Plan that has been approved by the Department. The DIZ Study Plan shall be prepared in accordance with the ADEM Administrative Rule 335-8-2-.12
2. The Permittee shall, upon request for a permit renewal perform a sediment and benthic community characterization at the sampling locations approved in the original DIZ Study Plan, unless a modified study plan is approved by the Department. Monitoring shall be conducted during the same season as the original characterization and shall conform to the DIZ study plan, unless otherwise approved by the Department. The DIZ monitoring shall be repeated if the Permittee fails accelerated testing and if it is required to initiate a Toxicity Reduction Evaluation (TRE) pursuant to Part IV.B. of this permit. Monitoring results shall be submitted to the Department along with the application for permit renewal.
3. The Permittee shall not cause biological damage or adverse water quality impacts at the perimeter or outside the boundaries of the original characterization area. If the biological monitoring shows evidence of biological damage or adverse water quality impacts at the perimeter or outside the boundaries of the original characterization area, the Permittee will be in violation of this permit, unless the Permittee can demonstrate that the cause of adverse impacts is due to a source other than the Permittee's discharge. Within 30 days after becoming aware of such violation, the Permittee is to submit a plan for correcting and eliminating the biological damage and adverse water quality impacts caused by the discharge.
4. The Department may suspend or otherwise modify the monitoring requirements of this rule if:
 - a. The Department determines, through review of discharger information and/or its own monitoring efforts, that the discharge is having no significant impact to coastal resources beyond 400 feet of the discharge point; or

- b. The Department determines, through review of the discharger information and/or its own monitoring efforts, that the discharge monitoring is inadequate to detect significant impacts to coastal resources beyond 400 feet of the discharge point; or
- c. The Department determines, based on available biological and chemical data that, due to the nature of the discharge, no significant impacts to coastal resources will occur beyond 400 feet of the discharge point; or
- d. The Department deems that further actions are required to ensure protection of coastal resources.

H. SANITARY SEWER OVERFLOW RESPONSE PLAN

1. SSO Response Plan

Within 120 days of the effective date of this Permit, the Permittee shall develop a Sanitary Sewer Overflow (SSO) Response Plan to establish timely and effective methods for responding to notifiable sanitary sewer overflows. The SSO Response Plan shall address each of the following:

a. General Information:

- (1) Approximate population of City/Town, if applicable
- (2) Approximate number of customers served by the Permittee
- (3) Identification of any subbasins designated by the Permittee, if applicable
- (4) Identification of estimated linear feet of sanitary sewers
- (5) Number of Pump/Lift Stations in the collection system

b. Responsibility Information:

- (1) The title(s) and contact information of key position(s) who will coordinate the SSO response, including information for a backup coordinator in the event that the primary SSO coordinator is unavailable. The SSO coordinator is the person responsible for assessing the SSO and initiating a series of response actions based on the type, severity, and destination of the SSO, except for routine SSOs for which the coordinator may pre-approve written procedures. Routine SSOs are those for which the corrective action procedures are generally consistent.
- (2) The title(s), and contact information of key position(s) who will respond to SSOs, including information for backup responder(s) in the event the primary responder(s) are unavailable (i.e., position(s) who provide notification to the Department, the public, the county health department, and other affected entities such as public water systems; position(s) responsible for organizing crews for response; position(s) responsible for addressing public inquiries)

c. SSO and Surface Water Assessment

- (1) Identification of locations within the collection system at which an SSO is likely to occur (e.g., based upon historical SSOs, lift stations where electricity may be lost, etc.)
- (2) A map of the general collection system area, including identification of surface waterbodies and the location(s) of public drinking water source(s). Mapping of all collection system piping, pump stations, etc. is not required; however, if this information is already available, it should be included.
- (3) Identification of surface waterbodies within the collection system area which are classified as Swimming according to ADEM Admin. Code chap. 335-6-11. References available to assist in this requirement include: <http://www.adem.state.al.us/alEnviroRegLaws/files/Division6Vol1.pdf> and http://gis.adem.alabama.gov/ADEM_Dash/use_class/index.html
- (4) Identification of surface waterbodies within the collection system area which are not classified as Swimming as indicated in paragraph c above, but are known locally as areas where swimming occurs or as areas that are heavily recreated

d. Public Reporting of SSOs

- (1) Contact information for the public to report an SSO to the Permittee, during both normal and outside of normal business hours (e.g., telephone number, website, email address, etc.)
 - (2) Information requested from the person reporting an SSO to assist the Permittee in identifying the SSO (e.g., date, time, location, contact information)
 - (3) Procedures for communication of the SSO report to the appropriate positions for follow-up investigation and response, if necessary
- e. Procedures to immediately notify the Department, the county health department, and other affected entities (such as public water systems) upon becoming aware of notifiable SSOs
- f. Public Notification Methods for SSOs
- (1) A listing of methods that are feasible, as determined by the Permittee, for public notifications (e.g., flyers distributed to nearby residents; signs posted at the location of the SSO, where the SSO enters a water of the state, and/or at a central public location; signs posted at fishing piers, boat launches, parks, swimming waterbodies, etc.; website and/or social media notifications; local print or radio and broadcast media notifications; "opt in" email, text message, or automated phone message notifications)
 - (a) If signage is a feasible method for public notification, procedures for use and removal of signage (e.g., availability and maintenance of signs, appropriate duration of postings)
 - (2) Minimum information to be included in public notifications (e.g., identification that an SSO has occurred, date, duration if known, estimated volume if known, location of the SSO by street address or other appropriate method, initial destination of the SSO)
 - (3) Procedures developed by the Permittee for determining the appropriate public notification method(s) based upon the potential for public exposure to health risks associated with the SSO
- g. Standard Procedures shall be developed by the Permittee and shall include, at a minimum:
- (1) General SSO Response Procedures (e.g., procedures for dispatching staff to assess/correct an SSO; procedures for routine SSO corrective actions such as those for sewer blockages, overflowing manholes, line breakages, pump station power failure, etc.; procedures for disinfection of affected area, if applicable);
 - (2) Procedures for collection and proper disposal of the SSO, if feasible.
 - (3) General procedures for coordinating instream water quality monitoring, including, but not limited to, procedures for mobilizing staff, collecting samples, and typical test methods should the Department or the Permittee determine monitoring is appropriate following an SSO. Identification of a contractor who will collect and analyze the sample(s) may be listed in lieu of the procedures.
 - (4) References to other documents (such as Standard Operating Procedures for SSO Responses) may be acceptable for this section; however, the referenced document shall be identified and shall be reviewed at a frequency of at least that required by the Administrative Procedures Section.
- h. Date of the SSO Response Plan, dates of all modifications and/or reviews, the title and signature of the reviewer(s) for each date and the signature of the responsible official or the appropriate designee.
2. SSO Response Plan Implementation
- Except as otherwise required by this Permit, the Permittee shall fully implement the SSO Response Plan as soon as practicable, but no later than 180 days after the effective date of this Permit.
3. Department Review of the SSO Response Plan
- a. When requested by the Director or his designee, the Permittee shall make the SSO Response Plan available for review by the Department.
 - b. Upon review, the Director or his designee may notify the Permittee that the SSO Response Plan is deficient and require modification of the Plan.

- c. Within thirty days of receipt of notification, or an alternate timeframe as approved by the Department, the Permittee shall modify any SSO Response Plan deficiency identified by the Director or his designee and shall certify to the Department that the modification has been made.
4. SSO Response Plan Administrative Procedures
 - a. The Permittee shall maintain a copy of the SSO Response Plan at the permitted facility or an alternate location approved by the Department in writing and shall make it available for inspection by the Department.
 - b. The Permittee shall make a copy of the SSO Response Plan available to the public upon written request within 30 days of such request. The Permittee may redact information which may present security issues, such as location of public water supplies, identification of specific details of vulnerabilities, employee information, etc.
 - c. The Permittee shall provide training for any personnel required to implement the SSO Response Plan and shall retain at the facility documentation of such training. This documentation shall be available for inspection by the Department. Training shall be provided for existing personnel prior to the date by which implementation of the SSO Response Plan is required and for new personnel as soon as possible. Should significant revisions be made to the SSO Response Plan, training regarding the revisions shall be conducted as soon as possible.
 - d. The Permittee shall complete a review and evaluation of the SSO Response Plan at least once every three years. Documentation of the SSO Response Plan review and evaluation shall be signed and dated by the responsible official or the appropriate designee as part of the SSO Response Plan.

Alabama Department of Environmental Management
adem.alabama.gov

1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

FACT SHEET

APPLICATION FOR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT TO DISCHARGE POLLUTANTS TO WATERS OF THE STATE OF ALABAMA

Date: September 24, 2019

Prepared By: Stephanie Ammons

NPDES Permit No. AL0023086

1. Name and Address of Applicant:

Mobile Area Water and Sewer System
Post Office Box 180249
Mobile, Alabama 36618

2. Name and Address of Facility:

Clifton C. Williams WWTP
1600 Yeend Street
Mobile, Alabama 36603

3. Description of Applicant's Type of Facility and/or Activity Generating the Discharge:

Waste Water Treatment Plant

4. Applicant's Receiving Waters

Receiving Waters
Mobile Bay

Classifications
F&W

For the Outfall latitude and longitude see the permit application.

5. Permit Conditions:

See attached Rationale and Draft Permit.

6. PROCEDURES FOR THE FORMULATION OF FINAL DETERMINATIONS

a. Comment Period

The Alabama Department of Environmental Management proposes to issue this NPDES permit subject to the limitations and special conditions outlined above. This determination is tentative.

Interested persons are invited to submit written comments on the draft permit to the following address:

Russell A. Kelly, Chief
Permits and Services Division
Alabama Department of Environmental Management
1400 Coliseum Blvd



(Mailing Address: Post Office Box 301463; Zip 36130-1463)
Montgomery, Alabama 36110-2059
(334) 271-7714

All comments received prior to the closure of the public notice period (see public notice for date) will be considered in the formulation of the final determination with regard to this permit.

b. Public Hearing

A written request for a public hearing may be filed within the public notice period and must state the nature of the issues proposed to be raised in the hearing. A request for a hearing should be filed with the Department at the following address:

Russell A. Kelly, Chief
Permits and Services Division
Alabama Department of Environmental Management
1400 Coliseum Blvd
(Mailing Address: Post Office Box 301463; Zip 36130-1463)
Montgomery, Alabama 36110-2059
(334) 271-7714

The Director shall hold a public hearing whenever it is found, on the basis of hearing requests, that there exists a significant degree of public interest in a permit application or draft permit. The Director may hold a public hearing whenever such a hearing might clarify one or more issues involved in the permit decision. Public notice of such a hearing will be made in accordance with ADEM Admin. Code r. 335-6-6-.21.

c. Issuance of the Permit

All comments received during the public comment period shall be considered in making the final permit decision. At the time that any final permit decision is issued, the Department shall prepare a response to comments in accordance with ADEM Admin. Code r. 335-6-6-.21. **The permit record, including the response to comments, will be available to the public via the eFile System (<http://app.adem.alabama.gov/eFile/>) or an appointment to review the record may be made by writing the Permits and Services Division at the above address.**

Unless a request for a stay of a permit or permit provision is granted by the Environmental Management Commission, the proposed permit contained in the Director's determination shall be issued and effective, and such issuance will be the final administrative action of the Alabama Department of Environmental Management.

d. Appeal Procedures

As allowed under ADEM Admin. Code chap. 335-2-1, any person aggrieved by the Department's final administrative action may file a request for hearing to contest such action. Such requests should be received by the Environmental Management Commission within thirty days of issuance of the permit. Requests should be filed with the Commission at the following address:

Alabama Environmental Management Commission
1400 Coliseum Blvd
(Mailing Address: Post Office Box 301463; Zip 36130-1463)
Montgomery, Alabama 36110-2059

All requests must be in writing and shall contain the information provided in ADEM Admin. Code r. 335-2-1-.04.

NPDES PERMIT RATIONALE

NPDES Permit No: **AL0023086** Date: February 5, 2020
Revision: April 17, 2020

Permit Applicant: Mobile Area Water and Sewer System
Post Office Box 180249
Mobile, Alabama 36618

Location: Clifton C. Williams WWTP
1600 Yeend Street
Mobile, Alabama 36603

Draft Permit is: Initial Issuance:
Reissuance due to expiration: X
Modification of existing permit:
Revocation and Reissuance:

Basis for Limitations: Water Quality Model: DO, NH₃-N, CBOD₅
Reissuance with no modification: pH, TSS, NH₃-N, CBOD₅, CBOD₅ Percent
Removal, TSS Percent Removal
Instream calculation: 21% (mixing zone), 33% (zone of initial dilution)
Toxicity based: TRC
Secondary Treatment Levels: TSS, CBOD₅, TSS Percent Removal, CBOD₅
Percent Removal
Other (described below): pH, *Enterococci*

Design Flow in Million Gallons per Day: 28 MGD

Major: Yes

Description of Discharge: Outfall Number 001;
The effluent discharges to Mobile Bay which is classified as
Fish and Wildlife.

Outfall Numbers 002 and 003S;
The storm water discharges to Mobile Bay which is classified
as Fish and Wildlife.

Discussion: This is a permit reissuance due to expiration. The permit regulates the discharge of treated domestic and industrial wastewater and storm water runoff to Mobile Bay, a Tier I water body classified as Fish and Wildlife in the Mobile River - Mobile Bay Basin. There are no impairments at the point of discharge; however, there is a nearby segment of Mobile Bay impaired for pathogens. The discharge is also in close proximity to Threemile Creek. There are Pathogen and Organic Enrichment (OE)/Dissolved Oxygen (DO) Total Maximum Daily Loads (TMDLs) established for Threemile Creek. The limits imposed for DO are consistent with the OE/DO TMDL, and limits imposed for *Enterococci* are more stringent than the requirements of the Pathogens TMDL. The proposed permit limitations are described below.

The *Enterococci* limits were determined based on the water-use classification of the receiving stream. The *Enterococci* limits are 35 col/100mL (monthly average) and 158 col/100mL (daily maximum) during the summer season (May through October). The daily maximum *Enterococci* limit is 275 col/100mL during the winter season (November – April).

Limits for Five Day Carbonaceous Biochemical Oxygen Demand (CBOD5), Total Ammonia as Nitrogen (NH3-N), and DO were developed based on a Waste Load Allocation (WLA) model completed by ADEM's Water Quality Branch on July 31, 2019. The monthly average CBOD5 limit is 25.0 mg/L. The monthly average NH3-N limit is 20.0 mg/L. The daily minimum DO limit is 3.0 mg/L.

In addition to NH3-N, the Permittee is required to monitor and report effluent test results for Total Phosphorus (TP), Total Kjeldahl Nitrogen (TKN), and Nitrite plus Nitrate-Nitrogen (NO2+NO3-N). Monitoring for these nutrient-related parameters is imposed so that sufficient information will be available regarding the nutrient contribution from this point source, should it be necessary at some later time to impose nutrient limits on this discharge.

The pH limits were developed in accordance with the water-use classification of the receiving stream. The pH limits are 6.0 s.u. (daily minimum) and 9.0 s.u. (daily maximum).

The Total Residual Chlorine (TRC) limits are based on calculations to ensure that the acute and chronic toxic concentrations of TRC in the receiving stream are not exceeded. The TRC limits are 0.036 mg/L (monthly average) and 0.04 mg/L (daily maximum). In accordance with a letter dated August 11, 1998 from EPA Headquarters and a 1991 memorandum from EPA Region 4's Environmental Services Division (ESD), due to testing and method detection limitations, a TRC measurement below 0.05 mg/L shall be considered below detection for compliance purposes. The TRC limits are provisional. If chlorine disinfection is utilized then the imposed TRC limits will apply. Because the location of discharge is defined as a Coastal Water, TRC limits have been revised to be protective of the saltwater aquatic life criteria. Revision of the TRC limits is not considered backsliding because the revision is consistent with the Department's antidegradation policy, and water quality standards are being attained for this pollutant.

The monthly average Total Suspended Solids (TSS) limit is established at 30.0 mg/L in accordance with 40 CFR 133.102. A minimum percent removal limit of 85.0 percent is imposed for TSS in accordance with 40 CFR 133.102. A minimum percent removal limit of 85.0 percent is imposed for CBOD5 in accordance with 40 CFR 133.102.

The Department completed a reasonable potential analysis (RPA) of the discharge based on a mixing zone analysis of the receiving stream, in-stream background data from monitoring station MO-2 located at the Mobile River, and data provided in the Permittee's application and discharge monitoring reports (DMRs). The RPA indicates whether pollutants in treated effluent have the potential to contribute to excursions of Alabama's in-stream water quality standards. The Department notes that the mercury data provided in the Permittee's application was not analyzed using a sufficient method detection level for the Department to determine the impact on in-stream water quality standards. However, the mercury data reported on the DMRs was analyzed using Low Level Mercury EPA test method 1631E which is a sufficient test method for analysis. Only the mercury data provided with the DMRs was considered in the RPA. Based on the RPA, it was determined that there is not a reasonable potential for in-stream water quality standards to be exceeded. Therefore, mercury monitoring is not being continued in this permit reissuance.

Toxicity testing is required for this discharge because this is a major facility (design capacity greater than 1.0 MGD) treating municipal and industrial wastewater discharging to a water of the State. The species for toxicity testing are being revised from fresh water species to marine species with this permit reissuance. Chronic toxicity testing with *Cyprinodon variegatus* and *Arbacia punctulata* is required in the months of March, June, September, and December at the calculated Instream Waste Concentration (IWC) of 21 percent.

The permittee asserts that there are two storm water discharges at the facility. Outfalls DSN002 and DSN003 as reported in the permit application, will correspond to Outfalls 002S and 003S, respectively, in the permit. Storm water monitoring at Outfalls 002S and 003S is required annually. The previous permit required monitoring of DO in the storm water. Storm water DO

monitoring and reporting requirements are not being imposed with this permit reissuance. Removal of the reporting requirement is not considered backsliding because the revision is consistent with the Department's antidegradation policy, and water quality standards are being attained for this pollutant.

The frequency of monitoring for most parameters is five days per week. Monitoring for NO₂+NO₃-N, TKN, and TP is to be conducted monthly. Percent removals are to be calculated monthly. Flow is to be monitored continuously, seven days per week. Toxicity testing is to be conducted during the months of March, June, September, and December. Storm water monitoring is to be conducted annually.

This permit imposes Discharge Information Zone (DIZ) requirements. DIZ requirements are described more fully in Part IV.G of the permit.

This permit imposes Sanitary Sewer Overflow Response Plan (SSORP) requirements. SSORP requirements are described more fully in Part IV.H of the permit.

ADEM Administrative Rule 335-6-10-.12 requires applicants for new or expanded discharges to Tier II waters demonstrate that the proposed discharge is necessary for important economic or social development in the area in which the waters are located. The application submitted by the facility is not for a new or expanded discharge to a Tier II stream, so the applicant is not required to demonstrate that the discharge is necessary for economic and social development.

Revision: The Flow sample type for Outfalls 002S and 003S, located in Part I of this permit, has been changed from calculated to calculated or measured.

Prepared by: Stephanie Ammons

Clifton C. Williams WWTP
Permit Number AL0023086
Total Recoverable Mercury DMR data

<u>Monitoring Period</u>	<u>Monthly Average (ug/L)</u>	<u>Maximum Daily (ug/L)</u>
July 2015 - Sept 2015	0.0016	0.0016
Oct 2015 - Dec 2015	0.003	0.003
Jan 2016 - March 2016	0.011	0.011
April 2016 - June 2016	0.004	0.004
July 2016 - Sept 2016	0.005	0.005
Oct 2016 - Dec 2016	0.005	0.005
Jan 2017 - March 2017	0.008	0.008
April 2017 - June 2017	0.003	0.003
July 2017 - Sept 2017	0.00675	0.0068
Oct 2017 - Dec 2017	0.0026	0.0026
Jan 2018 - March 2018	0	0
April 2018 - June 2018	0.004	0.004
July 2018 - Sept 2018	0.0071	0.0071
Oct 2018 - Dec 2018	0.0038	0.0038
Jan 2019 - March 2019	0.0023	0.0023
April 2019 - June 2019	0.0094	0.0094
July 2019 - Sept 2019	0.0089	0.0089
Oct 2019 - Dec 2019	0.0018	0.0018
	0.004847 ug/L	0.011 ug/L

Instream Waste Concentration (IWC) at the Zone of Dilution (ZID) = 0.324
IWC at the Mixing Zone (MZ) = 0.203

Total Residual Chlorine (TRC) Marine Acute Water Quality Criteria = 0.013 mg/L
TRC Marine Chronic Water Quality Criteria = 0.0075 mg/L

Proposed Daily Maximum permit limitation based on Marine Acute Water Criteria:

Acute Water Quality Criteria = $\frac{0.013 \mu\text{g/L}}{0.324} = 0.04 \text{ mg/L}$
ZID IWC

Proposed Monthly Average permit limitation based on Marine Chronic Water Criteria:

Chronic Water Quality Criteria = $\frac{0.0075 \mu\text{g/L}}{0.203} = 0.036 \text{ mg/L}$
MZ IWC

The permit imposes a daily maximum TRC limit of 0.04 mg/L and a monthly average TRC limit of 0.036 mg/L.

Total Ammonia as Nitrogen (NH₃-N) Marine Chronic Water Quality Criteria = 4.7 mg/L

Proposed Monthly Average NH₃-N limitation based on 7/31/2019 WLA model: 20.0 mg/L

Proposed Monthly Average toxicity based NH₃-N limitation: 23.15 mg/L

Chronic Water Quality Criteria = $\frac{4.7 \text{ mg/L}}{0.203} = 23.15 \text{ mg/L}$
MZ IWC

The permit imposes the more stringent NH₃-N monthly average limit of 20.0 mg/L.

Waste Load Allocation Summary

Page 1

REQUEST INFORMATION

Request Number: 3314

From:	Stephanie Ammons	In Branch/Section	Municipal		
Date Submitted	2/23/2016	Date Required	3/24/2016	FUND Code	605
Date Permit application received by NPDES program		8/26/2014			

Receiving Waterbody	Mobile Bay	
Previous Stream Name	Mobile Bay	
Facility Name	Clifton C. Williams WWTP	(Name of Discharger-WQ will use to file)
Previous Discharger Name		

River Basin	Mobile River - Mobile Ba	Outfall Latitude	30.658400	(decimal degrees)
*County	Mobile	Outfall Longitude	-88.032898	(decimal degrees)

Permit Number	AL0023086	Permit Type	Permit Reissuance
Permit Status		Active	
Type of Discharger		MUNICIPAL	

Do other discharges exist that may impact the model? Yes No

If yes, impacting dischargers names.		Impacting dischargers permit numbers.	
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Existing Discharge Design Flow	28	MGD	Note: The flow rates given should be those requested for modeling.
Proposed Discharge Design Flow	28	MGD	

Comments included Yes No

Information Verified By	JBR	Year File Was Created	2019
Response ID Number		1538	

Lat/Long Method: Arcview

12 Digit HUC Code	031602050300
Use Classification	F&W
Site Visit Completed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Waterbody Impaired?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Antidegradation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Waterbody Tier Level	Tier I
Use Support Category	1

Date of Site Visit	3/30/2016
Date of WLA Response	7/31/2019
Approved TMDL?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Approval Date of TMDL	

Waste Load Allocation Information

Modeled Reach Length	Miles	Date of Allocation	5/7/2019
Name of Model Used	WASP	Allocation Type	Annual
Model Completed by	JBR	Type of Model Used	Calibrated
Allocation Developed by	Water Quality Branch		

Waste Load Allocation Summary

Annual Effluent Limits	Conventional Parameters				Other Parameters			
	Qw	MGD	Qw	MGD	Qw	MGD	Qw	MGD
Season			Season		Season		Season	
From			From		From		From	
Through			Through		Through		Through	
CBOD5	25	mg/L	CBOD5		CBOD5		TP	
NH3-N	20	mg/L	NH3-N		NH3-N		TN	
TKN			TKN		TKN		TSS	
D.O.	3	mg/L	D.O.		D.O.			

"Monitor Only" Parameters for Effluent:			
Parameter	Frequency	Parameter	Frequency
TP	Monthly		
NO2+NO3-N	Monthly		
TKN	Monthly		

Water Quality Characteristics Immediately Upstream of Discharge					
Parameter	Summer		Winter		
CBODu		mg/l		mg/l	
NH3-N		mg/l		mg/l	
Temperature		°C		°C	
pH		su		su	

Hydrology at Discharge Location

Drainage Area Qualifier	Drainage Area	43662	sq mi	Method Used to Calculate
Estimated	Stream 7Q10		cfs	
	Stream 1Q10		cfs	
	Stream 7Q2		cfs	
	Annual Average		cfs	

Comments and/or Notations

Mixing Zone Analysis Summary

REQUEST INFORMATION

request number: 3215

From: (Responsible Engineer) Donald Brown In Branch/Section Municipal
Date Submitted 5/20/2015 Date Required 6/19/2015 FUND Code 605
Date Permit application received by NPDES program 8/29/2014

Receiving Waterbody Mobile Bay

Previous Stream Name Mobile Bay

Facility Name Clifton C. Williams WWTP (Name of Discharger-WQ will use to file)

Previous Discharger Name

River Basin Mobile Bay Outfall Latitude 30.658400 (decimal degrees)

*County Mobile Outfall Longitude -88.032898 (decimal degrees)

Permit Number AL0023086 Permit Type Permit Reissuance

Permit Status Active

Type of Discharger MUNICIPAL

Do other discharges exist that may impact the model? Yes No

If yes, impacting dischargers names.

Impacting dischargers permit numbers.

Existing Discharge Design Flow 28 MGD Proposed Discharge Design Flow 28 MGD Note: The flow rates given should be those requested for modeling.

Seasonal limits requested? Yes No

If not seasonal, only the summer sections will be used

Comments included
 Yes No

Information Verified By JBR

Year File Was Started 1994

12 Digit HUC Code 031602050300

Date of MZ Response 8/13/2015

Use Classification F&W

Site Visit Completed? Yes No

Date of Site Visit 7/13/2015

Hydrology

Method Used to Calculate

<u>Drainage Area</u>		<u>sq mi</u>
<u>Stream 7Q10</u>	<u>0</u>	<u>cfs</u>
<u>Stream 1Q10</u>	<u>0</u>	<u>cfs</u>
<u>Stream 7Q2</u>	<u>0</u>	<u>cfs</u>
<u>Annual Average</u>	<u>0</u>	<u>cfs</u>

Date of MZ Analysis 7/9/2015

Model Completed by JBR

Pollutant Category
Whole Effluent Toxicity (WET) Thermal Pathogens

WET Parameters

Summer

Acute

Ambient Streamflow cfs
 ZID Length Meters
 ZID IWC %

Chronic

Ambient Streamflow 0 cfs
 Mixing Zone Length 121.92 Meters
 Mixing Zone IWC 20.3 %

Winter

Acute

Ambient Streamflow cfs
 ZID Length Meters
 ZID IWC %

Chronic

Ambient Streamflow cfs
 Mixing Zone Length 121.92 Meters
 Mixing Zone IWC %

Thermal Parameters

Summer

Ambient Streamflow cfs
 Mixing Zone Length Meters
 Max. Effluent Temp °C

Winter

Ambient Streamflow cfs
 Mixing Zone Length Meters
 Max. Effluent Temp °C

Pathogen Parameters

Summer

Ambient Streamflow cfs
 ZID Length Meters
 Max. Effluent Fecal Conc Cols/100 mls
 Max. Effluent E. coli Conc Cols/100 mls
 Monthly Average Effluent E. coli Conc Cols/100 mls
 Max. Effluent Enterococci Conc (for coastal waters) Cols/100 mls

Winter

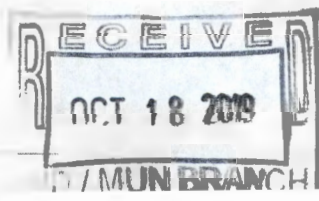
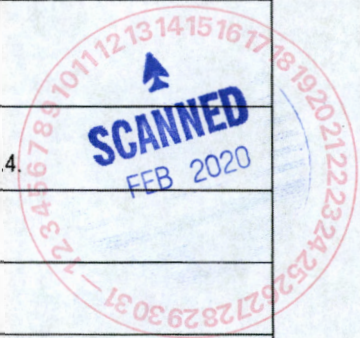
Ambient Streamflow cfs
 ZID Length Meters
 Max. Effluent Fecal Conc Cols/100 mls
 Max. Effluent E. coli Conc Cols/100 mls
 Monthly Average Effluent E. coli Conc Cols/100 mls
 Max. Effluent Enterococci Conc (for coastal waters) Cols/100 mls

Comments and/or Notations A site visit was attempted on 7/13/15 and was impossible to complete due to the outfall being located under the Alabama State Docks on McDuffie Island.

Form 2A NPDES		U.S. Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater NEW AND EXISTING PUBLICLY OWNED TREATMENT WORKS
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SECTION 1. BASIC APPLICATION INFORMATION FOR ALL APPLICANTS (40 CFR 122.21(j)(1) and (9))

Facility Information	1.1	Facility name Clifton C. Williams WWTP									
		Mailing address (street or P.O. box) PO Box 180249									
		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">City or town Mobile</td> <td style="width:20%;">State AL</td> <td style="width:30%;">ZIP code 36618</td> </tr> </table>	City or town Mobile	State AL	ZIP code 36618						
	City or town Mobile	State AL	ZIP code 36618								
		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;">Contact name (first and last) David Tillman</td> <td style="width:20%;">Title Chief Treatment Plant Operator</td> <td style="width:20%;">Phone number (251) 378-3505</td> <td style="width:30%;">Email address DTILLMAN@mawss.com</td> </tr> </table>	Contact name (first and last) David Tillman	Title Chief Treatment Plant Operator	Phone number (251) 378-3505	Email address DTILLMAN@mawss.com					
	Contact name (first and last) David Tillman	Title Chief Treatment Plant Operator	Phone number (251) 378-3505	Email address DTILLMAN@mawss.com							
	Location address (street, route number, or other specific identifier) <input type="checkbox"/> Same as mailing address 1600 Yeend Street										
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">City or town Mobile</td> <td style="width:20%;">State AL</td> <td style="width:30%;">ZIP code 36603</td> </tr> </table>	City or town Mobile	State AL	ZIP code 36603							
City or town Mobile	State AL	ZIP code 36603									
	1.2	Is this application for a facility that has yet to commence discharge? <input type="checkbox"/> Yes → See instructions on data submission requirements for new dischargers. <input checked="" type="checkbox"/> No									
Applicant Information	1.3	Is applicant different from entity listed under Item 1.1 above? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 1.4.									
		Applicant name Mobile Area Water and Sewer System									
		Applicant address (street or P.O. box) PO Box 180249									
		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">City or town Mobile</td> <td style="width:20%;">State AL</td> <td style="width:30%;">ZIP code 36618</td> </tr> </table>	City or town Mobile	State AL	ZIP code 36618						
	City or town Mobile	State AL	ZIP code 36618								
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;">Contact name (first and last) Douglas L. Cote, P.E.</td> <td style="width:20%;">Title Assistant Director-Operations</td> <td style="width:20%;">Phone number (251) 694-3187</td> <td style="width:30%;">Email address DCOTE@mawss.com</td> </tr> </table>	Contact name (first and last) Douglas L. Cote, P.E.	Title Assistant Director-Operations	Phone number (251) 694-3187	Email address DCOTE@mawss.com						
Contact name (first and last) Douglas L. Cote, P.E.	Title Assistant Director-Operations	Phone number (251) 694-3187	Email address DCOTE@mawss.com								
	1.4	Is the applicant the facility's owner, operator, or both? (Check only one response.) <input type="checkbox"/> Owner <input type="checkbox"/> Operator <input checked="" type="checkbox"/> Both									
	1.5	To which entity should the NPDES permitting authority send correspondence? (Check only one response.) <input checked="" type="checkbox"/> Facility <input type="checkbox"/> Applicant <input type="checkbox"/> Facility and applicant (they are one and the same)									
Existing Environmental Permits	1.6	Indicate below any existing environmental permits. (Check all that apply and print or type the corresponding permit number for each.)									
		Existing Environmental Permits									
		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:33%;"><input checked="" type="checkbox"/> NPDES (discharges to surface water) AL0023086</td> <td style="width:33%;"><input type="checkbox"/> RCRA (hazardous waste)</td> <td style="width:33%;"><input type="checkbox"/> UIC (underground injection control)</td> </tr> <tr> <td><input type="checkbox"/> PSD (air emissions)</td> <td><input type="checkbox"/> Nonattainment program (CAA)</td> <td><input type="checkbox"/> NESHAPs (CAA)</td> </tr> <tr> <td><input type="checkbox"/> Ocean dumping (MPRSA)</td> <td><input type="checkbox"/> Dredge or fill (CWA Section 404)</td> <td><input type="checkbox"/> Other (specify)</td> </tr> </table>	<input checked="" type="checkbox"/> NPDES (discharges to surface water) AL0023086	<input type="checkbox"/> RCRA (hazardous waste)	<input type="checkbox"/> UIC (underground injection control)	<input type="checkbox"/> PSD (air emissions)	<input type="checkbox"/> Nonattainment program (CAA)	<input type="checkbox"/> NESHAPs (CAA)	<input type="checkbox"/> Ocean dumping (MPRSA)	<input type="checkbox"/> Dredge or fill (CWA Section 404)	<input type="checkbox"/> Other (specify)
	<input checked="" type="checkbox"/> NPDES (discharges to surface water) AL0023086	<input type="checkbox"/> RCRA (hazardous waste)	<input type="checkbox"/> UIC (underground injection control)								
<input type="checkbox"/> PSD (air emissions)	<input type="checkbox"/> Nonattainment program (CAA)	<input type="checkbox"/> NESHAPs (CAA)									
<input type="checkbox"/> Ocean dumping (MPRSA)	<input type="checkbox"/> Dredge or fill (CWA Section 404)	<input type="checkbox"/> Other (specify)									



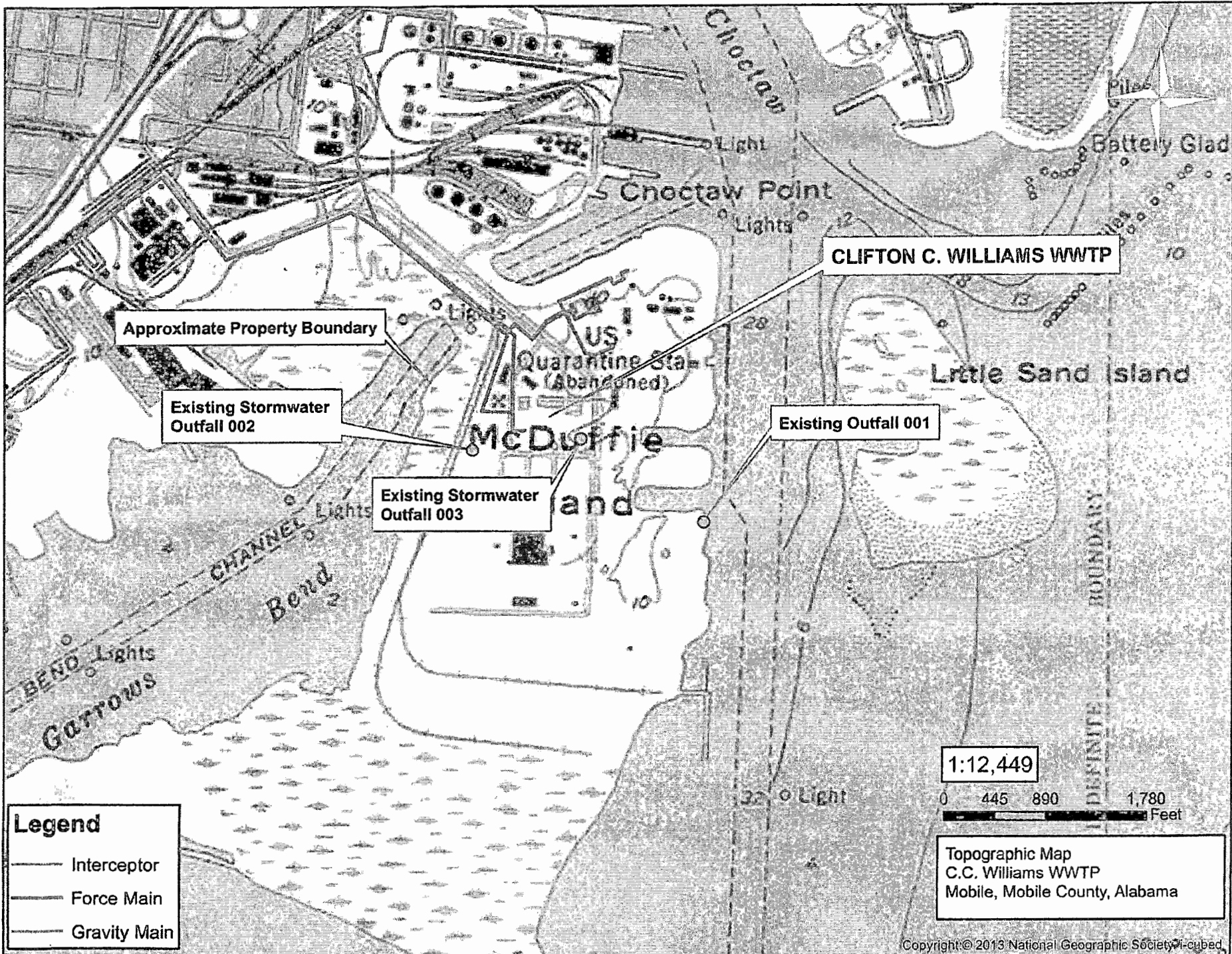
EPA Identification Number	NPDES Permit Number AL0023086	Facility Name Clifton C. Williams WWTP
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Form Approved 03/05/19
OMB No. 2040-0004

Collection System and Population Served	1.7	Provide the collection system information requested below for the treatment works.			
	Municipality Served	Population Served	Collection System Type (indicate percentage)		Ownership Status
	Mobile	265,440	<u>100</u> % separate sanitary sewer <input type="checkbox"/> % combined storm and sanitary sewer <input type="checkbox"/> Unknown	<input checked="" type="checkbox"/> Own <input type="checkbox"/> Own <input type="checkbox"/> Own	<input type="checkbox"/> Maintain <input type="checkbox"/> Maintain <input type="checkbox"/> Maintain
			<input type="checkbox"/> % separate sanitary sewer. <input type="checkbox"/> % combined storm and sanitary sewer <input type="checkbox"/> Unknown	<input type="checkbox"/> Own <input type="checkbox"/> Own <input type="checkbox"/> Own	<input type="checkbox"/> Maintain <input type="checkbox"/> Maintain <input type="checkbox"/> Maintain
			<input type="checkbox"/> % separate sanitary sewer <input type="checkbox"/> % combined storm and sanitary sewer <input type="checkbox"/> Unknown	<input type="checkbox"/> Own <input type="checkbox"/> Own <input type="checkbox"/> Own	<input type="checkbox"/> Maintain <input type="checkbox"/> Maintain <input type="checkbox"/> Maintain
			<input type="checkbox"/> % separate sanitary sewer <input type="checkbox"/> % combined storm and sanitary sewer <input type="checkbox"/> Unknown	<input type="checkbox"/> Own <input type="checkbox"/> Own <input type="checkbox"/> Own	<input type="checkbox"/> Maintain <input type="checkbox"/> Maintain <input type="checkbox"/> Maintain
	Total Population Served	265,440			
	Total percentage of each type of sewer line (in miles)		Separate Sanitary Sewer System	Combined Storm and Sanitary Sewer	
		100 %			
Indian Country	1.8	Is the treatment works located in Indian Country? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
	1.9	Does the facility discharge to a receiving water that flows through Indian Country? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Design and Actual Flow Rates	1.10	Provide design and actual flow rates in the designated spaces.			Design Flow Rate
					28 mgd
		Annual Average Flow Rates (Actual)			
		Two Years Ago	Last Year	This Year	
		26.5 mgd	23.21 mgd	22.86 mgd	
		Maximum Daily Flow Rates (Actual)			
Two Years Ago	Last Year	This Year			
74.10 mgd	65.44 mgd	58 mgd			
Discharge Points by Type	1.11	Provide the total number of effluent discharge points to waters of the United States by type.			
		Total Number of Effluent Discharge Points by Type			
		Treated Effluent	Untreated Effluent	Combined Sewer Overflows	Bypasses
	1	N/A	N/A	N/A	N/A

Outfalls and Other Discharge or Disposal Methods	Outfalls Other Than to Waters of the United States			
	1.12	Does the POTW discharge wastewater to basins, ponds, or other surface impoundments that do not have outlets for discharge to waters of the United States? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 1.14.		
	1.13	Provide the location of each surface impoundment and associated discharge information in the table below.		
		Surface Impoundment Location and Discharge Data		
		Location	Average Daily Volume Discharged to Surface Impoundment	
		Continuous or Intermittent (check one)		
		N/A	gpd	<input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent
			gpd	<input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent
			gpd	<input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent
	1.14	Is wastewater applied to land? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 1.16.		
	1.15	Provide the land application site and discharge data requested below.		
		Land Application Site and Discharge Data		
		Location	Size	Average Daily Volume Applied
Continuous or Intermittent (check one)				
	N/A	acres	gpd	<input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent
		acres	gpd	<input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent
		acres	gpd	<input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent
1.16	Is effluent transported to another facility for treatment prior to discharge? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 1.21.			
1.17	Describe the means by which the effluent is transported (e.g., tank truck, pipe). N/A			
1.18	Is the effluent transported by a party other than the applicant? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 1.20.			
1.19	Provide information on the transporter below.			
	Transporter Data			
	Entity name N/A	Mailing address (street or P.O. box)		
	City or town	State ZIP code		
	Contact name (first and last)	Title		
	Phone number	Email address		

Outfalls and Other Discharge or Disposal Methods Continued	1.20	In the table below, indicate the name, address, contact information, NPDES number, and average daily flow rate of the receiving facility.			
	Receiving Facility Data				
	Facility name N/A		Mailing address (street or P.O. box)		
	City or town		State	ZIP code	
	Contact name (first and last)		Title		
	Phone number		Email address		
	NPDES number of receiving facility (if any) <input type="checkbox"/> None		Average daily flow rate mgd		
	1.21	Is the wastewater disposed of in a manner other than those already mentioned in Items 1.14 through 1.21 that do not have outlets to waters of the United States (e.g., underground percolation, underground injection)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 1.23.			
	1.22	Provide information in the table below on these other disposal methods.			
Information on Other Disposal Methods					
		Disposal Method Description	Location of Disposal Site	Size of Disposal Site	Annual Average Daily Discharge Volume
		N/A		acres	gpd
				acres	gpd
				acres	gpd
					gpd
Variance Requests	1.23	Do you intend to request or renew one or more of the variances authorized at 40 CFR 122.21(n)? (Check all that apply. Consult with your NPDES permitting authority to determine what information needs to be submitted and when.) <input type="checkbox"/> Discharges into marine waters (CWA Section 301(h)) <input type="checkbox"/> Water quality related effluent limitation (CWA Section 302(b)(2)) <input checked="" type="checkbox"/> Not applicable			
	1.24	Are any operational or maintenance aspects (related to wastewater treatment and effluent quality) of the treatment works the responsibility of a contractor? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 2.			
Contractor Information	1.25	Provide location and contact information for each contractor in addition to a description of the contractor's operational and maintenance responsibilities.			
	Contractor Information				
			Contractor 1	Contractor 2	Contractor 3
	Contractor name (company name)	N/A			
	Mailing address (street or P.O. box)				
	City, state, and ZIP code				
	Contact name (first and last)				
	Phone number				
	Email address				
Operational and maintenance responsibilities of contractor					



Approximate Property Boundary

Existing Stormwater Outfall 002

Existing Stormwater Outfall 003

Existing Outfall 001

CLIFTON C. WILLIAMS WWTP

- Legend**
- Interceptor
 - Force Main
 - Gravity Main

1:12,449

0 445 890 1,780 Feet

Topographic Map
 C.C. Williams WWTP
 Mobile, Mobile County, Alabama

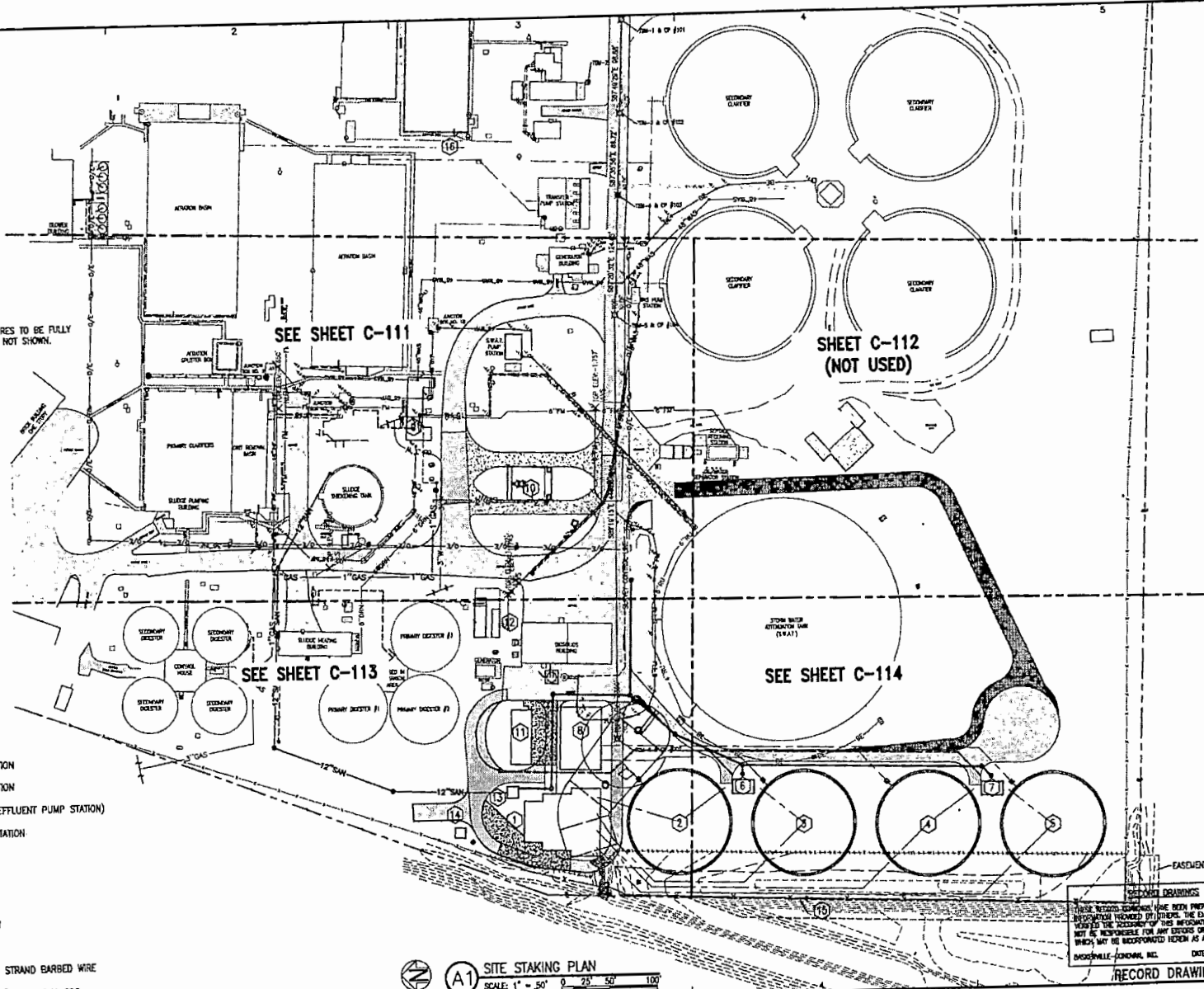
KA1119 MAWSS 111503.05 HERRICK ESDC\UNICE\MAWSS Record CAD Drawings\Record Drawings\C-110-114.dwg, Jul 11, 2019 - 11:47:46AM, 10x11in

NOTES:

1. C-110 THROUGH C-134 - STRUCTURES TO BE FULLY DEMOLISHED UNDER THE BASE GO ARE NOT SHOWN.

KEY PLAN

- 1 HEADWORKS
- 2 PRIMARY CLARIFIER #1
- 3 PRIMARY CLARIFIER #2
- 4 PRIMARY CLARIFIER #3
- 5 PRIMARY CLARIFIER #4
- 6 SLUDGE & SCUM PUMP STATION
- 7 SLUDGE & SCUM PUMP STATION
- 8 PCEPS (PRIMARY CLARIFIER EFFLUENT PUMP STATION)
- 9 FLOW CONTROL DIVERSION STATION
- 10 SEPTIAGE RECEIVING STATION
- 11 MOTOR CONTROL CENTER
- 12 GENERATOR/FUEL TANK
- 13 PLANT SEWER PUMP STATION
- 14 INFLUENT FLOW METER
- 15 6" CHAIN LINK FENCE W/ 3 STRAND BARBED WIRE
- 16 REPLACEMENT REUSE PUMP #2 - SEE M-500



(A1) **SITE STAKING PLAN**
 SCALE: 1" = 50' 0" 25' 50' 100'

THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. THE ENGINEER HAS NOT VERIFIED THE ACCURACY OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH MAY BE INCORPORATED HEREIN AS A RESULT.
 ENGINEERVILLE - SCHWAB, INC. DATE: JULY 2019

RECORD DRAWING

MAWSS
CC WILLIAMS WWTP
HEADWORKS AND
PRIMARY CLARIFIER
REPLACEMENT

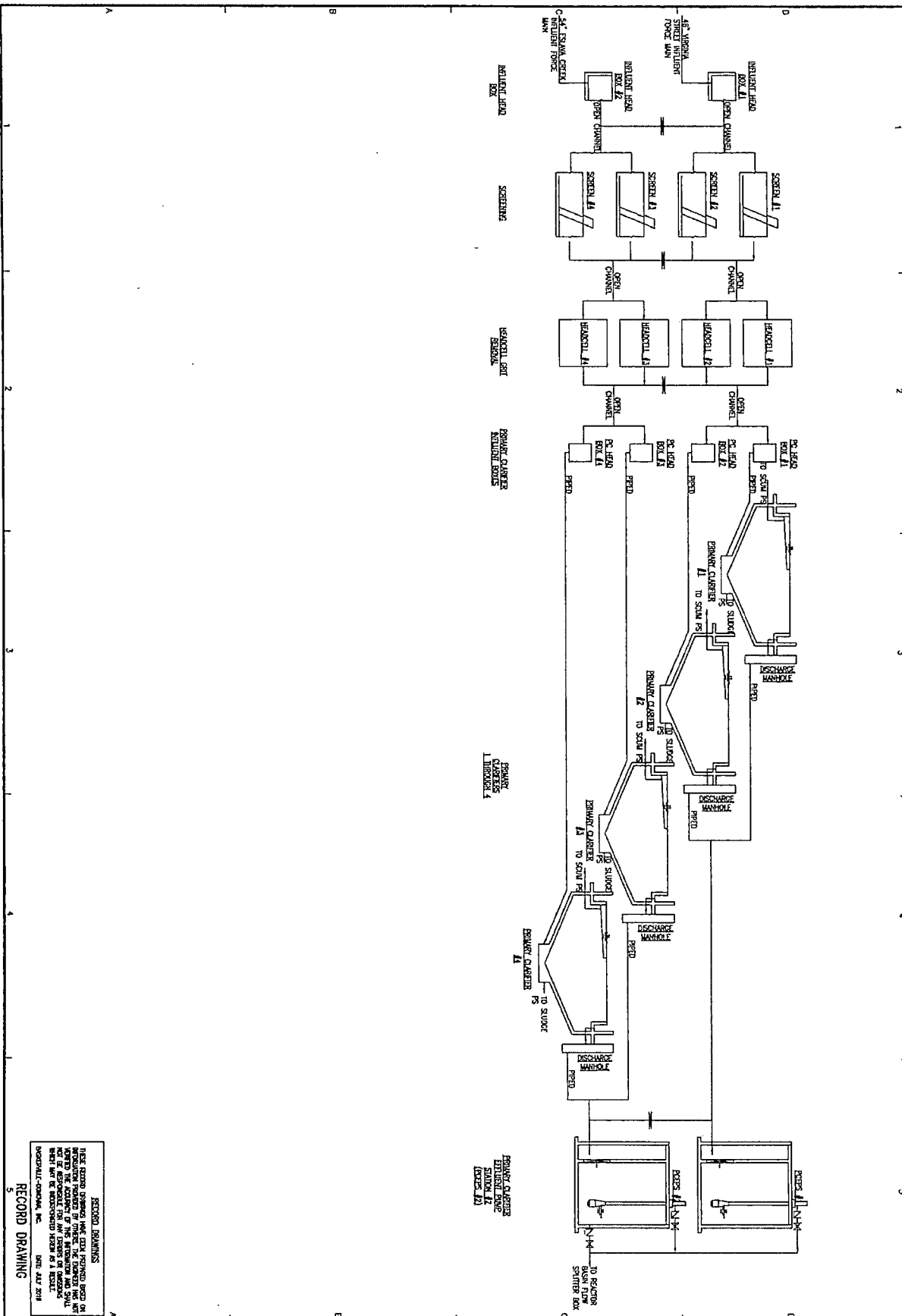
PROJECT NO.	DATE	APPROV.	REVISION/ACTION	TASKNO.
111503.01				
ISSUED FOR PERMITS				
ISSUED FOR BIDDING				
ISSUED FOR CONSTRUCTION				

DATE: DECEMBER 2015

C-110

BASKERVILLE-DONOVAN, INC.
 Innovative Infrastructure Solutions
 4415 MARKET PLACE, SUITE 100
 BASKERVILLE, MISSOURI 64005
 Phone: (816) 234-1100 Fax: (816) 234-1101
 www.baskerville-donovan.com

MARK A. GUN, P.E.
 A. State Engineer (11/2008)



RECORD DRAWINGS
 THESE RECORD DRAWINGS HAVE BEEN PREPARED BASED ON INFORMATION PROVIDED BY OTHERS. THE ENGINEER HAS NOT MADE AN INDEPENDENT VISUAL SURVEY OF THE PROJECT WHICH MAY BE INCORPORATED HEREIN AS A RESULT.
 BASKERVILLE-DONOVAN, INC. DATE: JULY 2019

5 RECORD DRAWING

PROJECT NO:	NO.	DATE	APPR.	REVISION/ACTION TAKEN
111503.01				
DESIGNED BY:				
DRAWN BY:				
CHECKED BY:				
PREP. MGR:	GAC			
DATE:	AUGUST 2013			RELEASED FOR CONSTRUCTION BY EOW DATE 12/17/2015

MAWSS
 CC WILLIAMS WWP
 HEADWORKS AND
 PRIMARY CLARIFIER
 REPLACEMENT

6590 A. CARL, P.E.
 AL Reg. Engineer #17890

BASKERVILLE-DONOVAN, INC.
 Innovative Infrastructure Solutions

440 YK MAIN ST. PENSACOLA, FL 32502 905-323-6811
 1204 SHERWOOD CIRCLE GAITHERSBURG, MD 20878

Professional - Professional City/County - License/Registration - Jurisdiction - Street - County - Tampa

This drawing is the property of BASKERVILLE-DONOVAN, INC. and is not to be reproduced in whole or in part. It is not to be used on any other project and is to be returned upon request.

EPA Identification Number	NPDES Permit Number AL0023086	Facility Name Clifton C. Williams WWTP
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Form Approved 03/05/19
OMB No. 2040-0004

SECTION 2. ADDITIONAL INFORMATION (40 CFR 122.21(j)(1) and (2))

Design Flow	Outfalls to Waters of the United States						
	2.1	Does the treatment works have a design flow greater than or equal to 0.1 mgd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 3.					
Inflow and Infiltration	2.2	Provide the treatment works' current average daily volume of inflow and infiltration.			Average Daily Volume of Inflow and Infiltration 9,513,000 gpd		
	Indicate the steps the facility is taking to minimize inflow and infiltration. MAWSS has ongoing efforts to locate I/I and rehabilitate these areas of the sewer as funding becomes available.						
Topographic Map	2.3	Have you attached a topographic map to this application that contains all the required information? (See instructions for specific requirements.) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
Flow Diagram	2.4	Have you attached a process flow diagram or schematic to this application that contains all the required information? (See instructions for specific requirements.) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
Scheduled Improvements and Schedules of Implementation	2.5	Are improvements to the facility scheduled? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 3.					
	Briefly list and describe the scheduled improvements.						
	1. New dewatering facility.						
	2. New chlorine building.						
	3.						
	4.						
Scheduled Improvements and Schedules of Implementation	2.6	Provide scheduled or actual dates of completion for improvements.					
	Scheduled or Actual Dates of Completion for Improvements						
		Scheduled Improvement (from above)	Affected Outfalls (list outfall number)	Begin Construction (MM/DD/YYYY)	End Construction (MM/DD/YYYY)	Begin Discharge (MM/DD/YYYY)	Attainment of Operational Level (MM/DD/YYYY)
		1.	0011	04/01/2020	01/01/2022	02/01/2022	03/01/2022
		2.	0011	04/01/2020	01/01/2022	02/01/2022	03/01/2022
		3.					
	4.						
Scheduled Improvements and Schedules of Implementation	2.7	Have appropriate permits/clearances concerning other federal/state requirements been obtained? Briefly explain your response. <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> None required or applicable					
	Explanation: Both of the scheduled improvements are still in the design phase.						

EPA Identification Number	NPDES Permit Number AL0023086	Facility Name Clifton C. Williams WWTP
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Form Approved 03/05/19
OMB No. 2040-0004

SECTION 3. INFORMATION ON EFFLUENT DISCHARGES (40 CFR 122.21(j)(3) to (5))

Description of Outfalls	3.1	Provide the following information for each outfall. (Attach additional sheets if you have more than three outfalls.)		
		Outfall Number <u>0011</u>	Outfall Number _____	Outfall Number _____
	State	Alabama		
	County	Mobile		
	City or town	Mobile		
	Distance from shore	0 ft.	ft.	ft.
	Depth below surface	6 ft.	ft.	ft.
	Average daily flow rate	26.85 mgd	mgd	mgd
	Latitude	30° 39' 30.2" N	° ' "	° ' "
	Longitude	88° 01' 58.4" W	° ' "	° ' "
Seasonal or Periodic Discharge Data	3.2	Do any of the outfalls described under Item 3.1 have seasonal or periodic discharges? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 3.4.		
	3.3	If so, provide the following information for each applicable outfall.		
		Outfall Number _____	Outfall Number _____	Outfall Number _____
	Number of times per year discharge occurs	N/A		
	Average flow of each discharge	mgd	mgd	mgd
Diffuser Type	3.4	Are any of the outfalls listed under Item 3.1 equipped with a diffuser? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 3.6.		
	3.5	Briefly describe the diffuser type at each applicable outfall.		
		Outfall Number _____	Outfall Number _____	Outfall Number _____
		N/A		
Waters of the U.S.	3.6	Does the treatment works discharge or plan to discharge wastewater to waters of the United States from one or more discharge points? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Section 6.		

Receiving Water Description	3.7	Provide the receiving water and related information (if known) for each outfall.		
		Outfall Number 0011	Outfall Number _____	Outfall Number _____
	Receiving water name	Mobile Bay		
	Name of watershed, river, or stream system	Mobile Bay		
	U.S. Soil Conservation Service 14-digit watershed code	Unknown		
	Name of state management/river basin	Mobile Bay		
	U.S. Geological Survey 8-digit hydrologic cataloging unit code	03160205		
	Critical low flow (acute)	3000 cfs	cfs	cfs
	Critical low flow (chronic)	4000 cfs	cfs	cfs
	Total hardness at critical low flow	Unknown mg/L of CaCO ₃	mg/L of CaCO ₃	mg/L of CaCO ₃
Treatment Description	3.8	Provide the following information describing the treatment provided for discharges from each outfall.		
		Outfall Number 0011	Outfall Number _____	Outfall Number _____
	Highest Level of Treatment (check all that apply per outfall)	<input checked="" type="checkbox"/> Primary <input type="checkbox"/> Equivalent to secondary <input checked="" type="checkbox"/> Secondary <input type="checkbox"/> Advanced <input type="checkbox"/> Other (specify) _____	<input type="checkbox"/> Primary <input type="checkbox"/> Equivalent to secondary <input type="checkbox"/> Secondary <input type="checkbox"/> Advanced <input type="checkbox"/> Other (specify) _____	<input type="checkbox"/> Primary <input type="checkbox"/> Equivalent to secondary <input type="checkbox"/> Secondary <input type="checkbox"/> Advanced <input type="checkbox"/> Other (specify) _____
	Design Removal Rates by Outfall	0011		
	BOD ₅ or CBOD ₅	85 %	%	%
	TSS	85 %	%	%
	Phosphorus	<input checked="" type="checkbox"/> Not applicable %	<input type="checkbox"/> Not applicable %	<input type="checkbox"/> Not applicable %
	Nitrogen	<input checked="" type="checkbox"/> Not applicable %	<input type="checkbox"/> Not applicable %	<input type="checkbox"/> Not applicable %
Other (specify) _____	<input checked="" type="checkbox"/> Not applicable %	<input type="checkbox"/> Not applicable %	<input type="checkbox"/> Not applicable %	

Treatment Description Continued	3.9	Describe the type of disinfection used for the effluent from each outfall in the table below. If disinfection varies by season, describe below. Chlorination	Outfall Number <u>0011</u>	Outfall Number _____	Outfall Number _____
		Disinfection type	Chlorination		
		Seasons used	N/A		
		Dechlorination used?	<input type="checkbox"/> Not applicable <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Not applicable <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Not applicable <input type="checkbox"/> Yes <input type="checkbox"/> No
Effluent Testing Data	3.10	Have you completed monitoring for all Table A parameters and attached the results to the application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
	3.11	Have you conducted any WET tests during the 4.5 years prior to the date of the application on any of the facility's discharges or on any receiving water near the discharge points? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 3.13.			
	3.12	Indicate the number of acute and chronic WET tests conducted since the last permit reissuance of the facility's discharges by outfall number or of the receiving water near the discharge points.	Outfall Number <u>0011</u>	Outfall Number _____	Outfall Number _____
			Acute	Chronic	Acute
				5	
	3.13	Does the treatment works have a design flow greater than or equal to 0.1 mgd? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 3.16.			
	3.14	Does the POTW use chlorine for disinfection, use chlorine elsewhere in the treatment process, or otherwise have reasonable potential to discharge chlorine in its effluent? <input checked="" type="checkbox"/> Yes → Complete Table B, including chlorine. <input type="checkbox"/> No → Complete Table B, omitting chlorine.			
	3.15	Have you completed monitoring for all applicable Table B pollutants and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
3.16	Does one or more of the following conditions apply? <ul style="list-style-type: none"> • The facility has a design flow greater than or equal to 1 mgd. • The POTW has an approved pretreatment program or is required to develop such a program. • The NPDES permitting authority has informed the POTW that it must sample for the parameters in Table C, must sample other additional parameters (Table D), or submit the results of WET tests for acute or chronic toxicity for each of its discharge outfalls (Table E). <input checked="" type="checkbox"/> Yes → Complete Tables C, D, and E as applicable. <input type="checkbox"/> No → SKIP to Section 4.				
3.17	Have you completed monitoring for all applicable Table C pollutants and attached the results to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
3.18	Have you completed monitoring for all applicable Table D pollutants required by your NPDES permitting authority and attached the results to this application package? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No additional sampling required by NPDES permitting authority.				

EPA Identification Number	NPDES Permit Number AL0023086	Facility Name Clifton C. Williams WWTP
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Effluent Testing Data Continued	3.19	Has the POTW conducted either (1) minimum of four quarterly WET tests for one year preceding this permit application or (2) at least four annual WET tests in the past 4.5 years? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → Complete tests and Table E and SKIP to Item 3.26.				
	3.20	Have you previously submitted the results of the above tests to your NPDES permitting authority? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → Provide results in Table E and SKIP to Item 3.26.				
	3.21	Indicate the dates the data were submitted to your NPDES permitting authority and provide a summary of the results.				
		<table border="1"> <thead> <tr> <th>Date(s) Submitted (MM/DD/YYYY)</th> <th>Summary of Results</th> </tr> </thead> <tbody> <tr> <td>01/24/2013, 04/23/2013, 07/22/2013, 10/24/2013, 03/28/2014</td> <td>No toxicity issues were encountered. All tests passed.</td> </tr> </tbody> </table>	Date(s) Submitted (MM/DD/YYYY)	Summary of Results	01/24/2013, 04/23/2013, 07/22/2013, 10/24/2013, 03/28/2014	No toxicity issues were encountered. All tests passed.
	Date(s) Submitted (MM/DD/YYYY)	Summary of Results				
	01/24/2013, 04/23/2013, 07/22/2013, 10/24/2013, 03/28/2014	No toxicity issues were encountered. All tests passed.				
	3.22	Regardless of how you provided your WET testing data to the NPDES permitting authority, did any of the tests result in toxicity? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 3.26.				
	3.23	Describe the cause(s) of the toxicity: N/A				
3.24	Has the treatment works conducted a toxicity reduction evaluation? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 3.26.					
3.25	Provide details of any toxicity reduction evaluations conducted. N/A					
3.26	Have you completed Table E for all applicable outfalls and attached the results to the application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Not applicable because previously submitted information to the NPDES permitting authority.					

SECTION 4. INDUSTRIAL DISCHARGES AND HAZARDOUS WASTES (40 CFR 122.21(j)(6) and (7))

Industrial Discharges and Hazardous Wastes	4.1	Does the POTW receive discharges from SIUs or NSCIUs? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.7.				
	4.2	Indicate the number of SIUs and NSCIUs that discharge to the POTW.				
		<table border="1"> <thead> <tr> <th>Number of SIUs</th> <th>Number of NSCIUs</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>18</td> </tr> </tbody> </table>	Number of SIUs	Number of NSCIUs	6	18
	Number of SIUs	Number of NSCIUs				
	6	18				
	4.3	Does the POTW have an approved pretreatment program? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
4.4	Have you submitted either of the following to the NPDES permitting authority that contains information substantially identical to that required in Table F: (1) a pretreatment program annual report submitted within one year of the application or (2) a pretreatment program? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 4.6.					
4.5	Identify the title and date of the annual report or pretreatment program referenced in Item 4.4. SKIP to Item 4.7. Pretreatment Program Rules and Regulations 02/21/2000					
4.6	Have you completed and attached Table F to this application package? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					

Industrial Discharges and Hazardous Wastes Continued	4.7	Does the POTW receive, or has it been notified that it will receive, by truck, rail, or dedicated pipe, any wastes that are regulated as RCRA hazardous wastes pursuant to 40 CFR 261?		
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 4.9.		
	4.8	If yes, provide the following information:		
		Hazardous Waste Number	Waste Transport Method (check all that apply)	Annual Amount of Waste Received
			<input type="checkbox"/> Truck <input type="checkbox"/> Rail <input type="checkbox"/> Dedicated pipe <input type="checkbox"/> Other (specify) _____	
			<input type="checkbox"/> Truck <input type="checkbox"/> Rail <input type="checkbox"/> Dedicated pipe <input type="checkbox"/> Other (specify) _____	
		<input type="checkbox"/> Truck <input type="checkbox"/> Rail <input type="checkbox"/> Dedicated pipe <input type="checkbox"/> Other (specify) _____		
	4.9	Does the POTW receive, or has it been notified that it will receive, wastewaters that originate from remedial activities, including those undertaken pursuant to CERCLA and Sections 3004(7) or 3008(h) of RCRA?		
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 5.		
	4.10	Does the POTW receive (or expect to receive) less than 15 kilograms per month of non-acute hazardous wastes as specified in 40 CFR 261.30(d) and 261.33(e)?		
		<input type="checkbox"/> Yes → SKIP to Section 5. <input checked="" type="checkbox"/> No		
	4.11	Have you reported the following information in an attachment to this application: identification and description of the site(s) or facility(ies) at which the wastewater originates; the identities of the wastewater's hazardous constituents; and the extent of treatment, if any, the wastewater receives or will receive before entering the POTW?		
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

SECTION 5. COMBINED SEWER OVERFLOWS (40 CFR 122.21(j)(8))

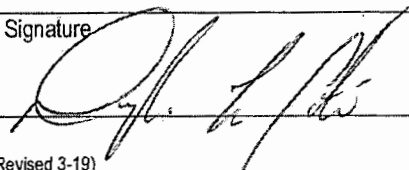
CSO Map and Diagram	5.1	Does the treatment works have a combined sewer system?		
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 6.		
	5.2	Have you attached a CSO system map to this application? (See instructions for map requirements.)		
		<input type="checkbox"/> Yes <input type="checkbox"/> No		
	5.3	Have you attached a CSO system diagram to this application? (See instructions for diagram requirements.)		
		<input type="checkbox"/> Yes <input type="checkbox"/> No		

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CSO Outfall Description	5.4	For each CSO outfall, provide the following information. (Attach additional sheets as necessary.)					
			CSO Outfall Number _____	CSO Outfall Number _____	CSO Outfall Number _____	CSO Outfall Number _____	
		City or town					
		State and ZIP code					
		County					
		Latitude	° ' "	° ' "	° ' "	° ' "	
		Longitude	° ' "	° ' "	° ' "	° ' "	
		Distance from shore		ft.	ft.	ft.	ft.
	Depth below surface		ft.	ft.	ft.	ft.	
CSO Monitoring	5.5	Did the POTW monitor any of the following items in the past year for its CSO outfalls?					
			CSO Outfall Number _____	CSO Outfall Number _____	CSO Outfall Number _____	CSO Outfall Number _____	
		Rainfall	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
		CSO flow volume	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
		CSO pollutant concentrations	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
		Receiving water quality	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
		CSO frequency	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	Number of storm events	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
CSO Events in Past Year	5.6	Provide the following information for each of your CSO outfalls.					
			CSO Outfall Number _____	CSO Outfall Number _____	CSO Outfall Number _____	CSO Outfall Number _____	
		Number of CSO events in the past year		events	events	events	events
		Average duration per event		hours	hours	hours	hours
			<input type="checkbox"/> Actual or <input type="checkbox"/> Estimated	<input type="checkbox"/> Actual or <input type="checkbox"/> Estimated	<input type="checkbox"/> Actual or <input type="checkbox"/> Estimated	<input type="checkbox"/> Actual or <input type="checkbox"/> Estimated	<input type="checkbox"/> Actual or <input type="checkbox"/> Estimated
	Average volume per event		million gallons	million gallons	million gallons	million gallons	
		<input type="checkbox"/> Actual or <input type="checkbox"/> Estimated	<input type="checkbox"/> Actual or <input type="checkbox"/> Estimated	<input type="checkbox"/> Actual or <input type="checkbox"/> Estimated	<input type="checkbox"/> Actual or <input type="checkbox"/> Estimated	<input type="checkbox"/> Actual or <input type="checkbox"/> Estimated	
	Minimum rainfall causing a CSO event in last year		inches of rainfall	inches of rainfall	inches of rainfall	inches of rainfall	
		<input type="checkbox"/> Actual or <input type="checkbox"/> Estimated	<input type="checkbox"/> Actual or <input type="checkbox"/> Estimated	<input type="checkbox"/> Actual or <input type="checkbox"/> Estimated	<input type="checkbox"/> Actual or <input type="checkbox"/> Estimated	<input type="checkbox"/> Actual or <input type="checkbox"/> Estimated	

CSO Receiving Waters	5.7	Provide the information in the table below for each of your CSO outfalls.			
		CSO Outfall Number _____	CSO Outfall Number _____	CSO Outfall Number _____	
		Receiving water name			
		Name of watershed/ stream system			
		U.S. Soil Conservation Service 14-digit watershed code (if known)	<input type="checkbox"/> Unknown	<input type="checkbox"/> Unknown	<input type="checkbox"/> Unknown
		Name of state management/river basin			
		U.S. Geological Survey 8-Digit Hydrologic Unit Code (if known)	<input type="checkbox"/> Unknown	<input type="checkbox"/> Unknown	<input type="checkbox"/> Unknown
		Description of known water quality impacts on receiving stream by CSO (see instructions for examples)			

SECTION 6. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	6.1	In Column 1 below, mark the sections of Form 2A that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.		
		Column 1	Column 2	
		<input checked="" type="checkbox"/> Section 1: Basic Application Information for All Applicants	<input type="checkbox"/> w/ variance request(s)	<input type="checkbox"/> w/ additional attachments
		<input checked="" type="checkbox"/> Section 2: Additional Information	<input checked="" type="checkbox"/> w/ topographic map <input type="checkbox"/> w/ additional attachments	<input checked="" type="checkbox"/> w/ process flow diagram
		<input checked="" type="checkbox"/> Section 3: Information on Effluent Discharges	<input checked="" type="checkbox"/> w/ Table A <input checked="" type="checkbox"/> w/ Table B <input checked="" type="checkbox"/> w/ Table C	<input type="checkbox"/> w/ Table D <input type="checkbox"/> w/ Table E <input type="checkbox"/> w/ additional attachments
		<input checked="" type="checkbox"/> Section 4: Industrial Discharges and Hazardous Wastes	<input checked="" type="checkbox"/> w/ SIU and NSCIU attachments <input type="checkbox"/> w/ additional attachments	<input checked="" type="checkbox"/> w/ Table F
		<input type="checkbox"/> Section 5: Combined Sewer Overflows	<input type="checkbox"/> w/ CSO map <input type="checkbox"/> w/ CSO system diagram	<input type="checkbox"/> w/ additional attachments
		<input checked="" type="checkbox"/> Section 6: Checklist and Certification Statement	<input type="checkbox"/> w/ attachments	

Checklist and Certification Statement	6.2	Certification Statement	
		<i>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.</i>	
		Name (print or type first and last name) Douglas L. Cote, P.E.	Official title Assistant Director-Operations
		Signature 	Date signed 10/17/19

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TABLE A: EFFLUENT PARAMETERS FOR ALL POTWS							
Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method ¹	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Biochemical oxygen demand <input checked="" type="checkbox"/> BOD ₅ or <input type="checkbox"/> CBOD ₅ (report one)	21	mg/L	7.58	mg/L	261	SM521B	37.5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Fecal coliform Enterococci	250	col/100 mL	26.08	col/100 mL	261		275 col/ 100 mL <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Design flow rate	65.44	MGD	26.84	MGD	365		
pH (minimum)	6.0	s.u.					
pH (maximum)	7.2	s.u.					
Temperature (winter)	77	°F	64	°F	365		
Temperature (summer)	87	°F	82	°F	365		
Total suspended solids (TSS)	21	mg/L	10.25	mg/L	261	SM2540D	45 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE B. EFFLUENT PARAMETERS FOR ALL POTWS WITH A FLOW EQUAL TO OR GREATER THAN 0.1 MGD

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method ¹	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Ammonia (as N)	49.2	mg/L	13.8	mg/L	260	SM4500NH3D	30 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Chlorine (total residual, TRC) ²	0	mg/L	0	mg/L	260		0.01 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Dissolved oxygen	8.8	mg/L	6.5	mg/L	260		<input type="checkbox"/> ML <input type="checkbox"/> MDL
Nitrate/nitrite	7.16	mg/L	1.94	mg/L	50	SM4500-NC	<input type="checkbox"/> ML <input type="checkbox"/> MDL
Kjeldahl nitrogen	21.6	mg/L	12.3	mg/L	50		<input type="checkbox"/> ML <input type="checkbox"/> MDL
Oil and grease	N/A						<input type="checkbox"/> ML <input type="checkbox"/> MDL
Phosphorus	9.12	mg/L	2.23	mg/L	50		<input type="checkbox"/> ML <input type="checkbox"/> MDL
Total dissolved solids TSS	161	mg/L	13	mg/L	260	SM25400	45 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

² Facilities that do not use chlorine for disinfection, do not use chlorine elsewhere in the treatment process, and have no reasonable potential to discharge chlorine in their effluent are not required to report data for chlorine.

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TABLE C. EFFLUENT PARAMETERS FOR SELECTED POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method ¹	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Metals, Cyanide, and Total Phenols							
Hardness (as CaCO ₃)	150	mg/L	144	mg/L	3	SM 2340	5 <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Antimony, total recoverable	BMDL	mg/L	BMDL	mg/L	3	EPA 200.8	.006 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Arsenic, total recoverable	BMDL	mg/L	BMDL	mg/L	3	EPA 200.8	0.01 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Beryllium, total recoverable	BMDL	mg/L	BMDL	mg/L	3	EPA 200.8	.004 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Cadmium, total recoverable	BMDL	mg/L	BMDL	mg/L	3	EPA 200.8	.005 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Chromium, total recoverable	BMDL	mg/L	BMDL	mg/L	3	EPA 200.8	0.05 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Copper, total recoverable	BMDL	mg/L	BMDL	mg/L	3	EPA 200.8	0.01 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Lead, total recoverable	BMDL	mg/L	BMDL	mg/L	3	EPA 200.8	.005 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Mercury, total recoverable	BMDL	mg/L	BMDL	mg/L	3	EPA 200.8	.002 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Nickel, total recoverable	BMDL	mg/L	BMDL	mg/L	3	EPA 200.8	0.05 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Selenium, total recoverable	BMDL	mg/L	BMDL	mg/L	3	EPA 200.8	0.02 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Silver, total recoverable	BMDL	mg/L	BMDL	mg/L	3	EPA 200.8	0.01 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Thallium, total recoverable	BMDL	mg/L	BMDL	mg/L	3	EPA 200.8	.002 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Zinc, total recoverable	BMDL	mg/L	BMDL	mg/L	3	EPA 200.8	0.1 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Cyanide	BMDL	mg/L	BMDL	mg/L	3	10-204-00-1-X	0.02 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Total phenolic compounds	BMDL	mg/L	BMDL	mg/L	3	EPA 420.1	0.1 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Volatile Organic Compounds							
Acrolein	BMDL	mg/L	BMDL	mg/L	3	EPA 624	20 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Acrylonitrile	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Benzene	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Bromoform	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL

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TABLE C. EFFLUENT PARAMETERS FOR SELECTED POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method ¹	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Carbon tetrachloride	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Chlorobenzene	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Chlorodibromomethane	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input checked="" type="checkbox"/> MDL
Chloroethane	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
2-chloroethylvinyl ether	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Chloroform	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Dichlorobromomethane	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
1,1-dichloroethane	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
1,2-dichloroethane	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
trans-1,2-dichloroethylene	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
1,1-dichloroethylene	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
1,2-dichloropropane	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
1,3-dichloropropylene	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Ethylbenzene	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Methyl bromide	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Methyl chloride	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Methylene chloride	BMDL	mg/L	BMDL	mg/L	3	EPA 624	10 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
1,1,2,2-tetrachloroethane	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Tetrachloroethylene	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Toluene	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
1,1,1-trichloroethane	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
1,1,2-trichloroethane	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL

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TABLE C. EFFLUENT PARAMETERS FOR SELECTED POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method ¹	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Trichloroethylene	BMDL	mg/L	BMDL	mg/L	3	EPA 624	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Vinyl chloride	BMDL	mg/L	BMDL	mg/L	3	EPA 624	2 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Acid-Extractable Compounds:							
p-chloro-m-cresol	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
2-chlorophenol	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
2,4-dichlorophenol	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
2,4-dimethylphenol	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
4,6-dinitro-o-cresol	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
2,4-dinitrophenol	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
2-nitrophenol	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
4-nitrophenol	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Pentachlorophenol	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Phenol	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
2,4,6-trichlorophenol	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Base-Neutral Compounds							
Acenaphthene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Acenaphthylene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Anthracene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Benzidine	BMDL	mg/L	BMDL	mg/L	3	EPA 625	15 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Benzo(a)anthracene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Benzo(a)pyrene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
3,4-benzofluoranthene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL

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TABLE C. EFFLUENT PARAMETERS FOR SELECTED POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method ¹	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Benzo(ghi)perylene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Benzo(k)fluoranthene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Bis (2-chloroethoxy) methane	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Bis (2-chloroethyl) ether	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Bis (2-chloroisopropyl) ether	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Bis (2-ethylhexyl) phthalate	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
4-bromophenyl phenyl ether	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Butyl benzyl phthalate	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
2-chloronaphthalene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
4-chlorophenyl phenyl ether	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Chrysene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
di-n-butyl phthalate	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
di-n-octyl phthalate	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Dibenzo(a,h)anthracene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
1,2-dichlorobenzene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
1,3-dichlorobenzene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
1,4-dichlorobenzene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
3,3-dichlorobenzidine	BMDL	mg/L	BMDL	mg/L	3	EPA 625	15 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Diethyl phthalate	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Dimethyl phthalate	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
2,4-dinitrotoluene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
2,6-dinitrotoluene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL

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TABLE C. EFFLUENT PARAMETERS FOR SELECTED POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method ¹	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
1,2-diphenylhydrazine	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Fluoranthene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Fluorene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Hexachlorobenzene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Hexachlorobutadiene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Hexachlorocyclo-pentadiene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Hexachloroethane	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Indeno(1,2,3-cd)pyrene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Isophorone	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Naphthalene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Nitrobenzene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
N-nitrosodi-n-propylamine	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
N-nitrosodimethylamine	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
N-nitrosodiphenylamine	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Phenanthrene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
Pyrene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL
1,2,4-trichlorobenzene	BMDL	mg/L	BMDL	mg/L	3	EPA 625	5 mg/L <input checked="" type="checkbox"/> ML <input type="checkbox"/> MDL

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR Chapter I, Subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE D. ADDITIONAL POLLUTANTS AS REQUIRED BY NPDES PERMITTING AUTHORITY

Pollutant (list)	Maximum Daily Discharge		Average Daily Discharge			Analytical Method ¹	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
<input checked="" type="checkbox"/> No additional sampling is required by NPDES permitting authority.							
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL
							<input type="checkbox"/> ML <input type="checkbox"/> MDL

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE E - EFFLUENT MONITORING FOR WHOLE EFFLUENT TOXICITY

The table provides response space for one whole effluent toxicity sample. Copy the table to report additional test results.

Test Information

	Test Number _____	Test Number _____	Test Number _____
Test species	N/A - Toxicity tests were previously submitted.		
Age at initiation of test			
Outfall number			
Date sample collected			
Date test started			
Duration			

Toxicity Test Methods

Test method number			
Manual title			
Edition number and year of publication			
Page number(s)			

Sample Type

Check one:	<input type="checkbox"/> Grab <input type="checkbox"/> 24-hour composite	<input type="checkbox"/> Grab <input type="checkbox"/> 24-hour composite	<input type="checkbox"/> Grab <input type="checkbox"/> 24-hour composite
------------	---	---	---

Sample Location

Check one:	<input type="checkbox"/> Before Disinfection <input type="checkbox"/> After Disinfection <input type="checkbox"/> After Dechlorination	<input type="checkbox"/> Before Disinfection <input type="checkbox"/> After Disinfection <input type="checkbox"/> After Dechlorination	<input type="checkbox"/> Before disinfection <input type="checkbox"/> After disinfection <input type="checkbox"/> After dechlorination
------------	--	--	--

Point in Treatment Process

Describe the point in the treatment process at which the sample was collected for each test.			
--	--	--	--

Toxicity Type

Indicate for each test whether the test was performed to assess acute or chronic toxicity, or both. (Check one response.)	<input type="checkbox"/> Acute <input type="checkbox"/> Chronic <input type="checkbox"/> Both	<input type="checkbox"/> Acute <input type="checkbox"/> Chronic <input type="checkbox"/> Both	<input type="checkbox"/> Acute <input type="checkbox"/> Chronic <input type="checkbox"/> Both
---	---	---	---

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TABLE E. EFFLUENT MONITORING FOR WHOLE EFFLUENT TOXICITY						
The table provides response space for one whole effluent toxicity sample. Copy the table to report additional test results.						
	Test Number _____		Test Number _____		Test Number _____	
Test Type						
Indicate the type of test performed. (Check one response.)	<input type="checkbox"/> Static <input type="checkbox"/> Static-renewal <input type="checkbox"/> Flow-through		<input type="checkbox"/> Static <input type="checkbox"/> Static-renewal <input type="checkbox"/> Flow-through		<input type="checkbox"/> Static <input type="checkbox"/> Static-renewal <input type="checkbox"/> Flow-through	
Source of Dilution Water						
Indicate the source of dilution water. (Check one response.)	<input type="checkbox"/> Laboratory water <input type="checkbox"/> Receiving water		<input type="checkbox"/> Laboratory water <input type="checkbox"/> Receiving water		<input type="checkbox"/> Laboratory water <input type="checkbox"/> Receiving water	
If laboratory water, specify type.						
If receiving water, specify source.						
Type of Dilution Water						
Indicate the type of dilution water. If salt water, specify "natural" or type of artificial sea salts or brine used.	<input type="checkbox"/> Fresh water <input type="checkbox"/> Salt water (specify)		<input type="checkbox"/> Fresh water <input type="checkbox"/> Salt water (specify)		<input type="checkbox"/> Fresh water <input type="checkbox"/> Salt water (specify)	
Percentage Effluent Used						
Specify the percentage effluent used for all concentrations in the test series.						
Parameters Tested						
Check the parameters tested.	<input type="checkbox"/> pH <input type="checkbox"/> Salinity <input type="checkbox"/> Temperature	<input type="checkbox"/> Ammonia <input type="checkbox"/> Dissolved oxygen	<input type="checkbox"/> pH <input type="checkbox"/> Salinity <input type="checkbox"/> Temperature	<input type="checkbox"/> Ammonia <input type="checkbox"/> Dissolved oxygen	<input type="checkbox"/> pH <input type="checkbox"/> Salinity <input type="checkbox"/> Temperature	<input type="checkbox"/> Ammonia <input type="checkbox"/> Dissolved oxygen
Acute Test Results						
Percent survival in 100% effluent		%		%		%
LC ₅₀						
95% confidence interval		%		%		%
Control percent survival		%		%		%

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TABLE E. EFFLUENT MONITORING FOR WHOLE EFFLUENT TOXICITY						
The table provides response space for one whole effluent toxicity sample. Copy the table to report additional test results.						
	Test Number _____		Test Number _____		Test Number _____	
Acute Test Results Continued						
Other (describe)						
Chronic Test Results						
NOEC		%		%		%
IC ₂₅		%		%		%
Control percent survival		%		%		%
Other (describe)						
Quality Control/Quality Assurance						
Is reference toxicant data available?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Was reference toxicant test within acceptable bounds?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
What date was reference toxicant test run (MM/DD/YYYY)?						
Other (describe)						

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OMB No. 2040-0004**TABLE F. INDUSTRIAL DISCHARGE INFORMATION**

Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU 1	SIU 2	SIU 3
Name of SIU	Aaron Oil	Action Resources	Alabama State Docks
Mailing address (street or P.O. box)	713 Bill Myles Road	4700 Hamilton Blvd	250 N Water St
City, state, and ZIP code	Saraland, AL 36571-3301	Theodore, AL 36582	Mobile, AL 36602.
Description of all industrial processes that affect or contribute to the discharge.	Petroleum recycling, industrial and commercial petroleum contaminated wastewater treatment	Transportation equipment cleaning	Creosote contaminated groundwater remediation
List the principal products and raw materials that affect or contribute to the SIU's discharge.	Reclaimed Oil, Used and waste oil	Wastewater from transportation equipment cleaning operations	Creosote.
Indicate the average daily volume of wastewater discharged by the SIU.	50000 gpd	15000 gpd	100000 gpd
How much of the average daily volume is attributable to process flow?	50000 gpd	15000 gpd	100000 gpd
How much of the average daily volume is attributable to non-process flow?	0 gpd	0 gpd	0 gpd
Is the SIU subject to local limits?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is the SIU subject to categorical standards?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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OMB No. 2040-0004**TABLE F. INDUSTRIAL DISCHARGE INFORMATION**

Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU ¹	SIU ²	SIU ³
Under what categories and subcategories is the SIU subject?	Part 437 - Centralized Waste Treatment; Subject to MAWSS Pretreatment Standards	Transportation Equipment Cleaning 40 CFR Part 442.16 Subpart A: Tank Truck and Inermodal Tank Containers	*Subject to MAWSS Pretreatment Standards
Has the POTW experienced problems (e.g., upsets, pass-through interferences) in the past 4.5 years that are attributable to the SIU?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe.			

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Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU ⁷	SIU ⁸	SIU ⁹
Under what categories and subcategories is the SIU subject?	Subject to MAWSS Pretreatment Standards	Subject to MAWSS Pretreatment Standards	Subject to MAWSS pretreatment standards.
Has the POTW experienced problems (e.g., upsets, pass-through interferences) in the past 4.5 years that are attributable to the SIU?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe.			

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Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU ⁷	SIU ⁸	SIU ⁹
Name of SIU	Cintas Corporation	Coca Cola Bottling Company Consolidated	Continental Motors, Inc.
Mailing address (street or P.O. box)	5679 Commerce Blvd E	5300 Coca Cola Rd	2039 Broad Street
City, state, and ZIP code	Theodore, AL 36619	Mobile, AL 36603	Mobile, AL 36615
Description of all industrial processes that affect or contribute to the discharge.	Industrial and commercial laundering	Soft drink bottling operations	Metal finishing operations (primary plating, cleaning, de-burring, cooling, solvent degreasing, rinsing, machining)
List the principal products and raw materials that affect or contribute to the SIU's discharge.	Wastewater from laundering operations	Wastewater from soft drink bottling operations	Discharges associated with metal finishing operations
Indicate the average daily volume of wastewater discharged by the SIU.	57700 gpd	55000 gpd	45000 gpd
How much of the average daily volume is attributable to process flow?	57700 gpd	113300 gpd	45000 gpd
How much of the average daily volume is attributable to non-process flow?	0 gpd	0 gpd	0 gpd
Is the SIU subject to local limits?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is the SIU subject to categorical standards?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU ¹³	SIU ¹⁴	SIU ¹⁵
Name of SIU	G & K Services	INEOS Phenol, LLC	Liquid Environmental Solutions, LLC
Mailing address (street or P.O. box)	361 St Louis St	7770 Rangeline Rd	Avenue A
City, state, and ZIP code	Mobile, AL 36602	Theodore, AL 36582	Mobile, AL 36615
Description of all industrial processes that affect or contribute to the discharge.	Industrial and commercial laundering operations	Organic chemical manufacturing, storm water from process area, and cooling tower blow down	Centralized waste treatment operations
List the principal products and raw materials that affect or contribute to the SIU's discharge.	Wastewater from industrial and commercial laundering	Phenol and Acetone, Cumene	DSN001, 001A, 001B - Pretreated metal and oils and organic wastewater
Indicate the average daily volume of wastewater discharged by the SIU.	33500 gpd	600000 gpd	100000 gpd
How much of the average daily volume is attributable to process flow?	28000 gpd	600000 gpd	100000 gpd
How much of the average daily volume is attributable to non-process flow?	7500 gpd	0 gpd	0 gpd
Is the SIU subject to local limits?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is the SIU subject to categorical standards?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU <u>13</u>	SIU <u>14</u>	SIU <u>15</u>
Under what categories and subcategories is the SIU subject?	Subject to MAWSS Pretreatment Standards	Subject to MAWSS Pretreatment Standards Part 414 - Organic chemicals, plastics, and synthetic fibers.	Subject to MAWSS pretreatment standards.
Has the POTW experienced problems (e.g., upsets, pass-through interferences) in the past 4.5 years that are attributable to the SIU?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe.			

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Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU <u>22</u>	SIU <u>23</u>	SIU <u>24</u>
Name of SIU	Turkey Trot Landfill, LLC	Warren Adhesives, Inc.	Waste Management of Alabama
Mailing address (street or P.O. box)	2328 Mannish Ryan Rd	7860 Zeigler Blvd	4770 Hamilton Blvd
City, state, and ZIP code	Citronelle, AL 36522	Mobile, AL 36608	Theodore, AL 36582
Description of all industrial processes that affect or contribute to the discharge.	Municipal solid waste landfill	Manufacturing of industrial adhesives	Washing of tanker trucks, transfer station
List the principal products and raw materials that affect or contribute to the SIU's discharge.	Landfill leachate	Water-based adhesives using poly vinyl acetate and ethylene vinyl acetate	Wastewater from washing of trucks and transfer station
Indicate the average daily volume of wastewater discharged by the SIU.	0 gpd	0 gpd	27000 gpd
How much of the average daily volume is attributable to process flow?	0 gpd	0 gpd	27000 gpd
How much of the average daily volume is attributable to non-process flow?	0 gpd	0 gpd	0 gpd
Is the SIU subject to local limits?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is the SIU subject to categorical standards?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU ²²	SIU ²³	SIU ²⁴
Under what categories and subcategories is the SIU subject?	Subject to MAWSS Pretreatment Standards	Subject to MAWSS Pretreatment Standards	Subject to MAWSS pretreatment standards.
Has the POTW experienced problems (e.g., upsets, pass-through interferences) in the past 4.5 years that are attributable to the SIU?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe.			

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Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU <u>16</u>	SIU <u>17</u>	SIU <u>18</u>
Name of SIU	Max Oil Company, Inc.	Mitsubishi Polycrystalline Silicon America Corporation	Oil Recovery Company of Alabama, Inc.
Mailing address (street or P.O. box)	750 Azalea Rd	7800 Mitsubishi Ln	1101 S Conception St
City, state, and ZIP code	Mobile, AL 36693	Theodore, AL 36582	Mobile, AL 36603
Description of all industrial processes that affect or contribute to the discharge.	Groundwater remediation	Polycrystalline silicon manufacturing	Centralized waste treatment of oily and organic wastes
List the principal products and raw materials that affect or contribute to the SIU's discharge.	Wastewater from groundwater remediation	Treated process wastewater, floor wash-down, fire extinguishing water, stormwater	Treated industrial process wastewaters
Indicate the average daily volume of wastewater discharged by the SIU.	15000 gpd	682800 gpd	100000 gpd
How much of the average daily volume is attributable to process flow?	0 gpd	682800 gpd	100000 gpd
How much of the average daily volume is attributable to non-process flow?	15000 gpd	0 gpd	0 gpd
Is the SIU subject to local limits?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is the SIU subject to categorical standards?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

EPA Identification Number

NPDES Permit Number

Facility Name

Form Approved 03/05/19
OMB No. 2040-0004**TABLE F. INDUSTRIAL DISCHARGE INFORMATION**

Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU <u>16</u>	SIU <u>17</u>	SIU <u>18</u>
Under what categories and subcategories is the SIU subject?	Subject to MAWSS Pretreatment Standards	Subject to MAWSS Pretreatment Standards	Subject to MAWSS pretreatment standards. Part 437 - Centralized Waste Treatment Point Source Category.
Has the POTW experienced problems (e.g., upsets, pass-through interferences) in the past 4.5 years that are attributable to the SIU?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe.			

EPA Identification Number

NPDES Permit Number

Facility Name

Form Approved 03/05/19
OMB No. 2040-0004**TABLE F. INDUSTRIAL DISCHARGE INFORMATION**

Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU ¹⁹	SIU ²⁰	SIU ²¹
Name of SIU	Praxair, Inc.	ST Aerospace Mobile, Inc.	Taylor-Wharton Cryogenics, LLC
Mailing address (street or P.O. box)	4037 Perch Point Dr	2100 9th Street, Brookley Aeroplex	4075 Hamilton Blvd
City, state, and ZIP code	Mobile, AL 36605	Mobile, Alabama 36615	Theodore, AL 36582
Description of all industrial processes that affect or contribute to the discharge.	Manufacture of industrial gases, non-contact cooling water blowdown, rain water from scuppered equipment area.	Washing and paint-stripping of aircraft	Plasma cutting table, hydrostatic testing pretreatment holding tank, nitric acid passivation of manufactured tanks
List the principal products and raw materials that affect or contribute to the SIU's discharge.	Industrial gases (Oxygen, Nitrogen, and Argon)	Wastewater from washing and paint-stripping of aircraft	DSN002, 003, 004 - wastewater from cooling tower blowdown, vapor degreaser
Indicate the average daily volume of wastewater discharged by the SIU.	25000 gpd	0 gpd	27000 gpd
How much of the average daily volume is attributable to process flow?	0 gpd	0 gpd	27000 gpd
How much of the average daily volume is attributable to non-process flow?	25000 gpd	0 gpd	0 gpd
Is the SIU subject to local limits?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is the SIU subject to categorical standards?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

EPA Identification Number

NPDES Permit Number

Facility Name

Form Approved 03/05/19
OMB No. 2040-0004**TABLE F. INDUSTRIAL DISCHARGE INFORMATION**

Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU <u>19</u>	SIU <u>20</u>	SIU <u>21</u>
Under what categories and subcategories is the SIU subject?	Subject to MAWSS Pretreatment Standards	Subject to MAWSS Pretreatment Standards	Subject to MAWSS pretreatment standards.
Has the POTW experienced problems (e.g., upsets, pass-through interferences) in the past 4.5 years that are attributable to the SIU?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe.			

EPA Identification Number

NPDES Permit Number

Facility Name

Form Approved 03/05/19
OMB No. 2040-0004**TABLE F. INDUSTRIAL DISCHARGE INFORMATION**

Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU ⁴	SIU ⁵	SIU ⁶
Name of SIU	APEX/FCC Oilfield Services	BAE Systems Southeast Shipyards Alabama, LLC	Chastang Landfill / W.M. Mobile Bay Environmental Center, Inc.
Mailing address (street or P.O. box)	7455 Rangeline Road	660 Dunlap Dr	17045 Hwy 43
City, state, and ZIP code	Theodore, AL 36582	Mobile, AL 36603	Mt Vernon, AL 36560
Description of all industrial processes that affect or contribute to the discharge.	Centralized Waste Treatment wastewater resulting from combined waste receipts from organics, metals, and oils.	Wastewater from wash rack and holding tanks for ships	landfill
List the principal products and raw materials that affect or contribute to the SIU's discharge.	Organics, metals, oils	Wastewater from wash rack and holding tanks for ships	landfill leachate
Indicate the average daily volume of wastewater discharged by the SIU.	100000 gpd	25000 gpd	gpd
How much of the average daily volume is attributable to process flow?	100000 gpd	25000 gpd	gpd
How much of the average daily volume is attributable to non-process flow?	0 gpd	0 gpd	gpd
Is the SIU subject to local limits?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is the SIU subject to categorical standards?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

EPA Identification Number

NPDES Permit Number

Facility Name

Form Approved 03/05/19
OMB No. 2040-0004**TABLE F. INDUSTRIAL DISCHARGE INFORMATION**

Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU ⁴	SIU ⁵	SIU ⁶
Under what categories and subcategories is the SIU subject?	Subject to MAWSS Pretreatment Standards	Subject to MAWSS Pretreatment Standards	Subject to MAWSS pretreatment standards.
Has the POTW experienced problems (e.g., upsets, pass-through interferences) in the past 4.5 years that are attributable to the SIU?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe.			

EPA Identification Number

NPDES Permit Number

Facility Name

Form Approved 03/05/19
OMB No. 2040-0004**TABLE F. INDUSTRIAL DISCHARGE INFORMATION**

Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU <u>10</u>	SIU <u>11</u>	SIU <u>12</u>
Name of SIU	Diversified Foods and Seasonings, Inc.	Evonik Degussa Corporation	Gotta Go Portables, Inc.
Mailing address (street or P.O. box)	5213 Hamilton Blvd	4201 Degussa Rd	4900 Hamilton Blvd
City, state, and ZIP code	Theodore, AL 36582	Theodore, AL 36582	Theodore, AL 36582
Description of all industrial processes that affect or contribute to the discharge.	Cooking and processing frozen food and warehousing products	Wastewater from chemical manufacturing	Portable toilets and holding tanks
List the principal products and raw materials that affect or contribute to the SIU's discharge.	Wastewater from cooking and processing frozen food and warehousing products	Wastewater from chemical manufacturing	Wastewater from portable toilets and holding tanks
Indicate the average daily volume of wastewater discharged by the SIU.	25000 gpd	400000 gpd	20000 gpd
How much of the average daily volume is attributable to process flow?	25000 gpd	113300 gpd	0 gpd
How much of the average daily volume is attributable to non-process flow?	0 gpd	400000 gpd	20000 gpd
Is the SIU subject to local limits?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Is the SIU subject to categorical standards?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

EPA Identification Number

NPDES Permit Number

Facility Name

Form Approved 03/05/19
OMB No. 2040-0004**TABLE F. INDUSTRIAL DISCHARGE INFORMATION**

Response space is provided for three SIUs. Copy the table to report information for additional SIUs.

	SIU <u>10</u>	SIU <u>11</u>	SIU <u>12</u>
Under what categories and subcategories is the SIU subject?	Subject to MAWSS Pretreatment Standards	Subject to MAWSS Pretreatment Standards Part 414 and Part 415 - Organic and Inorganic Chemical Manufacturing.	Subject to MAWSS pretreatment standards.
Has the POTW experienced problems (e.g., upsets, pass-through interferences) in the past 4.5 years that are attributable to the SIU?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, describe.			

**ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (ADEM)
 NPDES INDIVIDUAL PERMIT APPLICATION
 SUPPLEMENTARY INFORMATION FOR PUBLICLY-OWNED TREATMENT WORKS (POTW), OTHER TREATMENT
 WORKS TREATING DOMESTIC SEWAGE (TWTDS), AND PUBLIC WATER SUPPLY TREATMENT PLANTS**

Instructions: This form should be used to submit the required supplementary information for an application for an NPDES individual permit for Publicly Owned Treatment Works (POTW) and other Treatment Works Treating Domestic Sewage (TWTDS). The completed application should be submitted to ADEM in duplicate. If insufficient space is available to address any item, please continue on an attached sheet of paper. Please mark "N/A" in the appropriate box when an item is not applicable to the applicant. Please type or print legibly in blue or black ink. Mail the completed application to:

ADEM-Water Division
 Municipal Section
 P O Box 301463
 Montgomery, AL 36130-1463

PURPOSE OF THIS APPLICATION

- | | |
|---|---|
| <input type="checkbox"/> Initial Permit Application for New Facility* | <input type="checkbox"/> Initial Permit Application for Existing Facility* |
| <input type="checkbox"/> Modification of Existing Permit | <input checked="" type="checkbox"/> Reissuance of Existing Permit |
| <input type="checkbox"/> Revocation & Reissuance of Existing Permit | * An application for participation in the ADEM's Electronic Environmental (E2) Reporting must be submitted to allow permittee to electronically submit reports as required. |

SECTION A – GENERAL INFORMATION

- Facility Name: Clifton C. Williams WWTP
 a. Operator Name: Mobile Area Water and Sewer System
 b. Is the operator identified in A.1.a, the owner of the facility? Yes No
 If no, provide name and address of the operator and submit information indicating the operator's scope of responsibility for the facility.
N/A
 c. Name of Permittee* if different than Operator: N/A
 *Permittee will be responsible for compliance with the conditions of the permit
- NPDES Permit Number: AL 0023086 (Not applicable if initial permit application)
- Facility Physical Location: (Attach a map with location marked; street, route no. or other specific identifier)
 Street: 1600 Yeend Street
 City: Mobile County: Mobile State: AL Zip: 36652
 Facility Location (Front Gate): Latitude: 30° 39' 36.32" N Longitude: 88° 02' 22.05" W
- Facility Mailing Address: PO Box 180249
 City: Mobile County: Mobile State: AL Zip: 36618
- Responsible Official (as described on last page of this application):
 Name and Title: Douglas L. Cote, P.E., Assistant Director-Operations
 Address: 4725 Moffett Road
 City: Mobile State: Alabama Zip: 36618
 Phone Number: 251-694-3187 Email Address: dcote@mawss.com

6. Designated Facility/DMR Contact:

Name and Title: David Tillman, Chief Treatment Plant Operator
Phone Number: 251-378-3505 Email Address: dtillman@mawss.com

7. Designated Emergency Contact:

Name and Title: Gavin Butler, Wright-Smith WWTP - Plant Manager
Phone Number: 251-694-3525 Email Address: gbutler@mawss.com

8. Please complete this section if the Applicant's business entity is a Proprietorship or Limited Liability Company (LLC) with a responsible official not listed in A.5.

Name and Title: N/A
Address: N/A
City: N/A State: N/A Zip: N/A
Phone Number: N/A Email Address: N/A

9. Permit numbers for Applicant's previously issued NPDES Permits and identification of any other State Environmental Permits presently held by the Applicant within the State of Alabama:

<u>Permit Type</u>	<u>Permit Number</u>	<u>Held By</u>
NPDES	AL0023086	MAWSS

10. Identify all Administrative Complaints, Notices of Violation, Directives, or Administrative Orders, Consent Decrees, or Litigation concerning water pollution or other permit violations, if any against the Applicant within the State of Alabama in the past five years (attach additional sheets if necessary):

<u>Facility Name</u>	<u>Permit Number</u>	<u>Type of Action</u>	<u>Date of Action</u>

SECTION B – WASTEWATER DISCHARGE INFORMATION

1. List the following historical monthly flow rates recorded for the past five years for each outfall:

Outfall No.	Highest Flow in Last 12 Months (MGD)	Highest Daily Flow (MGD)	Average Flow (MGD)
001	32.18	65.44	22.17
_____	_____	_____	_____
_____	_____	_____	_____

2. Attach a process flow schematic of the treatment process, including the size of each unit operation and sample collection locations.

3. Do you share an outfall with another facility? Yes No (If no, continue to B.4)

For each shared outfall, provide the following:

Applicant's Outfall No.	Name of Other Permittee/Facility	NPDES Permit No.	Where is sample collected by Applicant?
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

4. Do you have, or plan to have, automatic sampling equipment or continuous wastewater flow metering equipment at this facility?

- Current:** Flow Metering Yes No N/A
 Sampling Equipment Yes No N/A
- Planned:** Flow Metering Yes No N/A
 Sampling Equipment Yes No N/A

If so, please attach a schematic diagram of the sewer system indicating the present or future location of this equipment and describe the equipment below:

5. Are any wastewater collection or treatment modifications or expansions planned during the next three years that could alter wastewater volumes or characteristics (Note: Permit Modification may be required)? Yes No

Briefly describe these changes and any potential or anticipated effects on the wastewater quality and quantity: (Attach additional sheets if needed.)

A master plan is currently underway with plans to improve the existing headworks and primary clarifiers but this is not anticipated to alter wastewater volumes or characteristics.

SECTION C – WASTE STORAGE AND DISPOSAL INFORMATION

Describe the location of all sites used for the storage of solids or liquids that have any potential for accidental discharge to a water of the state, either directly or indirectly via storm sewer, municipal sewer, municipal wastewater treatment plants, or other collection or distribution systems that are located at or operated by the subject existing or proposed NPDES- permitted facility. Indicate the location of any potential release areas and provide a map or detailed narrative description of the areas of concern as an attachment to this application:

Description of Waste	Description of Storage Location
_____	_____
_____	_____
_____	_____

Describe the location of any sites used for the ultimate disposal of solid or liquid waste materials or residuals (e.g. sludges) generated by any wastewater treatment system located at the facility.

Description of Waste	Quantity (lbs/day)	Disposal Method*
Biosolids	1756.14 dry tons	Applied to agricultural land
Biosolids	52.98 dry tons	Landfill

*Indicate any wastes disposed at an off-site treatment facility and any wastes that are disposed on-site

SECTION D – INDUSTRIAL INDIRECT DISCHARGE CONTRIBUTORS

a. List the existing and proposed industrial source wastewater contributions to the municipal wastewater treatment system (Attach other sheets if necessary)

Company Name	Description of Industrial Wastewater	Existing or Proposed	Flow (MGD)	Subject to SID Permit?	
Previously submitted				<input type="checkbox"/> Yes	<input type="checkbox"/> No
				<input type="checkbox"/> Yes	<input type="checkbox"/> No
				<input type="checkbox"/> Yes	<input type="checkbox"/> No
				<input type="checkbox"/> Yes	<input type="checkbox"/> No

b. Are industrial wastewater contributions regulated via a locally approved sewer use ordinance? Yes No
 If yes, please attach a copy of the ordinance.

SECTION E – COASTAL ZONE INFORMATION

Is the discharge(s) located within the 10-foot elevation contour and within the limits of Mobile or Baldwin County? Yes No
 If yes, complete items E.1 – E.12 below:

- | | Yes | No |
|--|-------------------------------------|-------------------------------------|
| 1. Does the project require new construction? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Will the project be a source of new air emissions?..... | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Does the project involve dredging and/or filling of a wetland area or water way? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| If Yes, has the Corps of Engineers (COE) permit been received? | <input type="checkbox"/> | <input type="checkbox"/> |
| COE Project No. _____ | | |
| 4. Does the project involve wetlands and/or submersed grassbeds?..... | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Are oyster reefs located near the project site?..... | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| If Yes, include a map showing project and discharge location with respect to oyster reefs | | |
| 6. Does the project involve the site development, construction and operation of an energy facility as defined in ADEM Admin. Code r. 335-8-1-.02(bb)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7. Does the project involve mitigation of shoreline or coastal area erosion?..... | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8. Does the project involve construction on beaches or dune areas? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 9. Will the project interfere with public access to coastal waters?..... | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10. Does the project lie within the 100-year floodplain? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 11. Does the project involve the registration, sale, use, or application of pesticides?..... | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 12. Does the project propose or require construction of a new well or to alter an existing groundwater well to pump more than 50 gallons per day (GPD)?..... | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| If yes, has the applicable permit for groundwater recovery or for groundwater well installation been obtained? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

SECTION F – ANTI-DEGRADATION EVALUATION

In accordance with 40 CFR §131.12 and the ADEM Admin. Code r. 335-6-10-.04 for anti-degradation, the following information must be provided, if applicable. It is the applicant's responsibility to demonstrate the social and economic importance of the proposed activity. If further information is required to make this demonstration, attach additional sheets to the application.

1. Is this a new or increased discharge that began after April 3, 1991? Yes No
If yes, complete F.2 below. If no, go to Section G.

2. Has an Anti-Degradation Analysis been previously conducted and submitted to the Department for the new or increased discharge referenced in F.1? Yes No

If yes, do not complete this section.

If no and the discharge is to a Tier II waterbody as defined in ADEM Admin. Code r. 335-6-10-.12(4), complete F.2.A – F.2.F below, ADEM Form 311-Alternatives Analysis, and either ADEM Form 312 or ADEM Form 313- Calculation of Total Annualized Project Costs (Public-Sector or Private-Sector Projects, whichever is applicable). ADEM Form 312 or ADEM Form 313, whichever is applicable, must be provided for each treatment discharge alternative considered technically viable. ADEM forms can be found on the Department's website at <http://adem.alabama.gov/DeptForms/>.

Information required for new or increased discharges to high quality waters:

- A. What environmental or public health problem will the discharger be correcting?

N/A

- B. How much will the discharger be increasing employment (at its existing facility or as the result of locating a new facility)?

N/A

- C. How much reduction in employment will the discharger be avoiding?

N/A

- D. How much additional state or local taxes will the discharger be paying?

N/A

- E. What public service to the community will the discharger be providing?

N/A

- F. What economic or social benefit will the discharger be providing to the community?

N/A

SECTION G – EPA Application Forms

All Applicants must submit certain EPA permit application forms. More than one application form may be required from a POTW or other TWTDS depending on the number and types of discharges or outfalls. The EPA application forms are found on the Department's website at <http://adem.alabama.gov/programs/water/waterforms.cnt>. The EPA application forms must be submitted in duplicate as follows:

1. All applicants must submit Form 1.
2. Applicants for new or existing discharges of sanitary wastewater from Publicly-Owned Treatment Works (POTW) and Other Treatment Works Treating Domestic Sewage (TWTDS) must submit Form 2A.
3. Applicants for new or existing land application of sanitary wastewater must submit Form 2A and, if the land application site is not completely bermed to prevent runoff, applicants must also submit Form 2F.
4. Applicants for new and existing discharges of process wastewater from water treatment facilities (i.e. public water supply treatment plants) must submit Form 2C.
5. Applicants that generate sewage sludge, derive a material from sewage sludge, or dispose of sewage sludge must submit Part 2 of Form 2S.

SECTION H- ENGINEERING REPORT/BMP PLAN REQUIREMENTS

Any Engineering Report or Best Management Practice (BMP) Plans required to be submitted to ADEM by the applicant must be in accordance with ADEM 335-6-6-.08(i) & (j).

SECTION I- RECEIVING WATERS

Outfall No.	Receiving Water(s)	303(d) Segment?		Included in TMDL?*	
001	Mobile Bay	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

*If a TMDL Compliance Schedule is requested, the following should be attached as supporting documentation:

- (1) Justification for the requested Compliance Schedule (e.g. time for design and installation of control equipment, etc.);
- (2) Monitoring results for the pollutant(s) of concern which have not previously been submitted to the Department (sample collection dates, analytical results (mass and concentration), methods utilized, MDL/ML, etc. should be submitted as available);
- (3) Requested interim limitations, if applicable;
- (4) Date of final compliance with the TMDL limitations; and,
- (5) Any other additional information available to support requested compliance schedule.

SECTION J - APPLICATION CERTIFICATION

The information contained in this form must be certified by a responsible official as defined in ADEM Administrative Code r. 335-6-6-09 "signatories to permit applications and reports" (see below).

"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 Responsible Official:  Date Signed: 10/17/19

Name and Title: Douglas L. Cote, P.E., Assistant Director-Operations

If the Responsible Official signing this application is not identified in Section A.5 or A.8, provide the following information:

Mailing Address: _____

City: _____ State: _____ Zip: _____

Phone Number: _____ Email Address: _____

335-6-6-.09 SIGNATORIES TO PERMIT APPLICATIONS AND REPORTS.

- (1) The application for an NPDES permit shall be signed by a responsible official, as indicated below:
 - (a) In the case of a corporation, by a principal executive officer of at least the level of vice president, or a manager assigned or delegated in accordance with corporate procedures, with such delegation submitted in writing if required by the Department, who is responsible for manufacturing, production, or operating facilities and is authorized to make management decisions which govern the operation of the regulated facility;
 - (b) In the case of a partnership, by a general partner;
 - (c) In the case of a sole proprietorship, by the proprietor; or
 - (d) In the case of a municipal, state, federal, or other public entity, by either a principal executive officer, or ranking elected official.

EPA Identification Number	NPDES Permit Number AL0023086	Facility Name Clifton C. Williams WWTP
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Form 2F NPDES		<p align="center">U.S Environmental Protection Agency Application for NPDES Permit to Discharge Wastewater</p> <p align="center">STORMWATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY</p>
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SECTION 1: OUTFALL LOCATION (40 CFR 122.21(g)(1))

Outfall Location	1.1	Provide information on each of the facility's outfalls in the table below			
		Outfall Number	Receiving Water Name	Latitude	Longitude
		002S	Mobile River	30° 39' 36.32" N	88° 2' 22.05" W
		003S	Mobile River	30° 39' 37.47" N	88° 2' 10.97" W
				° ' "	° ' "
				° ' "	° ' "
				° ' "	° ' "

SECTION 2: IMPROVEMENTS (40 CFR 122.21(g)(6))

Improvements	2.1	Are you presently required by any federal, state, or local authority to meet an implementation schedule for constructing, upgrading, or operating wastewater treatment equipment or practices or any other environmental programs that could affect the discharges described in this application?				
		<input type="checkbox"/> Yes		<input checked="" type="checkbox"/> No → SKIP to Section 3.		
	2.2	Briefly identify each applicable project in the table below.				
		Brief Identification and Description of Project	Affected Outfalls (list outfall numbers)	Source(s) of Discharge	Final Compliance Dates	
	Required				Projected	
	N/A					

2.3	Have you attached sheets describing any additional water pollution control programs (or other environmental projects that may affect your discharges) that you now have underway or planned? (Optional Item)
	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

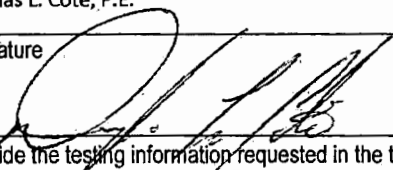
SECTION 3. SITE DRAINAGE MAP (40 CFR 122.26(c)(1)(i)(A))

Site Drainage Map	3.1	Have you attached a site drainage map containing all required information to this application? (See instructions for specific guidance.) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
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SECTION 4. POLLUTANT SOURCES (40 CFR 122.26(c)(1)(i)(B))

Pollutant Sources	4.1	Provide information on the facility's pollutant sources in the table below.			
		Outfall Number	Impervious Surface Area (within a mile radius of the facility)	Total Surface Area Drained (within a mile radius of the facility)	
		002S	134223 <i>specify units</i> sq ft	758150 <i>specify units</i> sq ft	
		003S	This outfall exists but has never discharged.	<i>specify units</i>	<i>specify units</i>
			<i>specify units</i>		<i>specify units</i>
			<i>specify units</i>		<i>specify units</i>
			<i>specify units</i>		<i>specify units</i>
			<i>specify units</i>		<i>specify units</i>
			<i>specify units</i>		<i>specify units</i>
			<i>specify units</i>		<i>specify units</i>
	4.2	Provide a narrative description of the facility's significant material in the space below. (See instructions for content requirements.) <p style="text-align: center;">None</p>			
	4.3	Provide the location and a description of existing structural and non-structural control measures to reduce pollutants in stormwater runoff. (See instructions for specific guidance.)			
		Stormwater Treatment			
		Outfall Number	Control Measures and Treatment	Codes from Exhibit 2F-1 (list)	
		002S	Sedimentation	I-U	

SECTION 5. NON STORMWATER DISCHARGES (40 CFR 122.26(c)(1)(i)(C))

Non-Stormwater Discharges	5.1	I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of non-stormwater discharges. Moreover, I certify that the outfalls identified as having non-stormwater discharges are described in either an accompanying NPDES Form 2C, 2D, or 2E application.		
		Name (print or type first and last name)	Official title	
		Douglas L. Cote, P.E.	Assistant Director - Operations	
		Signature	Date signed	
			10/17/19	
	5.2	Provide the testing information requested in the table below.		
		Outfall Number	Description of Testing Method Used	Date(s) of Testing
	002S	BOD - SM 5210 B, TSS - SM 2540 D, Enterococci - Enterolert	12/2011, 12/2012, 12/2013	002S

SECTION 6. SIGNIFICANT LEAKS OR SPILLS (40 CFR 122.26(c)(1)(i)(D))

Significant Leaks or Spills	6.1	Describe any significant leaks or spills of toxic or hazardous pollutants in the last three years. None

SECTION 7. DISCHARGE INFORMATION (40 CFR 122.26(c)(1)(i)(E))

Discharge Information	See the instructions to determine the pollutants and parameters you are required to monitor and, in turn, the tables you must complete. Not all applicants need to complete each table.	
	7.1	Is this a new source or new discharge? <input type="checkbox"/> Yes → See instructions regarding submission of estimated data. <input checked="" type="checkbox"/> No → See instructions regarding submission of actual data.
	Tables A, B, C, and D	
7.2	Have you completed Table A for each outfall? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

EPA Identification Number	NPDES Permit Number AL0023086	Facility Name Clifton C. Williams WWTP	Form Approved 03/05/19 OMB No. 2040-0004
Discharge Information Continued	7.3	Is the facility subject to an effluent limitation guideline (ELG) or effluent limitations in an NPDES permit for its process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.5.	
	7.4	Have you completed Table B by providing quantitative data for those pollutants that are (1) limited either directly or indirectly in an ELG and/or (2) subject to effluent limitations in an NPDES permit for the facility's process wastewater? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	7.5	Do you know or have reason to believe any pollutants in Exhibit 2F-2 are present in the discharge? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No → SKIP to Item 7.7.	
	7.6	Have you listed all pollutants in Exhibit 2F-2 that you know or have reason to believe are present in the discharge and provided quantitative data or an explanation for those pollutants in Table C? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	7.7	Do you qualify for a small business exemption under the criteria specified in the Instructions? <input type="checkbox"/> Yes → SKIP to Item 7.18. <input checked="" type="checkbox"/> No	
	7.8	Do you know or have reason to believe any pollutants in Exhibit 2F-3 are present in the discharge? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.10.	
	7.9	Have you listed all pollutants in Exhibit 2F-3 that you know or have reason to believe are present in the discharge in Table C? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	7.10	Do you expect any of the pollutants in Exhibit 2F-3 to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.12.	
	7.11	Have you provided quantitative data in Table C for those pollutants in Exhibit 2F-3 that you expect to be discharged in concentrations of 10 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	7.12	Do you expect acrolein, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4,6-dinitrophenol to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.14.	
	7.13	Have you provided quantitative data in Table C for the pollutants identified in Item 7.12 that you expect to be discharged in concentrations of 100 ppb or greater? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	7.14	Have you provided quantitative data or an explanation in Table C for pollutants you expect to be present in the discharge at concentrations less than 10 ppb (or less than 100 ppb for the pollutants identified in Item 7.12)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	7.15	Do you know or have reason to believe any pollutants in Exhibit 2F-4 are present in the discharge? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Item 7.17.	
	7.16	Have you listed pollutants in Exhibit 2F-4 that you know or believe to be present in the discharge and provided an explanation in Table C? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
7.17	Have you provided information for the storm event(s) sampled in Table D? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

Discharge Information Continued	Used or Manufactured Toxics		
	7.18	Is any pollutant listed on Exhibits 2F-2 through 2F-4 a substance or a component of a substance used or manufactured as an intermediate or final product or byproduct?	
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 8.	
	7.19	List the pollutants below, including TCDD if applicable.	
	1. N/A	4.	7.
	2.	5.	8.
	3.	6.	9.

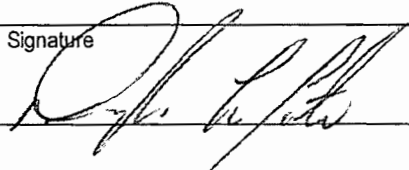
SECTION 8. BIOLOGICAL TOXICITY TESTING DATA (40 CFR 122.21(g)(11))

Biological Toxicity Testing Data	8.1	Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last three years?		
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 9.		
	8.2	Identify the tests and their purposes below.		
		Test(s)	Purpose of Test(s)	Submitted to NPDES Permitting Authority?
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	

SECTION 9. CONTRACT ANALYSIS INFORMATION (40 CFR 122.21(g)(12))

Contract Analysis Information	9.1	Were any of the analyses reported in Section 7 (on Tables A through C) performed by a contract laboratory or consulting firm?		
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No → SKIP to Section 10.		
	9.2	Provide information for each contract laboratory or consulting firm below.		
		Laboratory Number 1	Laboratory Number 2	Laboratory Number 3
		Name of laboratory/firm		
		Laboratory address		
	Phone number			
	Pollutant(s) analyzed			

SECTION 10. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement	10.1	In Column 1 below, mark the sections of Form 2F that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to complete all sections or provide attachments.	
		Column 1	Column 2
		<input checked="" type="checkbox"/> Section 1	<input type="checkbox"/> w/ attachments (e.g., responses for additional outfalls)
		<input checked="" type="checkbox"/> Section 2	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 3	<input checked="" type="checkbox"/> w/ site drainage map
		<input checked="" type="checkbox"/> Section 4	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 5	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 6	<input type="checkbox"/> w/ attachments
		<input checked="" type="checkbox"/> Section 7	<input checked="" type="checkbox"/> Table A <input type="checkbox"/> w/ small business exemption request <input checked="" type="checkbox"/> Table B <input type="checkbox"/> w/ analytical results as an attachment <input type="checkbox"/> Table C <input type="checkbox"/> Table D
		<input checked="" type="checkbox"/> Section 8	<input type="checkbox"/> w/attachments
		<input checked="" type="checkbox"/> Section 9	<input type="checkbox"/> w/attachments (e.g., responses for additional contact laboratories or firms)
		<input checked="" type="checkbox"/> Section 10	<input type="checkbox"/>
	10.2	Certification Statement <i>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.</i>	
	Name (print or type first and last name)		Official title
	Douglas L.Cote, P.E.		Assistant Director-Operations
	Signature 		Date signed 10/17/19

EPA Identification Number	NPDES Permit Number AL0023086	Facility Name Clifton C. Williams WWTP	Outfall Number
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TABLE A. CONVENTIONAL AND NON CONVENTIONAL PARAMETERS (40 CFR 122.26(c)(1)(i)(E)(3))¹

You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details and requirements.

Pollutant or Parameter	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
1. Oil and grease	0 mg/L		0 mg/L		1	
2. Biochemical oxygen demand (BOD ₅)	4.14 mg/L		4.14 mg/L		1	
3. Chemical oxygen demand (COD)	N/A		N/A		N/A	
4. Total suspended solids (TSS)	2.5 mg/L		2.5 mg/L		1	
5. Total phosphorus	2.61 mg/L		2.61 mg/L		1	
6. Total Kjeldahl nitrogen (TKN)	6.7 mg/L		6.7 mg/L		1	
7. Total nitrogen (as N)	0 mg/L		0 mg/L		1	
8. pH	minimum	6.88		6.88	1	
	maximum	6.88		6.88	1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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TABLE B. CERTAIN CONVENTIONAL AND NON CONVENTIONAL POLLUTANTS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(A))¹

List each pollutant that is limited in an effluent limitation guideline (ELG) that the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
DO	5.7 mg/L		5.7 mg/L		1	
Nitrogen Ammonia	6.56 mg/L		6.56 mg/L		1	
Enterococci	0 mg/L		0 mg/L		1	
Chlorine	0 mg/L		0 mg/L		1	

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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EPA Identification Number	NPDES Permit Number AL0023086	Facility Name Clifton C. Williams WWTP	Outfall Number
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TABLE C. TOXIC POLLUTANTS, CERTAIN HAZARDOUS SUBSTANCES, AND ASBESTOS (40 CFR 122.26(c)(1)(i)(E)(4) and 40 CFR 122.21(g)(7)(vi)(B) and (vii))¹

List each pollutant shown in Exhibits 2F-2, 2F-3, and 2F-4 that you know or have reason to believe is present. Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Daily Discharge (specify units)		Average Daily Discharge (specify units)		Number of Storm Events Sampled	Source of Information (new source/new dischargers only; use codes in instructions)
	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 30 Minutes	Flow-Weighted Composite		
N/A						

¹ Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter I, subchapter N or O. See instructions and 40 CFR 122.21(e)(3).

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EPA Identification Number	NPDES Permit Number AL0023086	Facility name Clifton C. Williams WWTP	Outfall Number
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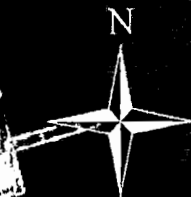
TABLE D. STORM EVENT INFORMATION (40 CFR 122.26(c)(1)(i)(E)(6))

Provide data for the storm event(s) that resulted in the maximum daily discharges for the flow-weighted composite sample.

Date of Storm Event	Duration of Storm Event (in hours)	Total Rainfall During Storm Event (in inches)	Number of Hours Between Beginning of Storm Measured and End of Previous Measurable Rain Event	Maximum Flow Rate During Rain Event (in gpm or specify units)	Total Flow from Rain Event (in gallons or specify units)

Provide a description of the method of flow measurement or estimate.

C.C. Williams Wastewater Treatment Facility



APPROXIMATE
PROPERTY BOUNDARY

Impervious Areas

Stormwater Outfall 002S
88° 2' 22.05" W
30° 39' 36.32" N

Stormwater Outfall 003S
88° 2' 10.97" W
30° 39' 37.47" N

Mobile Bay

Mobile-McDuffie Island

1:4,625

Form 2F
Site Drainage Map
Williams WWTF
Mobile, Mobile County, Alabama

0 175 350 700 Feet



FACILITY NAME AND PERMIT NUMBER:
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FORM
2S
NPDES

NPDES FORM 2S APPLICATION OVERVIEW

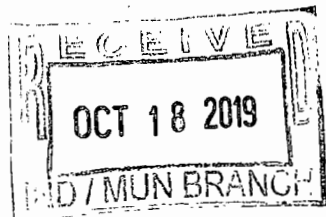
PRELIMINARY INFORMATION

This page is designed to indicate whether the applicant is to complete Part 1 or Part 2. Review each category, and then complete Part 1 or Part 2, as indicated. For purposes of this form, the term "you" refers to the applicant. "This facility" and "your facility" refer to the facility for which application information is submitted.

FACILITIES INCLUDED IN ANY OF THE FOLLOWING CATEGORIES MUST COMPLETE PART 2 (PERMIT APPLICATION INFORMATION).

1. Facilities with a currently effective NPDES permit.
2. Facilities which have been directed by the permitting authority to submit a full permit application at this time.

ALL OTHER FACILITIES MUST COMPLETE PART 1 (LIMITED BACKGROUND INFORMATION).



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PART 1: LIMITED BACKGROUND INFORMATION

This part should be completed only by "sludge-only" facilities - that is, facilities that do not currently have, and are not applying for, an NPDES permit for a direct discharge to a surface body of water.

For purposes of this form, the term "you" refers to the applicant. "This facility" and "your facility" refer to the facility for which application information is submitted.

1. Facility Information.

- a. Facility name N/A
- b. Mailing Address _____

- c. Contact person _____
Title _____
Telephone number _____
- d. Facility Address (not P.O. B ox) _____

- e. Indicate the type of facility
 Publicly owned treatment works (POTW) Privately owned treatment works
 Federally owned treatment works Blending or treatment operation
 Surface disposal site Sewage sludge incinerator
 Other (describe) _____

2. Applicant Information.

- a. Applicant name _____
- b. Mailing Address _____

- c. Contact person _____
Title _____
Telephone number _____
- d. Is the applicant the owner or operator (or both) of this facility?
 owner operator
- e. Should correspondence regarding this permit be directed to the facility or the applicant?
 facility applicant

FACILITY NAME AND PERMIT NUMBER:
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3. Sewage Sludge Amount. Provide the total dry metric tons per latest 365 day period of sewage sludge handled under the following practices:

- a. Amount generated at the facility _____ dry metric tons
 - b. Amount received from off site _____ dry metric tons
 - c. Amount treated or blended on site _____ dry metric tons
 - d. Amount sold or given away in a bag or other container for application to the land _____ dry metric tons
 - e. Amount of bulk sewage sludge shipped off site for treatment or blending _____ dry metric tons
 - f. Amount applied to the land in bulk form _____ dry metric tons
 - g. Amount placed on a surface disposal site _____ dry metric tons
 - h. Amount fired in a sewage sludge incinerator _____ dry metric tons
 - i. Amount sent to a municipal solid waste landfill _____ dry metric tons
 - j. Amount used or disposed by another practice _____ dry metric tons
- Describe _____

4. Pollutant Concentrations. Using the table below or a separate attachment, provide existing sewage sludge monitoring data for the pollutants for which limits in sewage sludge have been established in 40 CFR part 503 for this facility's expected use or disposal practices. If available, base data on three or more samples taken at least one month apart and no more than four and one-half years old.

POLLUTANT	CONCENTRATION (mg/kg dry weight)	ANALYTICAL METHOD	DETECTION LEVEL FOR ANALYSIS
ARSENIC			
CADMIUM			
CHROMIUM			
COPPER			
LEAD			
MERCURY			
MOLYBDENUM			
NICKEL			
SELENIUM			
ZINC			

5. Treatment Provided At Your Facility.

- a. Which class of pathogen reduction does the sewage sludge meet at your facility?
_____ Class A _____ Class B _____ Neither or unknown
- b. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce pathogens in sewage sludge:

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

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c. Which vector attraction reduction option is met for the sewage sludge at your facility?

- Option 1 (Minimum 38 percent reduction in volatile solids)
- Option 2 (Anaerobic process, with bench-scale demonstration)
- Option 3 (Aerobic process, with bench-scale demonstration)
- Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
- Option 5 (Aerobic processes plus raised temperature)
- Option 6 (Raise pH to 12 and retain at 11.5)
- Option 7 (75 percent solids with no unstabilized solids)
- Option 8 (90 percent solids with unstabilized solids)
- Option 9 (Injection below land surface)
- Option 10 (Incorporation into soil within 6 hours)
- Option 11 (Covering active sewage sludge unit daily)
- None or unknown

d. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce vector attraction properties of sewage sludge:

6. **Sewage Sludge Sent to Other Facilities.** Does the sewage sludge from your facility meet the Table 1 ceiling concentrations, the Table 3 pollutant concentrations, Class A pathogen requirements, and one of the vector attraction options 1-8?

Yes No

If yes, go to question 8 (Certification).

If no, is sewage sludge from your facility provided to another facility for treatment, distribution, use, or disposal?

Yes No

If no, go to question 7 (Use and Disposal Sites).

If yes, provide the following information for the facility receiving the sewage sludge:

a. Facility name _____

b. Mailing address _____

c. Contact person _____

Title _____

Telephone number _____

d. Which activities does the receiving facility provide? (Check all that apply)

Treatment or blending Sale or give-away in bag or other container

Land application Surface disposal

Incineration Other (describe):

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

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7. Use and Disposal Sites. Provide the following information for each site on which sewage sludge from this facility is used or disposed:

- a. Site name or number _____
- b. Contact person _____
Title _____
Telephone _____
- c. Site location (Complete 1 or 2)
 - 1. Street or Route # _____
County _____
City or Town _____ State _____ Zip _____
 - 2. Latitude _____ Longitude _____
- d. Site type (Check all that apply)
 - Agricultural Lawn or home garden Forest
 - Surface disposal Public Contact Incineration
 - Reclamation Municipal Solid Waste Landfill Other (describe): _____

8. Certification. Sign the certification statement below. (Refer to instructions to determine who is an officer for purposes of this certification.)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with the 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 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.

Name and official title _____
Signature _____
Telephone number _____
Date signed _____

SEND COMPLETED FORMS TO:

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

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PART 2: PERMIT APPLICATION INFORMATION

Complete this part if you have an effective NPDES permit or have been directed by the permitting authority to submit a full permit application at this time. In other words, complete this part if your facility has, or is applying for, an NPDES permit.

For purposes of this form, the term "you" refers to the applicant. "This facility" and "your facility" refer to the facility for which application information is submitted.

APPLICATION OVERVIEW — SEWAGE SLUDGE USE OR DISPOSAL INFORMATION

Part 2 is divided into five sections (A-E). Section A pertains to all applicants. The applicability of Sections B, C, D, and E depends on your facility's sewage sludge use or disposal practices. The information provided on this page indicates which sections of Part 2 to fill out.

1. SECTION A: GENERAL INFORMATION.

Section A must be completed by all applicants

2. SECTION B: GENERATION OF SEWAGE SLUDGE OR PREPARATION OF A MATERIAL DERIVED FROM SEWAGE SLUDGE.

Section B must be completed by applicants who either:

- 1) Generate sewage sludge, or
- 2) Derive a material from sewage sludge.

3. SECTION C: LAND APPLICATION OF BULK SEWAGE SLUDGE.

Section C must be completed by applicants who either:

- 1) Apply sewage to the land, or
- 2) Generate sewage sludge which is applied to the land by others.

NOTE: Applicants who meet either or both of the two above criteria are exempted from this requirement if all sewage sludge from their facility falls into one of the following three categories:

- 1) The sewage sludge from this facility meets the ceiling and pollutant concentrations, Class A pathogen reduction requirements, and one of vector attraction reduction options 1-8, as identified in the instructions, or
- 2) The sewage sludge from this facility is placed in a bag or other container for sale or give-away for application to the land, or
- 3) The sewage sludge from this facility is sent to another facility for treatment or blending.

4. SECTION D: SURFACE DISPOSAL

Section D must be completed by applicants who own or operate a surface disposal site.

5. SECTION E: INCINERATION

Section E must be completed by applicants who own or operate a sewage sludge incinerator.

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

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A. GENERAL INFORMATION

All applicants must complete this section.

A.1. Facility Information.

- a. Facility name Clifton C. Williams WWTP
- b. Mailing Address PO Box 180249
Mobile, Alabama 36618
- c. Contact person David Tillman
Title Chief Treatment Plant Operator
Telephone number (251) 378-3505
- d. Facility Address (not P.O. Box) 1600 Yeend Street
Mobile, Alabama 36652
- e. Is this facility a Class I sludge management facility? Yes No
- f. Facility design flow rate: 28.00 mgd
- g. Total population served: 265,440
- h. Indicate the type of facility:
 Publicly owned treatment works (POTW) Privately owned treatment works
 Federally owned treatment works Blending or treatment operation
 Surface disposal site Sewage sludge incinerator
 Other (describe) _____

A.2. Applicant Information. If the applicant is different from the above, provide the following:

- a. Applicant name Mobile Area Water and Sewer System
- b. Mailing Address PO Box 180249
Mobile, Alabama 36618
- c. Contact person Douglas L. Cote, P.E.
Title Assistant Director-Operations
Telephone number (251) 694-3187
- d. Is the applicant the owner or operator (or both) of this facility?
 owner operator
- e. Should correspondence regarding this permit should be directed to the facility or the applicant.
 facility applicant

FACILITY NAME AND PERMIT NUMBER:

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A.3. Permit Information.

- a. Facility's NPDES permit number (if applicable): AL0023086
- b. List, on this form or an attachment, all other Federal, State, and local permits or construction approvals received or applied for that regulate this facility's sewage sludge management practices:

Permit Number	Type of Permit
_____	_____
_____	_____
_____	_____

A.4. Indian Country. Does any generation, treatment, storage, application to land, or disposal of sewage sludge from this facility occur in Indian Country?

Yes No If yes, describe: N/A

A.5. Topographic Map. Provide a topographic map or maps (or other appropriate map(s) if a topographic map is unavailable) that show the following information. Map(s) should include the area one mile beyond all property boundaries of the facility:

- a. Location of all sewage sludge management facilities, including locations where sewage sludge is stored, treated, or disposed.
- b. Location of all wells, springs, and other surface water bodies, listed in public records or otherwise known to the applicant within 1/4 mile of the facility property boundaries.

A.6. Line Drawing. Provide a line drawing and/or a narrative description that identifies all sewage sludge processes that will be employed during the term of the permit, including all processes used for collecting, dewatering, storing, or treating sewage sludge, the destination(s) of all liquids and solids leaving each unit, and all methods used for pathogen reduction and vector attraction reduction.

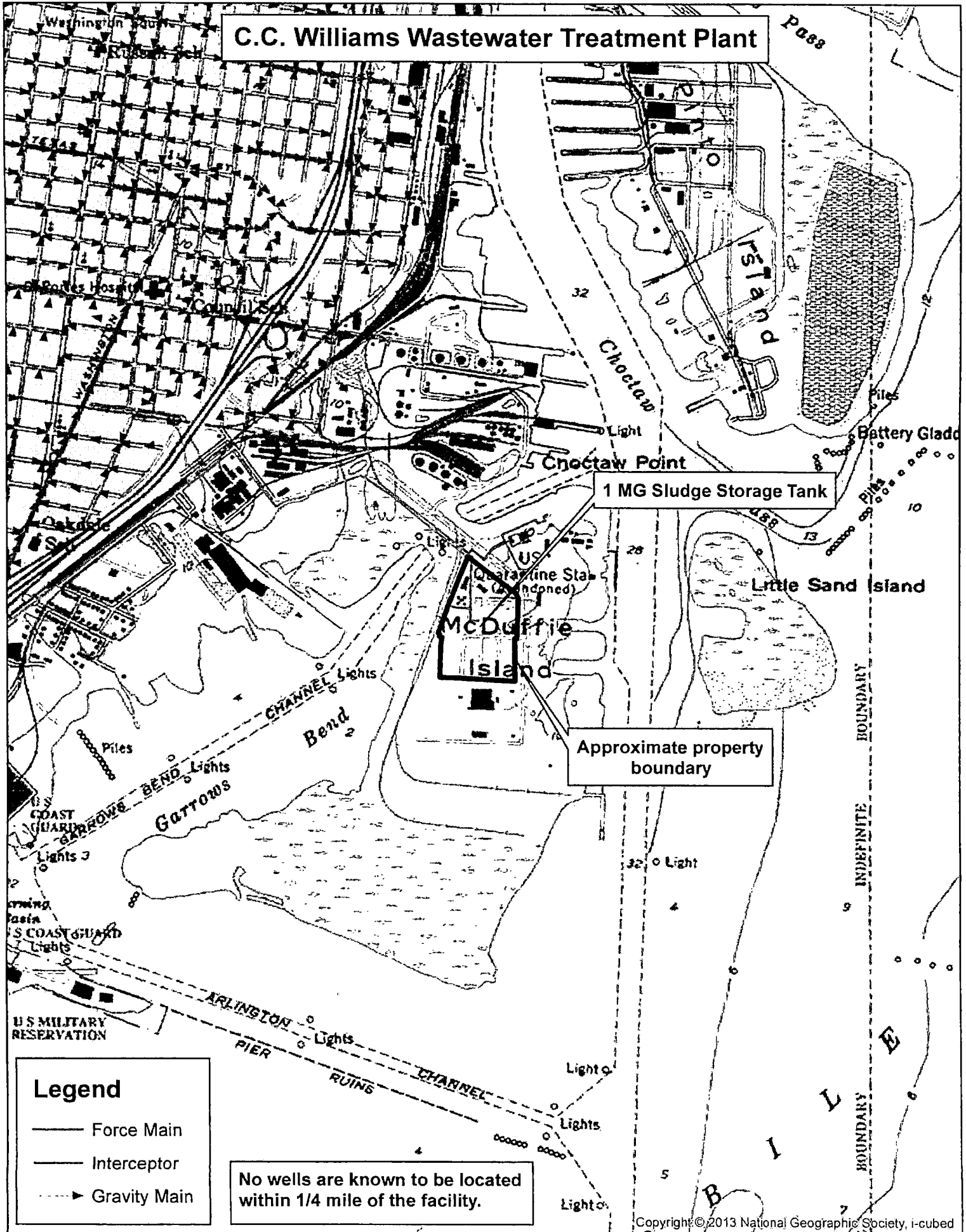
A.7. Contractor Information.

Are any operational or maintenance aspects of this facility related to sewage sludge generation, treatment, use or disposal the responsibility of a contractor? Yes No

If yes, provide the following for each contractor (attach additional pages if necessary):

- a. Name Denali Water Solutions
- b. Mailing Address 3308 Bernice Avenue, Russellville, AR 72802
- c. Telephone Number (479) 498-0500
- d. Responsibilities of contractor Land Application of Class B biosolids

C.C. Williams Wastewater Treatment Plant



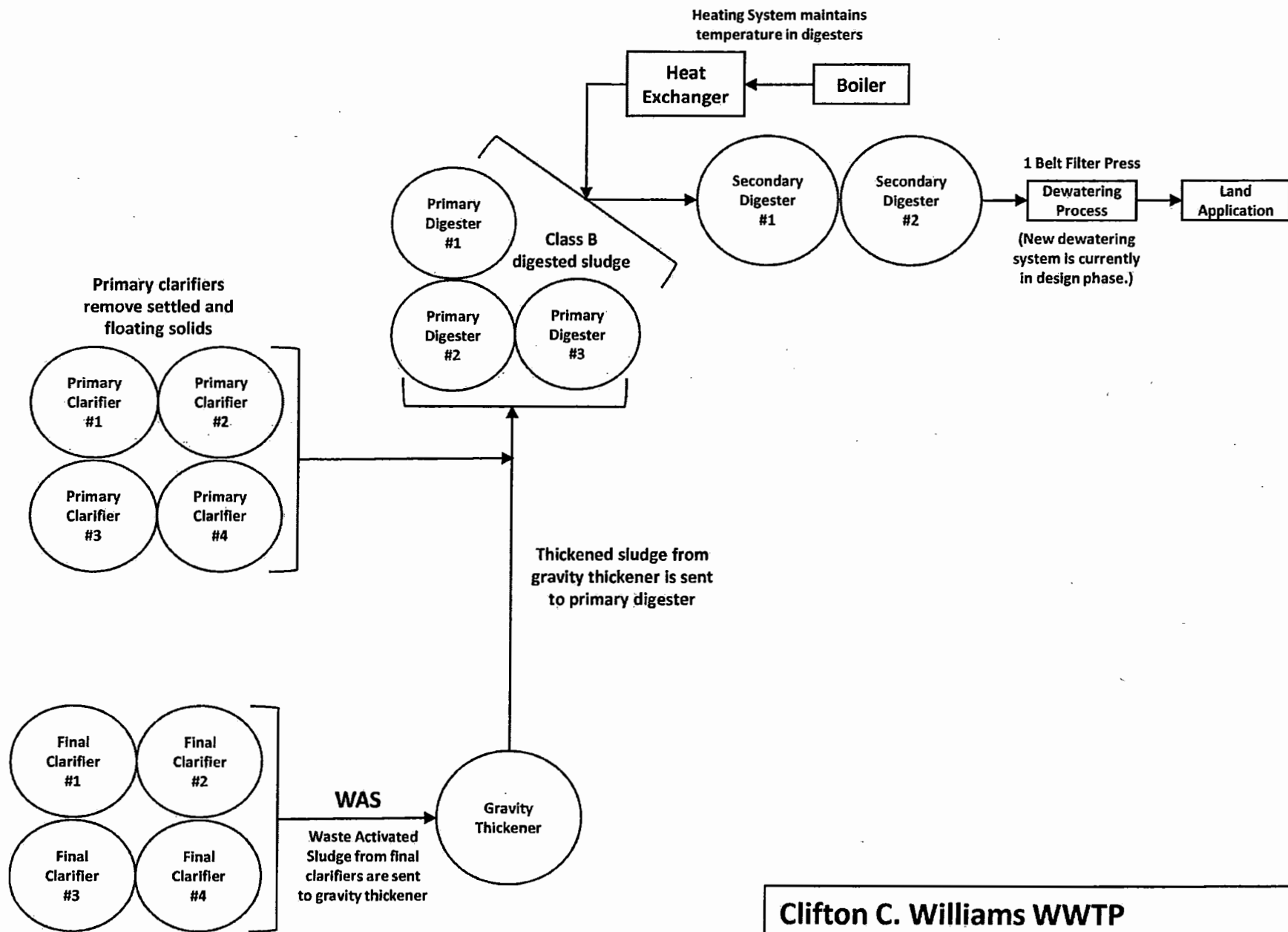
1 MG Sludge Storage Tank

Approximate property boundary

Legend

- Force Main
- - - Interceptor
- · · Gravity Main

No wells are known to be located within 1/4 mile of the facility.



**Clifton C. Williams WWTP
Form 2S – Sludge Process Flow Diagram**

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

A.8. Pollution Concentrations: Using the table below or a separate attachment, provide sewage sludge monitoring data for the pollutants for which limits in sewage sludge have been established in 40 CFR Part 503 for this facility's expected use or disposal practices. All data must be based on three or more samples taken at least one month apart and must be no more than four and one-half years old.

POLLUTANT	CONCENTRATION (mg/kg dry weight)	ANALYTICAL METHOD	DETECTION LEVEL FOR ANALYSIS
ARSENIC	5.10	6010D	5.0
CADMIUM	1.60	6010D	1.0
CHROMIUM	54.00	6010D	2.5
COPPER	302.00	6010D	2.5
LEAD	40.10	6010D	3.0
MERCURY	0.80	SW-7471B	0.4
MOLYBDENUM	22.00	6010D	2.5
NICKEL	25.30	6010D	2.5
SELENIUM	5.00	6010D	5.0
ZINC	898.30	6010D	5.0

A.9. Certification. Read and submit the following certification statement with this application. Refer to the instructions to determine who is an officer for purposes of this certification. Indicate which parts of Form 2S you have completed and are submitting:

Part 1 Limited Background Information packet

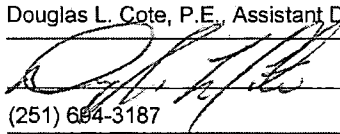
Part 2 Permit Application Information packet:

- Section A (General Information)
- Section B (Generation of Sewage Sludge or Preparation of a Material Derived from Sewage Sludge)
- Section C (Land Application of Bulk Sewage Sludge)
- Section D (Surface Disposal)
- Section E (Incineration)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with the 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 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.

Name and official title Douglas L. Cote, P.E., Assistant Director-Operations

Signature



Date signed

10/17/19

Telephone number

(251) 684-3187

Upon request of the permitting authority, you must submit any other information necessary to assess sewage sludge use or disposal practices at your facility or identify appropriate permitting requirements.

SEND COMPLETED FORMS TO:

FACILITY NAME AND PERMIT NUMBER:
Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

B. GENERATION OF SEWAGE SLUDGE OR PREPARATION OF A MATERIAL DERIVED FROM SEWAGE SLUDGE

Complete this section if your facility generates sewage sludge or derives a material from sewage sludge.

B.1. Amount Generated On Site.

Total dry metric tons per 365-day period generated at your facility: 1,846.50 dry metric tons

B.2. Amount Received from Off Site. If your facility receives sewage sludge from another facility for treatment, use, or disposal, provide the following information for each facility from which sewage sludge is received. If you receive sewage sludge from more than one facility, attach additional pages as necessary.

- a. Facility name N/A
- b. Mailing Address _____
- c. Contact person _____
- Title _____
- Telephone number _____
- d. Facility Address (not P.O. Box) _____

e. Total dry metric tons per 365-day period received from this facility: _____ dry metric tons

f. Describe, on this form or on another sheet of paper, any treatment processes known to occur at the off-site facility, including blending activities and treatment to reduce pathogens or vector attraction characteristics.

B.3. Treatment Provided At Your Facility.

a. Which class of pathogen reduction is achieved for the sewage sludge at your facility?

_____ Class A Class B _____ Neither or unknown

b. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce pathogens in sewage sludge:
Anaerobic Digestion Process

c. Which vector attraction reduction option is met for the sewage sludge at your facility?

- Option 1 (Minimum 38 percent reduction in volatile solids)
- _____ Option 2 (Anaerobic process, with bench-scale demonstration)
- _____ Option 3 (Aerobic process, with bench-scale demonstration)
- _____ Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
- _____ Option 5 (Aerobic processes plus raised temperature)
- _____ Option 6 (Raise pH to 12 and retain at 11.5)
- _____ Option 7 (75 percent solids with no unstabilized solids)
- _____ Option 8 (90 percent solids with unstabilized solids)
- _____ None or unknown

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
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B.3. Treatment Provided At Your Facility. (con't)

- d. Describe, on this form or another sheet of paper, any treatment processes used at your facility to reduce vector attraction properties of sewage sludge:

N/A _____

- e. Describe, on this form or another sheet of paper, any other sewage sludge treatment or blending activities not identified in (a) - (d) above:

N/A _____

Complete Section B.4 if sewage sludge from your facility meets the ceiling concentrations in Table 1 of 40 CFR 503.13, the pollutant concentrations in Table 3 of §503.13, the Class A pathogen reduction requirements in §503.32(a), and one of the vector attraction reduction requirements in § 503.33(b)(1)-(8) and is land applied. Skip this section if sewage sludge from your facility does not meet all of these criteria.

B.4. Preparation of Sewage Sludge Meeting Ceiling and Pollutant Concentrations, Class A Pathogen Requirements, and One of Vector Attraction Reduction Options 1-8.

- a. Total dry metric tons per 365-day period of sewage sludge subject to this section that is applied to the land: _____ dry metric tons

- b. Is sewage sludge subject to this section placed in bags or other containers for sale or give-away for application to the land?

_____ Yes _____ No

Complete Section B.5. if you place sewage sludge in a bag or other container for sale or give-away for land application. Skip this section if the sewage sludge is covered in Section B.4.

B.5. Sale or Give-Away in a Bag or Other Container for Application to the Land.

- a. Total dry metric tons per 365-day period of sewage sludge placed in a bag or other container at your facility for sale or give-away for application to the land: _____ dry metric tons

- b. Attach, with this application, a copy of all labels or notices that accompany the sewage sludge being sold or given away in a bag or other container for application to the land.

Complete Section B.6 if sewage sludge from your facility is provided to another facility that provides treatment or blending. This section does not apply to sewage sludge sent directly to a land application or surface disposal site. Skip this section if the sewage sludge is covered in Sections B.4 or B.5. If you provide sewage sludge to more than one facility, attach additional pages as necessary.

B.6. Shipment Off Site for Treatment or Blending.

- a. Receiving facility name N/A _____

- b. Mailing address _____

- c. Contact person _____

Title _____

Telephone number _____

- d. Total dry metric tons per 365-day period of sewage sludge provided to receiving facility: _____

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

B.6. Shipment Off Site for Treatment or Blending. (con't)

e. Does the receiving facility provide additional treatment to reduce pathogens in sewage sludge from your facility? Yes No

Which class of pathogen reduction is achieved for the sewage sludge at the receiving facility?

Class A Class B Neither or unknown

Describe, on this form or another sheet of paper, any treatment processes used at the receiving facility to reduce pathogens in sewage sludge:

f. Does the receiving facility provide additional treatment to reduce vector attraction characteristics of the sewage sludge?

Yes No

Which vector attraction reduction option is met for the sewage sludge at the receiving facility?

- Option 1 (Minimum 38 percent reduction in volatile solids)
- Option 2 (Anaerobic process, with bench-scale demonstration)
- Option 3 (Aerobic process, with bench-scale demonstration)
- Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
- Option 5 (Aerobic processes plus raised temperature)
- Option 6 (Raise pH to 12 and retain at 11.5)
- Option 7 (75 percent solids with no unstabilized solids)
- Option 8 (90 percent solids with unstabilized solids)
- None

Describe, on this form or another sheet of paper, any treatment processes used at the receiving facility to reduce vector attraction properties of sewage sludge.

g. Does the receiving facility provide any additional treatment or blending activities not identified in (c) or (d) above? Yes No

If yes, describe, on this form or another sheet of paper, the treatment or blending activities not identified in (c) or (d) above:

h. If you answered yes to (e), (f), or (g), attach a copy of any information you provide the receiving facility to comply with the "notice and necessary information" requirement of 40 CFR 503.12(g).

i. Does the receiving facility place sewage sludge from your facility in a bag or other container for sale or give-away for application to the land? Yes No

If yes, provide a copy of all labels or notices that accompany the product being sold or given away.

Complete Section B.7 if sewage sludge from your facility is applied to the land, unless the sewage sludge is covered in:

- Section B.4 (it meets Table 1 ceiling concentrations, Table 3 pollutant concentrations, Class A pathogen requirements, and one of vector attraction reduction options 1-8); or
- Section B.5 (you place it in a bag or other container for sale or give-away for application to the land); or
- Section B.6 (you send it to another facility for treatment or blending).

B.7. Land Application of Bulk Sewage Sludge.

a. Total dry metric tons per 365-day period of sewage sludge applied to all land application sites: 1,846.50 dry metric tons

FACILITY NAME AND PERMIT NUMBER:
Clifton C. Williams WWTP - AL0023086

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B.7. Land Application of Bulk Sewage Sludge. (con't)

b. Do you identify all land application sites in Section C of this application? Yes No

If no, submit a copy of the land application plan with application (see instructions).

c. Are any land application sites located in States other than the State where you generate sewage sludge or derive a material from sewage sludge? Yes No

If yes, describe, on this form or another sheet of paper, how you notify the permitting authority for the States where the land application sites are located. Provide a copy of the notification.

Complete Section B.8 if sewage sludge from your facility is placed on a surface disposal site.

B.8. Surface Disposal.

a. Total dry metric tons of sewage sludge from your facility placed on all surface disposal sites per 365-day period: _____ dry metric tons

b. Do you own or operate all surface disposal sites to which you send sewage sludge for disposal?

Yes No

If no, answer B.8.c through B.8.f for each surface disposal site that you do not own or operate. If you send sewage sludge to more than one such surface disposal site, attach additional pages as necessary.

c. Site name or number _____

d. Contact person _____

Title _____

Telephone number _____

Contact is Site owner Site operator

e. Mailing address _____

f. Total dry metric tons of sewage sludge from your facility placed on this surface disposal site per 365-day period: _____ dry metric tons

Complete Section B.9 if sewage sludge from your facility is fired in a sewage sludge incinerator.

B.9. Incineration.

a. Total dry metric tons of sewage sludge from your facility fired in all sewage sludge incinerators per 365-day period: _____ dry metric tons

b. Do you own or operate all sewage sludge incinerators in which sewage sludge from your facility is fired? Yes No

If no, complete B.9.c through B.9.f for each sewage sludge incinerator that you do not own or operate. If you send sewage sludge to more than one such sewage sludge incinerator, attach additional pages as necessary.

c. Incinerator name or number: _____

d. Contact person: _____

Title: _____

Telephone number: _____

Contact is: Incinerator owner Incinerator operator

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

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B.9. Incineration. (con't)

e. Mailing address: _____

f. Total dry metric tons of sewage sludge from your facility fired in this sewage sludge incinerator per 365-day period: _____ dry metric tons

Complete Section B.10 if sewage sludge from this facility is placed on a municipal solid waste landfill.

B.10. Disposal in a Municipal Solid Waste Landfill. Provide the following information for each municipal solid waste landfill on which sewage sludge from your facility is placed. If sewage sludge is placed on more than one municipal solid waste landfill, attach additional pages as necessary.

a. Name of landfill N/A

b. Contact person _____

Title _____

Telephone number _____

Contact is _____ Landfill owner _____ Landfill operator

c. Mailing address _____

d. Location of municipal solid waste landfill:

Street or Route # _____

County _____

City or Town _____ State _____ Zip _____

e. Total dry metric tons of sewage sludge from your facility placed in this municipal solid waste landfill per 365-day period:

_____ dry metric tons

f. List, on this form or an attachment, the numbers of all other Federal, State, and local permits that regulate the operation of this municipal solid waste landfill.

Permit Number _____ Type of Permit _____

g. Submit, with this application, information to determine whether the sewage sludge meets applicable requirements for disposal of sewage sludge in a municipal solid waste landfill (e.g., results of paint filter liquids test and TCLP test)

h. Does the municipal solid waste landfill comply with applicable criteria set forth in 40 CFR Part 258?

_____ Yes _____ No

FACILITY NAME AND PERMIT NUMBER:
Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
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C. LAND APPLICATION OF BULK SEWAGE SLUDGE

Complete Section C for sewage sludge that is applied to the land, unless any of the following conditions apply:

- The sewage sludge meets the Table 1 ceiling concentrations, the Table 3 pollutant concentrations, Class A pathogen requirements, and one of vector attraction reduction options 1-8 (fill out B.4 instead); or
- The sewage sludge is sold or given away in a bag or other container for application to the land (fill out B.5 instead); or
- You provide the sewage sludge to another facility for treatment or blending (fill out B.6 instead).

Complete Section C for every site on which the sewage sludge that you reported in Section B.7 is applied.

C.1. Identification of Land Application Site.

- a. Site name or number AL-MOB-3-Fields 1,3,4,5,6,7,9,14,15,16,17,18,19
- b. Site location (Complete 1 and 2).
1. Street or Route # Driskell Dairy Road
- County Mobile
- City or Town Grand Bay State AL Zip 36541
2. Latitude 30.586818 Longitude -88.388434
- Method of latitude/longitude determination
 USGS map Field survey Other Google Earth
- c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.

C.2. Owner Information.

- a. Are you the owner of this land application site? Yes No

b. If no, provide the following information about the owner:

Name William B. Driskell, Darrell A. Driskell, Charles K. Driskell, et al

Telephone number (251) 865-6875

Mailing Address 14353 Cat Deakle Road, Grand Bay, AL 36541

C.3. Applier Information.

- a. Are you the person who applies, or who is responsible for application of, sewage sludge to this land application site?
 Yes No

b. If no, provide the following information for the person who applies:

Name Denali Water Solutions

Telephone number Main Office: 479-498-0500; Local Office: 251-207-4085

Mailing Address Main Office: 3308 Bernice Avenue, Russellville, AR 72802
Local Office: 851 Cemetery Road, Wilmer, AL 36587

C.4. Site Type: Identify the type of land application site from among the following.

Agricultural land Forest Public contact site
 Reclamation site Other. Describe: _____

FACILITY NAME AND PERMIT NUMBER:
Clifton C. Williams WWTP - AL0023086

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C.5. Crop or Other Vegetation Grown on Site.

a. What type of crop or other vegetation is grown on this site?

Bermuda/Bahia, Cotton, Small Grain (i.e. Rye/Wheat)

b. What is the nitrogen requirement for this crop or vegetation?

Bermuda/Bahia - 300 lbs PAN/Ac/Yr; Cotton - 90 lbs PAN/Ac/Yr; Small Grain - 100 lbs PAN/Ac/Yr

C.6. Vector Attraction Reduction.

Are any vector attraction reduction requirements met when sewage sludge is applied to the land application site?

Yes No

If yes, answer C.6.a and C.6.b;

a. Indicate which vector attraction reduction option is met:

Option 9 (Injection below land surface)

Option 10 (Incorporation into soil within 6 hours)

b. Describe, on this form or another sheet of paper, any treatment processes used at the land application site to reduce vector attraction properties of sewage sludge:

Complete Question C.7 only if the sewage sludge applied to this site since July 20, 1993, is subject to the cumulative pollutant loading rates (CPLRs) in 40 CFR 503.13(b)(2).

C.7. Cumulative Loadings and Remaining Allotments.

a. Have you contacted the permitting authority in the State where the bulk sewage sludge subject to CPLRs will be applied, to ascertain whether bulk sewage sludge subject to CPLRs has been applied to this site on or since July 20, 1993? Yes No

If no, sewage sludge subject to CPLRs may not be applied to this site.

If yes, provide the following information:

Permitting authority _____

Contact Person _____

Telephone number _____

b. Based upon this inquiry, has bulk sewage sludge subject to CPLRs been applied to this site since July 20, 1993?

Yes No

If no, skip C.7.c.

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

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- c. Provide the following information for every facility other than yours that is sending, or has sent, bulk sewage sludge to CPLRs to this site since July 20, 1993. If more than one such facility sends sewage sludge to this site, attach additional pages as necessary.

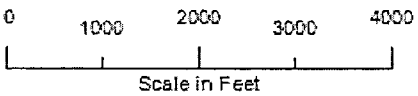
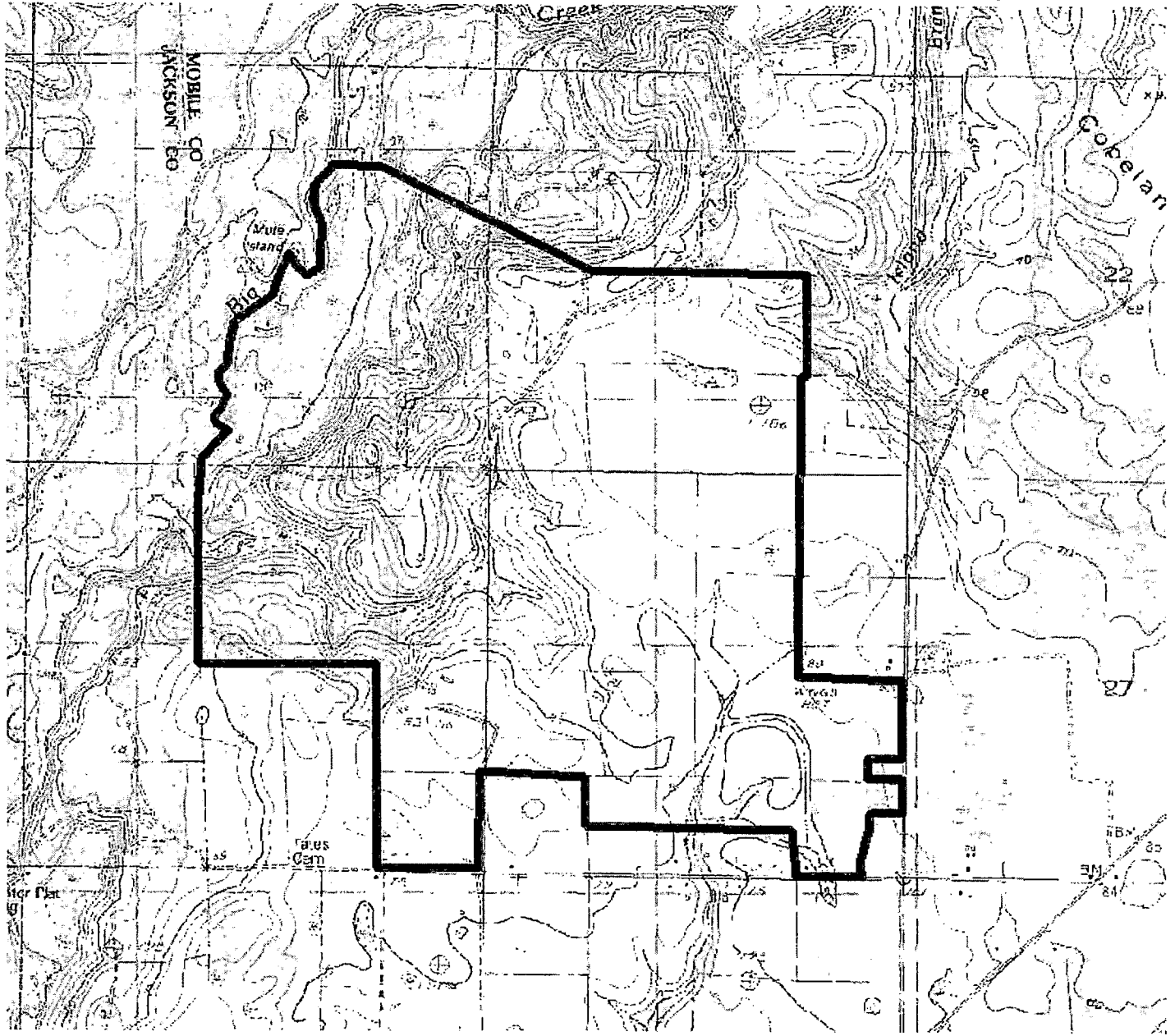
Facility name _____

Mailing Address _____

Contact person _____

Title _____

Telephone number _____



Property Line	~
drg_s_al097	Ⓜ

Owner: Bert Driskell, etc (AL-MOB-3)
 Operator: Driskell Farms
 Address: 14353 Cat Deakle Road
 Grand Bay, AL 36541
 Phone: 251-865-6875

Additional Site Info:

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

C. LAND APPLICATION OF BULK SEWAGE SLUDGE

Complete Section C for sewage sludge that is applied to the land, unless any of the following conditions apply:

- The sewage sludge meets the Table 1 ceiling concentrations, the Table 3 pollutant concentrations, Class A pathogen requirements, and one of vector attraction reduction options 1-8 (fill out B.4 instead); or
- The sewage sludge is sold or given away in a bag or other container for application to the land (fill out B.5 instead); or
- You provide the sewage sludge to another facility for treatment or blending (fill out B.6 instead).

Complete Section C for every site on which the sewage sludge that you reported in Section B.7 is applied.

C.1. Identification of Land Application Site.

- a. Site name or number AL-MOB-4-Field 1
- b. Site location (Complete 1 and 2).
1. Street or Route # Driskell Dairy Road
- County Mobile
- City or Town Grand Bay State AL Zip 36541
2. Latitude 30.605632 Longitude -88.380241
- Method of latitude/longitude determination
- USGS map Field survey Other Google Earth
- c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.

C.2. Owner Information.

- a. Are you the owner of this land application site? Yes No
- b. If no, provide the following information about the owner:
- Name Mobile County, Board of Schools (Attn: Facilities)
- Telephone number (251) 221-4330
- Mailing Address P.O. Box 180069, Mobile, AL 36618

C.3. Applier Information.

- a. Are you the person who applies, or who is responsible for application of, sewage sludge to this land application site? Yes No
- b. If no, provide the following information for the person who applies:
- Name Denali Water Solutions
- Telephone number Main Office: 479-498-0500; Local Office: 251-207-4085
- Mailing Address Main Office: 3308 Bernice Avenue, Russellville, AR 72802
Local Office: 851 Cemetery Road, Wilmer, AL 36587

C.4. Site Type: Identify the type of land application site from among the following.

- Agricultural land Forest Public contact site
- Reclamation site Other. Describe: _____

FACILITY NAME AND PERMIT NUMBER:
Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

C.5. Crop or Other Vegetation Grown on Site.

a. What type of crop or other vegetation is grown on this site?

Bermuda/Bahia & Small Grain (i.e. Rye/Wheat)

b. What is the nitrogen requirement for this crop or vegetation?

Bermuda/Bahia - 300 lbs PAN/Ac/Yr; Small Grain - 100 lbs PAN/Ac/Yr

C.6. Vector Attraction Reduction.

Are any vector attraction reduction requirements met when sewage sludge is applied to the land application site?

Yes No

If yes, answer C.6.a and C.6.b:

a. Indicate which vector attraction reduction option is met:

Option 9 (Injection below land surface)

Option 10 (Incorporation into soil within 6 hours)

b. Describe, on this form or another sheet of paper, any treatment processes used at the land application site to reduce vector attraction properties of sewage sludge:

Complete Question C.7 only if the sewage sludge applied to this site since July 20, 1993, is subject to the cumulative pollutant loading rates (CPLRs) in 40 CFR 503.13(b)(2).

C.7. Cumulative Loadings and Remaining Allotments.

a. Have you contacted the permitting authority in the State where the bulk sewage sludge subject to CPLRs will be applied, to ascertain whether bulk sewage sludge subject to CPLRs has been applied to this site on or since July 20, 1993? Yes No

If no, sewage sludge subject to CPLRs may not be applied to this site.

If yes, provide the following information:

Permitting authority _____

Contact Person _____

Telephone number _____

b. Based upon this inquiry, has bulk sewage sludge subject to CPLRs been applied to this site since July 20, 1993?

Yes No

If no, skip C.7.c.

FACILITY NAME AND PERMIT NUMBER:
Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

- c. Provide the following information for every facility other than yours that is sending, or has sent, bulk sewage sludge to CPLRs to this site since July 20, 1993. If more than one such facility sends sewage sludge to this site, attach additional pages as necessary.

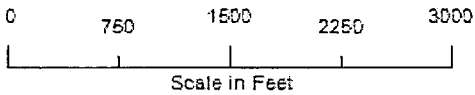
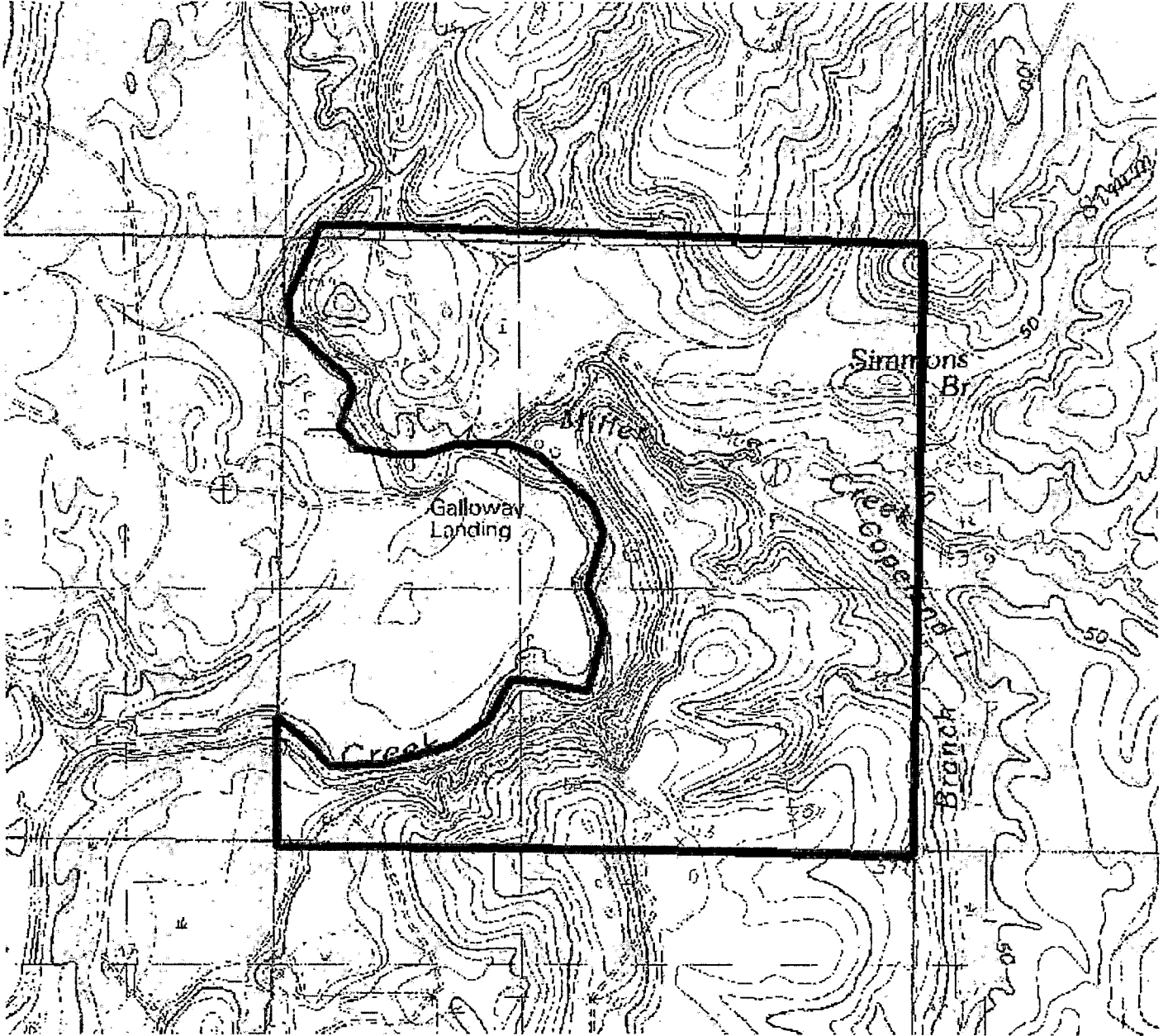
Facility name _____

Mailing Address _____

Contact person _____

Title _____

Telephone number _____



Property Line	~
dra_s_al097	☒

Owner: Mobile County Schools (AL-MOB-4)
 Operator: Driskell Farms
 Address: 14353 Cat Deakle Road
Grand Bay, AL 36541
 Phone: 251-865-6875

Additional Site Info:

FACILITY NAME AND PERMIT NUMBER:
Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

C. LAND APPLICATION OF BULK SEWAGE SLUDGE

Complete Section C for sewage sludge that is applied to the land, unless any of the following conditions apply:

- The sewage sludge meets the Table 1 ceiling concentrations, the Table 3 pollutant concentrations, Class A pathogen requirements, and one of vector attraction reduction options 1-8 (fill out B.4 instead); or
- The sewage sludge is sold or given away in a bag or other container for application to the land (fill out B.5 instead); or
- You provide the sewage sludge to another facility for treatment or blending (fill out B.6 instead).

Complete Section C for every site on which the sewage sludge that you reported in Section B.7 is applied.

C.1. Identification of Land Application Site.

- a. Site name or number AL-MOB-5-Fields 2B, 3
- b. Site location (Complete 1 and 2).
1. Street or Route # Driskell Dairy Road
- County Mobile
- City or Town Grand Bay State AL Zip 36541
2. Latitude 30.601982 Longitude -88.379601
- Method of latitude/longitude determination
- USGS map Field survey Other Google Earth
- c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.

C.2. Owner Information.

- a. Are you the owner of this land application site? Yes No

- b. If no, provide the following information about the owner:

Name Robert Pittman

Telephone number (251) 660-0115

Mailing Address 5150 Dawes Road, Grand Bay, AL 36541

C.3. Applier Information.

- a. Are you the person who applies, or who is responsible for application of, sewage sludge to this land application site?
 Yes No

- b. If no, provide the following information for the person who applies:

Name Denali Water Solutions

Telephone number Main Office: 479-498-0500; Local Office: 251-207-4085

Mailing Address Main Office: 3308 Bernice Avenue, Russellville, AR 72802
Local Office: 851 Cemetery Road, Wilmer, AL 36587

C.4. Site Type: Identify the type of land application site from among the following.

Agricultural land Forest Public contact site
 Reclamation site Other. Describe: _____

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

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C.5. Crop or Other Vegetation Grown on Site.

a. What type of crop or other vegetation is grown on this site?

Bermuda/Bahia & Small Grain (i.e. Rye/Wheat)

b. What is the nitrogen requirement for this crop or vegetation?

Bermuda/Bahia - 300 lbs PAN/Ac/Yr; Small Grain - 100 lbs PAN/Ac/Yr

C.6. Vector Attraction Reduction.

Are any vector attraction reduction requirements met when sewage sludge is applied to the land application site?

Yes No

If yes, answer C.6.a and C.6.b;

a. Indicate which vector attraction reduction option is met:

Option 9 (Injection below land surface)

Option 10 (Incorporation into soil within 6 hours)

b. Describe, on this form or another sheet of paper, any treatment processes used at the land application site to reduce vector attraction properties of sewage sludge:

Complete Question C.7 only if the sewage sludge applied to this site since July 20, 1993, is subject to the cumulative pollutant loading rates (CPLRs) in 40 CFR 503.13(b)(2).

C.7. Cumulative Loadings and Remaining Allotments.

a. Have you contacted the permitting authority in the State where the bulk sewage sludge subject to CPLRs will be applied, to ascertain whether bulk sewage sludge subject to CPLRs has been applied to this site on or since July 20, 1993? Yes No

If no, sewage sludge subject to CPLRs may not be applied to this site.

If yes, provide the following information:

Permitting authority _____

Contact Person _____

Telephone number _____

b. Based upon this inquiry, has bulk sewage sludge subject to CPLRs been applied to this site since July 20, 1993?

Yes No

If no, skip C.7.c.

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

- c. Provide the following information for every facility other than yours that is sending, or has sent, bulk sewage sludge to CPLRs to this site since July 20, 1993. If more than one such facility sends sewage sludge to this site, attach additional pages as necessary.

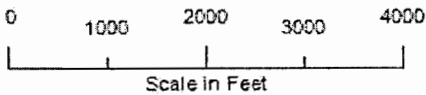
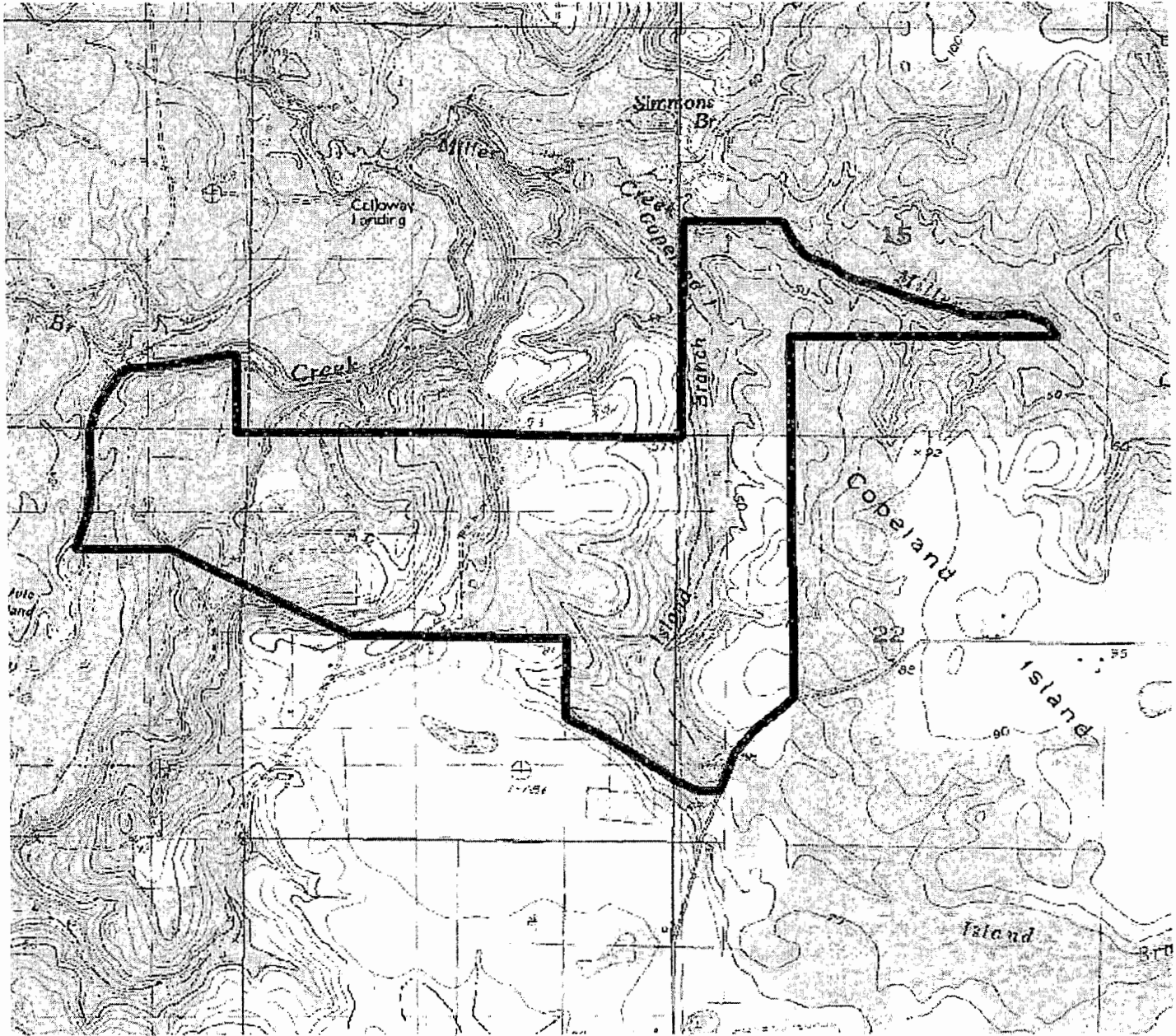
Facility name _____

Mailing Address _____

Contact person _____

Title _____

Telephone number _____



Property Line	
drg_s_al097	

Owner: Robert Pittman (AL-MOB-5)
 Operator: Robert Pittman
 Address: 5150 Dawes Road
 Grand Bay, AL 36541
 Phone: 251.660.0115

Additional Site Info:

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

C. LAND APPLICATION OF BULK SEWAGE SLUDGE

Complete Section C for sewage sludge that is applied to the land, unless any of the following conditions apply:

- The sewage sludge meets the Table 1 ceiling concentrations, the Table 3 pollutant concentrations, Class A pathogen requirements, and one of vector attraction reduction options 1-8 (fill out B.4 Instead); or
- The sewage sludge is sold or given away in a bag or other container for application to the land (fill out B.5 Instead); or
- You provide the sewage sludge to another facility for treatment or blending (fill out B.6 instead).

Complete Section C for every site on which the sewage sludge that you reported in Section B.7 is applied.

C.1. Identification of Land Application Site.

- a. Site name or number AL-MOB-7-Field 4
- b. Site location (Complete 1 and 2).
1. Street or Route # Dawes Road
- County Mobile
- City or Town Grand Bay State AL Zip 36541
2. Latitude 30.568903 Longitude -88.358009
- Method of latitude/longitude determination
- USGS map Field survey Other Google Earth
- c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.

C.2. Owner Information.

- a. Are you the owner of this land application site? Yes No
- b. If no, provide the following information about the owner:
- Name Driskell Properties, Inc.
- Telephone number (251) 865-6875
- Mailing Address 14353 Cat Deakle Road, Grand Bay, AL 36541

C.3. Applier Information.

- a. Are you the person who applies, or who is responsible for application of, sewage sludge to this land application site? Yes No
- b. If no, provide the following information for the person who applies:
- Name Denali Water Solutions
- Telephone number Main Office: 479-498-0500; Local Office: 251-207-4085
- Mailing Address Main Office: 3308 Bernice Avenue, Russellville, AR 72802
Local Office: 851 Cemetery Road, Wilmer, AL 36587

C.4. Site Type: Identify the type of land application site from among the following.

- Agricultural land Forest Public contact site
- Reclamation site Other: Describe: _____

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

C.5. Crop or Other Vegetation Grown on Site.

a. What type of crop or other vegetation is grown on this site?

Cotton, Small Grain (i.e. Rye/Wheat)

b. What is the nitrogen requirement for this crop or vegetation?

Cotton - 90 lbs PAN/Ac/Yr; Small Grain - 100 lbs PAN/Ac/Yr

C.6. Vector Attraction Reduction.

Are any vector attraction reduction requirements met when sewage sludge is applied to the land application site?

Yes No

If yes, answer C.6.a and C.6.b;

a. Indicate which vector attraction reduction option is met:

Option 9 (Injection below land surface)

Option 10 (Incorporation into soil within 6 hours)

b. Describe, on this form or another sheet of paper, any treatment processes used at the land application site to reduce vector attraction properties of sewage sludge:

Complete Question C.7 only if the sewage sludge applied to this site since July 20, 1993, is subject to the cumulative pollutant loading rates (CPLRs) in 40 CFR 503.13(b)(2).

C.7. Cumulative Loadings and Remaining Allotments.

a. Have you contacted the permitting authority in the State where the bulk sewage sludge subject to CPLRs will be applied, to ascertain whether bulk sewage sludge subject to CPLRs has been applied to this site on or since July 20, 1993? Yes No

If no, sewage sludge subject to CPLRs may not be applied to this site.

If yes, provide the following information:

Permitting authority _____

Contact Person _____

Telephone number _____

b. Based upon this inquiry, has bulk sewage sludge subject to CPLRs been applied to this site since July 20, 1993?

Yes No

If no, skip C.7.c.

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

- c. Provide the following information for every facility other than yours that is sending, or has sent, bulk sewage sludge to CPLRs to this site since July 20, 1993. If more than one such facility sends sewage sludge to this site, attach additional pages as necessary.

Facility name

Mailing Address

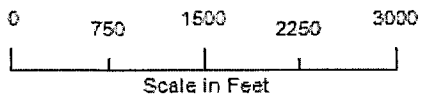
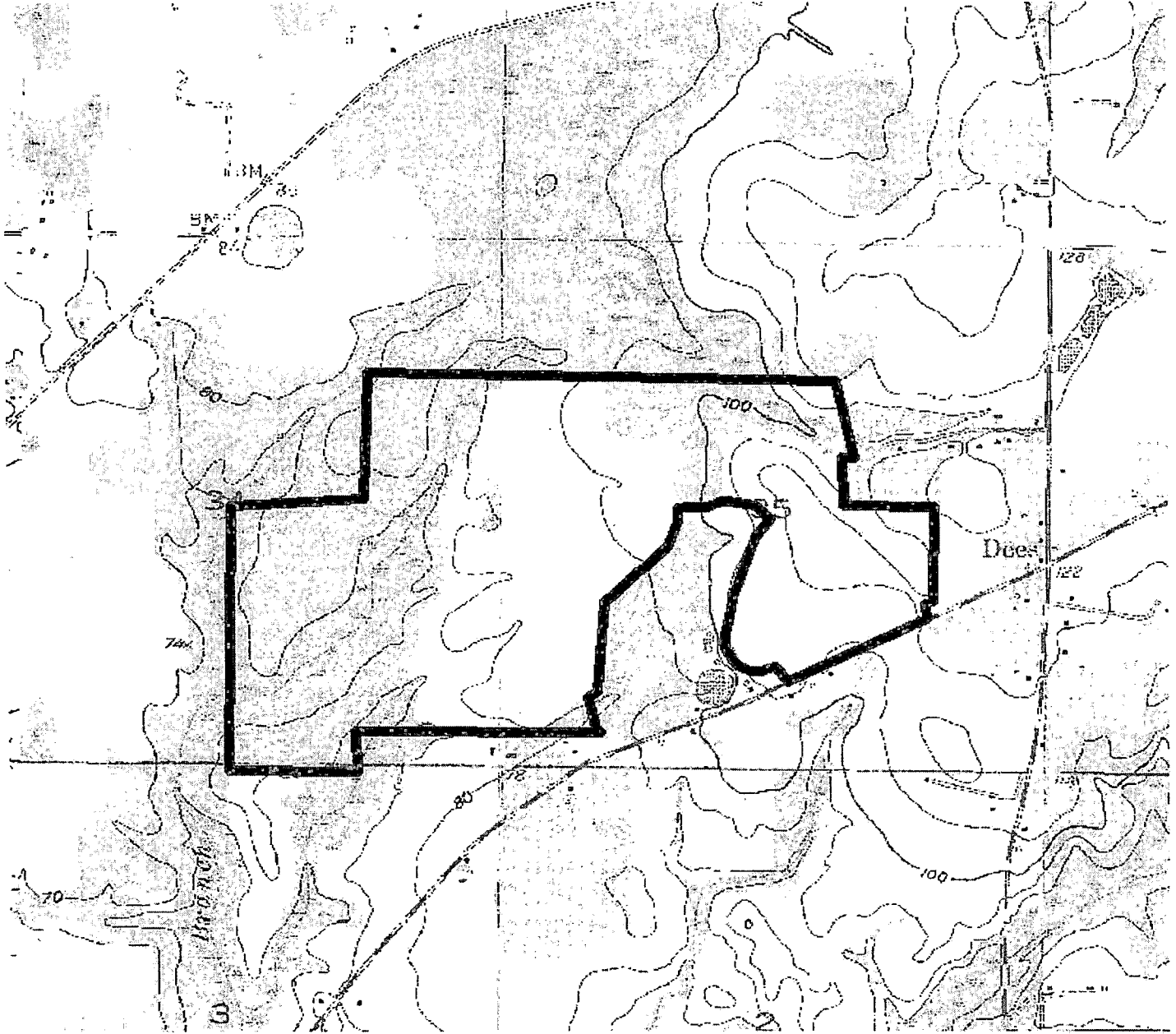
Contact person

Title

Telephone number



3308 Bernice Avenue
Russellville, AR 72802
PO Box 3036 • Russellville, AR 72811
Phone: 479-498-0500



Property Line	
drg_s_al097	
ortho_1-1_1n_s_al097_2013_1	

Owner: Bert Driskell, etc. (AL-MOB-7)
Operator: Driskell Farms
Address: 14353 Cat Deakle Road
Grand Bay, AL 36541
Phone: 251-865-6875

Additional Site Info:

FACILITY NAME AND PERMIT NUMBER:
Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

C. LAND APPLICATION OF BULK SEWAGE SLUDGE

Complete Section C for sewage sludge that is applied to the land, unless any of the following conditions apply:

- The sewage sludge meets the Table 1 ceiling concentrations, the Table 3 pollutant concentrations, Class A pathogen requirements, and one of vector attraction reduction options 1-8 (fill out B.4 instead); or
- The sewage sludge is sold or given away in a bag or other container for application to the land (fill out B.5 instead); or
- You provide the sewage sludge to another facility for treatment or blending (fill out B.6 instead).

Complete Section C for every site on which the sewage sludge that you reported in Section B.7 is applied.

C.1. Identification of Land Application Site.

- a. Site name or number AL-MOB-9-Fields 1,2
- b. Site location (Complete 1 and 2).
1. Street or Route # Hurricane Blvd
County Mobile
City or Town Grand Bay State AL Zip 36544
2. Latitude 30.438711 Longitude -88.295157
Method of latitude/longitude determination
 USGS map Field survey Other Google Earth
- c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.

C.2. Owner Information.

- a. Are you the owner of this land application site? Yes No
- b. If no, provide the following information about the owner:
- Name Driskell Properties, Inc.
Telephone number (251) 865-6875
Mailing Address 14353 Cat Deakle Road, Grand Bay, AL 36541

C.3. Applier Information.

- a. Are you the person who applies, or who is responsible for application of, sewage sludge to this land application site?
 Yes No
- b. If no, provide the following information for the person who applies:
- Name Denali Water Solutions
Telephone number Main Office: 479-498-0500; Local Office: 251-207-4085
Mailing Address Main Office: 3308 Bernice Avenue, Russellville, AR 72802
Local Office: 851 Cemetery Road, Wilmer, AL 36587

C.4. Site Type: Identify the type of land application site from among the following.

- Agricultural land Forest Public contact site
 Reclamation site Other. Describe: _____

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

C.5. Crop or Other Vegetation Grown on Site.

- a. What type of crop or other vegetation is grown on this site?

Cotton, Small Grain (i.e. Rye/Wheat)

- b. What is the nitrogen requirement for this crop or vegetation?

Cotton - 90 lbs PAN/Ac/Yr; Small Grain - 100 lbs PAN/Ac/Yr

C.6. Vector Attraction Reduction.

Are any vector attraction reduction requirements met when sewage sludge is applied to the land application site?

Yes No

If yes, answer C.6.a and C.6.b;

- a. Indicate which vector attraction reduction option is met:

Option 9 (Injection below land surface)

Option 10 (Incorporation into soil within 6 hours)

- b. Describe, on this form or another sheet of paper, any treatment processes used at the land application site to reduce vector attraction properties of sewage sludge:

Complete Question C.7 only if the sewage sludge applied to this site since July 20, 1993, is subject to the cumulative pollutant loading rates (CPLRs) in 40 CFR 503.13(b)(2).

C.7. Cumulative Loadings and Remaining Allotments.

- a. Have you contacted the permitting authority in the State where the bulk sewage sludge subject to CPLRs will be applied, to ascertain whether bulk sewage sludge subject to CPLRs has been applied to this site on or since July 20, 1993? Yes No

If no, sewage sludge subject to CPLRs may not be applied to this site.

If yes, provide the following information:

Permitting authority _____

Contact Person _____

Telephone number _____

- b. Based upon this inquiry, has bulk sewage sludge subject to CPLRs been applied to this site since July 20, 1993?

Yes No

If no, skip C.7.c.

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

- c. Provide the following information for every facility other than yours that is sending, or has sent, bulk sewage sludge to CPLRs to this site since July 20, 1993. If more than one such facility sends sewage sludge to this site, attach additional pages as necessary.

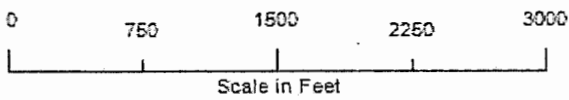
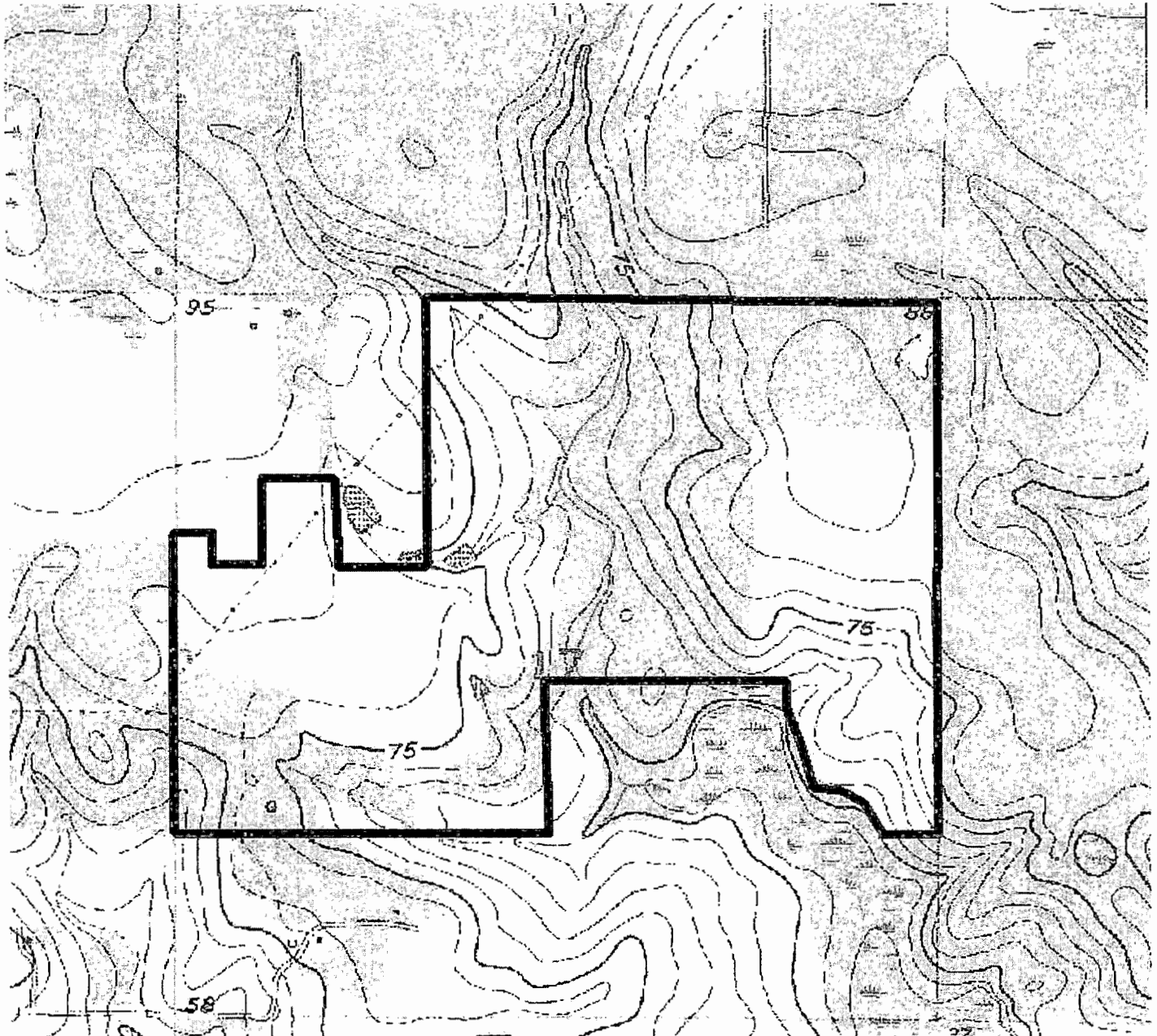
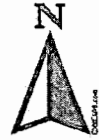
Facility name

Mailing Address

Contact person

Title

Telephone number



Property Line	
drg_s_al097	
ortho_1-1_1n_s_al097_2013_1	

Owner: Charles Driskell, etc. (AL-MOB-9)
 Operator: Driskell Farms
 Address: 14353 Cat Deakle Road
 Grand Bay, AL 36541
 Phone: 251-865-6875

Additional Site Info:

FACILITY NAME AND PERMIT NUMBER:
Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

C. LAND APPLICATION OF BULK SEWAGE SLUDGE

Complete Section C for sewage sludge that is applied to the land, unless any of the following conditions apply:

- The sewage sludge meets the Table 1 ceiling concentrations, the Table 3 pollutant concentrations, Class A pathogen requirements, and one of vector attraction reduction options 1-8 (fill out B.4 instead); or
- The sewage sludge is sold or given away in a bag or other container for application to the land (fill out B.5 instead); or
- You provide the sewage sludge to another facility for treatment or blending (fill out B.6 instead).

Complete Section C for every site on which the sewage sludge that you reported in Section B.7 is applied.

C.1. Identification of Land Application Site.

- a. Site name or number AL-MOB-11-Fields 1,2
- b. Site location (Complete 1 and 2).
1. Street or Route # Lloyd Road
- County Mobile
- City or Town Irvington State AL Zip 36544
2. Latitude 30.428654 Longitude -88.273225
- Method of latitude/longitude determination
- USGS map Field survey Other Google Earth
- c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.

C.2. Owner Information.

- a. Are you the owner of this land application site? Yes No
- b. If no, provide the following information about the owner:
- Name Larry Landry & Terry Landry, Sr.
- Telephone number (251) 653-8459
- Mailing Address Larry - 5501 Linwood Steiner Road, Theodore-Mobile, AL 36582
Terry - 12240 Lloyd Road, Irvington, AL 36544

C.3. Applier Information.

- a. Are you the person who applies, or who is responsible for application of, sewage sludge to this land application site?
 Yes No
- b. If no, provide the following information for the person who applies:
- Name Denali Water Solutions
- Telephone number Main Office: 479-498-0500; Local Office: 251-207-4085
- Mailing Address Main Office: 3308 Bernice Avenue, Russellville, AR 72802
Local Office: 851 Cemetery Road, Wilmer, AL 36587

C.4. Site Type: Identify the type of land application site from among the following.

- Agricultural land Forest Public contact site
- Reclamation site Other. Describe: _____

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

C.5. Crop or Other Vegetation Grown on Site.

a. What type of crop or other vegetation is grown on this site?

Cotton, Small Grain (i.e. Rye/Wheat)

b. What is the nitrogen requirement for this crop or vegetation?

Cotton - 90 lbs PAN/Ac/Yr; Small Grain - 100 lbs PAN/Ac/Yr

C.6. Vector Attraction Reduction.

Are any vector attraction reduction requirements met when sewage sludge is applied to the land application site?

Yes No

If yes, answer C.6.a and C.6.b;

a. Indicate which vector attraction reduction option is met:

Option 9 (Injection below land surface)

Option 10 (Incorporation into soil within 6 hours)

b. Describe, on this form or another sheet of paper, any treatment processes used at the land application site to reduce vector attraction properties of sewage sludge:

Complete Question C.7 only if the sewage sludge applied to this site since July 20, 1993, is subject to the cumulative pollutant loading rates (CPLRs) in 40 CFR 503.13(b)(2).

C.7. Cumulative Loadings and Remaining Allotments.

a. Have you contacted the permitting authority in the State where the bulk sewage sludge subject to CPLRs will be applied, to ascertain whether bulk sewage sludge subject to CPLRs has been applied to this site on or since July 20, 1993? Yes No

If no, sewage sludge subject to CPLRs may not be applied to this site.

If yes, provide the following information:

Permitting authority _____

Contact Person _____

Telephone number _____

b. Based upon this inquiry, has bulk sewage sludge subject to CPLRs been applied to this site since July 20, 1993?

Yes No

If no, skip C.7.c.

FACILITY NAME AND PERMIT NUMBER:

Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

- c. Provide the following information for every facility other than yours that is sending, or has sent, bulk sewage sludge to CPLRs to this site since July 20, 1993. If more than one such facility sends sewage sludge to this site, attach additional pages as necessary.

Facility name _____

Mailing Address _____

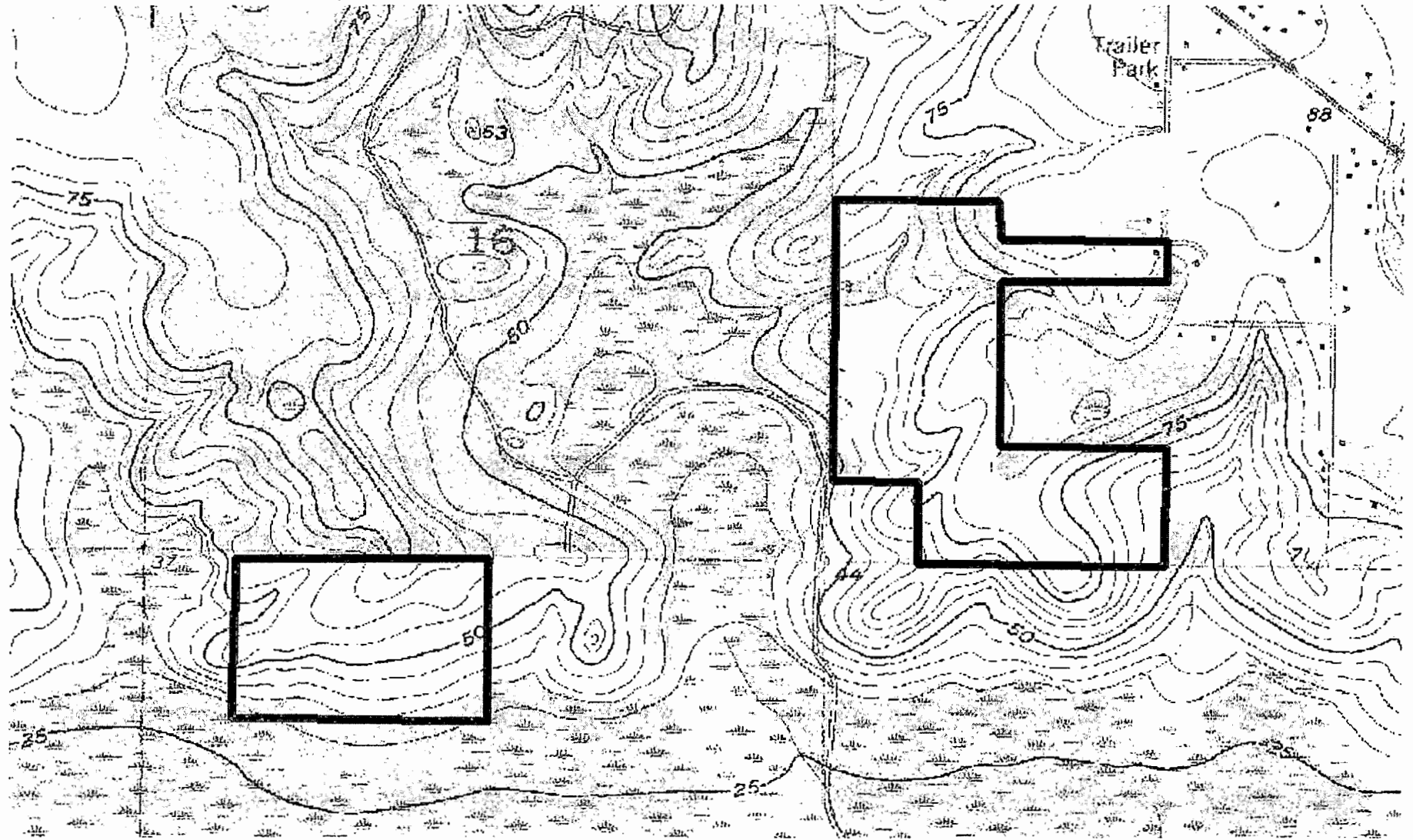
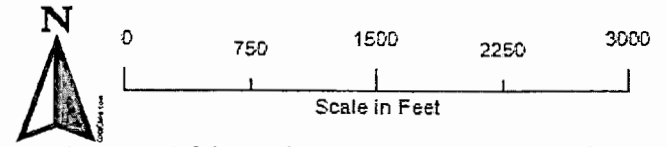
Contact person _____

Title _____

Telephone number _____



3308 Bernice Avenue
Russellville, AR 72802
PO Box 3036 - Russellville, AR 72811
Phone: 479-498-0500



Owner: Terry Landry, Jr & L.P. Landry (AL-MOB-11)
Operator: Driskell Farms
Address: 14353 Cat Deakle Road
Grand Bay, AL 36541
Phone: 251-865-6875

Property Line	~
drg_s_al097	
ortho_1-1_1n_s_al097_2013_1	

FACILITY NAME AND PERMIT NUMBER:
Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

D. SURFACE DISPOSAL

Complete this section if you own or operate a surface disposal site.

Complete Sections D.1 - D.5 for each active sewage sludge unit.

D.1. Information on Active Sewage Sludge Units.

- a. Unit name or number: N/A
- b. Unit location (Complete 1 and 2).
1. Street or Route # _____
County _____
City or Town _____ State _____ Zip _____
2. Latitude _____ Longitude _____
Method of latitude/longitude determination: _____ USGS map _____ Field survey _____ Other _____
- c. Topographic map. Provide a topographic map (or other appropriate map if a topographic map is unavailable) that shows the site location.
- d. Total dry metric tons of sewage sludge placed on the active sewage sludge unit per 365-day period: _____ dry metric tons
- e. Total dry metric tons of sewage sludge placed on the active sewage sludge unit over the life of the unit: _____ dry metric tons
- f. Does the active sewage sludge unit have a liner with a maximum hydraulic conductivity of 1×10^{-7} cm/sec? _____ Yes _____ No
If yes, describe the liner (or attach a description):

- g. Does the active sewage sludge unit have a leachate collection system? _____ Yes _____ No
If yes, describe the leachate collection system (or attach a description). Also describe the method used for leachate disposal and provide the numbers of any Federal, State, or local permit(s) for leachate disposal:

- h. If you answered no to either D.1.f. or D.1.g., answer the following question:
Is the boundary of the active sewage sludge unit less than 150 meters from the property line of the surface disposal site?
_____ Yes _____ No
If yes, provide the actual distance in meters: _____
Provide the following information:
Remaining capacity of active sewage sludge unit, in dry metric tons: _____ dry metric tons
Anticipated closure date for active sewage sludge unit, if known: _____ (MM/DD/YYYY)
Provide, with this application, a copy of any closure plan that has been developed for this active sewage sludge unit.

FACILITY NAME AND PERMIT NUMBER:
Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

D.2. Sewage Sludge from Other Facilities. Is sewage sent to this active sewage sludge unit from any facilities other than your facility?
 Yes No

If yes, provide the following information for each such facility. If sewage sludge is sent to this active sewage sludge unit from more than one such facility, attach additional pages as necessary.

a. Facility name _____

b. Mailing Address _____

c. Contact person _____

Title _____

Telephone number _____

d. Which class of pathogen reduction is achieved before sewage sludge leaves the other facility?

Class A Class B None or unknown

e. Describe, on this form or another sheet of paper, any treatment processes used at the other facility to reduce pathogens in sewage sludge:

f. Which vector attraction reduction option is met for the sewage sludge at the receiving facility?

- Option 1 (Minimum 38 percent reduction in volatile solids)
- Option 2 (Anaerobic process, with bench-scale demonstration)
- Option 3 (Aerobic process, with bench-scale demonstration)
- Option 4 (Specific oxygen uptake rate for aerobically digested sludge)
- Option 5 (Aerobic processes plus raised temperature)
- Option 6 (Raise pH to 12 and retain at 11.5)
- Option 7 (75 percent solids with no unstabilized solids)
- Option 8 (90 percent solids with unstabilized solids)
- None or unknown

g. Describe, on this form or another sheet of paper, any treatment processes used at the receiving facility to reduce vector attraction properties of sewage sludge

h. Describe, on this form or another sheet of paper, any other sewage sludge treatment activities performed by the other facility that are not identified in (d) - (g) above:

D.3. Vector Attraction Reduction

a. Which vector attraction option, if any, is met when sewage sludge is placed on this active sewage sludge unit?

- Option 9 (Injection below and surface)
- Option 10 (Incorporation into soil within 6 hours)
- Option 11 (Covering active sewage sludge unit daily)

FACILITY NAME AND PERMIT NUMBER:
Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
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D.3. Vector Attraction Reduction. (con't)

- b. Describe, on this form or another sheet of paper, any treatment processes used at the active sewage sludge unit to reduce vector attraction properties of sewage sludge:

D.4. Ground-Water Monitoring.

- a. Is ground-water monitoring currently conducted at this active sewage sludge unit, or are ground-water monitoring data otherwise available for this active sewage sludge unit?
 Yes No

If yes, provide a copy of available ground-water monitoring data. Also, provide a written description of the well locations, the approximate depth to ground-water, and the ground-water monitoring procedures used to obtain these data.

- b. Has a ground-water monitoring program been prepared for this active sewage sludge unit? Yes No

If yes, submit a copy of the ground-water monitoring program with this permit application.

- c. Have you obtained a certification from a qualified ground-water scientist that the aquifer below the active sewage sludge unit has not been contaminated? Yes No

If yes, submit a copy of the certification with this permit application.

- D.5. Site-Specific Limits.** Are you seeking site-specific pollutant limits for the sewage sludge placed on the active sewage sludge unit?
 Yes No

If yes, submit information to support the request for site-specific pollutant limits with this application.

FACILITY NAME AND PERMIT NUMBER:
Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

E. INCINERATION

Complete this section if you fire sewage sludge in a sewage sludge incinerator.

Complete this section once for each incinerator in which you fire sewage sludge. If you fire sewage sludge in more than one sewage sludge incinerator, attach additional copies of this section as necessary.

E.1. Incinerator Information.

- a. Incinerator name or number: N/A
- b. Incinerator location (Complete 1 and 2).
1. Street or Route # _____
County _____
City or Town _____ State _____ Zip _____
2. Latitude _____ Longitude _____
- Method of latitude/longitude determination: _____ USGS map _____ Field survey _____ Other _____

E.2. Amount Fired. Dry metric tons per 365-day period of sewage sludge fired in the sewage sludge incinerator: _____ dry metric tons

E.3. Beryllium NESHAP.

- a. Is the sewage sludge fired in this incinerator "beryllium-containing waste," as defined in 40 CFR Part 61.31? _____ Yes _____ No
- Submit, with this application, information, test data, and description of measures taken that demonstrate whether the sewage sludge incinerated is beryllium-containing waste, and will continue to remain as such.
- b. If the answer to (a) is yes, **submit with this application** a complete report of the latest beryllium emission rate testing and documentation of ongoing incinerator operating parameters indicating that the NESHAP emission rate limit for beryllium has been and will continue to be met.

E.4. Mercury NESHAP.

- a. How is compliance with the mercury NESHAP being demonstrated?
_____ Stack testing (if checked, complete E.4.b)
_____ Sewage sludge sampling (if checked, complete E.4.c)
- b. If stack testing is conducted, submit the following information with this application:
- A complete report of stack testing and documentation of ongoing incinerator operating parameters indicating that the incinerator has met, and will continue to meet, the mercury NESHAP emission rate limit.
- Copies of mercury emission rate tests for the two most recent years in which testing was conducted.
- c. If sewage sludge sampling is used to demonstrate compliance, submit a complete report of sewage sludge sampling and documentation of ongoing incinerator operating parameters indicating that the incinerator has met, and will continue to meet the mercury NESHAP emission rate limit.

E.5. Dispersion Factor.

- a. Dispersion factor, in micrograms/cubic meter per gram/second: _____
- b. Name and type of dispersion model: _____
- c. Submit a copy of the modeling results and supporting documentation with this application.

FACILITY NAME AND PERMIT NUMBER:
Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
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E.6. Control Efficiency.

- a. Control efficiency, in hundredths, for the following pollutants:

Arsenic: _____ Chromium: _____ Nickel: _____
Cadmium: _____ Lead: _____

- b. Submit a copy of the results or performance testing and supporting documentation (including testing dates) with this application.

E.7. Risk Specific Concentration for Chromium.

- a. Risk specific concentration (RSC) used for chromium, in micrograms per cubic meter: _____

- b. Which basis was used to determine the RSC?

____ Table 2 in 40 CFR 503.43
____ Equation 6 in 40 CFR 503.43 (site-specific determination)

- c. If Table 2 was used, identify the type of incinerator used as the basis:

____ Fluidized bed with wet scrubber
____ Fluidized bed with wet scrubber and wet electrostatic precipitator
____ Other types with wet scrubber
____ Other types with wet scrubber and wet electrostatic precipitator

- d. If Equation 6 was used, provide the following:

Decimal fraction of hexavalent chromium concentration to total chromium concentration in stack exit gas: _____

Submit results of incinerator stack tests for hexavalent and total chromium concentrations, including date(s) of test, with this application.

E.8. Incinerator Parameters

- a. Do you monitor Total Hydrocarbons (THC) in the sewage sludge incinerator's exit gas? _____ Yes _____ No
Do you monitor Carbon Monoxide (CO) in the sewage sludge incinerator's exit gas? _____ Yes _____ No

- b. Incinerator type: _____

- c. Incinerator stack height, in meters: _____

Indicate whether value submitted is: _____ Actual stack height _____ Creditable stack height

E.9. Performance Test Operating Parameters

- a. Maximum Performance Test Combustion Temperature: _____

- b. Performance test sewage sludge feed rate, in dry metric tons/day: _____

indicate whether value submitted is:

____ Average use _____ Maximum design

Submit, with this application, supporting documents describing how the feed rate was calculated.

- c. Submit, with this application, information documenting the performance test operating parameters for the air pollution control device(s) used for this sewage sludge incinerator.

FACILITY NAME AND PERMIT NUMBER:
Clifton C. Williams WWTP - AL0023086

Form Approved 1/14/99
OMB Number 2040-0086

E.10. Monitoring Equipment. List the equipment in place to monitor the following parameters:

- a. Total hydrocarbons or carbon monoxide: _____
- b. Percent oxygen: _____
- c. Moisture content: _____
- d. Combustion temperature: _____
- e. Other: _____

E.11. Air Pollution Control Equipment. Submit, with this application, a list of all air pollution control equipment used with this sewage sludge incinerator.

Additional Information, if provided, will appear on the following pages.

Volkert, Inc.
1110 Montlimar Dr., Suite 560
Mobile, AL 36609
(251) 342-1070
www.volkert.com

VOLKERT

October 18, 2019

VIA EMAIL

C.C. Williams WWTP NPDES Renewal Application
(Contract No. 335316)

Ms. Stephanie Ammons
Municipal Section
Water Division
Alabama Department of Environmental Management
Post Office Box 301463
Montgomery, Alabama 36130-1463

SUBJECT: C.C. Williams WWTP – Revised Application Forms

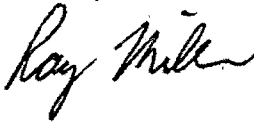
Dear Ms. Ammons:

On behalf of MAWSS, enclosed is the revised NPDES permit application renewal packet for the Clifton C. Williams Wastewater Treatment Plant in Mobile, Alabama (AL0023086). This packet includes the following forms as well all requested supporting documentation:

1. Form 188
2. Form 2A
3. Form 2F
4. Form 2S

Please contact Benita Palmer or me at your convenience should you have any questions or require any additional information.

Sincerely,

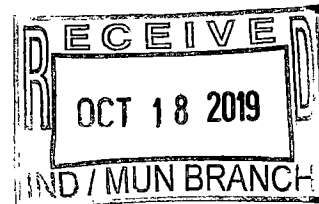


Ray Miller, P.E.
Vice President
Gulf Region Utilities Operations Manager

BP

Enclosures

c Mr. Douglas L. Cote – MAWSS
Mr. David Tillman – MAWSS
Ms. Suzy Lindblom – MAWSS



TRANSPORTATION ▼ ENERGY ▼ WATER ▼ ENVIRONMENT



Corporate: 1717 Seaboard Drive • Baton Rouge, LA 70810 • 800-364-1930
Louisiana Division: Baton Rouge, LA • (225) 769-1930
Alabama Division: Mobile, AL • (251) 344-9915
Texas Division: Bryan, TX • 800-364-1930

March 28, 2014

Mike Sims
Mobile Water
1600 Yeend St.
Mobile, AL 36603

RECEIVED

APR 15 2014

VOLKERT, INC.

RE: AET Project # 1403143

Dear Mike,

On March 10, 2014, the first of three composite samples was submitted to A & E Testing, Inc. labeled Clifton C. Williams WWTP 001 (Permit AL0023086, Mobile Water, Mobile County) for the Quarterly ADEM bioassay. The Bioassay/Biotoxicity evaluation was performed as per EPA publication 821-R-02-013. The species requested were Pimephales promelas and Ceriodaphnia dubia. The chronic results were calculated by the Shapiro Wilks Test, the F-Test, the Equal Variance T-test, and the Steels Many-One Rank Test where applicable.

The following is a tabulation of the data generated:

WWTP 001 - 19% Effluent

P. promelas

Survival data = No significant difference between 19% effluent and the control.

Growth data = No significant difference between 19 % effluent and the control.

C. dubia

Survival data = No significant difference between 19% effluent and the control.

Reproduction data = No significant difference between 19% effluent and the control.

Sincerely,

A handwritten signature in cursive script that reads "Marie Levy".

Marie Levy
Toxicity Project Officer

SUBMIT TO MUNICIPAL BRANCH

[ONE COPY OF PAGE 1 OF THE ADEM REPORT FORM ONLY, WITHOUT LAB SUPPORT DATA, IS TO BE
SUBMITTED TO THE MUNICIPAL BRANCH.]

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
TOXICITY TEST REPORT FORM

1. GENERAL:

NPDES PERMIT NO.: AL0023086 DSN: 001 COUNTY: Mobile

Permittee: Board of Water and Sewer Commissioners of the City of Mobile

Facility Name: Clifton C. Williams WWTP

Agent Submitting Report: Mike Sims

Lab Conducting Toxicity Test(s): Analytical and Environmental Testing, Inc.

Months Toxicity Test(s) Required: Quarterly This Report for Test in Month of: March 2014

Scheduled Test(s): X Accelerated Test(s): _____
Number _____ of _____ for failed test of (date): _____

Test Type Required: _____ 48-hr Acute Screening: _____ 24-hr Acute Screening
X Short-term Chronic Screening _____ Other (specify) _____

Sample #	Test Organism: Pimephales promelas					Test Organism: Ceriodaphnia dubia				
	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid
1	3/11/14	11:35 am	3/18/14	11:30am	yes	3/11/14	11:23 am	3/16/14	11:15 am	yes

2A. SUMMARY OF RESULTS FOR SCREENING TESTS:

Test Org.	Effluent Conc.	Test Number 1			Test Number 2			Test Number 3			Test Number 4		
		Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow	Supr	Repr	Grow
Pp	19 %	Pass		Pass									
Cd	19 %	Pass	Pass										

2B. SUMMARY OF RESULTS FOR DEFINITIVE TEST:

Test Org.	Test Solution Concentration (%)	LC50	NOEC	Not Determined

3. LABORATORY ANALYSIS OF UNDILUTED SAMPLES:

Sample ID	CBOD ₅ mg/L	TSS mg/L	NH ₃ -N mg/L	pH s.u.	TRC mg/L	Alkalinity mg/L	Hardness (Eff.)mg/L	Hardness (Strm.)mg/L
1	16	13	8.38	6.4	2	78	108	
2	19	11	7.67	6.6	1.9	110	152	
3	14	17	7.83	6.5	1.8	120	120	
4								

Municipal Facilities Only

Sample ID	Arsenic µg/L	Cadium µg/L	Chromium µg/L	Copper µg/L	Lead µg/L	Hexavalent Chromium µg/L
Sample ID	Mercury µg/L	Nickel µg/L	Silver µg/L	Zinc µg/L	Total Cyanide µg/L	Other(s) µg/L

Chemical Analyses Performed By (Lab): Board of Water and Sewer Commissioners of the City of Mobile, AET

Instantaneous Flow: (1) _____ GPM (2) _____ GPM (3) _____ GPM (4) _____ GPM

Total 24-hr Flow: (1) 33.155 MGD (2) 31.57 MGD (3) 25.481 MGD (4) _____ GPM

Comments: C. dubia test ended two days early due to 60% of the control mothers having 3 broods

I certify under the 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 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 RESPONSIBLE OFFICIAL: [Signature] DATE: 3-1-14

SUBMIT TO TOXICS UNIT

[SUBMIT ALL TOXICITY REPORT FORMS, ALL SUPPORTING LAB DATA, AND COPIES OF BENCH SHEETS.]

ADEM REPORT FORM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
TOXICITY TEST REPORT FORM

1. GENERAL:

NPDES PERMIT NO.: AL0023086 DSN: 001 COUNTY: Mobile
 Permittee: Board of Water and Sewer Commissioners of the City of Mobile
 Facility Name: Clifton C. Williams WWTP
 Agent Submitting Report: Mike Sims
 Lab Conducting Toxicity Test(s): Analytical and Environmental Testing, Inc.

Months Toxicity Test(s) Required: Quarterly This Report for Test in Month of: March 2014
 Scheduled Test(s): X Accelerated Test(s): _____
 Number _____ of _____ for failed test of (date): _____
 Test Type Required: _____ 48-hr Acute Screening: _____ 24-hr Acute Screening
X Short-term Chronic Screening _____ Other (specify) _____

Sample #	Test Organism: Pimephales promelas					Test Organism: Ceriodaphnia dubia				
	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid
1	3/11/14	11:35 am	3/18/14	11:30am	yes	3/11/14	11:23 am	3/16/14	11:15 am	yes

2A. SUMMARY OF RESULTS FOR SCREENING TESTS:

Test Org.	Effluent Conc.	Test Number 1			Test Number 2			Test Number 3			Test Number 4		
		Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow	Supr	Repr	Grow
Pp	19 %	Pass		Pass									
Cd	19 %	Pass	Pass										

2B. SUMMARY OF RESULTS FOR DEFINITIVE TEST:

Test Org.	Test Solution Concentration (%)	LC50	NOEC	Not Determined

3. LABORATORY ANALYSIS OF UNDILUTED SAMPLES:

Sample ID	CBOD ₅ mg/L	TSS mg/L	NH ₃ -N mg/L	pH s.u.	TRC mg/L	Alkalinity mg/L	Hardness (Eff.)mg/L	Hardness (Strm.)mg/L
1	16	13	8.38	6.4	2	78	108	
2	19	11	7.67	6.6	1.9	110	152	
3	14	17	7.83	6.5	1.8	120	120	
4								

Municipal Facilities Only

Sample ID	Arsenic µg/L	Cadium µg/L	Chromium µg/L	Copper µg/L	Lead µg/L	Hexavalent Chromium µg/L
Sample ID	Mercury µg/L	Nickel µg/L	Silver µg/L	Zinc µg/L	Total Cyanide µg/L	Other(s) µg/L

Chemical Analyses Performed By (Lab): Board of Water and Sewer Commissioners of the City of Mobile, AET
 Instantaneous Flow: (1) _____ GPM (2) _____ GPM (3) _____ GPM (4) _____ GPM
 Total 24-hr Flow: (1) 33.155 MGD (2) 31.57 MGD (3) 25.481 MGD (4) _____ GPM
 Comments: C. dubia test ended two days early due to 60% of the control mothers having 3 broods

I certify under the 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 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 RESPONSIBLE OFFICIAL: [Signature] DATE: 4-1-14

Facility Name: Clifton C. Williams WWTP NPDES #: AL0023086 DSN: 001 DATE: 4/1/14

4. SAMPLE COLLECTION:

Split Samples: N/A X Yes _____ (Explain) _____

Samples Collected as Specified in the NPDES Permit: Yes X No (Explain) _____

Receiving Water: Mobile Bay
Design Flow: 28 (MGD)

Sample ID	Sample(s) Collected				Arrival Temp. (°C)	Used in Test(s)			
	MM/DD/YY	HH:MM	-	MM/DD/YY		HH:MM	MM/DD/YY	-	MM/DD/YY
1	3/8/14	2355	-	3/9/14	2355	0.9	3/11/14	-	3/12/14
2	3/10/14	2356	-	3/11/14	2356	0.9	3/13/14	-	3/14/14
3	3/12/14	2350	-	3/13/14	2350	4	3/15/14	-	3/17/14
4			-					-	

5. CONTROL / DILUTION WATER:

Type	Prepared MM/DD/YY	Begin Use MM/DD/YY	Initial Water Chemistries					
			Hard.	Alk.	pH	Cond.	@	°C
MHRW	3/10/14	3/11/14	96	64	8.03	327	@	25
MHRW	3/13/14	3/14/14	92	64	7.86	322	@	25
							@	
							@	

6. TOXICITY TEST INFORMATION:

Test	Organism	Organism	Test Solution Concentrations (%)				
Species	Age	Source					
C. d.	< 24 Hours	In House Culture	0	19			
P. p.	< 24 Hours	In House Culture	0	19			

Test	Test Vessel	Vessel	Solution	Org. / Test	Replicates
Species	Type	Vol. (mL)	Vol. (mL)	Vessel	Per Conc.
C. d.	Disposable plastic cup	30	15	1	10
P. p.	Disposable plastic cup	300	250	10	4

Test	Temp. Range	D. O. Range	pH Range	Light Intensity
Species	(°C)	(mg/L)	(s.u.)	Average (ft.-can.)
C. d.	24.7 - 25	7.38 - 7.95	6.82 - 7.55	55 - 60
P. p.	24.7 - 25	7.38 - 7.95	6.82 - 7.55	55 - 60

7. FEEDING

Not Fed: _____ Fed Daily: X Fed Irregularly: _____ (explain in comments below)
 Brine Shrimp: Fed 0.1 mL suspension of newly hatched larvae 2 times daily
 Yct: Fed 0.1 mL suspension containing 2.06 g/L TSS daily
 Algae: Fed 0.1 mL suspension containing 3.1 X 10⁷ algal cells / mL daily

COMMENTS:

C. dubia test ended two days early due to 60% of the control mothers having 3 broods

Facility Name: Clifton C. Williams WWTP NPDES #: AL0023086 DSN: 001 DATE: 4/1/14

8. REFERENCE TOXICANT TESTS:

TOXICANT: NaCl SOURCE: Sigma-Aldrich 2BT-06-12 CAS #: 7647-14-5

Solution Concentration Unit: mg/L _____ g/L X % _____ Other (specify) PPT

Test	Test Date	Control	Reference Test Solution Concentrations						
			(Control to Highest Conc.)						
Org.	MM/DD - MM/DD	Water							
C. d.	3/4/14 - 3/10/14	MHRW	0	0.25	0.5	1	2	4	
P. p.	3/4/14 - 3/11/14	MHRW	0	1	2	4	8	16	

Test	Results and 95% Confidence Interval	This Test Upper and Lower		Number
		CUSUM Chart Control Limit		
Org.				(N)
C. d.	7 day NOEC = 0.5 0.25 - 1.0	0.25	1.0	20
P. p.	7 day NOEC = 2.0 1.0 - 4.0	1.0	4.0	20

9. TEST CONDITION VARIABILITY:

9A. DEVIATIONS FROM STANDARD TEST CONDITIONS:

9B. TEST SOLUTION MANIPULATIONS OR TEST MODIFICATIONS:

10. REQUIRED REPORT ATTACHMENTS:

Attach copies of chain-of-custody forms, reference toxicant tests, and raw data (bench sheets) pertaining to physical, chemical, and biological measurements for all tests. Include suspended, interrupted, or discontinued toxicity tests data.

COMMENTS:

11C. CHRONIC SCREENING TOXICITY TESTS RESULTS (Freshwater):

TEST ORGANISM: *Ceriodaphnia dubia*

Were the neonates used to begin the test within eight (8) hours of the same age?: YES: X NO:
 Did 60% of the CONTROL females produce their third brood?: YES: X NO:

SURVIVAL

CHRONIC TOXICITY INDICATED: YES: NO: X
 NO SURVIVAL STATISTICAL ANALYSIS NECESSARY: X
 CONTROL (%) 24h 100 48h 100 END 100 EFFLUENT (%) 24h 100 48h 100 END 100
 Fishers Exact Test: A = See stats, B = , a = , b =

REPRODUCTION (Average Neonates / Female)

CHRONIC TOXICITY INDICATED: YES: NO: X
 CONTROL: 18.6 EFFLUENT: 20.9
 NO REPRODUCTION STATISTICAL ANALYSIS NECESSARY: X
 Normally Distributed: Yes No:
 Test Statistic: Critical Value: 0.868 (Parametric)
 Equal Variance: Unequal Variance:
 F Statistic: Critical F: 8.1
 t Test Statistic: t Test Critical Value: 1.74
 Sample Rank Sum: # Reprs.: Critical Rank Sum: (Non-Parametric)

Comments: C. dubia test ended two days early due to 60% of the control mothers having 3 broods

TEST ORGANISM: *Pimephales promelas*

SURVIVAL

CHRONIC TOXICITY INDICATED: YES: NO: X
 NO SURVIVAL STATISTICAL ANALYSIS NECESSARY: X
 CONTROL (%) 24h 100 48h 100 7day 100 EFFLUENT (%) 24h 100 48h 100 7day 100
 Normally Distributed: Yes No:
 Test Statistic: Critical Value: (Parametric)
 Equal Variance: Unequal Variance:
 F Statistic: Critical F:
 t Test Statistic: t Test Critical Value:
 Sample Rank Sum: # Reprs.: Critical Rank Sum: (Non-Parametric)

GROWTH (Mean Dry Weight - mg)

CHRONIC TOXICITY INDICATED: YES: NO: X
 CONTROL: 0.69905 EFFLUENT: 0.794425
 NO GROWTH STATISTICAL ANALYSIS NECESSARY: X
 Normally Distributed: Yes No:
 Test Statistic: Critical Value: 0.749 (Parametric)
 Equal Variance: Unequal Variance:
 F Statistic: Critical F: 11.3
 t Test Statistic: t Test Critical Value: 1.944
 Sample Rank Sum: # Reprs.: Critical Rank Sum: (Non-Parametric)

Comments:

ANALYTICAL & ENVIRONMENTAL TESTING'S REPORT FORM

Mobile Water
March 28, 2014

INTRODUCTION

Permit number: AL0023086

Toxicity testing requirements of permit: The permittee shall perform chronic static renewal tests on Mobile Water's 001 effluent with a control and a 19% dilution using Pimephales promelas and Ceriodaphnia dubia in accordance with EPA 821-R-02-013. The critical dilution is defined as 19% effluent. Approved toxicity test methods are: 1000.0 and 1002.0 respectively

Plant Location: Mobile, Alabama

Name of receiving water body: Mobile Bay

Contractor: Analytical and Environmental Testing, INC.

(225) 769-1930

1717 Seabord Dr.

Baton Rouge, LA 70810

Contact: Marie Levy

PLANT OPERATION

Product: Not Applicable

Raw materials: Not Applicable

Operating schedule: 24-hours 7-days

Description of waste treatment: Activated Sludge

Schematic of waste treatment: On file at ADEM

Retention time: 16 Hours

Volume of waste flow: Rated-28 MGD

Total flow:

Design flow of treatment facility at time of sampling: On file at ADEM

SOURCE OF EFFLUENT (AMBIENT) AND DILUTION WATER

Effluent Samples

a. Sampling point: 001

b. Collection dates and times:

Sample	Collection Dates	Collection Times	Lapsed time
WWTP 001			Collection-delivery
Sample # 1	3/8/14-3/9/14	2355 - 2355	15 hours 35 minutes
Sample # 2	3/10/14-3/11/14	2356 - 2356	15 hours 34 minutes
Sample # 3	3/12/14-3/13/14	2350 - 2350	15 hours 35 minutes

Corresponding Total Flows (MGD): 33.155, 31.57, and 25.481

c. Sample collection method: Flow proportional auto flow sampler

Mobile Water

March 28, 2014

SOURCE OF EFFLUENT (AMBIENT) AND DILUTION WATER

Continued

d. Physical and chemical data: At Lab site upon sample receipt

LAB RESULTS	ALK mg/L	AMMONIA mg/L	TRC mg/L	COND. Umhos/c	DO mg/L	HARD. mg/L	pH su	TEMP. C
Sample #1	78	3	0.01	691	10.5	108	7.23	4
Sample #2	110	7.5	0.03	1282	9.10	152	6.85	0.9
Sample #3	120	8	0.02	1026	9.14	120	6.82	4

Surface Water Samples: None taken

Dilution Water

- a. Source: Moderately-Hard reconstituted water, laboratory prepared
- b. Pretreatment: Filtered to remove predatory species
- c. Physical and chemical data: See raw data sheets

TEST METHODS

Toxicity test methods: EPA-821-R-02-013 method 1000.0 and 1002.0

End points of test: P. promelas: survival and growth

C. dubia: survival and reproduction

Deviations from reference method: none

Species	Test begin	Time	Test End	Time
<u>P. promelas</u>	3/11/14	11:35 am	3/18/14	11:30 am
<u>C. dubia</u>	3/11/14	11:23 am	3/16/14	11:15 am

Type and volume of test chambers:

P. promelas plastic disposable 250ml cups

C. dubia plastic disposable 30ml graduated medicine cups

Volume of solution used per chamber: P. promelas 250ml/chamber

C. dubia 15ml/chamber

Number of organisms per test chamber: P. promelas 10/chamber

C. dubia 1/chamber

Number of replicate test chambers per treatment:

P. promelas: 4/treatment

C. dubia: 10/treatment

Acclimation of test organisms: P. promelas none needed.

C. dubia none needed.

Mobile Water
March 28, 2014

TEST METHODS

Continued

Test temperature: range = 24.7-25.3 C
Initial test temperature: 25 degrees C prior to renewal.
Was aeration needed? No.

Feeding:

P. promelas: Artemia <24-h fed at 9AM, and 5PM amount: 0.1 ml per feeding.

C. dubia: 0.1ml of YCT and algal suspension once daily.

Were pH control measures implemented? No

TEST ORGANISMS

Scientific name: Pimephales promelas and Ceriodaphnia dubia

Determined by visual taxonomic key reference

Age: P. promelas <24 hours C. dubia <24 hours within 8 hours

Life stage: P. promelas Larval C. dubia neonate

Mean length and weight: Not applicable until the termination of the test

Source: P. promelas In House Culture

C. dubia In House Culture

Diseases and treatment: Methylene blue dip used to treat P.promelas eggs to inhibit fungus growth.

QUALITY ASSURANCE

CHRONIC REFERENCE TOXICANT

Standard toxicant used: NaCl

Source: Sigma-Aldrich Control #: 2BT-06-12

Date and Time of monthly reference toxicant test:

3/4/14 1:30 pm - P. promelas

3/4/14 12:31 pm - C. dubia

Dilution water used in test: Moderately-Hard Reconstituted

Results: P. promelas NOEC: 2.00 PPT Accept. Range(1.0 PPT - 4.0 PPT) PMSD = 13.3 %

C. dubia NOEC: 0.5 PPT Acceptable Range(0.25 PPT - 1.0 PPT) PMSD = 9.57 %

Physical and chemical methods used: Physical testing: EPA-821-R-02-013 and methods
for chemical analysis: pH, DO, Temperature-150.1, 360.1, 170.1

Results

P. promelas: Survival NOEC: 19%

Growth NOEC: 19%

C. dubia: Survival NOEC: 19%

Reproduction NOEC: 19%

Mobile Water
March 28, 2014

CONCLUSIONS AND RECOMMENDATIONS

Relationship between test endpoints and permit limits:

P. promelas: **PASS SURVIVAL**
PASS GROWTH

C. dubia: **PASS SURVIVAL**
PASS REPRODUCTION

Actions to be taken: None.

Schedule: The results generated from this bioassay event satisfy the ongoing quarterly permitted toxicity criteria for the First Quarter of 2014. The next routinely scheduled bioassay event for DSN 001 will be June 2014.

Permit Expiration: July 31, 2009.

ORIGINAL CHAINS-OF-CUSTODY



Analytical Request Form / Chain of Custody

23rd Edition 03/2004

AET Project No.: 1403143
Log In Person: TMC
Log In Date/Time: 3/10/14 11:28 AM

Company: MAWSS

Site Contact: Mike Sims

Report To: Mike Sims

Address: 1600 Yeend St.

City: Mobile, AL

State & Zip Code: 36603

Phone#: (251) 378-3503 - Ext.

FAX#: (251) 433-4090 - Ext.

SAMPLER: Chris Freeman

Authorized By:

Sampler: [x] Client [] AET
Transporter: [] Client [x] AET
Bottles: [] Client [x] AET

Table with 3 columns: Matrix Codes, Turnaround Hrs., Surchage. Rows include A=Water, B=Sludge, C=Soil, D=Oil, E=Acid, F=Cautic, G=100% Organic, H=Solids&Misc.

NOTE: Multiphase MUST BE split into separate subsamples

CHAIN OF CUSTODY

Relinquished by: [Signature] Date: 3-10-14 Time: 0600
Received by: [Signature] Date: 3-10-14 Time: 0600
Relinquished by: [Signature] Date: 03-10-14 Time: 1000
Received by: [Signature] Date: 3/10/14 Time: 10:00 AM
Relinquished by: [Signature] Date: 3/10/14 Time: 2:03 PM
Received by: [Signature] Date: 3-10-14 Time: 2:03

Form with fields for Sample Site (Clifton C. Williams WWTP 0011), Client ID, Sample Date (3/9/14), Sample Time (11:55 PM), Matrix Code (A), Storage Upon Arrival At Lab, Temp (ICE Y N), AET Sample No. (1), Division (MOB), Client Type (Approved), and Comments (All samples are preserved per EPA protocol).

Table of analytical parameters including Alkalinity, Ammonia Nitrogen, Ash, BOD-5 day, Bromide, BTU, Chloride, Chlorine, Res., COD, Color, Conductivity, Cyanide, Cyanide-ATC, Density, Dissolved Oxygen, Flow, Fluoride, Halogens, Total, Hardness, Moisture%, Nitrite, Nitrate, Oil & Grease, pH, Phenol, Phosphate, Ortho, Phosphorus, Total, Solids, Total, Sulfate, Sulfide, Sulfur, Total, Surfactants, TDS, Temperature (field), Thiocyanate, TKN, TOC, TON, TOX, TPHC, TSS, Turbidity, VSS. Includes handwritten values like 7.6, 3.0, 0.01, 10.45, 10.91, 1.23, 10.8.

Comments: QUARTERLY (March) June Sept/Dec First Week CHRONIC. SAMPLE START DATE: 3-8-14 TIME: 2355. SAMPLE END DATE: 3-9-14 TIME: 2355. Preferred Communication Cell: (251) 463-7042. EMAIL: msims@mawss.com or Emily Tuggle 251-378-3501. Flow 33.155 mbd.

NOTE: A Positive Response Below Mandates Additional Information on Back Page!

Table for additional testing options: METALS, Total; RCRA Hazardous Waste; RADIOLOGICAL; SPECIFIC ORGANICS; MICROBIOLOGY; BIOASSAY/BIOTOXICITY; OTHER (Define).

AET Workorder Number

1403143

METALS

OTHER ANALYSES REQUESTED

#1

#2

#3

#4

RCRA Hazardous Waste

RADIOLOGICAL

SPECIFIC ORGANICS

MICROBIOLOGY

BIOASSAY / BIOTOXICITY

AET Sample No.						Comments
Aluminum	(Al)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Antimony	(Sb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Arsenic	(As)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Barium	(Ba)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Beryllium	(Be)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bismuth	(Bi)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boron	(B)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cadmium	(Cd)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Calcium	(Ca)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chromium	(Cr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chromium, Hexavalent	(CrVI)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cobalt	(Co)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Copper	(Cu)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Iron	(Fe)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lead	(Pb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Magnesium	(Mg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Manganese	(Mn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mercury	(Hg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Molybdenum	(Mo)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Nickel	(Ni)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Potassium	(K)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Selenium	(Se)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Silicon	(Si)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Silver	(Ag)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sodium	(Na)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Strontium	(Sr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Thallium	(Tl)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tin	(Sn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Titanium	(Ti)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Vanadium	(V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Zinc	(Zn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ignitability (Flash Pt.)	(FP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Corrosivity	(Corr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Reactivity (CN & S)	(RXCONS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-Metals	(TM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-Pest/Herb	(TP/H)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-BNA	(TBNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-VOA	(TVOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Gross Alpha		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Gross, Beta		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Radium, T.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Radium, 226/228		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Volatiles	(VOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Semi-Volatiles	(BNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pesticides/PCB)	(PEST/PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCB Only	(PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPH/Diesel	(TPH/D)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPH/Gasoline	(TPH/G)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BTEX	(BTEX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
THM's	(THM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other (Define)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fecal Coliform	(FC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Total Coliform	(TC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other (Define)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Acute		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chronic		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Daphnia magna/pulex		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mysid shrimp		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pimephales promelas		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ceriodaphnia		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cyprinodon		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

ANALYTICAL AND ENVIRONMENTAL TESTING

TOXICITY SAMPLE FLOW SHEET

It is imperative that this form be completely filled out.

Client MAWSS
Site C.P. Williams
Initial Flow Meter Reading 6568.253
UNITS OF FLOW 33.155 MGD

Date of Collection	Time of Collection	Flow Meter Reading
3-9-14	2355	6601.408

This information will be used to calculate the flow weighted composite aliquots.

Analytical & Environmental Testing, Inc.

Sample Receipt Check List-Required for Regulatory Samples only!!

filename:g:\chklist\Sample Receipt Checklist 2009.xls

Last revised: 07/15/2

AET Workorder Number

Date: 3/10/14
 Login Person: TMC

Project Number: 1403143

Samples received by [AET, UPS, FedEx, BUS] CIRCLE ONE
 MUST ATTACH SHIPPING BILL OR COPY TO COC

	YES	NO	N/A	Comments
COC Present, Correct, & Complete? (name/address, sample id, division, client type)	✓	*		
SAMPLES WITHIN HOLDING TIME? Customer must not be allowed to leave until this is verified	✓	*		
Samples delivered on ice?	✓	*		
Temperature of Samples	2.4°	*		N/A if sample date=received date
COC and Sample Labels Agree?	✓	*		
Preserved to <2 (Metals, TOC, COD, NH3, TKN TPHOS, O&G, PHENOL, HARD) Circle Failure		*	✓	N/A if testing other than listed
Preserved to >12 CN, >9 S2 Circle Failure		*	✓	N/A if testing other than listed
Correct Sample Containers?	✓	*		
Containers intact?	✓	*		
Volume adequate?	✓	*		
Zero Headspace VOA/TOX		*	✓	
Custody seal on shipping container?	✓	✓		not a requirement
Custody seal on bottles?	✓	✓		not a requirement

* A "NO" response mandates a "Sample Condition Notification" to be either signed on dock upon delivery or faxed to the customer ASAP

Analytical and Environmental Testing, Inc.
G:\Bioassay\FLOW WEIGHTED\Flow sheet.doc

AET Workorder Number
1403143

ANALYTICAL AND ENVIRONMENTAL TESTING

TOXICITY SAMPLE FLOW SHEET

It is imperative that this form be completely filled out.

Client MAWSS - CC Williams
Site 0011
Initial Flow Meter Reading 6634.956
UNITS OF FLOW 31.574 MG

Date of Collection	Time of Collection	Flow Meter Reading
3-11-14	2356	6666.530

This information will be used to calculate the flow weighted composite aliquots.

Analytical & Environmental Testing, Inc.

Sample Receipt Check List--Required for Regulatory Samples only!!

filename:g:\chcklist\Sample Receipt Checklist 2009.xls

Last revised: 07/15/20

AET Workorder Number

Date: 3/12/14
 Login Person: TMC

Project Number: 1403143

Samples received by [AET, UPS, FedEx, BUS] **CIRCLE ONE**
MUST ATTACH SHIPPING BILL OR COPY TO COC

	YES	NO	N/A	Comments
COC Present, Correct, & Complete? (name/address, sample id, division, client type)	✓	*		
SAMPLES WITHIN HOLDING TIME? Customer must not be allowed to leave until this is verified	✓	*		
Samples delivered on ice?	✓	*		
Temperature of Samples	-0.9°	*		N/A if sample date=received date
COC and Sample Labels Agree?	✓	*		
Preserved to <2 (Metals, TOC, COD, NH3, TKN TPHOS, O&G, PHENOL, HARD) Circle Failure		*	✓	N/A if testing other than listed
Preserved to >12 CN, >9 S2 Circle Failure.		*	✓	N/A if testing other than listed
Correct Sample Containers?	✓	*		
Containers intact?	✓	*		
Volume adequate?	✓	*		
Zero Headspace VOA/TOX		*	✓	
Custody seal on shipping container?		✓		not a requirement
Custody seal on bottles?	✓			not a requirement

* A "NO" response mandates a "Sample Condition Notification" to be either signed on dock upon delivery or faxed to the customer ASAP

AET Sample No.							Comments
METALS							
	Aluminum	(Al)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Antimony	(Sb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Arsenic	(As)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Barium	(Ba)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Beryllium	(Be)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Bismuth	(Bi)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Boron	(B)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Cadmium	(Cd)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Calcium	(Ca)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Chromium	(Cr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Chromium, Hexavalent	(CrVI)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Cobalt	(Co)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Copper	(Cu)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Iron	(Fe)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Lead	(Pb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Magnesium	(Mg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Manganese	(Mn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Mercury	(Hg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Molybdenum	(Mo)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Nickel	(Ni)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Potassium	(K)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Selenium	(Se)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Silicon	(Si)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Silver	(Ag)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Sodium	(Na)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Strontium	(Sr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Thallium	(Tl)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Tin	(Sn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Titanium	(Ti)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Vanadium	(V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Zinc	(Zn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RCRA Hazardous Waste							
	Ignitability (Flash Pt.)	(FP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Corrosivity	(Corr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Reactivity (CN & S)	(RXCNS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	TCLP-Metals	(TM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	TCLP-Pest/Herb	(TP/H)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	TCLP-BNA	(TBNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	TCLP-VOA	(TVOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RADIOLOGICAL							
	Gross Alpha		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Gross, Beta		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Radium, T.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Radium, 226/228		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECIFIC ORGANICS							
	Volatiles	(VOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Semi-Volatiles	(BNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Pesticides/PCB	(PEST/PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PCB Only	(PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	TPH/Diesel	(TPH/D)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	TPH/Gasoline	(TPH/G)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	BTEX	(BTEX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	THM's	(THM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Other (Define)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MICROBIOLOGY							
	Fecal Colliform	(FC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Total Colliform	(TC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Other (Define)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BIOASSAY / BIOTOXICITY							
	Acute		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Chronic	[X]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Daphnia magna/pulex		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Mysid shrimp		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Pimephales promelas	[X]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Ceriodaphnia	[X]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Cyprinodon		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

METALS

OTHER ANALYSES REQUESTED

#1 _____

#2 _____

#3 _____

#4 _____

RCRA Hazardous Waste

RADIOLOGICAL

SPECIFIC ORGANICS

MICROBIOLOGY

BIOASSAY / BIOTOXICITY

1403143

ANALYTICAL AND ENVIRONMENTAL TESTING

TOXICITY SAMPLE FLOW SHEET

It is imperative that this form be completely filled out.

Client MAWSS
Site CC Williams
Initial Flow Meter Reading 6697.788
UNITS OF FLOW 25.481 MGD

Date of Collection	Time of Collection	Flow Meter Reading
3-13-14	2355	6723.269

This information will be used to calculate the flow weighted composite aliquots.

Analytical & Environmental Testing, Inc.

Sample Receipt Check List--Required for Regulatory Samples only!!

filename:g:\chcklist\Sample Receipt Checklist 2009.xls

Last revised: 07/15/2009

AET Work Order Number

Date: 03/14/13
 Login Person: ktw

Project Number: 1403143

Samples received by [AET, UPS, FedEx, BUS] **CIRCLE ONE**
MUST ATTACH SHIPPING BILL OR COPY TO COC

	YES	NO	N/A	Comments
COC Present, Correct, & Complete? (name/address, sample id, division, client type)	✓	*		
SAMPLES WITHIN HOLDING TIME?	✓	*		
Customer must not be allowed to leave until this is verified				
Samples delivered on ice?	✓	*		
Temperature of Samples	6.2°	*		N/A if sample date=received date
COC and Sample Labels Agree?	✓	*		
Preserved to <2 (Metals, TOC, COD, NH3, TKN TPHOS, O&G, PHENOL, HARD) Circle Failure		*	✓	N/A if testing other than listed
Preserved to >12 CN, >9 S2 Circle Failure		*	✓	N/A if testing other than listed
Correct Sample Containers?	✓	*		
Containers intact?	✓	*		
Volume adequate?	✓	*		
Zero Headspace VOATOX		*	✓	
Custody seal on shipping container?			✓	not a requirement
Custody seal on bottles?	✓			not a requirement

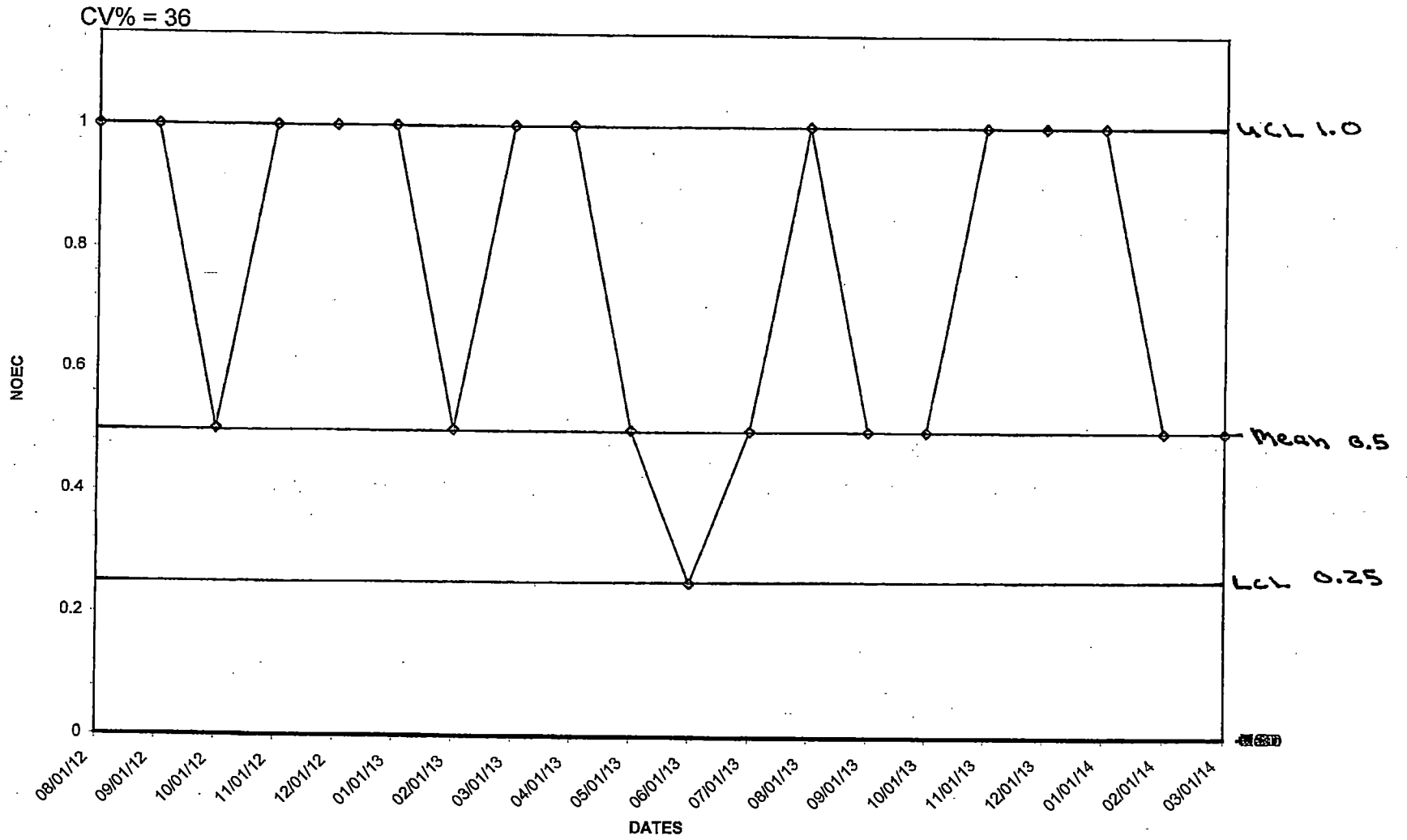
*** A "NO" response mandates a "Sample Condition Notification" to be either signed on dock upon delivery or faxed to the customer ASAP**

STATISTICAL CALCULATIONS

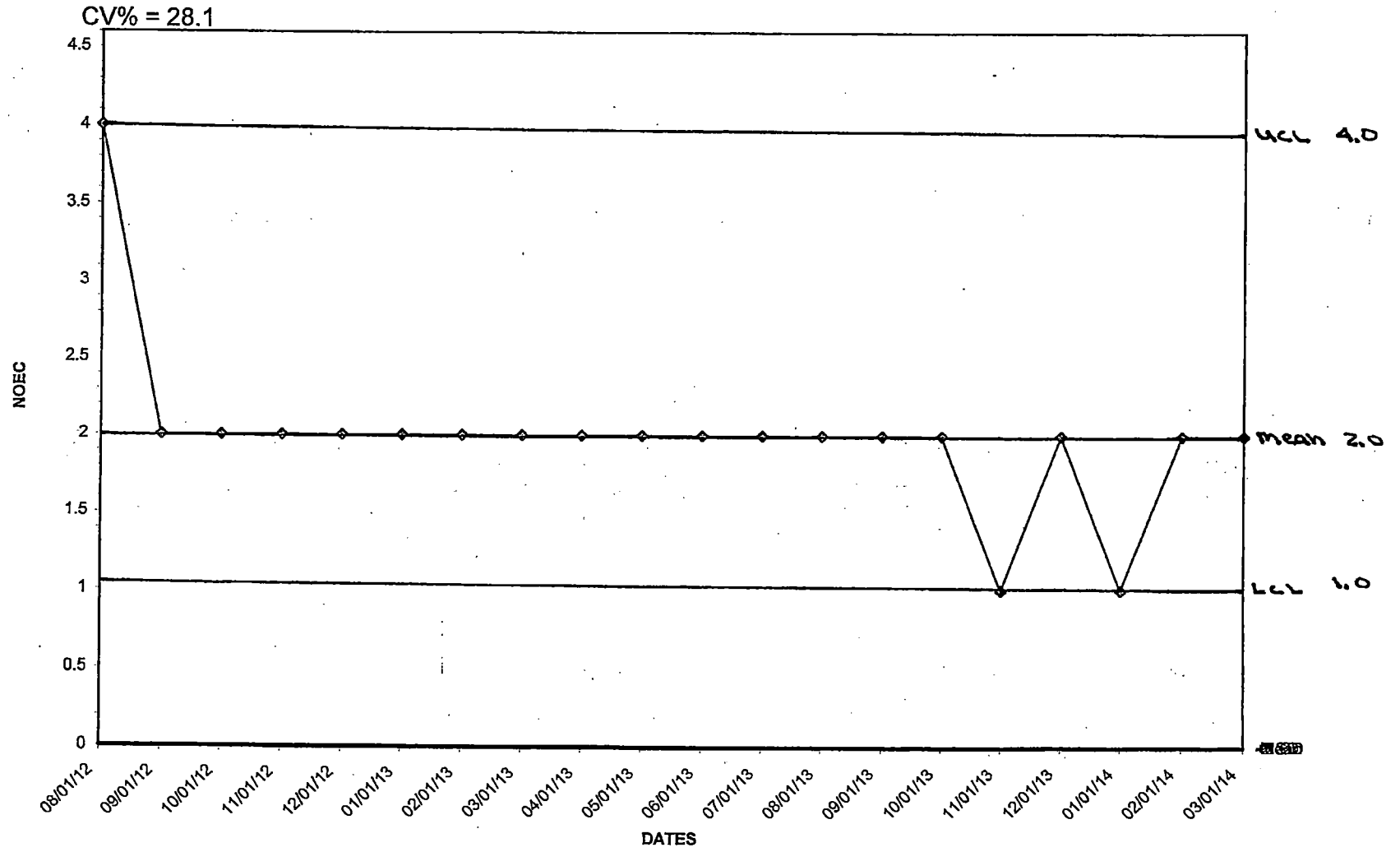
Normality Shapiro Wilks									
Fathead Minnow									
Last Modified 12/27/96									
Filename: PP_grow.xls									
		Wt_fin	Wt_ini	Gain/10	Mean	Centered	Squared	Sorted	
						Centered	Centered	Centered	
Control	a	18.271	11.574	0.6697	0.69905	-0.02935	0.000861	-0.06888	
	b	15.92	8.985	0.6935		-0.00555	3.08E-05	-0.0677	
	c	16.003	8.758	0.7245		0.02545	0.000648	-0.00857	
	d	15.918	8.833	0.7085		0.00945	8.93E-05	-0.00418	
							0.001629	-0.0013	
			Wt_ini	Gain/10	Mean	Centered		0.0339	
19%	a	16.631	9.015	0.7616	0.794425	-0.03288	0.001077	0.0351	
	b	17.132	9.145	0.7987		0.004275	1.83E-05	0.081125	
	c	17.784	9.676	0.8108		0.016375	0.000268		
	d	19.396	11.33	0.8066		0.012175	0.000148		
							0.001512		
Overall Mean of Centered Observation						-3.5E-17			
Sum of Squared Centered Observations.						0.003141			
Denominator (D)						0.003141			
Coefficient of Difference			DeltaX		Square of				
i	Ai		X(n+1)-X(i)	Ai*DeltaX	Ai*DeltaX				
1	0.6052		0.1495	0.090477	0.008186				
2	0.3164		0.1028	0.032526	0.001058				
3	0.1743		0.042475	0.007403	5.48E-05				
4	0.0561		0.002875	0.000161	2.6E-08				
Total:				0.130568	0.009299				
Test Static W=	5.426954		Sq Total:		0.017048				
Limit =	0.749 Normal								
Two Tailed F Test		Run to xstat 3.3 to obtain variance numbers							
Variance C	0.002								
Variance 100%	0.004								
F=	2		Variances Homogenous						
Critical F Limit=	11.3								
F < Critical F							F > Critical F		
Equal Variance T-Test			Unequal Variance T-Test						
t=	-2.46257							t=	Not Applicable
Replicates	4		Replicates =						4
Critical t w/ 6 deg of freedom	1.944		Adj. Deg. of Freedom, df=			Not Applicable			
Sp=	0.054772		C=			Not Applicable			
Different:	NO								
Revised Equal Variance T-Test									
Critical t with Adjusted Deg. of Freedom =						2.354			
Significantly Different						Not Applicable			
Sample is Different if t > Critical t						Sample is different if t > Adjusted Critical t			

REFERENCE TOXICANT DATA

C. dubia 7-DAY NOEC



P. promelas 7-DAY NOEC



Analytical and Environmental Testing, Inc.

G:\SOP\CURRENT\TOXICITY\TABLES\Chronic0%100% Chem. Table.doc SOP

Revision # 13, 8

CHRONIC BIOASSAY CONTROL AND 100% EFFLUENT CHEMICAL TABLE

AET PROJECT NO.: REF TOX MARCH 2014

CLIENT: AET

SAMPLE DATE/DESIGNATION: 3/4/14 (NaCl)

BEGINNING DATE OF BIOASSAY: 3/4/14

SPECIES (circle): C. dubia P. promelas

INITIAL CHEMISTRIES- CONTROL 0% MEASURE EACH NEW BATCH							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	3/4/14	3/5/14	3/6/14	3/7/14	3/8/14	3/9/14	3/10/14
TIME	12:00pm	10:35am	10:16am	10:15am	9:42am	9:37am	10:25am
INITIALS	ASC	ASC	ASC	ASC	GRA	GRA	SP
ALK	66						
COND.	338						
DO	7.81						
HARD	100						
pH	7.99						
TRC	0.00						

16PPT

100% EFFLUENT SAMPLE MEASURE EACH NEW SAMPLE (pH - daily)							
DATE	3/4/14						
TIME	12:00pm						
INITIALS	ASC						
ALK	104						
COND	23,420						
DO	8.74						
HARD	60						
pH	7.66						
TRC	0.01						

The pH of the effluent sample must be run daily.

NOTES:

CHRONIC BIOASSAY INITIAL CHEMICAL TABLE

AET PROJECT NO.: Ref Tox March 2014

CLIENT: AET

SAMPLE DATE/DESIGNATION: 3/4/14 / NaCl

BEGINNING DATE OF BIOASSAY: 3/4/14

SPECIES (circle): C. dubia / P. promelas

INITIAL CHEMISTRIES- CONTROL 0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	3/4/14	3/5/14	3/6/14	3/7/14	3/8/14	3/9/14	3/10/14
TIME	12:00pm	10:35am	10:16am	10:15am	9:42am	9:32am	10:25am
INITIALS	AJC	AJC	AJC	AJC	GRA	GRA	SP
DO	7.81	7.92	8.01	7.87	6.45	7.38	6.28
DILUTION 1 - 0.25 PPT							
DO	7.90	7.95	8.17	7.87	6.47	7.57	7.08
DILUTION 2 - 0.5 PPT							
DO	7.73	8.01	8.15	7.93	6.55	7.65	7.00
DILUTION 3 - 1 PPT							
DO	7.98	8.06	8.10	8.15	6.67	7.63	6.65
DILUTION 4 - 2 PPT							
DO	7.92	7.98	8.07	7.91	6.74	7.60	6.62
DILUTION 5 - 4 PPT							
DO	7.76	7.98	8.05	8.07	6.83	7.70	6.58
DILUTION 6 - 8 PPT							
DO	7.71	8.11	8.36	8.09	6.98	7.80	6.88
DILUTION 7 - 16 PPT							
DO	7.86						
TIME = Time the dilution was made.							
NOTES:							

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

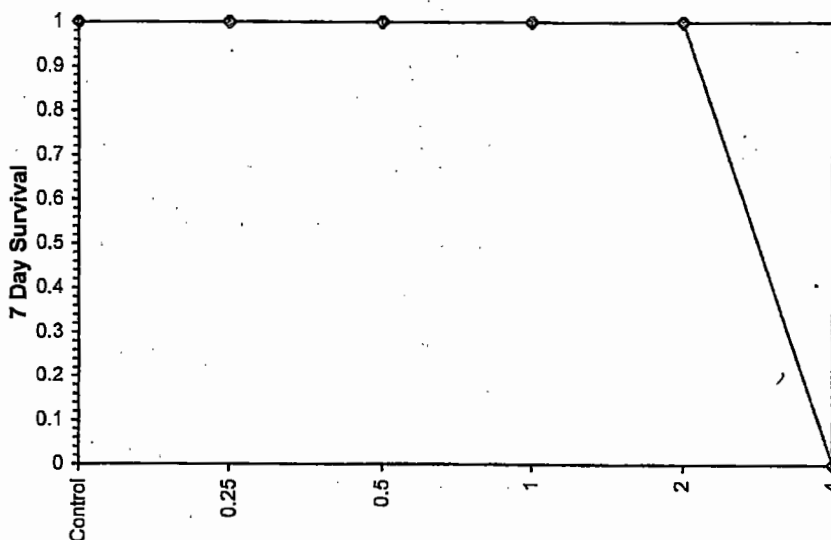
Start Date: 3/4/2014 12:31 Test ID: Ref Tox Sample ID: REF-Ref Toxicant
 End Date: 3/10/2014 12:50 Lab ID: Ref Tox Sample Type: NACL-Sodium chloride
 Sample Date: 3/4/2014 12:00 Protocol: EPAF 94-EPA Freshwater Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-ppt	1	2	3	4	5	6	7	8	9	10
Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical
Control	1.0000	1.0000	0	10	10	10		
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500
2	1.0000	1.0000	0	10	10	10	1.0000	0.0500
4	0.0000	0.0000	10	0	10	10		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	2	4	2.82843	
Treatments vs Control				

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-Reproduction

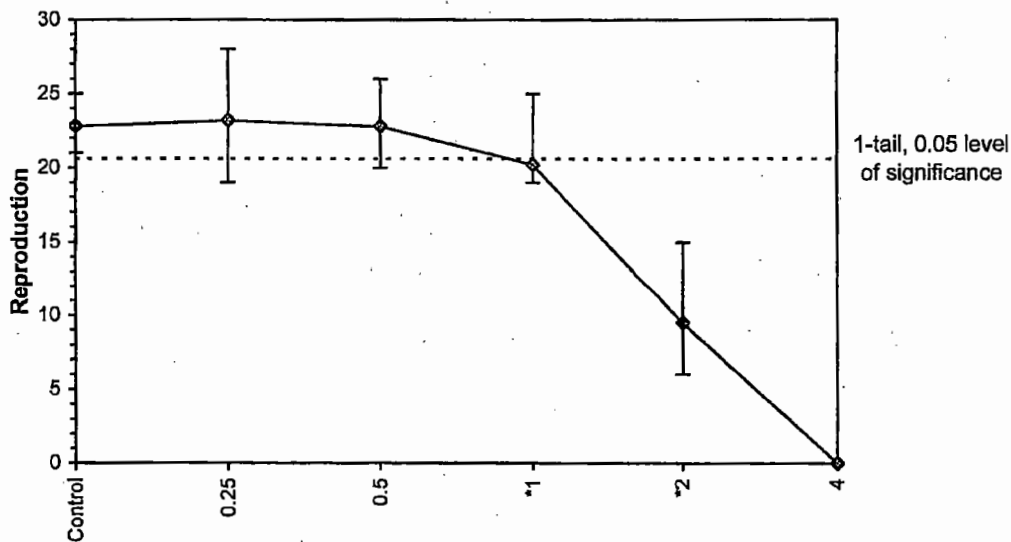
Start Date: 3/4/2014 12:31 Test ID: Ref Tox Sample ID: REF-Ref Toxicant
 End Date: 3/10/2014 12:50 Lab ID: Ref Tox Sample Type: NACL-Sodium chloride
 Sample Date: 3/4/2014 12:00 Protocol: EPAF 94-EPA Freshwater Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-ppt	1	2	3	4	5	6	7	8	9	10
Control	25.000	24.000	21.000	22.000	21.000	23.000	25.000	22.000	24.000	21.000
0.25	19.000	25.000	23.000	23.000	20.000	21.000	25.000	25.000	28.000	23.000
0.5	23.000	22.000	21.000	24.000	23.000	26.000	23.000	20.000	21.000	25.000
1	20.000	19.000	20.000	19.000	20.000	19.000	25.000	20.000	21.000	19.000
2	8.000	15.000	6.000	7.000	13.000	10.000	10.000	8.000	9.000	9.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-ppt	Mean	N-Mean	Transform: Untransformed					N	1-Tailed		
			Mean	Min	Max	CV%	t-Stat		Critical	MSD	
Control	22.800	1.0000	22.800	21.000	25.000	7.102	10				
0.25	23.200	1.0175	23.200	19.000	28.000	11.637	10	-0.407	2.223	2.183	
0.5	22.800	1.0000	22.800	20.000	26.000	8.218	10	0.000	2.223	2.183	
*1	20.200	0.8860	20.200	19.000	25.000	8.978	10	2.648	2.223	2.183	
*2	9.500	0.4167	9.500	6.000	15.000	28.613	10	13.546	2.223	2.183	
4	0.000	0.0000	0.000	0.000	0.000	0.000	10				

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.96058	0.93	0.63001	0.45969
Bartlett's Test indicates equal variances (p = 0.40)	4.02447	13.2767		
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Dunnnett's Test	0.5	1	0.70711	
Treatments vs Control				
			MSDu	MSDp
			339.4	0.09574
			MSE	F-Prob
			4.82	8.7E-19
				df
				4, 45

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 3/4/2014 12:31	Test ID: Ref Tox	Sample ID: REF-Ref Toxicant
End Date: 3/10/2014 12:50	Lab ID: Ref Tox	Sample Type: NACL-Sodium chloride
Sample Date: 3/4/2014 12:00	Protocol: EPAF 94-EPA Freshwater	Test Species: CD-Ceriodaphnia dubia

Comments:

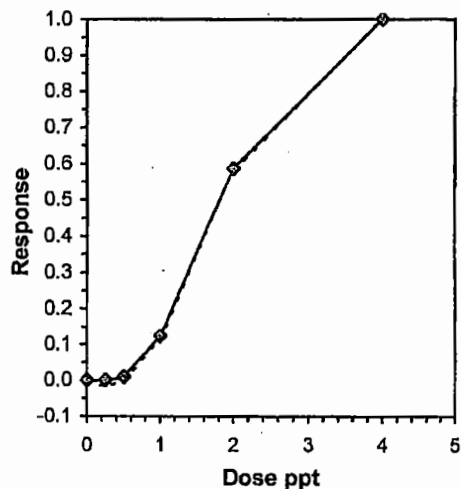
Conc-ppt	1	2	3	4	5	6	7	8	9	10
Control	25.000	24.000	21.000	22.000	21.000	23.000	25.000	22.000	24.000	21.000
0.25	19.000	25.000	23.000	23.000	20.000	21.000	25.000	25.000	28.000	23.000
0.5	23.000	22.000	21.000	24.000	23.000	26.000	23.000	20.000	21.000	25.000
1	20.000	19.000	20.000	19.000	20.000	19.000	25.000	20.000	21.000	19.000
2	8.000	15.000	6.000	7.000	13.000	10.000	10.000	8.000	9.000	9.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-ppt	Mean	N-Mean	Transform: Untransformed					N	Isotonic	
			Mean	Min	Max	CV%	Mean		N-Mean	
Control	22.800	1.0000	22.800	21.000	25.000	7.102	10	23.000	1.0000	
0.25	23.200	1.0175	23.200	19.000	28.000	11.637	10	23.000	1.0000	
0.5	22.800	1.0000	22.800	20.000	26.000	8.218	10	22.800	0.9913	
1	20.200	0.8860	20.200	19.000	25.000	8.978	10	20.200	0.8783	
2	9.500	0.4167	9.500	6.000	15.000	28.613	10	9.500	0.4130	
4	0.000	0.0000	0.000	0.000	0.000	0.000	10	0.000	0.0000	

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.96058	0.93	0.63001	0.45969
Bartlett's Test indicates equal variances (p = 0.40)	4.02447	13.2767		

Linear Interpolation (200 Resamples)

Point	ppt	SD	95% CL	Skew
IC05	0.6827	0.1144	0.4160	0.8833
IC10	0.9038	0.1034	0.6985	1.0678
IC15	1.0607	0.0622	0.9307	1.1691
IC20	1.1682	0.0541	1.0693	1.2771
IC25	1.2757	0.0517	1.1868	1.3798
IC40	1.5981	0.0555	1.4999	1.7090
IC50	1.8131	0.0660	1.6911	1.9524



CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: Ref Tok March 2014

CLIENT: AET

SAMPLE DATE/DESIGNATION: 3/4/14 | NaCl

BEGINNING DATE OF BIOASSAY: 3/4/14

SPECIES (circle): C. dubia P. promelas

FINAL CHEM. - CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	3/5/14	3/6/14	3/7/14	3/8/14	3/9/14	3/10/14	3/11/14
INITIALS	Bmg	Bmg	Bmg	Bmg	APS	APS	APS
DO	7.42	7.62	7.68	6.93	7.41	5.70	5.68
pH	8.03	7.99	8.02	8.06	7.91	7.81	7.61
TEMP	25.3	24.6	24.7	25.2	25.7	25.9	25.5
DILUTION 1- 0.25 PPT %							
DO	7.85	7.77	7.69	6.47	7.53	5.63	
pH	7.97	7.98	8.02	8.04	7.92	7.73	
TEMP	25.3	24.6	24.7	25.2	25.7	25.9	25.5
DILUTION 2- 0.5 PPT %							
DO	7.85	7.85	7.63	6.60	7.47	5.86	
pH	7.94	7.97	7.98	8.00	7.90	7.72	
TEMP	25.3	24.6	24.7	25.2	25.7	25.9	25.5
DILUTION 3- 1 PPT %							
DO	7.87	7.84	7.81	6.49	7.51	5.78	
pH	7.92	7.95	7.95	7.95	7.88	7.70	
TEMP	25.3	24.6	24.7	25.2	25.7	25.9	25.5
DILUTION 4- 2 PPT %							
DO	7.81	7.84	7.71	6.60	7.53	5.85	
pH	7.88	7.90	7.91	7.90	7.85	7.66	
TEMP	25.3	24.6	24.7	25.2	25.7	25.9	25.5
DILUTION 5- 4 PPT %							
DO	7.90						
pH	7.87						
TEMP	25.3						

Bmg
3/5/14

TE
APS
3/11/14

All final temperatures must be taken from the ghost cups in the chamber.

Larval Fish Growth and Survival Test-7 Day Survival

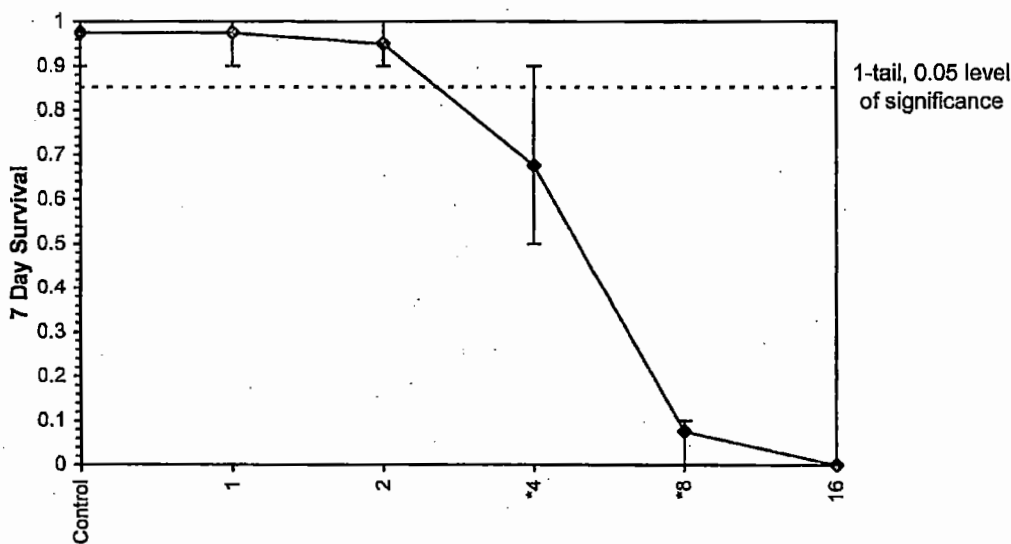
Start Date: 3/4/2014 14:30	Test ID: Ref Tox	Sample ID: REF-Ref Toxicant
End Date: 3/11/2014 13:30	Lab ID: Ref Tox	Sample Type: NACL-Sodium chloride
Sample Date: 3/4/2014 12:00	Protocol: EPAF 94-EPA Freshwater	Test Species: PP-Pimephales promelas

Conc-ppt	1	2	3	4
Control	1.0000	1.0000	0.9000	1.0000
1	0.9000	1.0000	1.0000	1.0000
2	0.9000	1.0000	0.9000	1.0000
4	0.6000	0.9000	0.7000	0.5000
8	0.1000	0.1000	0.0000	0.1000
16	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Transform: Arcsin Square Root							1-Tailed		
	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD
Control	0.9750	1.0000	1.3713	1.2490	1.4120	5.942	4			
1	0.9750	1.0000	1.3713	1.2490	1.4120	5.942	4	0.000	2.360	0.1953
2	0.9500	0.9744	1.3305	1.2490	1.4120	7.072	4	0.492	2.360	0.1953
*4	0.6750	0.6923	0.9779	0.7854	1.2490	20.382	4	4.753	2.360	0.1953
*8	0.0750	0.0769	0.2810	0.1588	0.3218	28.997	4	13.173	2.360	0.1953
16	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	4			

Auxiliary Tests					Statistic	Critical	Skew	Kurt				
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)					0.87535	0.868	0.37187	1.2276				
Bartlett's Test indicates equal variances (p = 0.39)					4.08955	13.2767						
Hypothesis Test (1-tail, 0.05)			NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnnett's Test			2	4	2.82843		0.10869	0.11313	0.88033	0.0137	2.9E-09	4, 15
Treatments vs Control												

Dose-Response Plot



Larval Fish Growth and Survival Test-7 Day Growth

Start Date: 3/4/2014 14:30 Test ID: Ref Tox
 End Date: 3/11/2014 13:30 Lab ID: Ref Tox
 Sample Date: 3/4/2014 12:00 Protocol: EPAF 94-EPA Freshwater Test Species: PP-Pimephales promelas

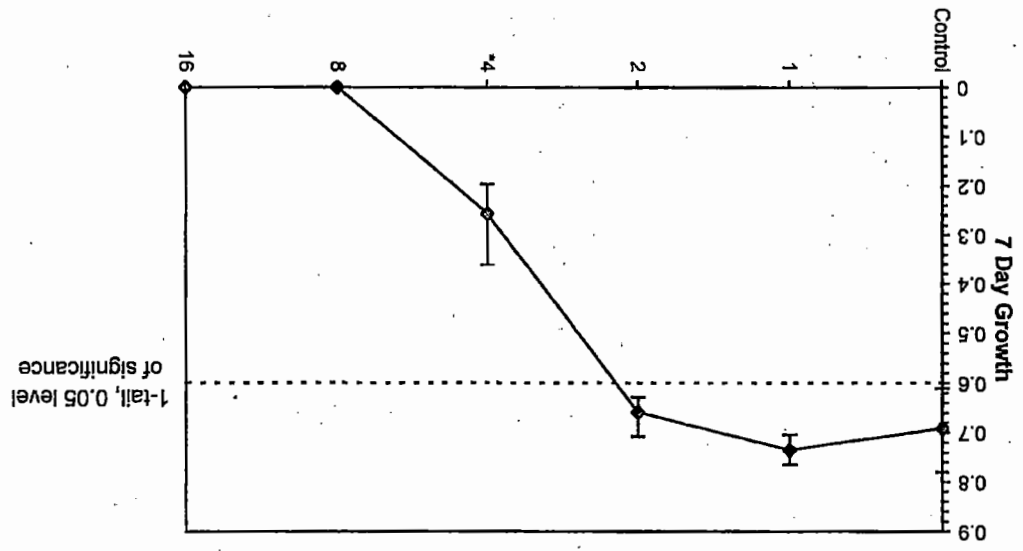
Sample ID: REF-Ref Toxicant
 Sample Type: NAOL-Sodium chloride

Comments:

Conc-ppt	1	2	3	4
Control	0.7231	0.6530	0.6103	0.7797
1	0.7051	0.7307	0.7394	0.7654
2	0.6287	0.7080	0.6342	0.6670
4	0.2270	0.3626	0.2396	0.1967
8	0.0000	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Transform: Untransformed				N	t-Stat	Critical	MSD
	Mean	N-Mean	Mean	Min				
Control	0.6915	1.0000	0.6915	0.6103	4	10.839	10.839	0.0920
1	0.7352	1.0631	0.7352	0.7051	4	3.383	-1.086	0.0920
2	0.6595	0.9537	0.6595	0.6287	4	5.535	0.798	0.0920
*4	0.2565	0.3709	0.2565	0.1967	4	28.465	10.835	2.290
8	0.0000	0.0000	0.0000	0.0000	4	0.000	0.000	0.0920
16	0.0000	0.0000	0.0000	0.0000	4	0.000	0.000	0.0920

Auxiliary Tests										
Statistic	Critical	Skew	Kurt	Shapiro-Wilk's Test indicates normal distribution (p > 0.01)						0.9514
				Bartlett's Test indicates equal variances (p = 0.27)						3.8914
				Hypothesis Test (1-tail, 0.05)						11.3449
Dunnnett's Test	2	4	2.82843	0.09195	0.13297	0.19649	0.00322	1.6E-07	3.12	
Treatments vs Control										



Dose-Response Plot

Larval Fish Growth and Survival Test-7 Day Growth

Start Date: 3/4/2014 14:30	Test ID: Ref Tox	Sample ID: REF-Ref Toxicant
End Date: 3/11/2014 13:30	Lab ID: Ref Tox	Sample Type: NACL-Sodium chloride
Sample Date: 3/4/2014 12:00	Protocol: EPAF 94-EPA Freshwater	Test Species: PP-Pimephales promelas

Comments:

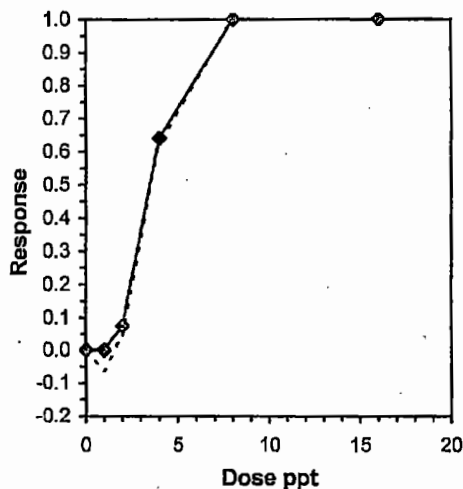
Conc-ppt	1	2	3	4
Control	0.7231	0.6530	0.6103	0.7797
1	0.7051	0.7307	0.7394	0.7654
2	0.6287	0.7080	0.6342	0.6670
4	0.2270	0.3626	0.2396	0.1967
8	0.0000	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Transform: Untransformed							Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
Control	0.6915	1.0000	0.6915	0.6103	0.7797	10.839	4	0.7133	1.0000
1	0.7352	1.0631	0.7352	0.7051	0.7654	3.383	4	0.7133	1.0000
2	0.6595	0.9537	0.6595	0.6287	0.7080	5.535	4	0.6595	0.9245
4	0.2565	0.3709	0.2565	0.1967	0.3626	28.465	4	0.2565	0.3595
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4	0.0000	0.0000
16	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4	0.0000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$)	0.9514	0.844	0.66589	0.12575
Bartlett's Test indicates equal variances ($p = 0.27$)	3.8914	11.3449		

Linear Interpolation (200 Resamples)

Point	ppt	SD	95% CL(Exp)	Skew	
IC05	1.6622	0.2773	0.7240	2.4357	-0.2662
IC10	2.0867	0.1682	1.3257	2.4189	-1.4472
IC15	2.2637	0.1176	1.8753	2.5891	-0.6902
IC20	2.4407	0.1087	2.0573	2.7614	-0.3043
IC25	2.6177	0.1062	2.2434	2.9368	-0.1441
IC40	3.1487	0.1146	2.8093	3.5679	0.4360
IC50	3.5028	0.1312	3.1778	4.0163	0.6860



CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: Ref Tox March 2014

CLIENT: AET

SAMPLE DATE/DESIGNATION: 3/4/14 | NaCl

BEGINNING DATE OF BIOASSAY: 3/4/14

SPECIES (circle): C. dubia, P. promelas

FINAL CHEM.- CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	3/5/14	3/6/14	3/7/14	3/8/14	3/9/14	3/10/14	3/11/14
INITIALS	Bmg	Bmg	Bmg	Bmg	APS	APS	APS
DO	7.69	7.78	7.89	6.33	7.12	6.30	5.68
pH	7.86	7.83	7.75	8.01	7.80	7.95	7.61
TEMP	25.3	24.6	24.7	25.2	25.7	25.9	25.5
DILUTION 1- 1 PPT %							
DO	7.54	8.00	7.37	6.18	7.34	6.40	5.80
pH	7.74	7.75	7.70	7.71	7.73	7.80	7.51
TEMP	25.3	24.6	24.7	25.2	25.7	25.9	25.5
DILUTION 2- 2 PPT %							
DO	7.57	7.76	7.50	6.41	7.51	6.48	6.02
pH	7.66	7.70	7.68	7.66	7.70	7.76	7.54
TEMP	25.3	24.6	24.7	25.2	25.7	25.9	25.5
DILUTION 3- 4 PPT %							
DO	7.74	7.63	7.48	6.50	7.50	6.63	6.15
pH	7.6676	7.65	7.63	7.64	7.68	7.74	7.49
TEMP	25.3	24.6	24.7	25.2	25.7	25.9	25.5
DILUTION 4- 8 PPT %							
DO	7.68	7.87	7.71	6.60	7.46	6.64	6.50
pH	7.59	7.66	7.62	7.63	7.66	7.71	7.55
TEMP	25.3	24.6	24.7	25.2	25.7	25.9	25.5
DILUTION 5- 16 PPT %							
DO	7.66	/	/	/	/	/	/
pH	7.52	/	/	/	/	/	/
TEMP	25.3	/	/	/	/	/	/

TC
Bmg
3/5/14

All final temperatures must be taken from the ghost cups in the chamber.

Analytical and Environmental Testing, Inc.

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Revision # 8

CHRONIC P.p. BIOASSAY ORGANISM TABLE

CLIENT: AET AET PROJECT NO.: Ref Tox March 2014

SAMPLE DATE: 3/4/14 SAMP. DESIGNATION: NaCl

BEGINNING DATE: 3/4/14 ENDING DATE: 3/11/14

RANDOMIZATION TEMPLATE #: 9 P. promelas LOT #: 3394

HOUR	DAY1	DAY2	DAY3	DAY4	DAY5	DAY6	DAY7	END	
INITIALS	AJC	AJC	AJC	AJC	GRA	GRA	AJC	AJC	
TIME	2:30pm	1:30pm	4:10pm	1:20pm	11:49am	12:58pm	2:00pm	1:30pm	
CONTROL - 0%									
LIVE A	10	10	10	10	10	10	10	10	
LIVE B	↓	↓	↓	↓	↓	↓	10	10	
LIVE C	↓	↓	↓	↓	↓	↓	9	9	
LIVE D	↓	↓	↓	↓	↓	↓	10	10	
LIVE E									
DILUTION 1 - 1 PPT %									
LIVE A	10	10	10	10	10	10	10	9	
LIVE B	↓	↓	↓	↓	↓	↓	↓	10	
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓	
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓	
LIVE E									
DILUTION 2 - 2 PPT %									
LIVE A	10	10	10	10	10	10	9	9	
LIVE B	↓	↓	↓	↓	↓	↓	10	10	
LIVE C	↓	↓	↓	↓	↓	↓	9	9	
LIVE D	↓	↓	↓	↓	↓	↓	10	10	
LIVE E									
DILUTION 3 - 4 PPT %									
LIVE A	10	10	10	10	10	9	8	6	
LIVE B	↓	↓	↓	↓	↓	10	9	9	
LIVE C	↓	↓	↓	↓	↓	8	7	7	
LIVE D	↓	↓	↓	↓	↓	9	6	5	
LIVE E									
DILUTION 4 - 8 PPT %									
LIVE A	10	9	9	9	9	3	1	1	
LIVE B	↓	9	9	9	5	3	1	1	
LIVE C	↓	9	7	5	3	1	0	0	
LIVE D	↓	10	9	9	8	3	1	1	
LIVE E									
DILUTION 5 - 16 PPT %									
LIVE A	10	0	/						
LIVE B	↓	↓							
LIVE C	↓	↓							
LIVE D	↓	↓							
LIVE E									

① Non-Eater

TIME = The time the organisms are placed into new dilution water. This

Analytical and Environmental Testing, Inc.

P.promelas Wt. Gain Benchsheet

Last Modified: 10/20/11 by ANC

Filename: G:/benchsheet/NewLims/P.promelas Wt Gain.xls

Company Name : AET

Initials : AJC

Project Number : Ref Tox March 2014

Beginning Oven Temp: 110°C

Organism Name : P. promelas

Time : 5:00 pm

Date : 3/11/14

Beginning Date of Test : 3/4/14

End Oven Temp: 112°C

Time : 10:28 am

Ending Date of Test : 3/11/14

Date : 3/12/14

Concentration		Initial Wt of Pad (mg)	Final Wt of Pad (mg)	
0 PPT	A	10.016	17.247	
	B	9.984	16.514	
	C	8.480	14.583	
	RT1	D	7.246	15.043
	E			
1 PPT	A	7.634	14.685	
	B	7.960	15.267	
	C	6.711	14.105	
	RT2	D	7.213	14.867
	E			
2 PPT	A	7.448	13.735	
	B	6.967	14.047	
	C	8.714	15.056	
	RT3	D	6.669	13.339
	E			
4 PPT	A	8.778	11.048	
	B	8.508	12.134	
	C	10.582	12.977	
	RT4	D	8.489	10.456
	E			
	A			
	B			
	C			
	D			
	E			
	A			
	B			
	C			
	D			
	E			

COPIES OF HANDWRITTEN RAW DATA SHEETS

Analytical and Environmental Testing, Inc.

G:\SOP\CURRENT\TOXICITY\TABLES\Chronic0%100% Chem. Table.doc SOP

Revision # 13, 8

CHRONIC BIOASSAY CONTROL AND 100% EFFLUENT CHEMICAL TABLE

AET PROJECT NO.: 1403143

CLIENT: MASS-CC Williams

SAMPLE DATE/DESIGNATION: 3/8-3/9/14 1001

BEGINNING DATE OF BIOASSAY: 3/11/14

SPECIES (circle): C. dubia P. promelas

INITIAL CHEMISTRIES- CONTROL 0% MEASURE EACH NEW BATCH							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	3/11/14	3/12/14	3/13/14	3/14/14	3/15/14	3/16/14	3/17/14
TIME	10:40 am	10:10 am	9:50 am	9:35 am	9:45 am	10:45 am	9:30 am
INITIALS	SP	SP	SP	SP	AJC	AJC	SP
ALK	64			64			
COND	327			322			
DO	6.68			7.63			
HARD	96			92			
pH	8.03			7.86			
TRC	0.00			0.01			
100 % EFFLUENT SAMPLE MEASURE EACH NEW SAMPLE (pH - daily)							
DATE	3/11/14	3/12/14	3/13/14	3/14/14	3/15/14	3/16/14	3/17/14
TIME	10:40 am	10:10 am	9:50 am	9:35 am	9:45 am	10:45 am	9:30 am
INITIALS	SP	SP	SP	SP	AJC	AJC	SP
ALK	78		110		120		
COND	691		1282		1026		
DO	10.45		9.10		9.14		
HARD	108		152		120		
pH	7.23	7.41	6.85	7.07	6.82	7.35	7.55
TRC	0.01		0.03		0.02		
The pH of the effluent sample must be run daily.							
NOTES:							

CHRONIC BIOASSAY INITIAL CHEMICAL TABLE

AET PROJECT NO.: 1403143

CLIENT: MauSS - CC Williams

SAMPLE DATE/DESIGNATION: 3/8-3/19/14 1001

BEGINNING DATE OF BIOASSAY: 3/11/14

SPECIES (circle): C. dubia P. promelas

INITIAL CHEMISTRIES- CONTROL 0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	3/11/14	3/12/14	3/13/14	3/14/14	3/15/14	3/16/14	3/17/14
TIME	10:40am	10:10am	9:50am	9:35am	9:45am	10:45am	9:30am
INITIALS	SP	SP	SP	SP	ACL	ACL	SP
DO		7.74	7.63	7.76	9.00	8.03	8.08
DILUTION 1 -		1% %					
DO	7.38	7.76	7.72	7.92	7.71	7.32	7.95
DILUTION 2 -		%					
DO							
DILUTION 3 -		%					
DO							
DILUTION 4 -		%					
DO							
DILUTION 5 -		%					
DO							
TIME = Time the dilution was made.							
NOTES:							

CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: 1403143
 CLIENT: Maass - CC Williams
 SAMPLE DATE/DESIGNATION: 3/8 - 3/14/14 1001
 BEGINNING DATE OF BIOASSAY: 3/11/14
 SPECIES (circle): C. dubia, P. promelas

FINAL CHEM.- CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	3/12/14	3/13/14	3/14/14	3/15/14	3/16/14		
INITIALS	Bmg	Bmg	SBM	Bmg	Bmg		
DO	7.21	7.28	7.14	7.39	7.09		
pH	7.86	7.80	7.67	7.85	7.99		
TEMP	24.7	24.7	24.7	24.8	25.3	24.8	
DILUTION 1- 19 %							
DO	7.17	7.40	7.24	7.06	7.19		
pH	7.97	7.81	7.74	7.81	8.05		
TEMP	24.7	24.7	24.7	24.8	25.3	24.8	
DILUTION 2- %							
DO							
pH							
TEMP							
DILUTION 3- %							
DO							
pH							
TEMP							
DILUTION 4 - %							
DO							
pH							
TEMP							
DILUTION 5 - %							
DO							
pH							
TEMP							

All final temperatures must be taken from the ghost cups in the chamber.

CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: 1403143

CLIENT: Mass-CC Williams

SAMPLE DATE/DESIGNATION: 3/8 - 3/19/14 1001

BEGINNING DATE OF BIOASSAY: 3/11/14

SPECIES (circle): C. dubia, P. promelas

FINAL CHEM.- CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	3/12/14	3/13/14	3/14/14	3/15/14	3/16/14	3/17/14	3/18/14
INITIALS	Bmg	Bmg	SRM	Bmg	Bmg	SRM	APS
DO	6.22	6.84	7.42	6.83	6.32	7.28	5.70
pH	7.58	7.62	7.71	7.60	7.65	7.65	7.23
TEMP	24.7	24.7	24.7	24.8	25.3	24.8	25.0
DILUTION 1- 19 %							
DO	6.69	7.03	7.06	6.90	6.56	6.37	7.01
pH	7.60	7.64	7.57	7.58	7.68	7.48	7.39
TEMP	24.7	24.7	24.7	24.8	25.3	24.8	25.0
DILUTION 2 - %							
DO							
pH							
TEMP							
DILUTION 3- %							
DO							
pH							
TEMP							
DILUTION 4 - %							
DO							
pH							
TEMP							
DILUTION 5 - %							
DO							
pH							
TEMP							

All final temperatures must be taken from the ghost cups in the chamber.

C. dubia

LEDGER

#a - Number of Aborted neonates

#B - Brood number

check mark - one mother has been added to the test chamber, it also means that the mother is still alive.

#d - Number of neonates born dead.

perpendicular line - means that all test chambers are the same as above.

- number of neonates born

⌒ - split brood

X - Death of mother

0 - Zero neonates

CHRONIC P.p. BIOASSAY ORGANISM TABLE

CLIENT: Manus - CC Williams AET PROJECT NO.: 1403143

SAMPLE DATE: 3/8 - 3/9/14 SAMP. DESIGNATION: 001

BEGINNING DATE: 3/11/14 ENDING DATE: 3/18/14

RANDOMIZATION TEMPLATE #: 1 P. promelas LOT #: 3401

HOUR	DAY1	DAY2	DAY3	DAY4	DAY5	DAY6	DAY7	END
INITIALS	AJC	AJC	AJC	GRA	AJC	AJC	AJC	AJC
TIME	11:35 ^{AM}	11:45	11:15 am	11:2a	11:00a	11:30a	11:20a	11:30a
CONTROL - 0%								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E	_____							
DILUTION 1 - 10 %								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E	_____							
DILUTION 2 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								
DILUTION 3 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								
DILUTION 4 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								
DILUTION 5 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								

TIME = The time the organisms are placed into new dilution water. This

Last Modified: 10/20/11 by ANC

Filename:G:/benchsheet/NewLims/P.promelas Wt Gain.xls

Company Name: Mawss

Initials: ASC

Project Number: 1463143

Beginning Oven Temp: 110°C

Organism Name: P. promelas

Time: 5:15 pm

Date: 3/18/14

Beginning Date of Test: 3/17/14

End Oven Temp: 108°C

Time: 1:40 pm

Ending Date of Test: 3/18/14

Date: 3/19/14

Concentration		Initial Wt of Pad (mg)	Final Wt of Pad (mg)
0% M1	A	11.574	18.271
	B	8.985	15.920
	C	8.758	16.003
	D	8.833	15.918
	E		
19% M2	A	9.015	16.631
	B	9.145	17.132
	C	9.676	17.784
	D	11.330	19.396
	E		
	A		
	B		
	C		
	D		
	E		
	A		
	B		
	C		
	D		
	E		
	A		
	B		
	C		
	D		
	E		



April 23, 2013

Alabama Department of Environmental Management
Water Division/Municipal Section
Post Office Box 301463
Montgomery, AL 36130-1463

Attn: Ms. Emily Anderson

Re: NPDES AL 0023086 Clifton C. Williams WWTP Toxicity Report
NPDES AL 0023094 Wright Smith Jr. WWTP Toxicity Report

Please find enclosed the First Quarter "2013" DMR Toxicity results for the above referenced Wastewater Treatment Plants.

Please feel free to contact me, should you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Sims", is written over a light blue horizontal line.

Michael Sims
Chief Treatment Plant Operator

MS: eh

Cc: Volkert & Associates, Tim Patton

E2 Receipt

Here is your report submission receipt. [Click here to print.](#)

Submission ID: 37183

Submitted on 4/23/2013 1:43:32 PM, at 69.85.232.2

Submitted by: Mike Sims
Mobile Clifton C Williams Wwtp
1600 Yeend St
Mobile, AL 36603
251-378-3503
msims@mawss.com

Report Detail

Summary Discharge Monitoring Report
Facility Name Mobile Clifton C Williams Wwtp
Permit Number AL0023086
Report Frequency MONTHLY
Report Period 03/01/2013 - 03/31/2013

Attachment Detail

Online Attachments

Mail Attachments

Mail to Address:

Mail in the following attachment(s):

Thank you for using E2 system!

4/23/2013

Alabama Department of Environmental Management Discharge Monitoring Report (DMR)

PERMITTEE NAME: Mobile Area Water and Sewer System
MAILING ADDRESS: PO BOX 2368
 Mobile, AL 36652
FACILITY: Mobile Clifton C Williams Wwtp
LOCATION: 1600 Yeend Street
 Mobile, AL 36603

PERMIT NUMBER: AL0023086

MONITORING POINT: 001T

COUNTY: Mobile

Monitoring Period : 2013-03-01 To: 2013-03-31

NO DISCHARGE FROM SITE: ()

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		*****	0		*****	*****	*****				
TOXICITY, CERIODAPHNIA CHRONIC PARAM CODE: 61426 Stage Code: 1 Final Effluent	Sample Measurement	*****	0	9A pass(0)/fail(1)	*****	*****	*****		0	See Permit Requirements	24-Hr Composite
	Permit Requirement	*****	0 Single Sample		*****	*****	*****				
TOXICITY, PIMEPHALES CHRONIC PARAM CODE: 61428 Stage Code: 1 Final Effluent	Sample Measurement	*****	0	9A pass(0)/fail(1)	*****	*****	*****		0	See Permit Requirements	24-Hr Composite
	Permit Requirement	*****	0 Single Sample		*****	*****	*****				

Name/Title of Principal Executive Officer Or Authorized Agent <i>Chief TPO</i>	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319 (Penalties under these statutes may include fines up to \$10,000 and/or maximum imprisonment of between 6 months to 5 years.)	Signature of Principal Executive Officer Or Authorized Agent	Telephone No	Date (MM/DD/YY)
		<i>[Signature]</i>	251-378-3503	04/23/13

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



Corporate: 1717 Seaboard Drive • Baton Rouge, LA 70810 • 800-364-1930
Louisiana Division: Baton Rouge, LA • (225) 769-1930
Alabama Division: Mobile, AL • (251) 344-9915
Texas Division: Bryan, TX • 800-364-1930

March 14, 2013

Mike Sims
Mobile Water
1600 Yeend St.
Mobile, AL 36603

RE: AET Project # 1303036

Dear Mike,

On March 4, 2013, the first of three composite samples was submitted to A & E Testing, Inc. labeled Clifton C. Williams WWTP 001 (Permit AL0023086, Mobile Water, Mobile County) for the Quarterly ADEM bioassay. The Bioassay/Biototoxicity evaluation was performed as per EPA publication 821-R-02-013. The species requested were Pimephales promelas and Ceriodaphnia dubia. The chronic results were calculated by the Shapiro Wilks Test, the F-Test, the Equal Variance T-test, and the Steels Many-One Rank Test where applicable.

The following is a tabulation of the data generated:

WWTP 001 - 19% Effluent

P. promelas

Survival data = No significant difference between 19% effluent and the control.

Growth data = No significant difference between 19 % effluent and the control.

C. dubia

Survival data = No significant difference between 19% effluent and the control.

Reproduction data = No significant difference between 19% effluent and the control.

Sincerely,

A handwritten signature in black ink that reads "Marie Levy".

Marie Levy
Toxicity Project Officer

ANALYTICAL & ENVIRONMENTAL TESTING'S REPORT FORM

SUBMIT TO MUNICIPAL BRANCH

[ONE COPY OF PAGE 1 OF THE ADEM REPORT FORM ONLY, WITHOUT LAB SUPPPORT DATA, IS TO BE
SUBMITTED TO THE MUNICIPAL BRANCH.]

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
TOXICITY TEST REPORT FORM

1. GENERAL:

NPDES PERMIT NO.: AL0023086 DSN: 001 COUNTY: Mobile
 Permittee: Board of Water and Sewer Commissioners of the City of Mobile
 Facility Name: Clifton C. Williams WWTP
 Agent Submitting Report: Mike Sims
 Lab Conducting Toxicity Test(s): Analytical and Environmental Testing, Inc.

Months Toxicity Test(s) Required: Quarterly This Report for Test in Month of: March 2013
 Scheduled Test(s): X Accelerated Test(s): _____
 Number _____ of _____ for failed test of (date): _____
 Test Type Required: _____ 48-hr Acute Screening: _____ 24-hr Acute Screening
X Short-term Chronic Screening _____ Other (specify) _____

Sample #	Test Organism: Pimephales promelas					Test Organism: Ceriodaphnia dubia				
	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid
1	3/5/13	11:35 am	3/12/13	10:00 am	yes	3/5/13	10:52 am	3/11/13	11:48 am	yes

2A. SUMMARY OF RESULTS FOR SCREENING TESTS:

Test Org.	Effluent Conc.	Test Number 1			Test Number 2			Test Number 3			Test Number 4		
		Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow	Supr	Repr	Grow
Pp	19 %	Pass		Pass									
Cd	19 %	Pass	Pass										

2B. SUMMARY OF RESULTS FOR DEFINITIVE TEST:

Test Org.	Test Solution Concentration (%)					LC50	NOEC	Not Determined

3. LABORATORY ANALYSIS OF UNDILUTED SAMPLES:

Sample ID	CBOD ₅ mg/L	TSS mg/L	NH ₃ -N mg/L	pH s.u.	TRC mg/L	Alkalinity mg/L	Hardness (Eff.)mg/L	Hardness (Strm.)mg/L
1	5	5	8	6.4	1.4	118	124	
2	8	14	7	6.6	1.8	82	68	
3	0	6	9	6.9	1	138	116	
4								

Municipal Facilities Only

Sample ID	Arsenic µg/L	Cadium µg/L	Chromium µg/L	Copper µg/L	Lead µg/L	Hexavalent Chromium µg/L
Sample ID	Mercury µg/L	Nickel µg/L	Silver µg/L	Zinc µg/L	Total Cyanide µg/L	Other(s) µg/L

Chemical Analyses Performed By (Lab): Board of Water and Sewer Commissioners of the City of Mobile, AET
 Instantaneous Flow: (1) _____ GPM (2) _____ GPM (3) _____ GPM (4) _____ GPM
 Total 24-hr Flow: (1) 34.865 MGD (2) 36.378 MGD (3) 33.07 MGD (4) _____ GPM
 Comments: C. dubia test ended one day early due to 60% of the control mothers having 3 broods
On 3/11/13, the final DO was 3.94 below the required 4.00. However there were no complications to the integrity of the test.

I certify under the 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 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 RESPONSIBLE OFFICIAL: _____ DATE: 4/23/2013

SUBMIT TO TOXICS UNIT

[SUBMIT ALL TOXICITY REPORT FORMS, ALL SUPPORTING LAB DATA, AND COPIES OF BENCH SHEETS.]

ADEM REPORT FORM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
TOXICITY TEST REPORT FORM

I. GENERAL:

NPDES PERMIT NO.: AL0023086 DSN: 001 COUNTY: Mobile
 Permittee: Board of Water and Sewer Commissioners of the City of Mobile
 Facility Name: Clifton C. Williams WWTP
 Agent Submitting Report: Mike Sims
 Lab Conducting Toxicity Test(s): Analytical and Environmental Testing, Inc.

Months Toxicity Test(s) Required: Quarterly This Report for Test in Month of: March 2013
 Scheduled Test(s): X Accelerated Test(s): _____
 Number _____ of _____ for failed test of (date): _____
 Test Type Required: X 48-hr Acute Screening: _____ 24-hr Acute Screening
X Short-term Chronic Screening _____ Other (specify) _____

Sample #	Test Organism: Pimephales promelas					Test Organism: Ceriodaphnia dubia				
	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid
1	3/5/13	11:35 am	3/12/13	10:00 am	yes	3/5/13	10:52 am	3/11/13	11:48 am	yes

2A. SUMMARY OF RESULTS FOR SCREENING TESTS:

Test Org.	Effluent Conc.	Test Number 1			Test Number 2			Test Number 3			Test Number 4		
		Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow	Supr	Repr	Grow
Pp	19 %	Pass		Pass									
Cd	19 %	Pass	Pass										

2B. SUMMARY OF RESULTS FOR DEFINITIVE TEST:

Test Org.	Test Solution Concentration (%)					LC50	NOEC	Not Determined

3. LABORATORY ANALYSIS OF UNDILUTED SAMPLES:

Sample ID	CBOD ₅ mg/L	TSS mg/L	NH ₃ -N mg/L	pH s.u.	TRC mg/L	Alkalinity mg/L	Hardness (Eff.)mg/L	Hardness (Strm.)mg/L
1	5	5	8	6.4	1.4	118	124	
2	8	14	7	6.6	1.8	82	68	
3	0	6	9	6.9	1	138	116	
4								

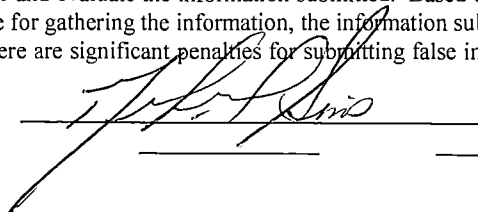
Municipal Facilities Only

Sample ID	Arsenic µg/L	Cadium µg/L	Chromium µg/L	Copper µg/L	Lead µg/L	Hexavalent Chromium µg/L
Sample ID	Mercury µg/L	Nickel µg/L	Silver µg/L	Zinc µg/L	Total Cyanide µg/L	Other(s) µg/L

Chemical Analyses Performed By (Lab): Board of Water and Sewer Commissioners of the City of Mobile, AET
 Instantaneous Flow: (1) _____ GPM (2) _____ GPM (3) _____ GPM (4) _____ GPM
 Total 24-hr Flow: (1) 34.865 MGD (2) 36.378 MGD (3) 33.07 MGD (4) _____ GPM
 Comments: C. dubia test ended one day early due to 60% of the control mothers having 3 broods
On 3/11/13, the final DO was 3.94 below the required 4.00. However there were no complications to the integrity of the test.

I certify under the 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 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 RESPONSIBLE OFFICIAL: _____



DATE: _____

4/23/2013

4. SAMPLE COLLECTION:

Split Samples: N/A X Yes _____ (Explain) _____

Samples Collected as Specified in the NPDES Permit: Yes X No _____ (Explain) _____

Receiving Water: Mobile Bay
 Design Flow: 28 (MGD)

Sample ID	Sample(s) Collected					Arrival Temp. (°C)	Used in Test(s)		
	MM/DD/YY	HH:MM	-	MM/DD/YY	HH:MM		MM/DD/YY	-	MM/DD/YY
1	3/2/13	2355	-	3/3/13	2355	4.0	3/5/13	-	3/6/13
2	3/4/13	2350	-	3/5/13	2350	4.0	3/7/13	-	3/8/13
3	3/6/13	2355	-	3/7/13	2355	4.0	3/9/13	-	3/11/13
4			-					-	

5. CONTROL / DILUTION WATER:

Type	Prepared MM/DD/YY	Begin Use MM/DD/YY	Initial Water Chemistries					
			Hard.	Alk.	pH	Cond.	@	°C
MHRW	3/4/13	3/5/13	96	68	8.06	305	@	25
MHRW	3/7/13	3/8/13	88	64	7.97	329	@	25
							@	
							@	

6. TOXICITY TEST INFORMATION:

Test	Organism	Organism	Test Solution Concentrations (%)					
Species	Age	Source						
C. d.	< 24 Hours	In House Culture	0	19				
P. p.	< 24 Hours	In House Culture	0	19				

Test	Test Vessel	Vessel	Solution	Org. / Test	Replicates
Species	Type	Vol. (mL)	Vol. (mL)	Vessel	Per Conc.
C. d.	Disposable plastic cup	30	15	1	10
P. p.	Disposable plastic cup	300	250	10	4

Test	Temp. Range	D. O. Range	pH Range	Light Intensity
Species	(°C)	(mg/L)	(s.u.)	Average (ft.-can.)
C. d.	24.0 – 25.7	8.00 – 8.56	7.25 – 8.15	55 - 60
P. p.	24.0 – 25.7	8.00 – 8.56	7.25 – 8.15	55 - 60

7. FEEDING

Not Fed: _____ Fed Daily: X Fed Irregularly: _____ (explain in comments below)
 Brine Shrimp: Fed 0.1 mL suspension of newly hatched larvae 2 times daily
 Yct: Fed 0.1 mL suspension containing 2.06 g/L TSS daily
 Algae: Fed 0.1 mL suspension containing 3.1 X 10⁷ algal cells / mL daily

COMMENTS:

C. dubia test ended one day early due to 60% of the control mothers having 3 broods
 On 3/11/13, the final DO was 3.94 below the required 4.00. However there were no complications to the integrity of the test.

8. REFERENCE TOXICANT TESTS:

TOXICANT: NaCl SOURCE: Sigma-Aldrich 2BT-06-12 CAS #: 7647-14-5

Solution Concentration Unit: mg/L _____ g/L X % _____ Other (specify) PPT

Test	Test Date	Control	Reference Test Solution Concentrations					
			(Control to Highest Conc.)					
Org.	MM/DD - MM/DD	Water						
C. d.	2/4/13 - 2/10/13	MHRW	0	0.25	0.5	1	2	4
P. p.	2/4/13 - 2/11/13	MHRW	0	1	2	4	8	16

Test	Results and 95% Confidence Interval		This Test Upper and Lower		Number (N)
			CUSUM Chart Control Limit		
Org.					
C. d.	7 day NOEC = 0.5	0.25 - 1.0	0.25	1.0	20
P. p.	7 day NOEC = 2.0	1.0 - 4.0	1.0	4.0	20

9. TEST CONDITION VARIABILITY:

9A. DEVIATIONS FROM STANDARD TEST CONDITIONS:

9B. TEST SOLUTION MANIPULATIONS OR TEST MODIFICATIONS:

10. REQUIRED REPORT ATTACHMENTS:

Attach copies of chain-of-custody forms, reference toxicant tests, and raw data (bench sheets) pertaining to physical, chemical, and biological measurements for all tests. Include suspended, interrupted, or discontinued toxicity tests data.

COMMENTS:

11C. CHRONIC SCREENING TOXICITY TESTS RESULTS (Freshwater):

TEST ORGANISM: *Ceriodaphnia dubia*

Were the neonates used to begin the test within eight (8) hours of the same age?: YES: X NO:
 Did 60% of the CONTROL females produce their third brood?: YES: X NO:

SURVIVAL

CHRONIC TOXICITY INDICATED: YES: NO: X
 NO SURVIVAL STATISTICAL ANALYSIS NECESSARY: X
 CONTROL (%) 24h 100 48h 100 END 100 EFFLUENT (%) 24h 100 48h 100 END 90
 Fishers Exact Test: A = See stats, B = , a = , b =

REPRODUCTION (Average Neonates / Female)

CHRONIC TOXICITY INDICATED: YES: NO: X
 CONTROL: 21.1 EFFLUENT: 22.4
 NO REPRODUCTION STATISTICAL ANALYSIS NECESSARY: X
 Normally Distributed: Yes No:
 Test Statistic: Critical Value: 0.868 (Parametric)
 Equal Variance: Unequal Variance:
 F Statistic: Critical F: 8.1
 t Test Statistic: t Test Critical Value: 1.74
 Sample Rank Sum: # Reprs.: Critical Rank Sum: (Non-Parametric)

Comments: C. dubia test ended one day early due to 60% of the control mothers having 3 broods

TEST ORGANISM: *Pimephales promelas*

SURVIVAL

CHRONIC TOXICITY INDICATED: YES: NO: X
 NO SURVIVAL STATISTICAL ANALYSIS NECESSARY: X
 CONTROL (%) 24h 100 48h 100 7day 100 EFFLUENT (%) 24h 100 48h 100 7day 100
 Normally Distributed: Yes No:
 Test Statistic: Critical Value: (Parametric)
 Equal Variance: Unequal Variance:
 F Statistic: Critical F:
 t Test Statistic: t Test Critical Value:
 Sample Rank Sum: # Reprs.: Critical Rank Sum: (Non-Parametric)

GROWTH (Mean Dry Weight - mg)

CHRONIC TOXICITY INDICATED: YES: NO: X
 CONTROL: 0.8862 EFFLUENT: 0.8937
 NO GROWTH STATISTICAL ANALYSIS NECESSARY: X
 Normally Distributed: Yes No: X
 Test Statistic: Critical Value: 0.749 (Parametric)
 Equal Variance: Unequal Variance:
 F Statistic: Critical F: 11.3
 t Test Statistic: t Test Critical Value: 1.944
 Sample Rank Sum: # Reprs.: Critical Rank Sum: (Non-Parametric)

Comments: On 3/11/13, the final DO was 3.94 below the required 4.00. However there were no complications to the integrity of the test.

Mobile Water
March 14, 2013

INTRODUCTION

Permit number: AL0023086

Toxicity testing requirements of permit: The permittee shall perform chronic static renewal tests on Mobile Water's 001 effluent with a control and a 19% dilution using Pimephales promelas and Ceriodaphnia dubia in accordance with EPA 821-R-02-013. The critical dilution is defined as 19% effluent. Approved toxicity test methods are: 1000.0 and 1002.0 respectively

Plant Location: Mobile, Alabama

Name of receiving water body: Mobile Bay

Contractor: Analytical and Environmental Testing, INC.

(225) 769-1930

1717 Seaboard Dr.

Baton Rouge, LA 70810

Contact: Marie Levy

PLANT OPERATION

Product: Not Applicable

Raw materials: Not Applicable

Operating schedule: 24-hours 7-days

Description of waste treatment: Activated Sludge

Schematic of waste treatment: On file at ADEM

Retention time: 16 Hours

Volume of waste flow: Rated-28 MGD

Total flow:

Design flow of treatment facility at time of sampling: On file at ADEM

SOURCE OF EFFLUENT (AMBIENT) AND DILUTION WATER

Effluent Samples

a. Sampling point: 001

b. Collection dates and times:

Sample	Collection Dates	Collection Times	Lapsed time
WWTP 001			Collection-delivery
Sample # 1	3/2/13-3/3/13	2355 - 2355	15 hours 15 minutes
Sample # 2	3/4/13-3/5/13	2350 - 2350	15 hours 35 minutes
Sample # 3	3/6/13-3/7/13	2355 - 2355	15 hours 10 minutes

Corresponding Total Flows (MGD): 34.865, 36.378, and 33.07

b. Sample collection method: Flow proportional auto flow sampler

Mobile Water
 March 14, 2013

SOURCE OF EFFLUENT (AMBIENT) AND DILUTION WATER

Continued

d. Physical and chemical data: At Lab site upon sample receipt

LAB RESULTS	ALK mg/L	AMMONIA mg/L	TRC mg/L	COND. Umhos/c	DO mg/L	HARD. mg/L	pH su	TEMP. C
Sample #1	118	10.0	0.04	950	9.62	124	6.82	4.0
Sample #2	82	8.0	0.00	703	10.74	68	6.70	4.0
Sample #3	138	12.5	0.01	1050	10.50	116	6.92	4.0

Surface Water Samples: None taken

Dilution Water

- a. Source: Moderately-Hard reconstituted water, laboratory prepared
- b. Pretreatment: Filtered to remove predatory species
- c. Physical and chemical data: See raw data sheets

TEST METHODS

Toxicity test methods: EPA-821-R-02-013 method 1000.0 and 1002.0

End points of test: P. promelas: survival and growth

C. dubia: survival and reproduction

Deviations from reference method: none

Species	Test begin	Time	Test End	Time
<u>P. promelas</u>	3/5/13	11:35 am	3/12/13	10:00 am
<u>C. dubia</u>	3/5/13	10:52 am	3/11/13	11:48 am

Type and volume of test chambers:

P. promelas plastic disposable 250ml cups

C. dubia plastic disposable 30ml graduated medicine cups

Volume of solution used per chamber: P. promelas 250ml/chamber

C. dubia 15ml/chamber

Number of organisms per test chamber: P. promelas 10/chamber

C. dubia 1/chamber

Number of replicate test chambers per treatment:

P. promelas: 4/treatment

C. dubia: 10/treatment

Acclimation of test organisms: P. promelas none needed.

C. dubia none needed.

Mobile Water
March 14, 2013

TEST METHODS

Continued

Test temperature: range = 24.0-25.7 C

Initial test temperature: 25 degrees C prior to renewal.

Was aeration needed? No.

Feeding:

P. promelas: Artemia <24-h fed at 9AM, and 5PM amount: 0.1 ml per feeding.

C. dubia: 0.1ml of YCT and algal suspension once daily.

Were pH control measures implemented? No

TEST ORGANISMS

Scientific name: Pimephales promelas and Ceriodaphnia dubia

Determined by visual taxonomic key reference

Age: P. promelas <24 hours C. dubia <24 hours within 8 hours

Life stage: P. promelas Larval C. dubia neonate

Mean length and weight: Not applicable until the termination of the test

Source: P. promelas In House Culture

C. dubia In House Culture

Diseases and treatment: Methylene blue dip used to treat P.promelas eggs to inhibit fungus growth.

QUALITY ASSURANCE

CHRONIC REFERENCE TOXICANT

Standard toxicant used: NaCl

Source: Sigma-Aldrich Control #: 2BT-06-12

Date and Time of monthly reference toxicant test:

2/4/13 4:00 pm - P. promelas

2/4/13 1:20 pm - C. dubia

Dilution water used in test: Moderately-Hard Reconstituted

Results: P. promelas NOEC: 2.0 PPT Accept. Range (1.0 PPT - 4.0 PPT) PMSD = 10.4 %

C. dubia NOEC: 0.5 PPT Acceptable Range(0.25 PPT - 1.0 PPT) PMSD = NG %

Physical and chemical methods used: Physical testing: EPA-821-R-02-013 and methods for chemical analysis: pH, DO, Temperature-150.1, 360.1, 170.1

Results

P. promelas: Survival NOEC: 19%

Growth NOEC: 19%

C. dubia: Survival NOEC: 19%

Reproduction NOEC: 19%

Mobile Water
March 14, 2013

CONCLUSIONS AND RECOMMENDATIONS

Relationship between test endpoints and permit limits:

P. promelas: **PASS SURVIVAL**
PASS GROWTH

C. dubia: **PASS SURVIVAL**
PASS REPRODUCTION

Actions to be taken: None.

Schedule: The results generated from this bioassay event satisfy the ongoing quarterly permitted toxicity criteria for the First Quarter of 2013. The next routinely scheduled bioassay event for DSN 001 will be June 2013.

Permit Expiration: July 31, 2009.

ORIGINAL CHAINS-OF-CUSTODY

AET Sample No.						Comments	
METALS	Aluminum	(Al)	[]	[]	[]	[]	
	Antimony	(Sb)	[]	[]	[]	[]	
	Arsenic	(As)	[]	[]	[]	[]	
	Barium	(Ba)	[]	[]	[]	[]	
	Beryllium	(Be)	[]	[]	[]	[]	
	Bismuth	(Bi)	[]	[]	[]	[]	
	Boron	(B)	[]	[]	[]	[]	
	Cadmium	(Cd)	[]	[]	[]	[]	
	Calcium	(Ca)	[]	[]	[]	[]	
	Chromium	(Cr)	[]	[]	[]	[]	
	Chromium, Hexavalent	(CrVI)	[]	[]	[]	[]	
	Cobalt	(Co)	[]	[]	[]	[]	
	Copper	(Cu)	[]	[]	[]	[]	
	Iron	(Fe)	[]	[]	[]	[]	
	Lead	(Pb)	[]	[]	[]	[]	
	Magnesium	(Mg)	[]	[]	[]	[]	
	Manganese	(Mn)	[]	[]	[]	[]	
	Mercury	(Hg)	[]	[]	[]	[]	
	Molybdenum	(Mo)	[]	[]	[]	[]	
	Nickel	(Ni)	[]	[]	[]	[]	
	Potassium	(K)	[]	[]	[]	[]	
Selenium	(Se)	[]	[]	[]	[]		
Silicon	(Si)	[]	[]	[]	[]		
Silver	(Ag)	[]	[]	[]	[]		
Sodium	(Na)	[]	[]	[]	[]		
Strontium	(Sr)	[]	[]	[]	[]		
Thallium	(Tl)	[]	[]	[]	[]		
Tin	(Sn)	[]	[]	[]	[]		
Titanium	(Ti)	[]	[]	[]	[]		
Vanadium	(V)	[]	[]	[]	[]		
Zinc	(Zn)	[]	[]	[]	[]		
RCRA Hazardous Waste	Ignitability (Flash Pt.)	(FP)	[]	[]	[]	[]	
	Corrosivity	(Corr)	[]	[]	[]	[]	
	Reactivity (CN & S)	(RXCNS)	[]	[]	[]	[]	
	TCLP-Metals	(TM)	[]	[]	[]	[]	
	TCLP-Pest/Herb	(TP/H)	[]	[]	[]	[]	
	TCLP-BNA	(TBNA)	[]	[]	[]	[]	
	TCLP-VOA	(TVOA)	[]	[]	[]	[]	
RADIOLOGICAL	Gross Alpha		[]	[]	[]	[]	
	Gross, Beta		[]	[]	[]	[]	
	Radium, T.		[]	[]	[]	[]	
	Radium, 226/228		[]	[]	[]	[]	
SPECIFIC ORGANICS	Volatiles	(VOA)	[]	[]	[]	[]	
	Semi-Volatiles	(BNA)	[]	[]	[]	[]	
	Pesticides/PCB)	(PEST/PCB)	[]	[]	[]	[]	
	PCB Only	(PCB)	[]	[]	[]	[]	
	TPH/Diesel	(TPH/D)	[]	[]	[]	[]	
	TPH/Gasoline	(TPH/G)	[]	[]	[]	[]	
	BTEX	(BTEX)	[]	[]	[]	[]	
	THM's	(THM)	[]	[]	[]	[]	
	Other (Define)		[]	[]	[]	[]	
MICROBIOLOGY	Fecal Coliform	(FC)	[]	[]	[]	[]	
	Total Coliform	(TC)	[]	[]	[]	[]	
	Other (Define)		[]	[]	[]	[]	
BIOASSAY / BIOTOXICITY	Acute		[]	[]	[]	[]	
	Chronic		[X]	[]	[]	[]	
	Daphnia magna/pulex		[]	[]	[]	[]	
	Mysid shrimp		[]	[]	[]	[]	
	Pimephales promelas		[X]	[]	[]	[]	
	Ceriodaphnia		[X]	[]	[]	[]	
	Cyprinodon		[]	[]	[]	[]	

ANALYTICAL AND ENVIRONMENTAL TESTING

TOXICITY SAMPLE FLOW SHEET

It is imperative that this form be completely filled out.

Client MAWSS
 Site C.C WILLIAMS - 0011
 Initial Flow Meter Reading 5178.600
 UNITS OF FLOW 34,865 mg

Date of Collection	Time of Collection	Flow Meter Reading
3-3-13	2355	5213.465

This information will be used to calculate the flow weighted composite aliquots.

Analytical & Environmental Testing, Inc.

Sample Receipt Check List--Required for Regulatory Samples only!!

filepath: G:\SAMPLING DEPT

Last revised: 6/7/2011

AET Workorder Number

Date: <u>03/04/13</u>
Login Person: <u>Kfn</u>

Work Order Number : <u>1303036</u>

Samples received by [AET, UPS, FedEx, BUS] **CIRCLE ONE**
MUST ATTACH SHIPPING BILL OR COPY TO COC

	YES	NO	N/A	Comments
COC Present, Correct, & Complete? (name/address, sample id, division, client type)	✓	*		
SAMPLES WITHIN HOLDING TIME? Customer must not be allowed to leave until this is verified	✓	*		
Samples delivered on ice?	✓	*		
Temperature of Samples		*		N/A if sample date=received date
COC and Sample Labels Agree?	✓	*		
Preserved to <2 (Metals, TOC, COD, NH3, TKN TPHOS, O&G, PHENOL, HARD) Circle Failure		*	✓	N/A if testing other than listed
Preserved to >12 CN, >9 S Circle Failure		*	✓	N/A if testing other than listed
Correct Sample Containers?	✓	*		
Containers intact?	✓	*		
Volume adequate?	✓	*		
Zero Headspace VOA/TOX		*	✓	
Custody seal on shipping container?			✓	not a requirement
Custody seal on bottles?	✓			not a requirement

*** A "NO" response mandates a "Sample Condition Notification" to be either signed on dock upon delivery or faxed to the customer ASAP**



Analytical Request Form / Chain of Custody 23rd Edition 03/2004

AET Project No.: 1303036
 Log In Person: ktw
 Log In Date/Time: 03/06/13

Sample Site: Clifton C. Williams WWTP 0011
 or Client ID:
 Sample Date: Please Document it
 Sample Time: Convents
 Matrix Code: A
 Storage Upon Arrival At Lab: Temp Y C N ICE Y N
 AET Sample No. 2

Division: MOB
 Client Type: Approved By ktw
 DPW
 NPDES
 RCRA
 Drinking Water
 Other
 All samples are preserved per EPA protocol

Company: MAWSS
 Site Contact: Mike Sims
 Report To: Mike Sims
 Address: 1600 Yeend St.
 City: Mobile, AL
 State & Zip Code: 36603
 Phone#: (251) 378-3503 - Ext. _____
 FAX#: (251) 433-4090 - Ext. _____
 SAMPLER AMS Client
 Authorized By: _____
 Sampler: Client AET
 Transporter: Client AET
 Bottles: Client AET
 Matrix Codes Turnaround Surcharge
 A=Water [] 24 hrs. 200%
 B=Sludge [] 48 hrs. 150%
 C=Soil [] 1 week 100%
 D=Oil 2 weeks 50%
 E=Acid [] 3 weeks
 F=Caustic
 G=100% Organic
 H=Solids&Misc.

Alkalinity (Alk)	<input checked="" type="checkbox"/>	8.2	[]	[]	[]	[]
Ammonia Nitrogen (NH3)	<input checked="" type="checkbox"/>	8.0	[]	[]	[]	[]
Ash (Ash)	[]	[]	[]	[]	[]	[]
BOD-5 day (BOD)	[]	[]	[]	[]	[]	[]
Bromide (Br)	[]	[]	[]	[]	[]	[]
BTU (BTU)	[]	[]	[]	[]	[]	[]
Chloride (Cl)	[]	[]	[]	[]	[]	[]
Chlorine, Res. (TRC)	<input checked="" type="checkbox"/>	0.00	[]	[]	[]	[]
COD (COD)	[]	[]	[]	[]	[]	[]
Color (Color)	[]	[]	[]	[]	[]	[]
Conductivity (Cond)	<input checked="" type="checkbox"/>	703	[]	[]	[]	[]
Cyanide (CN)	[]	[]	[]	[]	[]	[]
Cyanide-ATC (CNATC)	[]	[]	[]	[]	[]	[]
Density (DEN)	[]	[]	[]	[]	[]	[]
Dissolved Oxygen (DO)	<input checked="" type="checkbox"/>	10.74	[]	[]	[]	[]
Flow (GPM)(field) (Flow)	<input checked="" type="checkbox"/>	[]	[]	[]	[]	[]
Fluoride (F)	[]	[]	[]	[]	[]	[]
Halogens, Total (TX)	[]	[]	[]	[]	[]	[]
Hardness (Hard)	<input checked="" type="checkbox"/>	68	[]	[]	[]	[]
Moisture% (%M)	[]	[]	[]	[]	[]	[]
Nitrite (NO2)	[]	[]	[]	[]	[]	[]
Nitrate (NO3)	[]	[]	[]	[]	[]	[]
Oil & Grease (O&G)	[]	[]	[]	[]	[]	[]
pH (field) (pH)	<input checked="" type="checkbox"/>	6.70	su	su	su	su
Phenol (Phenol)	[]	[]	[]	[]	[]	[]
Phosphate, Ortho (O Phos)	[]	[]	[]	[]	[]	[]
Phosphorus, Total (T Phos)	[]	[]	[]	[]	[]	[]
Solids, Total (TS)	[]	[]	[]	[]	[]	[]
Sulfate (SO4)	[]	[]	[]	[]	[]	[]
Sulfide (S2)	[]	[]	[]	[]	[]	[]
Sulfur, Total (T Sulfur)	[]	[]	[]	[]	[]	[]
Surfactants (Surf)	[]	[]	[]	[]	[]	[]
TDS (TDS)	[]	[]	[]	[]	[]	[]
Temperature (field) (Temp)	[]	[]	C	C	C	C
Thiocyanate (SCN)	[]	[]	[]	[]	[]	[]
TKN (TKN)	[]	[]	[]	[]	[]	[]
TOC (TOC)	[]	[]	[]	[]	[]	[]
TON (TON)	[]	[]	[]	[]	[]	[]
TOX (TOX)	[]	[]	[]	[]	[]	[]
TPHC (TPHC)	[]	[]	[]	[]	[]	[]
TSS (TSS)	[]	[]	[]	[]	[]	[]
Turbidity (Turb)	[]	[]	[]	[]	[]	[]
VSS (VSS)	[]	[]	[]	[]	[]	[]

Comments
 QUARTERLY March/June Sept/Dec First Week CHRONIC
 SAMPLE START DATE: 3-4-13 TIME: 2350
 SAMPLE END DATE: 3-5-13 TIME: 2350
 Preferred Communication Cell: (251) 463-7042
 EMAIL: msims@mawss.com
 or Emily Tuggle 251-378-3501
 Flow. 36.378

NOTE: Multiphase MUST BE split into separate subsamples

CHAIN OF CUSTODY

Relinquished by: AMS Client ktw
 Date: 3-6-13 Time: 10:48am
 Received by: Kim Walker
 Date: 03/06/13 Time: 10:48am
 Relinquished by: Kim Walker
 Date: 03/06/13 Time: 1:25
 Received by: [Signature]
 Date: 3/06/13 Time: 13:25

NOTE: A Positive Response Below Mandates Additional Information on Back Page!!

METALS, Total	[]	[]	[]	[]
RCRA Hazardous Waste	[]	[]	[]	[]
RADIOLOGICAL	[]	[]	[]	[]
SPECIFIC ORGANICS	[]	[]	[]	[]
MICROBIOLOGY	[]	[]	[]	[]
BIOASSAY/BIOToxicity	<input checked="" type="checkbox"/>	[]	[]	[]
OTHER (Define)	[]	[]	[]	[]

Relinquished by: _____
 Date: _____ Time: _____
 Received by: _____
 Date: _____ Time: _____
 Relinquished by: _____
 Date: _____ Time: _____
 Received by: _____
 Date: _____ Time: _____

AET Sample No.						Comments	
METALS	Aluminum	(Al)	[]	[]	[]	[]	
	Antimony	(Sb)	[]	[]	[]	[]	
	Arsenic	(As)	[]	[]	[]	[]	
	Barium	(Ba)	[]	[]	[]	[]	
	Beryllium	(Be)	[]	[]	[]	[]	
	Bismuth	(Bi)	[]	[]	[]	[]	
	Boron	(B)	[]	[]	[]	[]	
	Cadmium	(Cd)	[]	[]	[]	[]	
	Calcium	(Ca)	[]	[]	[]	[]	
	Chromium	(Cr)	[]	[]	[]	[]	
	Chromium, Hexavalent	(CrVI)	[]	[]	[]	[]	
	Cobalt	(Co)	[]	[]	[]	[]	
	Copper	(Cu)	[]	[]	[]	[]	
	Iron	(Fe)	[]	[]	[]	[]	
	Lead	(Pb)	[]	[]	[]	[]	
	Magnesium	(Mg)	[]	[]	[]	[]	
	Manganese	(Mn)	[]	[]	[]	[]	
	Mercury	(Hg)	[]	[]	[]	[]	
	Molybdenum	(Mo)	[]	[]	[]	[]	
	Nickel	(Ni)	[]	[]	[]	[]	
	Potassium	(K)	[]	[]	[]	[]	
Selenium	(Se)	[]	[]	[]	[]		
Silicon	(Si)	[]	[]	[]	[]		
Silver	(Ag)	[]	[]	[]	[]		
Sodium	(Na)	[]	[]	[]	[]		
Strontium	(Sr)	[]	[]	[]	[]		
Thallium	(Tl)	[]	[]	[]	[]		
Tin	(Sn)	[]	[]	[]	[]		
Titanium	(Ti)	[]	[]	[]	[]		
Vanadium	(V)	[]	[]	[]	[]		
Zinc	(Zn)	[]	[]	[]	[]		
RCRA Hazardous Waste	Ignitability (Flash Pt.)	(FP)	[]	[]	[]	[]	
	Corrosivity	(Corr)	[]	[]	[]	[]	
	Reactivity (CN & S)	(RXCNS)	[]	[]	[]	[]	
	TCLP-Metals	(TM)	[]	[]	[]	[]	
	TCLP-Pest/Herb	(TP/H)	[]	[]	[]	[]	
	TCLP-BNA	(TBNA)	[]	[]	[]	[]	
	TCLP-VOA	(TVOA)	[]	[]	[]	[]	
RADIOLOGICAL	Gross Alpha		[]	[]	[]	[]	
	Gross, Beta		[]	[]	[]	[]	
	Radium, T.		[]	[]	[]	[]	
	Radium, 226/228		[]	[]	[]	[]	
SPECIFIC ORGANICS	Volatiles	(VOA)	[]	[]	[]	[]	
	Semi-Volatiles	(BNA)	[]	[]	[]	[]	
	Pesticides/PCB)	(PEST/PCB)	[]	[]	[]	[]	
	PCB Only	(PCB)	[]	[]	[]	[]	
	TPH/Diesel	(TPH/D)	[]	[]	[]	[]	
	TPH/Gasoline	(TPH/G)	[]	[]	[]	[]	
	BTEX	(BTEX)	[]	[]	[]	[]	
	THM's	(THM)	[]	[]	[]	[]	
	Other (Define)		[]	[]	[]	[]	
MICROBIOLOGY	Fecal Coliform	(FC)	[]	[]	[]	[]	
	Total Coliform	(TC)	[]	[]	[]	[]	
	Other (Define)		[]	[]	[]	[]	
BIOASSAY / BIOTOXICITY	Acute		[]	[]	[]	[]	
	Chronic		[X]	[]	[]	[]	
	Daphnia magna/pulex		[]	[]	[]	[]	
	Mysid shrimp		[]	[]	[]	[]	
	Pimephales promelas		[X]	[]	[]	[]	
	Ceriodaphnia		[X]	[]	[]	[]	
	Cyprinodon		[]	[]	[]	[]	

AET Workorder Number
1303036

ANALYTICAL AND ENVIRONMENTAL TESTING

TOXICITY SAMPLE FLOW SHEET

It is imperative that this form be completely filled out.

Client MAWSS
Site CC Williams
Initial Flow Meter Reading 5252.119
UNITS OF FLOW 36.378 MGD

Date of Collection	Time of Collection	Flow Meter Reading
3-5-13	2350	5288.497

This information will be used to calculate the flow weighted composite aliquots.

Analytical & Environmental Testing, Inc.

Sample Receipt Check List--Required for Regulatory Samples only!!

filepath: G:\SAMPLING\DEPT

Last revised: 6/7/2011 AET Workorder Number

Date: <u>03/06/13</u>
Login Person: <u>KFW</u>

Work Order Number: <u>1303036</u>

Samples received by [AET, UPS, FedEx, BUS] **CIRCLE ONE**
MUST ATTACH SHIPPING BILL OR COPY TO COC

	YES	NO	N/A	Comments
COC Present, Correct, & Complete? (name/address, sample id, division, client type)	✓	*		
SAMPLES WITHIN HOLDING TIME? Customer must not be allowed to leave until this is verified	✓	*		
Samples delivered on ice?	✓	*		
Temperature of Samples		*		N/A if sample date=received date
COC and Sample Labels Agree?	✓	*		
Preserved to <2 (Metals, TOC, COD, NH3, TKN TPHOS, O&G, PHENOL, HARD) Circle Failure		*	✓	N/A if testing other than listed
Preserved to >12 CN, >9 S Circle Failure		*	✓	N/A if testing other than listed
Correct Sample Containers?	✓	*		
Containers intact?	✓	*		
Volume adequate?	✓	*		
Zero Headspace VOA/TOX		*	✓	
Custody seal on shipping container?			✓	not a requirement
Custody seal on bottles?	✓			not a requirement

*** A "NO" response mandates a "Sample Condition Notification" to be either signed on dock upon delivery or faxed to the customer ASAP**



AET Project No.: 1303036
Log In Person: KFW
Log In Date/Time: 03/08/13

Analytical Request Form / Chain of Custody

23rd Edition 03/2004

Sample Site: Clifton C. Williams WWTP 0011
Client ID:
Sample Date: Please Recount in
Sample Time: Corvents
Matrix Code: A
Storage Upon Arrival At Lab: Temp C ICE Y N
AET Sample No. 3

Division: MOB
Client Type: Approved
By KFW
[] DPW
[] NPDES
[] RCRA
[] Drinking Water
[] Other

All samples are preserved per EPA protocol

Comments

Company: MAWSS
Site Contact: Mike Sims
Report To: Mike Sims
Address: 1600 Yeend St.
City: Mobile, AL
State & Zip Code: 36603

Phone#: (251) 378-3503 - Ext.
FAX#: (251) 433-4090 - Ext.

SAMPLER: [Signature]
Authorized By:
Sampler: [X] Client [] AET
Transporter: [] Client [X] AET
Bottles: [] Client [X] AET

Table with 3 columns: Matrix Codes, Turnaround Hrs., Surcharge. Includes rows for A=Water, B=Sludge, C=Soil, D=Oil, E=Acid, F=Caustic, G=100% Organic, H=Solids&Misc.

NOTE: Multiphase MUST BE split into separate subsamples

CHAIN OF CUSTODY

Relinquished by: [Signature]
Date: 3-8-13 Time: 0600-11:30am
Received by: Kim Walker
Date: 03/08/13 Time: 11:30am
Relinquished by: Kim Walker
Date: 03/08/13 Time: 1:05 pm
Received by: [Signature]
Date: 3/8/13 Time: 1052m

Main analytical results table with columns for parameter name, unit, and four temperature/condition columns (ICE Y N). Includes parameters like Alkalinity, Ammonia Nitrogen, BOD-5 day, etc.

QUARTERLY March/June Sept/Dec First Week CHRONIC
SAMPLE START DATE: 3-6-13 TIME: 2355
SAMPLE END DATE: 3-7-13 TIME: 2355
Preferred Communication Cell:(251) 463-7042
EMAIL: msims@mawss.com
or Emily Tuggle 251-378-3501
flow 33.07 MBD

NOTE: A Positive Response Below Mandates Additional Information on Back Page!!

Table with 4 columns for METALS, Total, RCRA Hazardous Waste, RADIOLOGICAL, SPECIFIC ORGANICS, MICROBIOLOGY, BIOASSAY/BIOTOXICITY, OTHER (Define).

Relinquished by:
Date: Time:
Received by:
Date: Time:
Relinquished by:
Date: Time:
Received by:
Date: Time:

		AET Sample No.					Comments
OTHER ANALYSES REQUESTED	METALS	Aluminum (Al)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Antimony (Sb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Arsenic (As)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Barium (Ba)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Beryllium (Be)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Bismuth (Bi)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Boron (B)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Cadmium (Cd)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Calcium (Ca)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Chromium (Cr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Chromium, Hexavalent (CrVI)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Cobalt (Co)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Copper (Cu)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Iron (Fe)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Lead (Pb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Magnesium (Mg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Manganese (Mn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Mercury (Hg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Molybdenum (Mo)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Nickel (Ni)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Potassium (K)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Selenium (Se)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Silicon (Si)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Silver (Ag)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Sodium (Na)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Strontium (Sr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Thallium (Tl)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Tin (Sn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Titanium (Ti)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Vanadium (V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Zinc (Zn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
RCRA Hazardous Waste	Ignitability (Flash Pt.) (FP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Corrosivity (Corr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Reactivity (CN & S) (RXCNS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	TCLP-Metals (TM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	TCLP-Pest/Herb (TP/H)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	TCLP-BNA (TBNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	TCLP-VOA (TVOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
RADIOLOGICAL	Gross Alpha	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Gross, Beta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Radium, T.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Radium, 226/228	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
SPECIFIC ORGANICS	Volatiles (VOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Semi-Volatiles (BNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Pesticides/PCB (PEST/PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	PCB Only (PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	TPH/Diesel (TPH/D)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	TPH/Gasoline (TPH/G)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	BTEX (BTEX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	THM's (THM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Other (Define)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
MICROBIOLOGY	Fecal Coliform (FC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Total Coliform (TC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Other (Define)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
BIOASSAY / BIOTOXICITY	Acute	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Chronic	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Daphnia magna/pulex	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Mysid shrimp	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Pimephales promelas	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Ceriodaphnia	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	Cyprinodon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

ANALYTICAL AND ENVIRONMENTAL TESTING

TOXICITY SAMPLE FLOW SHEET

It is imperative that this form be completely filled out.

Client MAW11
Site (11)
Initial Flow Meter Reading 5321.403
UNITS OF FLOW MGD

Date of Collection	Time of Collection	Flow Meter Reading
3-7-13	2355	5354.473

This information will be used to calculate the flow weighted composite aliquots.

Analytical & Environmental Testing, Inc.

Sample Receipt Check List--Required for Regulatory Samples only!!

filepath: G:\SAMPLING DEPT

Last revised: 6/7/2011

Date: <u>03/08/13</u>
Login Person: <u>KTW</u>

Work Order Number: <u>1303036</u>

AET Work Order Number
1303036

Samples received by [AET, UPS, FedEx, BUS] **CIRCLE ONE**
MUST ATTACH SHIPPING BILL OR COPY TO COC

	YES	NO	N/A	Comments
COC Present, Correct, & Complete? (name/address, sample id, division, client type)	✓	*		
SAMPLES WITHIN HOLDING TIME?	✓	*		
Customer must not be allowed to leave until this is verified				
Samples delivered on ice?	✓	*		
Temperature of Samples	10C	*		N/A if sample date=received date
COC and Sample Labels Agree?	✓	*		
Preserved to <2 (Metals, TOC, COD, NH3, TKN TPHOS, O&G, PHENOL, HARD) Circle Failure		*	✓	N/A if testing other than listed
Preserved to >12 CN, >9 S Circle Failure		*	✓	N/A if testing other than listed
Correct Sample Containers?	✓	*		
Containers intact?	✓	*		
Volume adequate?	✓	*		
Zero Headspace VOA/TOX		*	✓	
Custody seal on shipping container?	✓		✓	not a requirement
Custody seal on bottles?	✓			not a requirement

*** A "NO" response mandates a "Sample Condition Notification" to be either signed on dock upon delivery or faxed to the customer ASAP**

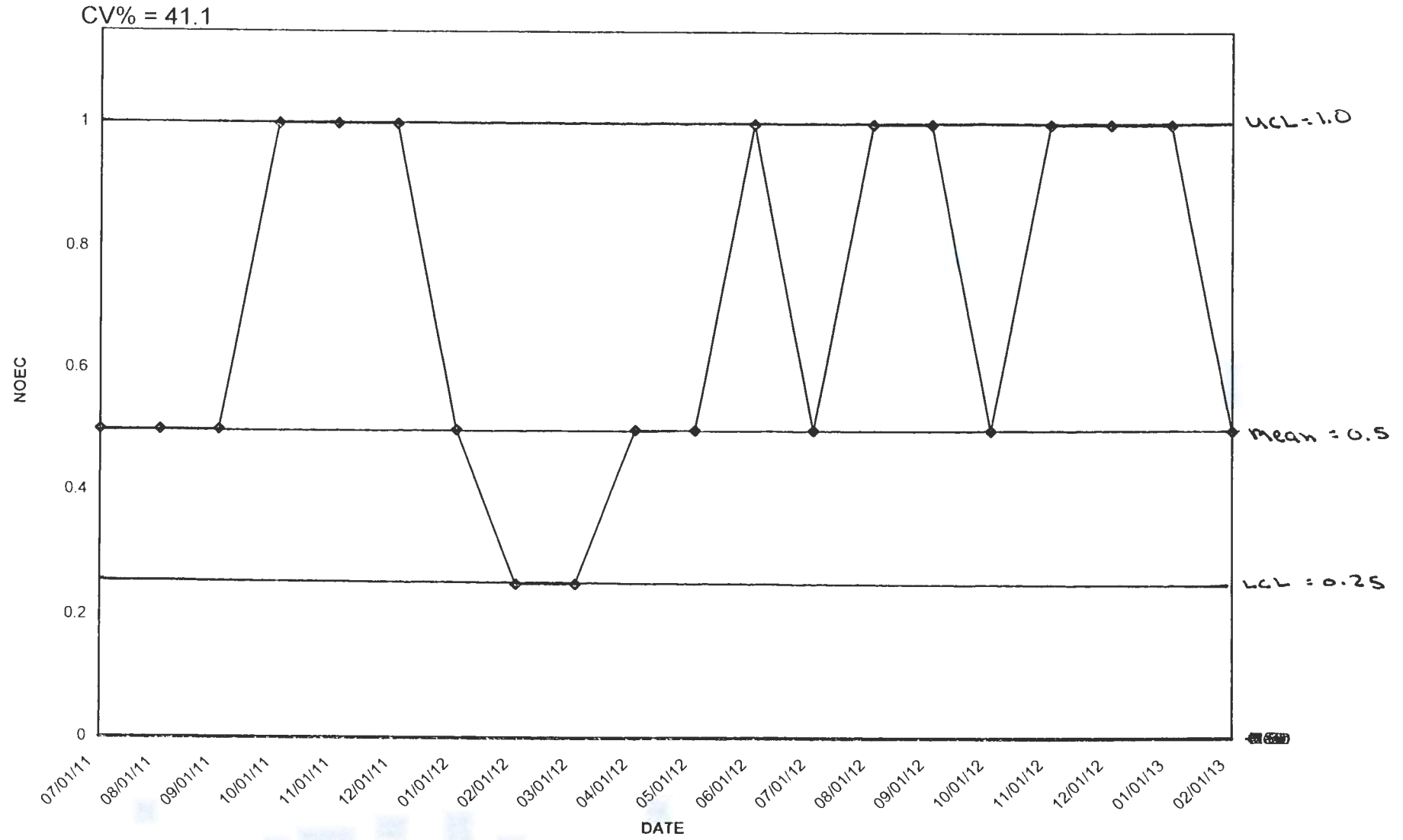
STATISTICAL CALCULATIONS

Ceriodaphnia dubia									
Normality Shapiro Wilks									
Last Modified 12/27/96						0%	19%	All	
Filename: f:\bioassay\CD_repro.xls		0%	19%	Squared	Squared	Sorted			
		0%	19%	Centered	Centered	Centered	Centered	Cen.Data	
Control	a	22	23	0.9	0.6	0.81	0.36	-20.1	
	b	19	32	-2.1	9.6	4.41	92.16	-12.3	
	c	18	14	-3.1	-8.4	9.61	70.56	-8.1	
	d	23	21	1.9	-1.4	3.61	1.96	-6.3	
	e	17	23	-4.1	0.6	16.81	0.36	-2.3	
	f	26	19	4.9	-3.4	24.01	11.56	-2.1	
	g	22	19	0.9	-3.4	0.81	11.56	-2.1	
	h	20	21	-1.1	-1.4	1.21	1.96	-1.3	
	i	18	27	-3.1	4.6	9.61	21.16	-0.3	
	j	26	25	4.9	2.6	24.01	6.76	-0.1	
Average		21.1	22.4	Sum Sq=		94.9	218.4	1.7	
								1.9	
								2.7	
Overall Mean of Centered Observation						-5.5	4.7		
99						313.3	5.7		
Denominator (D)						318.8	5.9		
								7.7	
Coefficiance of Difference		DeltaX				Square of		7.9	
i	Ai	X(n-i+1)-X(i)			Ai*DeltaX	Ai*DeltaX	7.9		
1	0.4734	29			13.7286	188.47446	8.9		
2	0.3211	20.2			6.48622	42.07105			
3	0.2565	16			4.104	16.842816			
4	0.2085	14			2.919	8.520561			
5	0.1686	8.2			1.38252	1.9113616			
6	0.1334	7.8			1.04052	1.0826819			
7	0.1013	6.8			0.68884	0.4745005			
8	0.0711	4			0.2844	0.0808834			
9	0.0422	2.2			0.09284	0.0086193			
10	0.014	1.8			0.0252	0.000635			
Total:					30.75214	259.46757			
Test Static W=		2.9664182	Sq Total:		945.69411				
Limit =		0.868	Normal						
Normal=W>Limit									
Two Tailed F Test		For variance numbers use toxstat 3.3 run stat summary							
Variance Control=		35.8							
Variance 100%=		80.1							
F=		2.2374302	Variances Homogenous						
Critical F Limit=		8.1							
F < Critical F				F > Critical F					
Equal Variance T-Test				Unequal Variance T-Test					
t=	-0.381858	t= Not Applicable							
Replicates	10	Replicates = 10							
Critical tw/ 18 deg of freedom=	1.74	Adj. Deg. of Freedom, df=		Not Applicable					
Sp=	7.6124897	C=		Not Applicable					
Different NO									
Sample is Different if t > Critical t				Revised Equal Variance T-Test					
				Critical t with Adjusted Deg. of Freedom =		2.354	LOOK UP		
							Significantly Different		Not Applicable
Sample is different if t > Adjusted Critical t									

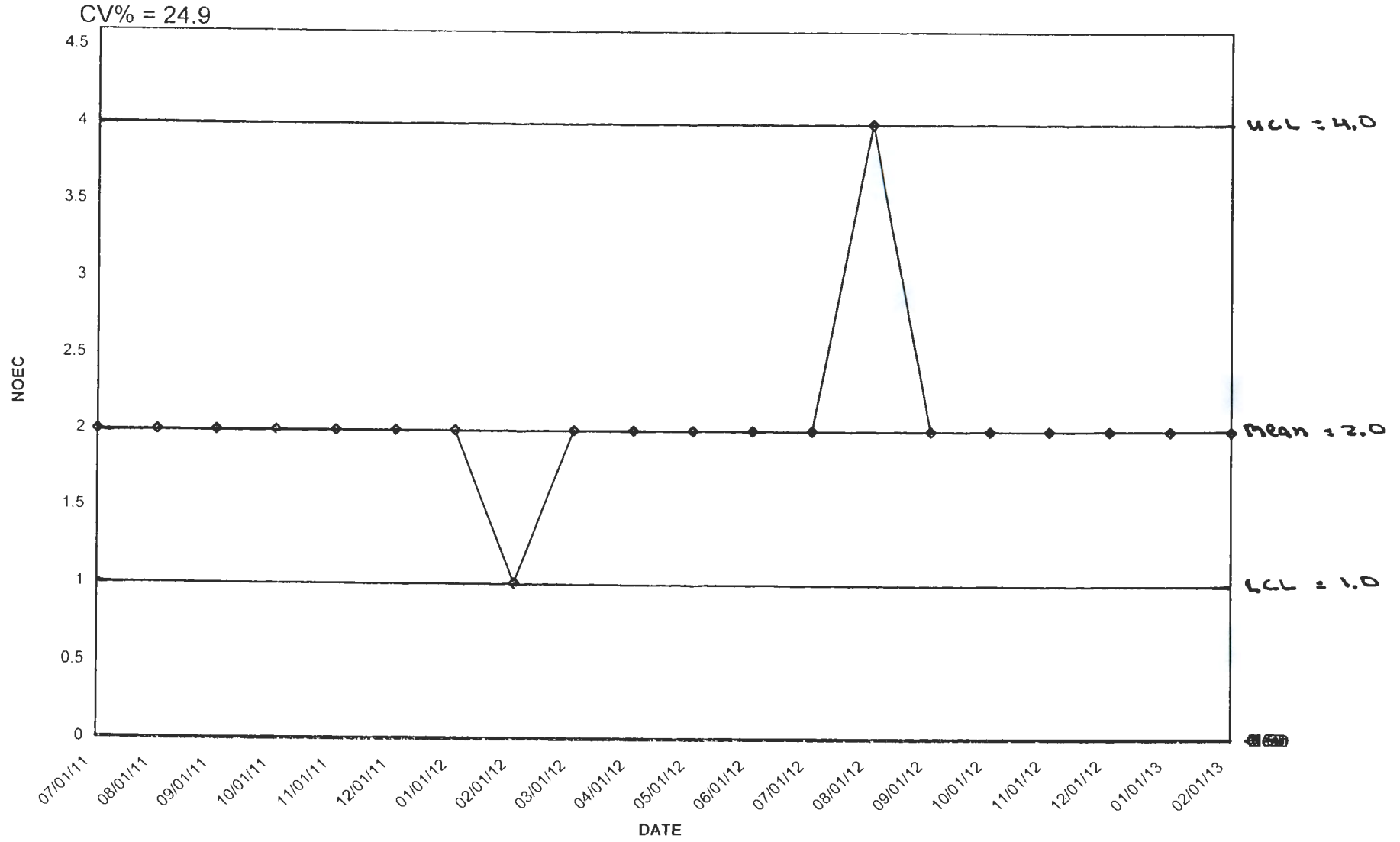
Normality Shapiro Wilks									
Fathead Minnow									
Last Modified 12/27/96									
Filename: PP_grow.xls							Squared	Sorted	
		Wt_fin	Wt_ini	Gain/10	Mean	Centered	Centered	Cen.Data	
Control	a	17.125	9.037	0.8088	0.88615	-0.07735	0.005983	-0.06838	
	b	18.087	8.849	0.9238		0.03765	0.001418	-0.0677	
	c	18.54	8.982	0.9558		0.06965	0.004851	-0.00857	
	d	17.871	9.309	0.8562		-0.02995	0.000897	-0.00418	
							0.013149	-0.0013	
			Wt_ini	Gain/10	Mean	Centered		0.0339	
19%	a	16.764	7.996	0.8768	0.893725	-0.01693	0.000286	0.0351	
	b	18.05	8.474	0.9576		0.063875	0.00408	0.081125	
	c	17.298	8.686	0.8612		-0.03253	0.001058		
	d	17.107	8.314	0.8793		-0.01442	0.000208		
							0.005632		
		Overall Mean of Centered Observation					-3.5E-17		
		Sum of Squared Centered Observations.					0.018781		
		Denominator (D)					0.018781		
Coefficient of Difference		DeltaX			Square of				
i	Ai	X(n-i+1)-X(i)			Ai*DeltaX	Ai*DeltaX			
1	0.6052	0.1495			0.090477	0.008186			
2	0.3164	0.1028			0.032526	0.001058			
3	0.1743	0.042475			0.007403	5.48E-05			
4	0.0561	0.002875			0.000161	2.6E-08			
		Total:			0.130568	0.009299			
Test Static W=	0.907721	Sq Total:			0.017048				
Limit =	0.749	Normal							
Two Tailed F Test		Run toxstat 3.3 to obtain variance numbers							
Variance C	0.002								
Variance 100%	0.004								
F=	2	Variances Homogenous							
Critical F Limit=	11.3								
F < Critical F		F > Critical F							
Equal Variance T-Test				Unequal Variance T-Test					
t=	-0.19559					t=	Not Applicable		
Replicates	4					Replicates =	4		
Critical t w/ 6 deg of freedom	1.944	Adj. Deg. of Freedom. df=				Not Applicable			
Sp=	0.054772					C= Not Applicable			
Different:	NO								
				Revised Equal Variance T-Test					
				Critical t with Adjusted Deg. of Freedom = 2.354					
				Significantly Different: Not Applicable					
Sample is Different if t > Critical t				Sample is different if t > Adjusted Critical t					

REFERENCE TOXICANT DATA

C. dubia 7- DAY NOEC



P. promelas 7-DAY NOEC



Analytical and Environmental Testing, Inc.

G:\SOP\CURRENT\TOXICITY\TABLES\Chronic0%100% Chem. Table.doc SOP

Revision # 13, 8

CHRONIC BIOASSAY CONTROL AND 100% EFFLUENT CHEMICAL TABLE

AET PROJECT NO.: Ref Tox Feb 2013

CLIENT: AET

SAMPLE DATE/DESIGNATION: 2/4/13 / NaCl

BEGINNING DATE OF BIOASSAY: 2/4/13

SPECIES (circle): C. dubia P. promelas

INITIAL CHEMISTRIES- CONTROL 0% MEASURE EACH NEW BATCH							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	2/4/13	2/5/13	2/6/13	2/7/13	2/8/13	2/9/13	2/10/13
TIME	12:30pm	11:30am	11:05am	11:20am	11:30am	12:00pm	2:20pm
INITIALS	SP	AJC	SP	SP	SP	AJC	AJC
ALK	62	62			62		
COND	300	317	317		316		
DO	7.21	7.97			8.16		
HARD	88	96			96		
pH	8.04	8.24			8.16		
TRC	0.02	0.01			0.01		

16 PPT

100% EFFLUENT SAMPLE MEASURE EACH NEW SAMPLE (pH - daily)							
DATE	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	2/4/13	2/5/13	2/6/13	2/7/13			
TIME	12:30pm	11:30am	11:05am	11:20am			
INITIALS	SP	AJC	SP	SP			
ALK	60						
COND	241						
DO	8.24						
HARD	92						
pH	7.91						
TRC	0.02						

The pH of the effluent sample must be run daily.

NOTES:

CHRONIC BIOASSAY INITIAL CHEMICAL TABLE

AET PROJECT NO.: Ref Tox Feb 2013
 CLIENT: AET
 SAMPLE DATE/DESIGNATION: 2/4/13 | NaCl
 BEGINNING DATE OF BIOASSAY: 2/4/13
 SPECIES (circle): C. dubia, P. promelas

INITIAL CHEMISTRIES- CONTROL 0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	2/4/13	2/5/13	2/6/13	2/7/13	2/8/13	2/9/13	2/10/13
TIME	12:30pm	11:30am	11:05am	11:20am	11:30am	12:00pm	2:10pm
INITIAL	SP	AJC	SP	SP	SP	AJC	AJC
DO	7.71	7.97	8.39	9.13	8.11	8.09	8.90
DILUTION 1 - 0.25 PPT							
DO	7.72	8.65	8.52	9.04	8.26	7.87	/
DILUTION 2 - 0.5 PPT							
DO	7.94	8.64	8.85	9.38	8.44	8.11	/
DILUTION 3 - 1 PPT							
DO	7.43	8.26	8.49	8.35	7.93	8.05	8.37
DILUTION 4 - 2 PPT							
DO	7.41	8.01	8.44	8.27	8.31	8.34	8.48
DILUTION 5 - 4 PPT							
DO	7.71	8.73	8.49	8.24	8.12	8.15	9.12
DILUTION 6 - 8 PPT							
DO	7.82	8.61	8.45	8.27	8.26	8.22	8.57
DILUTION 7 - 16 PPT							
DO	7.84	/	/	/	/	/	/
TIME = Time the dilution was made.							
NOTES:							

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

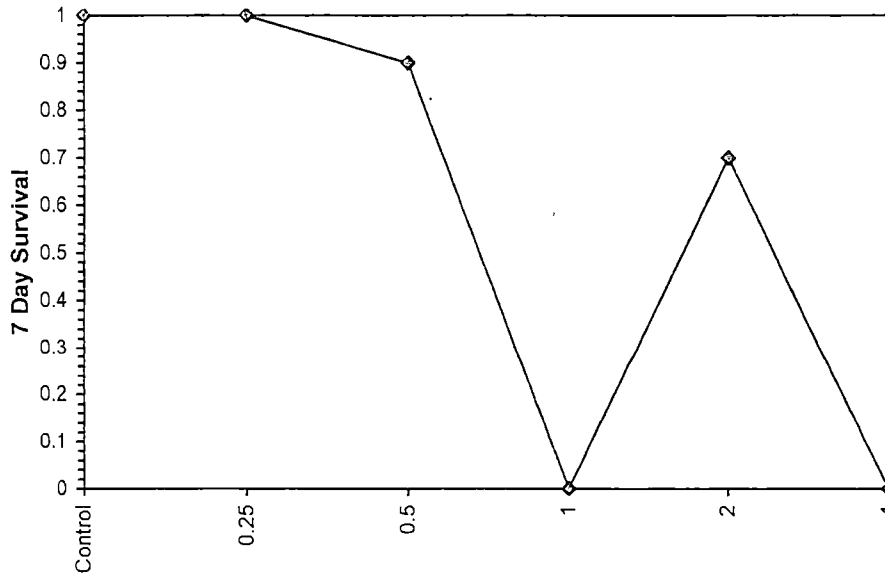
Start Date: 2/4/2013 13:20 Test ID: REF TOX Sample ID: REF-Ref Toxicant
 End Date: 2/10/2013 15:10 Lab ID: REF TOX Sample Type: NACL-Sodium chloride
 Sample Date: 2/4/2013 12:30 Protocol: EPAF 94-EPA Freshwater Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-ppt	1	2	3	4	5	6	7	8	9	10
Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	0.0000	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical
Control	1.0000	1.0000	0	10	10	10		
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500
0.5	0.9000	0.9000	1	9	10	10	0.5000	0.0500
1	0.0000	0.0000	10	0	10	10		
2	0.7000	0.7000	3	7	10	10	0.1053	0.0500
4	0.0000	0.0000	10	0	10	10		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	2	4	2.82843	
Treatments vs Control				

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-Reproduction

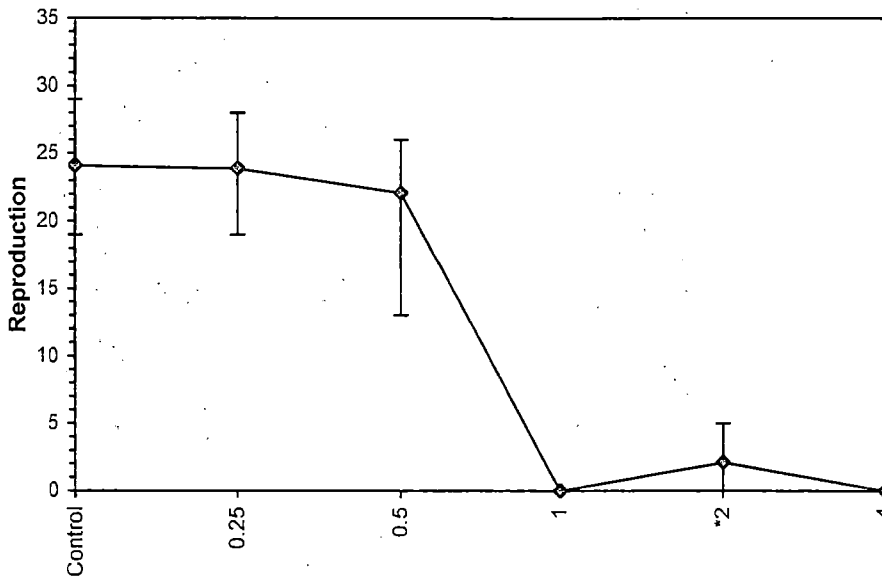
Start Date: 2/4/2013 13:20 Test ID: REF TOX Sample ID: REF-Ref Toxicant
 End Date: 2/10/2013 15:10 Lab ID: REF TOX Sample Type: NACL-Sodium chloride
 Sample Date: 2/4/2013 12:30 Protocol: EPAF 94-EPA Freshwater Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-ppt	1	2	3	4	5	6	7	8	9	10
Control	25.000	26.000	25.000	23.000	23.000	26.000	19.000	29.000	25.000	20.000
0.25	28.000	25.000	19.000	25.000	23.000	27.000	22.000	24.000	23.000	23.000
0.5	26.000	20.000	26.000	23.000	13.000	23.000	22.000	25.000	20.000	23.000
1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	0.000	3.000	3.000	2.000	3.000	2.000	0.000	3.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-ppt	Mean	N-Mean	Transform: Untransformed					Rank Sum	1-Tailed Critical
			Mean	Min	Max	CV%	N		
Control	24.100	1.0000	24.100	19.000	29.000	12.286	10		
0.25	23.900	0.9917	23.900	19.000	28.000	10.704	10	99.50	77.00
0.5	22.100	0.9170	22.100	13.000	26.000	17.388	10	90.50	77.00
1	0.000	0.0000	0.000	0.000	0.000	0.000	10		
*2	2.100	0.0871	2.100	0.000	5.000	79.206	10	55.00	77.00
4	0.000	0.0000	0.000	0.000	0.000	0.000	10		

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$)	0.93787	0.919	-0.9356	2.01247
Equality of variance cannot be confirmed				
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	0.5	2	1	
Treatments vs Control				

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 2/4/2013 13:20 Test ID: REF TOX Sample ID: REF-Ref Toxicant
 End Date: 2/10/2013 15:10 Lab ID: REF TOX Sample Type: NACL-Sodium chloride
 Sample Date: 2/4/2013 12:30 Protocol: EPAF 94-EPA Freshwater Test Species: CD-Ceriodaphnia dubia
 Comments:

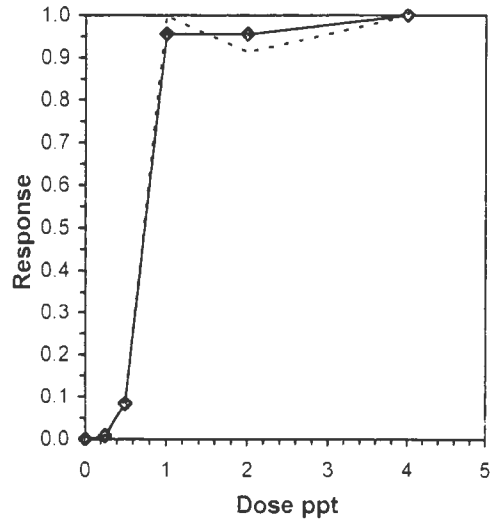
Conc-ppt	1	2	3	4	5	6	7	8	9	10
Control	25.000	26.000	25.000	23.000	23.000	26.000	19.000	29.000	25.000	20.000
0.25	28.000	25.000	19.000	25.000	23.000	27.000	22.000	24.000	23.000	23.000
0.5	26.000	20.000	26.000	23.000	13.000	23.000	22.000	25.000	20.000	23.000
1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	0.000	0.000	3.000	3.000	2.000	3.000	2.000	0.000	3.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-ppt	Transform: Untransformed							Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
Control	24.100	1.0000	24.100	19.000	29.000	12.286	10	24.100	1.0000
0.25	23.900	0.9917	23.900	19.000	28.000	10.704	10	23.900	0.9917
0.5	22.100	0.9170	22.100	13.000	26.000	17.388	10	22.100	0.9170
1	0.000	0.0000	0.000	0.000	0.000	0.000	10	1.050	0.0436
2	2.100	0.0871	2.100	0.000	5.000	79.206	10	1.050	0.0436
4	0.000	0.0000	0.000	0.000	0.000	0.000	10	0.000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.93787	0.919	-0.9356	2.01247
Equality of variance cannot be confirmed				

Linear Interpolation (200 Resamples)

Point	ppt	SD	95% CL		Skew
IC05	0.3896	0.1210	0.1278	0.5261	-0.4885
IC10	0.5097	0.0744	0.2741	0.5521	-1.8284
IC15	0.5384	0.0373	0.4326	0.5785	-2.1188
IC20	0.5670	0.0281	0.5026	0.6043	-1.1608
IC25	0.5956	0.0250	0.5355	0.6308	-0.8073
IC40	0.6815	0.0200	0.6342	0.7092	-0.7670
IC50	0.7387	0.0167	0.7000	0.7620	-0.7166



CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: Ref Tox Feb 2013

CLIENT: AET

SAMPLE DATE/DESIGNATION: 2/4/13 / NaCl

BEGINNING DATE OF BIOASSAY: 2/4/13

SPECIES (circle) C. dubia, P. promelas

FINAL CHEM.- CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	2/5/13	2/6/13	2-7-13	2/8/13	2-9-13	2/10/13	
INITIALS	SBM	AGB	JNH	AGB	JNH	AGB	
DO	7.04	7.80	8.73	7.47	7.47	7.72	
pH	7.85	8.13	8.01	8.02	8.05	8.16	
TEMP	24.7	24.7	24.7	24.7	24.7	25.7	
DILUTION 1- 0.25% PPT							
DO	7.28	7.37	8.94	7.48	7.54	7.85	
pH	7.90	7.89	7.94	8.08	8.02	8.10	
TEMP	24.7	24.7	24.7	24.7	24.7	25.7	
DILUTION 2- 0.5% PPT							
DO	7.22	7.55	7.79	7.63	7.61	7.89	
pH	7.90	7.86	7.95	8.02	8.01	8.08	
TEMP	24.7	24.7	24.7	24.7	24.7	25.7	
DILUTION 3- 1% PPT							
DO	7.67	7.80	9.19	/	/	/	/
pH	7.84	7.85	7.82	/	/	/	/
TEMP	24.7	24.7	24.7	24.7	24.7	24.7	24.7
DILUTION 4- 2% PPT							
DO	7.35	7.65	9.39	7.64	7.61	7.85	
pH	7.82	7.82	7.83	7.97	7.98	8.01	
TEMP	24.7	24.7	24.7	24.7	24.7	25.7	
DILUTION 5- 4% PPT							
DO	7.16	/	/	/	/	/	/
pH	7.77	/	/	/	/	/	/
TEMP	24.7	/	24.7	/	/	/	/

All final temperatures must be taken from the ghost cups in the chamber.

Chronic C. dubia Organism Table AET #: ^{Ref Tex Feb 2013} Samp. Date: 2/4/13

Block Parentage: Y or N (circle one)

Client: AET Beg. Date: 2/4/13 End Date: 2/10/13 Rand. Temp.: 11 Lot #: M551

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8/9	Total #
Time:	1:20pm	12:20pm	11:07am	11:56am	10:56am	3:50pm	3:10pm		
Initials:	GRA	GRA	GRA	GRA	GRA	AJC	AJC		
Dilution									
0% A1	✓	✓	✓	✓	3	9	13		25
B2					4	9	13		26
C3					3	9	13		25
D4					3	8	12		23
E5					3	8	12		23
F6					4	10	12		26
G7					3	6	10		19
H8					4	11	14		29
I9					3	8	14		25
J10					4	6	10		20
0.25 ppt %A1					4	10	14		28
B2					5	7	13		25
C3					2	7	10		19
D4					3	8	14		25
E5					4	8	11		23
F6					5	10	12		27
G7					3	7	12		22
H8					4	8	12		24
I9					3	8	9+3a		23
J10					3	9	11		23
0.5 ppt %A1					4	8	14		26
B2					0	8	12		20
C3					3	9	14		26
D4					4	9	10+4a		23
E5					4	9x			13
F6					3	7	13		23
G7					3	7	12		22
H8					3	7	13		25
I9					0	7	11		20
J10				✓	2	10	11		23
1 ppt %A1				X					→X
B2									→X
C3									→X
D4				↓					→X
E5				✓	✓				→X
F6				X					→X
G7									→X
H8									→X
I9									→X
J10				↓					→X
2 ppt %A1		✓	✓	✓					→X
B2		X							→X
C3		✓	✓	✓	0	2	1		3
D4					0	3	0		3
E5					0	2	0		2
F6					0	3	0		3
G7					0	0	2		2
H8					X				→X
I9					0	2	1		3
J10		✓	✓	✓	0	1	4		5
4 ppt %A1		X							→X
B2									↓
C3									↓
D4									↓
E5									↓
F6									↓
G7									↓
H8									↓
I9									↓
J10		✓	✓	✓					↓

→ next 7

Larval Fish Growth and Survival Test-7 Day Survival

Start Date: 2/4/2013 16:00	Test ID: REF TOX	Sample ID: REF-Ref Toxicant
End Date: 2/11/2013 14:25	Lab ID: REF TOX	Sample Type: NACL-Sodium chloride
Sample Date: 2/4/2013 12:30	Protocol: EPAF 94-EPA Freshwater	Test Species: PP-Pimephales promelas

Conc-ppt	1	2	3	4
Control	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000
2	1.0000	1.0000	1.0000	0.8000
4	0.9000	0.6000	0.6000	0.6000
8	0.2000	0.0000	0.4000	0.2000
16	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Mean	N-Mean	Transform: Arcsin Square Root					Rank Sum	1-Tailed Critical
			Mean	Min	Max	CV%	N		
Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4		
1	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4	18.00	10.00
2	0.9500	0.9500	1.3358	1.1071	1.4120	11.411	4	16.00	10.00
*4	0.6750	0.6750	0.9768	0.8861	1.2490	18.579	4	10.00	10.00
*8	0.2000	0.2000	0.4427	0.1588	0.6847	48.808	4	10.00	10.00
16	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	4		

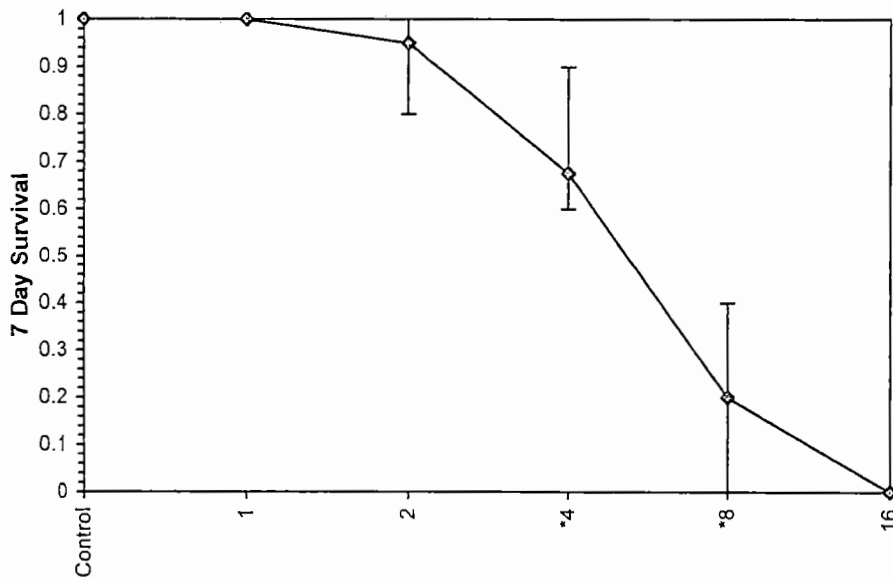
Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.89359	0.868	-0.0391	1.51621

Equality of variance cannot be confirmed

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	2	4	2.82843	

Treatments vs Control

Dose-Response Plot



Larval Fish Growth and Survival Test-7 Day Growth

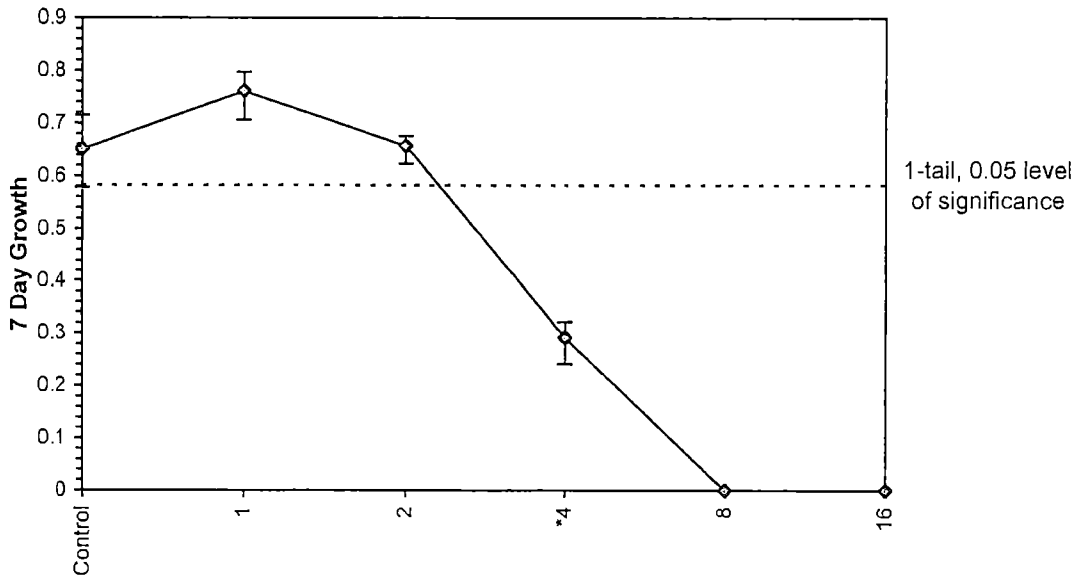
Start Date: 2/4/2013 16:00 Test ID: REF TOX Sample ID: REF-Ref Toxicant
 End Date: 2/11/2013 14:25 Lab ID: REF TOX Sample Type: NACL-Sodium chloride
 Sample Date: 2/4/2013 12:30 Protocol: EPAF 94-EPA Freshwater Test Species: PP-Pimephales promelas
 Comments:

Conc-ppt	1	2	3	4
Control	0.6397	0.5778	0.7147	0.6703
1	0.7837	0.7567	0.7054	0.7967
2	0.6760	0.6715	0.6233	0.6567
4	0.3196	0.2826	0.2408	0.3219
8	0.0000	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Mean	N-Mean	Transform: Untransformed					1-Tailed		
			Mean	Min	Max	CV%	N	t-Stat	Critical	MSD
Control	0.6506	1.0000	0.6506	0.5778	0.7147	8.836	4			
1	0.7606	1.1691	0.7606	0.7054	0.7967	5.313	4	-3.729	2.290	0.0676
2	0.6569	1.0096	0.6569	0.6233	0.6760	3.631	4	-0.212	2.290	0.0676
*4	0.2912	0.4476	0.2912	0.2408	0.3219	13.095	4	12.183	2.290	0.0676
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4			
16	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4			

Auxiliary Tests	Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$)	0.95373	0.844	-0.4854	-0.3228						
Bartlett's Test indicates equal variances ($p = 0.59$)	1.89615	11.3449								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs Control	2	4	2.82843		0.06755	0.10383	0.1687	0.00174	1.1E-08	3, 12

Dose-Response Plot



Larval Fish Growth and Survival Test-7 Day Growth

Start Date: 2/4/2013 16:00 Test ID: REF TOX Sample ID: REF-Ref Toxicant
 End Date: 2/11/2013 14:25 Lab ID: REF TOX Sample Type: NACL-Sodium chloride
 Sample Date: 2/4/2013 12:30 Protocol: EPAF 94-EPA Freshwater Test Species: PP-Pimephales promelas
 Comments:

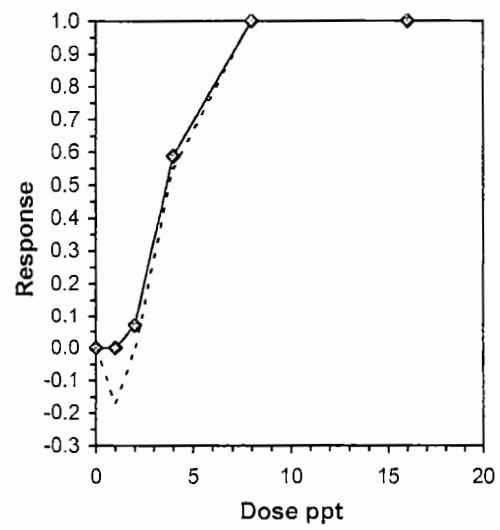
Conc-ppt	1	2	3	4
Control	0.6397	0.5778	0.7147	0.6703
1	0.7837	0.7567	0.7054	0.7967
2	0.6760	0.6715	0.6233	0.6567
4	0.3196	0.2826	0.2408	0.3219
8	0.0000	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Transform: Untransformed							Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
Control	0.6506	1.0000	0.6506	0.5778	0.7147	8.836	4	0.7056	1.0000
1	0.7606	1.1691	0.7606	0.7054	0.7967	5.313	4	0.7056	1.0000
2	0.6569	1.0096	0.6569	0.6233	0.6760	3.631	4	0.6569	0.9309
4	0.2912	0.4476	0.2912	0.2408	0.3219	13.095	4	0.2912	0.4127
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4	0.0000	0.0000
16	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4	0.0000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$)	0.95373	0.844	-0.4854	-0.3228
Bartlett's Test indicates equal variances ($p = 0.59$)	1.89615	11.3449		

Linear Interpolation (200 Resamples)

Point	ppt	SD	95% CL(Exp)		Skew
IC05	1.7237	0.2079	1.3103	2.3568	0.2092
IC10	2.1193	0.0969	1.8175	2.4084	-0.3572
IC15	2.3123	0.0843	2.0838	2.5862	0.1039
IC20	2.5053	0.0795	2.2794	2.7585	0.1706
IC25	2.6982	0.0761	2.4818	2.9488	0.2140
IC40	3.2772	0.0767	3.0752	3.5488	0.1344
IC50	3.6631	0.0855	3.4230	3.9407	0.0240



CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: Ref Tox Feb 2013

CLIENT: AET

SAMPLE DATE/DESIGNATION: 2/4/13 | NaCl

BEGINNING DATE OF BIOASSAY: 2/4/13

SPECIES (circle): C. dubia (P. promelas)

FINAL CHEM.- CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	2/5/13	2/6/13	2-7-13	2/8/13	2-9-13	2/10/13	2/11/13
INITIALS	SBM	AGB	JNH	AGB	JNH	AGB	RAA
DO	7.30	6.36	8.71	7.45	7.21	7.23	7.84
pH	7.97	7.79	7.84	7.85	7.92	7.85	7.92
TEMP	24.7	24.7	24.7	24.7	24.7	25.7	25.3
DILUTION 1-			1x PPT				
DO	7.51	6.20	8.29	7.45	7.20	7.06	7.08
pH	7.79	7.59	7.79	7.83	7.84	7.67	8.01
TEMP	24.7	24.7	24.7	24.7	24.7	25.7	25.3
DILUTION 2-			2x PPT				
DO	7.39	6.65	8.01	7.55	7.01	6.99	7.35
pH	7.71	7.61	7.71	7.87	7.78	7.65	7.78
TEMP	24.7	24.7	24.7	24.7	24.7	25.7	25.3
DILUTION 3-			4x PPT				
DO	7.47	6.41	7.83	7.41	7.20	7.67	7.35
pH	7.63	7.57	7.65	7.84	7.75	7.69	7.62
TEMP	24.7	24.7	24.7	24.7	24.7	25.7	25.3
DILUTION 4 -			6x PPT				
DO	7.35	6.57	7.95	7.57	7.13	7.16	7.24
pH	7.55	7.51	7.68	7.82	7.72	7.62	7.71
TEMP	24.7	24.7	24.7	24.7	24.7	25.7	25.3
DILUTION 5 -			16x PPT				
DO	7.32						
pH	7.55						
TEMP	24.7						

All final temperatures must be taken from the ghost cups in the chamber.

CHRONIC P.p. BIOASSAY ORGANISM TABLE

CLIENT: AET AET PROJECT NO.: Ref Tox Feb. 2013
 SAMPLE DATE: 2/4/13 SAMP. DESIGNATION: NaCl
 BEGINNING DATE: 2/4/13 ENDING DATE: 2/11/13 WFM O/E 2/12
 RANDOMIZATION TEMPLATE #: 9 P. promelas LOT #: 3003

HOUR	DAY1	DAY2	DAY3	DAY4	DAY5	DAY6	DAY7	END
INITIALS	AJC	AJC	AJC	AJC	BPH	AJC	AJC	AJC
TIME	4:00pm	4:45pm	1:10pm	1:50pm	1:24pm	4:20pm	3:35pm	2:25pm
CONTROL - 0%								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E								
DILUTION 1 - 1 PPT %								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E								
DILUTION 2 - 2 PPT %								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	9	5	8	8
LIVE E								
DILUTION 3 - 4 PPT %								
LIVE A	10	10	10	10	10	9	9	9
LIVE B	↓	↓	↓	9	8	6	6	6
LIVE C	↓	↓	↓	10	10	7	7	6
LIVE D	↓	↓	↓	9	9	6	6	6
LIVE E								
DILUTION 4 - 8 PPT %								
LIVE A	10	10	9	10	6	3	2	2
LIVE B	↓	↓	10	7	6	0	0	0
LIVE C	↓	↓	↓	9	8	6	4	4
LIVE D	↓	↓	↓	8	7	2	2	2
LIVE E								
DILUTION 5 - 16 PPT %								
LIVE A	10	0	/					
LIVE B	↓	↓						
LIVE C	↓	↓						
LIVE D	↓	↓						
LIVE E								

TIME = The time the organisms are placed into new dilution water. This

Company Name: AET

Initials: AJC

Project Number: Ref Tox February 2013

Beginning Oven Temp: 110°C

Time: 3:15 pm

Organism Name: P. promelas

Date: 2/11/13

Beginning Date of Test: 2/4/13

End Oven Temp: 115°C

Time: 9:20 am

Ending Date of Test: 2/11/13

Date: 2/12/13

Concentration		Initial Wt of Pad (mg)	Final Wt of Pad (mg)
0 PPT	A	10.094	16.491
	B	10.282	16.060
	C	9.784	16.931
	D	10.158	16.861
	E		
4390			
1 PPT	A	8.178	16.015
	B	8.544	16.111
	C	7.867	14.921
	D	8.240	16.207
	E		
4392			
2 PPT	A	9.187	15.947
	B	7.971	14.686
	C	8.340	14.573
	D	8.037	14.604
	E		
4393			
4 PPT	A	8.007	11.203
	B	8.179	11.005
	C	8.280	10.688
	D	9.125	12.344
	E		
4394			
	A		
	B		
	C		
	D		
	E		
	A		
	B		
	C		
	D		
	E		

COPIES OF HANDWRITTEN RAW DATA SHEETS

CHRONIC BIOASSAY CONTROL AND 100% EFFLUENT CHEMICAL TABLE

AET PROJECT NO.: 1303036

CLIENT: Mawss (CC Williams)

SAMPLE DATE/DESIGNATION: 3/2-3/13 / 001

BEGINNING DATE OF BIOASSAY: 3/5/13

SPECIES (circle): C. dubia, P. promelas

INITIAL CHEMISTRIES- CONTROL 0% MEASURE EACH NEW BATCH							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	3/5/13	3/6/13	3/7/13	3/8/13	3/9/13	3/10/13	3/11/13
TIME	10:10am	10:00am	9:40am	9:40am	10:15am	10:10am	10:15am
INITIALS	SP	SP	SP	SP	AVC	SP	SP
ALK	68			64			
COND	305			329			
DO	7.80			8.34			
HARD	96			88			
pH	8.06			7.97			
TRC	0.01			0.01			
100 % EFFLUENT SAMPLE MEASURE EACH NEW SAMPLE (pH - daily)							
DATE	3/5/13	3/6/13	3/7/13	3/8/13	3/9/13	3/10/13	3/11/13
TIME	10:10am	10:00am	9:40am	9:40am	10:15am	10:00am	10:15am
INITIALS	SP	SP	SP	SP	AVC	SP	
ALK	118		82		138		
COND	950		703		1050		
DO	9.62		10.74		10.50		
HARD	124		68		116		
pH	7.49	8.15	7.25	7.46	7.95	7.69	7.36
TRC	0.04		0.00		0.01		
The pH of the effluent sample must be run daily.							
NOTES:							

CHRONIC BIOASSAY INITIAL CHEMICAL TABLE

AET PROJECT NO.: 1303036
 CLIENT: Mawss (CC Williams)
 SAMPLE DATE/DESIGNATION: 3/2-3/13 / 001
 BEGINNING DATE OF BIOASSAY: 3/5/13
 SPECIES (circle): C. dubia P. promelas

INITIAL CHEMISTRIES- CONTROL 0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	3/5/13	3/6/13	3/7/13	3/8/13	3/9/13	3/10/13	3/11/13
TIME	10:10am	10:00am	9:40am	9:40am	10:15am	10:00am	10:15am
INITIALS	SP	SP	SP	SP	Asc	SP	SP
DO	7.80	8.64	8.30	8.34	8.27	8.22	8.95
DILUTION 1 -		19%					
DO	8.04	8.56	8.19	8.18	8.00	7.87	8.29
DILUTION 2 -		%					
DO							
DILUTION 3 -		%					
DO							
DILUTION 4 -		%					
DO							
DILUTION 5 -		%					
DO							
TIME = Time the dilution was made.							
NOTES:							

CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: 1303036
 CLIENT: Mawss (CC Williams)
 SAMPLE DATE/DESIGNATION: 3/2-3/13 / 1001
 BEGINNING DATE OF BIOASSAY: 3/5/13
 SPECIES (circle): C. dubia P. promelas

FINAL CHEM. - CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	3/6/13	3/7/13	3/8/13	3/9/13	3/10/13	3/11/13	3/12/13
INITIALS	ABJ	AJC	AJC	AJC	SP	SBM	SBM
DO	8.08	7.64	7.65	7.49	6.98	7.67	4.30
pH	7.98	7.91	7.90	8.00	7.99	7.92	7.51
TEMP	24.0	24.7	25.0	24.8	25.7	24.7	24.7
DILUTION 1-			19 %				
DO	7.97	7.53	7.48	7.46	7.01	7.72	6.03
pH	7.97	7.95	7.89	8.00	8.02	7.95	7.59
TEMP	24.0	24.7	25.0	24.8	25.7	24.7	24.7
DILUTION 2 -			%				
DO							
pH							
TEMP							
DILUTION 3 -			%				
DO							
pH							
TEMP							
DILUTION 4 -			%				
DO							
pH							
TEMP							
DILUTION 5 -			%				
DO							
pH							
TEMP							

Imm
3/11/13
DE

All final temperatures must be taken from the ghost cups in the chamber.

CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: 1303036

CLIENT: Mawss (CC Williams)

SAMPLE DATE/DESIGNATION: 3/2 - 3/13 / 001

BEGINNING DATE OF BIOASSAY: 3/5/13

SPECIES (circle): C. dubia, P. promelas

FINAL CHEM. - CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	3/6/13	3/7/13	3/8/13	3/9/13	3/10/13	3/11/13	3/12/13
INITIALS	ABC	ABC	ABC	ABC	ST	SBM	SBM
DO	7.65	7.49	6.94	7.59	7.25	4.29	4.30
pH	7.73	7.86	7.72	7.89	7.77	7.46	7.51
TEMP	24.0	24.7	25.0	24.8	25.7	24.7	24.7
DILUTION 1-		19 %					
DO	7.83	7.41	7.01	7.24	7.06	3.94	6.03
pH	7.79	7.76	7.63	7.82	7.65	7.35	7.59
TEMP	24.0	24.7	25.0	24.8	25.7	24.7	24.7
DILUTION 2		%					
DO							
pH							
TEMP							
DILUTION 3-		%					
DO							
pH							
TEMP							
DILUTION 4 -		%					
DO							
pH							
TEMP							
DILUTION 5 -		%					
DO							
pH							
TEMP							

All final temperatures must be taken from the ghost cups in the chamber.

C. dubia

LEDGER

#a – Number of Aborted neonates

#B – Brood number

check mark – one mother has been added to the test chamber, it also means that the mother is still alive.

#d – Number of neonates born dead.

perpendicular line – means that all test chambers are the same as above.

- number of neonates born

⤿ - split brood

X - Death of mother

0 – Zero neonates

Chronic *C. dubia* Organism Table AET #: 1303036 Samp. Date: 3/2/13-3/13/13

Block Parentage: (Y) or N (circle one)

Client: Mawss (cc) Beg. Date: 3/5/13 End Date: 3/11/13 Rand. Temp.: 12 Lot #: M503

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8/9	Total #
Time:	10:52am	10:14am	10:20am	10:25am	11:05am	10:50am	11:48am		
Initials:	SEA	SEA	SP	SP	AJC	SP	SEA		
Dilution									
O% A1	✓	✓	✓	0	4	6	10		22
B2	↓	↓	↓	0	3	7	9		19
C3	↓	↓	↓	4	0	5	9		18
D4	↓	↓	↓	0	5	7	11		23
E5	↓	↓	↓	0	4	7	6		17
F6	↓	↓	↓	0	8	8	10		26
G7	↓	↓	↓	0	4	7	11		22
H8	↓	↓	↓	0	0	7	10		20
I9	↓	↓	↓	0	4	6	8		18
J10	↓	↓	↓	0	3a	9	11		23
I9 %A1				0	4	8	11		23
B2				0	5	12	15		32
C3				0	9	1	X		14 XX
D4				0	0	10	11		21
E5				4	9	10	15 4B		23
F6				4	0	0	15		19
G7				4	4	11	15 4B		19
H8				5	7	0	9		21
I9				0	4	11	12		27
J10				0	4	10	11		25
I9 %A1									
B2									
C3									
D4									
E5									
F6									
G7									
H8									
I9									
J10									
I9 %A1									
B2									
C3									
D4									
E5									
F6									
G7									
H8									
I9									
J10									
I9 %A1									
B2									
C3									
D4									
E5									
F6									
G7									
H8									
I9									
J10									

JMM 3/18/13
DE

CHRONIC P.p. BIOASSAY ORGANISM TABLE

CLIENT: Mawss (CC WILLIAMS) AET PROJECT NO.: 1303036

SAMPLE DATE: 3/2-3/3/13 SAMP. DESIGNATION: 001

BEGINNING DATE: 3/5/13 ENDING DATE: 3/12/13

RANDOMIZATION TEMPLATE #: 4 P. promelas LOT #: 3032

HOUR	DAY1	DAY2	DAY3	DAY4	DAY5	DAY6	DAY7	END
INITIALS	AJC	AJC	SP	SP	AJC	SP	AJC	AJC
TIME	11:35 am	11:40 am	11:35 am	11:35 am	11:40 am	11:30 am	11:00 am	10:00 am
CONTROL - 0%								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E								
DILUTION 1 - 19%								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E								
DILUTION 2 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								
DILUTION 3 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								
DILUTION 4 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								
DILUTION 5 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								

TIME = The time the organisms are placed into new dilution water. This

Last Modified: 10/20/11 by ANC

Filename:G:/benchshe/BTR Current/P.promelas Wt Gain.xls

Company Name : Mawss

Initials : AJC

Project Number : 13030310

Beginning Oven Temp: 110°C

Time : 11:50 am

Organism Name : P. promelas

Date : 3/12/13

Beginning Date of Test : 3/5/13

End Oven Temp: 110°C

Time : 9:00 am

Ending Date of Test : 3/12/13

Date : 3/13/13

Concentration		Initial Wt of Pad (mg)	Final Wt of Pad (mg)
0%	A	9.037	17.125
	B	8.849	18.087
	C	8.982	18.540
	D	9.309	17.871
	E		
19%	A	7.996	16.764
	B	8.474	18.050
	C	8.686	17.298
	D	8.314	17.107
	E		
5054	A		
	B		
	C		
	D		
	E		
5055	A		
	B		
	C		
	D		
	E		
	A		
	B		
	C		
	D		
	E		
	A		
	B		
	C		
	D		
	E		



E2 Receipt

Here is your report submission receipt. [Click here to print.](#)

Submission ID: 41809

Submitted on 7/22/2013 3:15:20 PM, at 69.85.232.2

Submitted by: Mike Sims
Mobile Clifton C Williams Wwtp
1600 Yeend St
Mobile, AL 36603
251-378-3503
msims@mawss.com

Report Detail

Summary Discharge Monitoring Report
Facility Name Mobile Clifton C Williams Wwtp
Permit Number AL0023086
Report Frequency MONTHLY
Report Period 06/01/2013 - 06/30/2013

Attachment Detail

Online Attachments

Mail Attachments

Mail to Address:

Mail in the following attachment(s):

Thank you for using E2 system!

Alabama Department of Environmental Management Discharge Monitoring Report (DMR)

PERMITTEE NAME: Mobile Area Water and Sewer System
MAILING ADDRESS: PO BOX 2368
 Mobile, AL 36652
FACILITY: Mobile Clifton C Williams Wwtp
LOCATION: 1600 Yeend Street
 Mobile, AL 36603

PERMIT NUMBER: AL0023086

MONITORING POINT: 001T

COUNTY: Mobile

Monitoring Period: 2013-06-01 To: 2013-06-30

NO DISCHARGE FROM SITE: ()

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		*****	0		*****	*****	*****				
TOXICITY, CERIODAPHNIA CHRONIC PARAM CODE: 61426 Stage Code: 1 Final Effluent	Sample Measurement	*****	0	9A pass(0)/fail(1)	*****	*****	*****		0	See Permit Requirements	24-Hr Composite
	Permit Requirement	*****	0 Single Sample		*****	*****	*****		See Permit Requirements	24-Hr Composite	
TOXICITY, PIMEPHALES CHRONIC PARAM CODE: 61428 Stage Code: 1 Final Effluent	Sample Measurement	*****	0	9A pass(0)/fail(1)	*****	*****	*****		0	See Permit Requirements	24-Hr Composite
	Permit Requirement	*****	0 Single Sample		*****	*****	*****		See Permit Requirements	24-Hr Composite	

Name/Title of Principal Executive Officer Or Authorized Agent <i>Chief TPO</i>	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. <small>(Penalties under these statutes may include fines up to \$10,000 and or maximum imprisonment of between 6 months to 5 years.)</small>	Signature of Principal Executive Officer Or Authorized Agent <i>[Signature]</i>	Telephone No <i>(251) 378-3503</i>	Date (MM/DD/YY) <i>07/22/13</i>

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



Corporate: 1717 Seaboard Drive • Baton Rouge, LA 70810 • 800-364-1930
Louisiana Division: Baton Rouge, LA • (225) 769-1930
Alabama Division: Mobile, AL • (251) 344-9915
Texas Division: Bryan, TX • 800-364-1930

June 27, 2013

Mike Sims
Mobile Water
1600 Yeend St.
Mobile, AL 36603

RE: AET Project # 1306265

Dear Mike,

On June 17, 2013, the first of three composite samples was submitted to A & E Testing, Inc. labeled Clifton C. Williams WWTP 001 (Permit AL0023086, Mobile Water, Mobile County) for the Quarterly ADEM bioassay. The Bioassay/Biototoxicity evaluation was performed as per EPA publication 821-R-02-013. The species requested were Pimephales promelas and Ceriodaphnia dubia. The chronic results were calculated by the Shapiro Wilks Test, the F-Test, the Equal Variance T-test, and the Steels Many-One Rank Test where applicable.

The following is a tabulation of the data generated:

WWTP 001 - 19% Effluent

P. promelas

Survival data = No significant difference between 19% effluent and the control.

Growth data = No significant difference between 19 % effluent and the control.

C. dubia

Survival data = No significant difference between 19% effluent and the control.

Reproduction data = No significant difference between 19% effluent and the control.

Sincerely,

Marie Levy
Toxicity Project Officer

SUBMIT TO MUNICIPAL BRANCH

[ONE COPY OF PAGE 1 OF THE ADEM REPORT FORM ONLY, WITHOUT LAB SUPPPORT DATA, IS TO BE
SUBMITTED TO THE MUNICIPAL BRANCH.]

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
TOXICITY TEST REPORT FORM

1. GENERAL:

NPDES PERMIT NO.: AL0023086 DSN: 001 COUNTY: Mobile
 Permittee: Board of Water and Sewer Commissioners of the City of Mobile
 Facility Name: Clifton C. Williams WWTP
 Agent Submitting Report: Mike Sims
 Lab Conducting Toxicity Test(s): Analytical and Environmental Testing, Inc.

Months Toxicity Test(s) Required: Quarterly This Report for Test in Month of: June 2013
 Scheduled Test(s): X Accelerated Test(s): _____
 Number _____ of _____ for failed test of (date): _____
 Test Type Required: X 48-hr Acute Screening: _____ 24-hr Acute Screening _____
X Short-term Chronic Screening _____ Other (specify) _____

Sample #	Test Organism: Pimephales promelas					Test Organism: Ceriodaphnia dubia				
	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid
1	6/18/13	11:35 am	6/25/13	10:10 am	yes	6/18/13	10:32 am	6/23/13	11:20 am	yes

2A. SUMMARY OF RESULTS FOR SCREENING TESTS:

Test Org.	Effluent Conc.	Test Number 1			Test Number 2			Test Number 3			Test Number 4		
		Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow	Supr	Repr	Grow
Pp	19 %	Pass		Pass									
Cd	19 %	Pass	Pass										

2B. SUMMARY OF RESULTS FOR DEFINITIVE TEST:

Test Org.	Test Solution Concentration (%)	LC50	NOEC	Not Determined

3. LABORATORY ANALYSIS OF UNDILUTED SAMPLES:

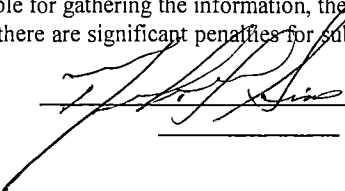
Sample ID	CBOD ₅ mg/L	TSS mg/L	NH ₃ -N mg/L	pH s.u.	TRC mg/L	Alkalinity mg/L	Hardness (Eff.)mg/L	Hardness (Strm.)mg/L
1	0	20	11.55	6.8	2.00	100	92	
2	0	19	11.8	6.7	1.40	172	128	
3	0	6	2.97	6.4	1.80	80	96	
4								

Municipal Facilities Only

Sample ID	Arsenic µg/L	Cadium µg/L	Chromium µg/L	Copper µg/L	Lead µg/L	Hexavalent Chromium µg/L
Sample ID	Mercury µg/L	Nickel µg/L	Silver µg/L	Zinc µg/L	Total Cyanide µg/L	Other(s) µg/L

Chemical Analyses Performed By (Lab): Board of Water and Sewer Commissioners of the City of Mobile, AET
 Instantaneous Flow: (1) _____ GPM (2) _____ GPM (3) _____ GPM (4) _____ GPM
 Total 24-hr Flow: (1) 19.906 MGD (2) 22.453 MGD (3) 20.333 MGD (4) _____ GPM
 Comments: C. dubia test ended two days early due to 60% of the control mothers having 3 broods

I certify under the 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 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 RESPONSIBLE OFFICIAL:  DATE: 07/22/13

SUBMIT TO TOXICS UNIT

[SUBMIT ALL TOXICITY REPORT FORMS, ALL SUPPORTING LAB DATA, AND COPIES OF BENCH SHEETS.]

ADEM REPORT FORM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
TOXICITY TEST REPORT FORM

1. GENERAL:

NPDES PERMIT NO.: AL0023086 DSN: 001 COUNTY: Mobile
 Permittee: Board of Water and Sewer Commissioners of the City of Mobile
 Facility Name: Clifton C. Williams WWTP
 Agent Submitting Report: Mike Sims
 Lab Conducting Toxicity Test(s): Analytical and Environmental Testing, Inc.

Months Toxicity Test(s) Required: Quarterly This Report for Test in Month of: June 2013
 Scheduled Test(s): X Accelerated Test(s): _____
 Number _____ of _____ for failed test of (date): _____
 Test Type Required: X 48-hr Acute Screening: _____ 24-hr Acute Screening _____
X Short-term Chronic Screening _____ Other (specify) _____

Sample #	Test Organism: Pimephales promelas					Test Organism: Ceriodaphnia dubia				
	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid
1	6/18/13	11:35 am	6/25/13	10:10 am	yes	6/18/13	10:32 am	6/23/13	11:20 am	yes

2A. SUMMARY OF RESULTS FOR SCREENING TESTS:

Test Org.	Effluent Conc.	Test Number 1			Test Number 2			Test Number 3			Test Number 4		
		Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow	Supr	Repr	Grow
Pp	19 %	Pass		Pass									
Cd	19 %	Pass	Pass										

2B. SUMMARY OF RESULTS FOR DEFINITIVE TEST:

Test Org.	Test Solution Concentration (%)					LC50	NOEC	Not Determined

3. LABORATORY ANALYSIS OF UNDILUTED SAMPLES:

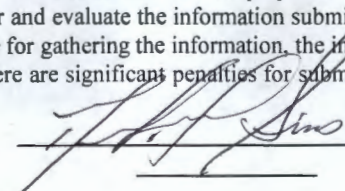
Sample ID	CBOD ₅ mg/L	TSS mg/L	NH ₃ -N mg/L	pH s.u.	TRC mg/L	Alkalinity mg/L	Hardness (Eff.)mg/L	Hardness (Strm.)mg/L
1	0	20	11.55	6.8	2.00	100	92	
2	0	19	11.8	6.7	1.40	172	128	
3	0	6	2.97	6.4	1.80	80	96	
4								

Municipal Facilities Only

Sample ID	Arsenic µg/L	Cadium µg/L	Chromium µg/L	Copper µg/L	Lead µg/L	Hexavalent Chromium µg/L
Sample ID	Mercury µg/L	Nickel µg/L	Silver µg/L	Zinc µg/L	Total Cyanide µg/L	Other(s) µg/L

Chemical Analyses Performed By (Lab): Board of Water and Sewer Commissioners of the City of Mobile, AET
 Instantaneous Flow: (1) _____ GPM (2) _____ GPM (3) _____ GPM (4) _____ GPM
 Total 24-hr Flow: (1) 19.906 MGD (2) 22.453 MGD (3) 20.333 MGD (4) _____ GPM
 Comments: C. dubia test ended two days early due to 60% of the control mothers having 3 broods

I certify under the 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 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 RESPONSIBLE OFFICIAL:  DATE: 07/22/13

4. SAMPLE COLLECTION:

Split Samples: N/A X Yes _____ (Explain) _____

Samples Collected as Specified in the NPDES Permit: Yes X No _____ (Explain) _____

Receiving Water: Mobile Bay
Design Flow: 28 (MGD)

Sample ID	Sample(s) Collected					Arrival Temp. (°C)	Used in Test(s)		
	MM/DD/YY	HH:MM	-	MM/DD/YY	HH:MM		MM/DD/YY	-	MM/DD/YY
1	6/15/13	2350	-	6/16/13	2350	4.0	6/18/13	-	6/19/13
2	6/17/13	2400	-	6/18/13	2400	4.0	6/20/13	-	6/21/13
3	6/19/13	2358	-	6/20/13	2358	4.0	6/22/13	-	6/25/13
4			-					-	

5. CONTROL / DILUTION WATER:

Type	Prepared MM/DD/YY	Begin Use MM/DD/YY	Initial Water Chemistries					
			Hard.	Alk.	pH	Cond.	@	°C
MHRW	6/17/13	6/18/13	88	62	8.09	305	@	25
MHRW	6/20/13	6/21/13	104	62	8.18	326	@	25
							@	
							@	

6. TOXICITY TEST INFORMATION:

Test Species	Organism Age	Organism Source	Test Solution Concentrations (%)					
C. d.	< 24 Hours	In House Culture	0	19				
P. p.	< 24 Hours	In House Culture	0	19				

Test Species	Test Vessel Type	Vessel Vol. (mL)	Solution Vol. (mL)	Org. / Test Vessel	Replicates Per Conc.
C. d.	Disposable plastic cup	30	15	1	10
P. p.	Disposable plastic cup	300	250	10	4

Test Species	Temp. Range (°C)	D. O. Range (mg/L)	pH Range (s.u.)	Light Intensity Average (ft.-can.)
C. d.	24.7 - 24.9	7.71 - 8.89	6.93 - 7.76	55 - 60
P. p.	24.7 - 25.0	7.71 - 8.89	6.93 - 7.76	55 - 60

7. FEEDING

Not Fed: _____ Fed Daily: X Fed Irregularly: _____ (explain in comments below)
 Brine Shrimp: Fed 0.1 mL suspension of newly hatched larvae 2 times daily
 Yct: Fed 0.1 mL suspension containing 2.06 g/L TSS daily
 Algae: Fed 0.1 mL suspension containing 3.1 X 10⁷ algal cells / mL daily

COMMENTS:

C. dubia test ended two days early due to 60% of the control mothers having 3 broods

Facility Name: Clifton C. Williams WWTP NPDES #: AL0023086 DSN: 001 DATE: 06/27/13

8. REFERENCE TOXICANT TESTS:

TOXICANT: NaCl SOURCE: Sigma-Aldrich 2BT-06-12 CAS #: 7647-14-5

Solution Concentration Unit: mg/L _____ g/L X % _____ Other (specify) PPT

Test	Test Date	Control	Reference Test Solution Concentrations						
Org.	MM/DD - MM/DD	Water	(Control to Highest Conc.)						
C. d.	6/4/13 - 6/10/13	MHRW	0	0.25	0.5	1	2	4	
P. p.	6/4/13 - 6/11/13	MHRW	0	1	2	4	8	16	

Test	Results and 95% Confidence Interval		This Test Upper and Lower		Number
Org.			CUSUM Chart Control Limit		(N)
C d.	7 day NOEC = 0.25	0.25 - 1.0	0.25	1.0	20
P. p.	7 day NOEC = 2.0	1.0 - 4.0	1.0	4.0	20

9. TEST CONDITION VARIABILITY:

9A. DEVIATIONS FROM STANDARD TEST CONDITIONS:

9B. TEST SOLUTION MANIPULATIONS OR TEST MODIFICATIONS:

10. REQUIRED REPORT ATTACHMENTS:

Attach copies of chain-of-custody forms, reference toxicant tests, and raw data (bench sheets) pertaining to physical, chemical, and biological measurements for all tests. Include suspended, interrupted, or discontinued toxicity tests data.

COMMENTS:

11C. CHRONIC SCREENING TOXICITY TESTS RESULTS (Freshwater):

TEST ORGANISM: *Ceriodaphnia dubia*

Were the neonates used to begin the test within eight (8) hours of the same age?: YES: X NO:
 Did 60% of the CONTROL females produce their third brood?: YES: X NO:

SURVIVAL
 CHRONIC TOXICITY INDICATED: YES: NO: X
 NO SURVIVAL STATISTICAL ANALYSIS NECESSARY: X
 CONTROL (%) 24h 100 48h 100 END 100 EFFLUENT (%) 24h 100 48h 100 END 100
 Fishers Exact Test: A = See stats , B = , a = , b =

REPRODUCTION (Average Neonates / Female)
 CHRONIC TOXICITY INDICATED: YES: NO: X
 CONTROL: 23.9 EFFLUENT: 27.4
 NO REPRODUCTION STATISTICAL ANALYSIS NECESSARY: X
 Normally Distributed: Yes No:
 Test Statistic: Critical Value: 0.868 (Parametric)
 Equal Variance: Unequal Variance:
 F Statistic: Critical F: 8.1
 t Test Statistic: t Test Critical Value: 1.74
 Sample Rank Sum: # Reps.: Critical Rank Sum: (Non-Parametric)

Comments: C. dubia test ended two days early due to 60% of the control mothers having 3 broods

TEST ORGANISM: *Pimephales promelas*

SURVIVAL
 CHRONIC TOXICITY INDICATED: YES: NO: X
 NO SURVIVAL STATISTICAL ANALYSIS NECESSARY: X
 CONTROL (%) 24h 100 48h 100 7day 100 EFFLUENT (%) 24h 100 48h 100 7day 100
 Normally Distributed: Yes No:
 Test Statistic: Critical Value: (Parametric)
 Equal Variance: Unequal Variance:
 F Statistic: Critical F:
 t Test Statistic: t Test Critical Value:
 Sample Rank Sum: # Reps.: Critical Rank Sum: (Non-Parametric)

GROWTH (Mean Dry Weight - mg)
 CHRONIC TOXICITY INDICATED: YES: NO: X
 CONTROL: 0.5059 EFFLUENT: 0.5454
 NO GROWTH STATISTICAL ANALYSIS NECESSARY: X
 Normally Distributed: Yes No: X
 Test Statistic: Critical Value: 0.749 (Parametric)
 Equal Variance: Unequal Variance:
 F Statistic: Critical F: 11.3
 t Test Statistic: t Test Critical Value: 1.944
 Sample Rank Sum: # Reps.: Critical Rank Sum: (Non-Parametric)

Comments:

ANALYTICAL & ENVIRONMENTAL TESTING'S REPORT FORM

Mobile Water
June 27, 2013

INTRODUCTION

Permit number: AL0023086

Toxicity testing requirements of permit: The permittee shall perform chronic static renewal tests on Mobile Water's 001 effluent with a control and a 19% dilution using Pimephales promelas and Ceriodaphnia dubia in accordance with EPA 821-R-02-013. The critical dilution is defined as 19% effluent. Approved toxicity test methods are: 1000.0 and 1002.0 respectively

Plant Location: Mobile, Alabama

Name of receiving water body: Mobile Bay

Contractor: Analytical and Environmental Testing, INC.

(225) 769-1930

1717 Seaboard Dr.

Baton Rouge, LA 70810

Contact: Marie Levy

PLANT OPERATION

Product: Not Applicable

Raw materials: Not Applicable

Operating schedule: 24-hours 7-days

Description of waste treatment: Activated Sludge

Schematic of waste treatment: On file at ADEM

Retention time: 16 Hours

Volume of waste flow: Rated-28 MGD

Total flow:

Design flow of treatment facility at time of sampling: On file at ADEM

SOURCE OF EFFLUENT (AMBIENT) AND DILUTION WATER

Effluent Samples

a. Sampling point: 001

b. Collection dates and times:

Sample	Collection Dates	Collection Times	Lapsed time
WWTP 001			Collection-delivery
Sample # 1	6/15/13-6/16/13	2350 - 2350	16 hours 45 minutes
Sample # 2	6/17/13-6/18/13	2400 - 2400	15 hours 35 minutes
Sample # 3	6/19/13-6/20/13	2358 - 2358	12 hours 32 minutes

Corresponding Total Flows (MGD): 19.906, 22.453, and 20.333

c. Sample collection method: Flow proportional auto flow sampler

Mobile Water
June 27, 2013

SOURCE OF EFFLUENT (AMBIENT) AND DILUTION WATER

Continued

d. Physical and chemical data: At Lab site upon sample receipt

LAB RESULTS	ALK mg/L	AMMONIA mg/L	TRC mg/L	COND. Umhos/c	DO mg/L	HARD. mg/L	pH su	TEMP. C
Sample #1	100	28	0.01	826	8.85	92	7.19	4.0
Sample #2	172	14.0	0.05	1024	8.84	128	7.22	4.0
Sample #3	80	9	0.01	748	9.10	96	7.26	4.0

Surface Water Samples: None taken

Dilution Water

- a. Source: Moderately-Hard reconstituted water, laboratory prepared
- b. Pretreatment: Filtered to remove predatory species
- c. Physical and chemical data: See raw data sheets

TEST METHODS

Toxicity test methods: EPA-821-R-02-013 method 1000.0 and 1002.0

End points of test: P. promelas: survival and growth

C. dubia: survival and reproduction

Deviations from reference method: none

Species	Test begin	Time	Test End	Time
<u>P. promelas</u>	6/18/13	11:35 am	6/25/13	10:10 am
<u>C. dubia</u>	6/18/13	10:32 am	6/23/13	11:20 am

Type and volume of test chambers:

P. promelas plastic disposable 250ml cups

C. dubia plastic disposable 30ml graduated medicine cups

Volume of solution used per chamber: P. promelas 250ml/chamber

C. dubia 15ml/chamber

Number of organisms per test chamber: P. promelas 10/chamber

C. dubia 1/chamber

Number of replicate test chambers per treatment:

P. promelas: 4/treatment

C. dubia: 10/treatment

Acclimation of test organisms: P. promelas none needed.

C. dubia none needed.

Mobile Water
June 27, 2013

TEST METHODS

Continued

Test temperature: range = 24.7-25.0 C

Initial test temperature: 25 degrees C prior to renewal.

Was aeration needed? No.

Feeding:

P. promelas: Artemia <24-h fed at 9AM, and 5PM amount: 0.1 ml per feeding.

C. dubia: 0.1ml of YCT and algal suspension once daily.

Were pH control measures implemented? No

TEST ORGANISMS

Scientific name: Pimephales promelas and Ceriodaphnia dubia

Determined by visual taxonomic key reference

Age: P. promelas <24 hours C. dubia <24 hours within 8 hours

Life stage: P. promelas Larval C. dubia neonate

Mean length and weight: Not applicable until the termination of the test

Source: P. promelas In House Culture

C. dubia In House Culture

Diseases and treatment: Methylene blue dip used to treat P.promelas eggs to inhibit fungus growth.

QUALITY ASSURANCE

CHRONIC REFERENCE TOXICANT

Standard toxicant used: NaCl

Source: Sigma-Aldrich Control #: 2BT-06-12

Date and Time of monthly reference toxicant test:

6/4/13 4:00 pm - P. promelas

6/4/13 11:00 am - C. dubia

Dilution water used in test: Moderately-Hard Reconstituted

Results: P. promelas NOEC: 2.0 PPT Accept. Range (1.0 PPT - 4.0 PPT) PMSD = 13.7 %

C. dubia NOEC: 0.25 PPT Acceptable Range(0.25 PPT - 1.0 PPT) PMSD = 9.05 %

Physical and chemical methods used: Physical testing: EPA-821-R-02-013 and methods for chemical analysis: pH, DO, Temperature-150.1, 360.1, 170.1

Results

P. promelas: Survival NOEC: 19%

Growth NOEC: 19%

C. dubia: Survival NOEC: 19%

Reproduction NOEC: 19%

Mobile Water

June 27, 2013

CONCLUSIONS AND RECOMMENDATIONS

Relationship between test endpoints and permit limits:

P. promelas: **PASS SURVIVAL**

PASS GROWTH

C. dubia: **PASS SURVIVAL**

PASS REPRODUCTION

Actions to be taken: None.

Schedule: The results generated from this bioassay event satisfy the ongoing quarterly permitted toxicity criteria for the Second Quarter of 2013. The next routinely scheduled bioassay event for DSN 001 will be September 2013.

Permit Expiration: July 31, 2009.

ORIGINAL CHAINS-OF-CUSTODY



Anal 435p

1306265

Analytical Request Form / Chain of Custody

AET Project No.: 1306265
Log In Person: KFW
Log In Date/Time: 06/17/13

Company: MAWSS
Site Contact: Mike Sims
Report To: Mike Sims
Address: 1600 Yeend St.
City: Mobile, AL
State & Zip Code: 36603
Phone#: (251) 378-3503 - Ext.
FAX#: (251) 433-4090 - Ext.
SAMPLER AME Center

Authorized By:
Sampler: [X] Client [] AET
Transporter: [] Client [X] AET
Bottles: [] Client [X] AET

Table with Matrix Codes, Turnaround Hrs, and Surcharge percentages for various sample types (A=Water, B=Sludge, etc.)

NOTE: Multiphase MUST BE split into separate subsamples

CHAIN OF CUSTODY

Relinquished by: AME Center
Date: 6-17-13 Time: 0600
Received by: Ben Sims
Date: 6-17-13 Time: 0600
Relinquished by: Ben Sims
Date: 6-17-13 Time: 1130
Received by: Jennifer Dixon
Date: 6-17-13 Time: 11:30AM
Relinquished by: Jennifer Dixon
Date: 6-17-13 Time: 2:20PM
Received by: Mike Sims
Date: 6-17-13 Time: 2:20pm

Header section of the form containing Sample Site (Clifton C. Williams WWTP 0011), Division (MOB), Client Type (Approved), and various checkboxes for regulatory compliance (DPW, NPDES, RCRA, etc.).

Main analytical results table with columns for parameter name, units, and checkboxes for detection. Includes handwritten values for Alkalinity (100), Ammonia Nitrogen (28), Chlorine Res. (0.01), Conductivity (226), Density (8.85), Hardness (92), pH (7.19), and TKN (19.906).

Comments section containing: QUARTERLY March/June, SAMPLE START DATE: 6-15-13, SAMPLE END DATE: 6-16-13, and contact information for Mike Sims and Emily Tuggle.

NOTE: A Positive Response Below Mandates Additional Information on Back Page!!
METALS, Total
RCRA Hazardous Waste
RADIOLOGICAL
SPECIFIC ORGANICS
MICROBIOLOGY
BIOASSAY/BIOTOXICITY
OTHER (Define)

1306265

METALS

OTHER ANALYSES REQUESTED

#1

#2

#3

#4

AET Sample No.					Comments	
METALS	Aluminum (Al)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Antimony (Sb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Arsenic (As)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Barium (Ba)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Beryllium (Be)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Bismuth (Bi)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Boron (B)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Cadmium (Cd)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Calcium (Ca)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Chromium (Cr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Chromium, Hexavalent (CrVI)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Cobalt (Co)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Copper (Cu)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Iron (Fe)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Lead (Pb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Magnesium (Mg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Manganese (Mn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Mercury (Hg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Molybdenum (Mo)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Nickel (Ni)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Potassium (K)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Selenium (Se)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Silicon (Si)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Silver (Ag)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Sodium (Na)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Strontium (Sr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Thallium (Tl)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Tin (Sn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Titanium (Ti)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Vanadium (V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Zinc (Zn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
RCRA Hazardous Waste	Ignitability (Flash Pt.) (FP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Corrosivity (Corr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Reactivity (CN & S) (RXCNS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TCLP-Metals (TM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TCLP-Pest/Herb (TP/H)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TCLP-BNA (TBNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TCLP-VOA (TVOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RADIOLOGICAL	Gross Alpha	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Gross, Beta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Radium, T.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Radium, 226/228	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SPECIFIC ORGANICS	Volatiles (VOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Semi-Volatiles (BNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Pesticides/PCB) (PEST/PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	PCB Only (PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TPH/Diesel (TPH/D)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TPH/Gasoline (TPH/G)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	BTEX (BTEX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	THM's (THM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Other (Define)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
MICROBIOLOGY	Fecal Coliform (FC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Total Coliform (TC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Other (Define)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BIOASSAY / BIOTOXICITY	Acute	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Chronic	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Daphnia magna/pulex	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Mysid shrimp	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Pimephales promelas	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Ceriodaphnia	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Cyprinodon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

ANALYTICAL AND ENVIRONMENTAL TESTING

TOXICITY SAMPLE FLOW SHEET

It is imperative that this form be completely filled out.

Client MAWS
Site CC Williams
Initial Flow Meter Reading 8162.253
UNITS OF FLOW 19.906 MGD

Date of Collection	Time of Collection	Flow Meter Reading
6-16-13	2350	8182.159

This information will be used to calculate the flow weighted composite aliquots.

Analytical & Environmental Testing, Inc.

Sample Receipt Check List--Required for Regulatory Samples only!!

filepath: G:\SAMPLING DEPT

Last revised: 6/7/2011

Date: 06/17/13
Login Person: KFW

Work Order Number: 1306215

Samples received by [AET, UPS, FedEx, BUS] **CIRCLE ONE**
MUST ATTACH SHIPPING BILL OR COPY TO COC

	YES	NO	N/A	Comments
COC Present, Correct, & Complete? (name/address, sample id, division, client type)	✓	*		
SAMPLES WITHIN HOLDING TIME?	✓	*		
Customer must not be allowed to leave until this is verified				
Samples delivered on ice?	✓	*		
Temperature of Samples	0.1°C	*		N/A if sample date=received date
COC and Sample Labels Agree?	✓	*		
Preserved to <2 (Metals, TOC, COD, NH3, TKN TPHOS, O&G, PHENOL, HARD) Circle Failure		*	✓	N/A if testing other than listed
Preserved to >12 CN, >9 S Circle Failure		*	✓	N/A if testing other than listed
Correct Sample Containers?	✓	*		
Containers intact?	✓	*		
Volume adequate?	✓	*		
Zero Headspace VO/TOX		*	✓	
Custody seal on shipping container?			✓	not a requirement
Custody seal on bottles?	✓			not a requirement

*** A "NO" response mandates a "Sample Condition Notification" to be either signed on dock upon delivery or faxed to the customer ASAP**



AET Project No.: 1306295
Log In Person: BCD
Log In Date/Time: 6-19-13

Analytical Request Form / Chain of Custody

Sample Site: Clifton C. Williams WWTP 0011
Client ID:
Sample Date: Please Document in
Sample Time: Comments
Matrix Code: A
Storage Upon Arrival At Lab: Temp ICE Y N C
AET Sample No. 2

Company: MAWSS
Site Contact: Mike Sims
Report To: Mike Sims
Address: 1600 Yeend St.
City: Mobile, AL
State & Zip Code: 36603
Phone#: (251) 378-3503 - Ext.
FAX#: (251) 433-4090 - Ext.
SAMPLER: Kozlowski
Authorized By:
Sampler: [X] Client [] AET
Transporter: [] Client [X] AET
Bottles: [] Client [X] AET
Matrix Codes Turnaround Surcharge
A=Water [] 24 hrs. 200%
B=Sludge [] 48 hrs. 150%
C=Soil [] 1 week 50%
D=Oil [X] 2 weeks
E=Acid [] 3 weeks
F=Caustic
G=100% Organic
H=Solids&Misc.

Table with columns for Analyte Name, Unit, and checkboxes for detection. Includes rows for Alkalinity, Ammonia Nitrogen, Ash, BOD-5 day, Bromide, BTU, Chloride, Chlorine, Res., COD, Color, Conductivity, Cyanide, Cyanide-ATC, Density, Dissolved Oxygen, Flow (GPM)(field), Fluoride, Halogens, Total, Hardness, Moisture%, Nitrite, Nitrate, Oil & Grease, pH (field), Phenol, Phosphate, Ortho, Phosphorus, Total, Solids, Total, Sulfate, Sulfide, Sulfur, Total, Surfactants, TDS, Temperature (field), Thiocyanate, TKN, TOC, TON, TOX, TPHC, TSS, Turbidity, VSS.

Division: MOB
Client Type: Approved By Kozlowski
[] DPW
[X] NPDES
[] RCRA
[] Drinking Water
[] Other
All samples are preserved per EPA protocol
Comments: QUARTERLY March (June) Sept/Dec First Week CHRONIC
SAMPLE START DATE: 6-17-13 TIME: 2400
SAMPLE END DATE: 6-18-13 TIME: 2400
Preferred Communication Cell:(251) 463-7042
EMAIL: msims@mawss.com
or Emily Tuggle 251-378-3501

NOTE: Multiphase MUST BE split into separate subsamples

CHAIN OF CUSTODY
Relinquished by: Kozlowski
Date: 6-19-13 Time: 0600
Received by: Ben Sims
Date: 6-19-13 Time: 0600
Relinquished by: Ben Sims
Date: 6-19-13 Time: 1145
Received by: Jennifer Kim
Date: 6-19-13 Time: 11:15AM
Relinquished by: Brandon Dixon
Date: 6/19/13 Time: 12:00pm
Received by: Kim Walker
Date: 6/19/13 Time: 12:00pm
Relinquished by: Kim Walker
Date: 6/19/13 Time: 2:05pm
Received by: [Signature]
Date: 6-19-13 Time: 2:05p

NOTE: A Positive Response Below Mandates Additional Information on Back Page!!

Table with columns for Analyte Name and checkboxes for detection. Includes rows for METALS, Total; RCRA Hazardous Waste; RADIOLOGICAL; SPECIFIC ORGANICS; MICROBIOLOGY; BIOASSAY/BIOToXICITY; OTHER (Define).

1306265

METALS

OTHER ANALYSES REQUESTED

#1

#2

#3

#4

AET Sample No.					Comments	
Aluminum	(Al)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Antimony	(Sb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Arsenic	(As)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Barium	(Ba)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Beryllium	(Be)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bismuth	(Bi)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boron	(B)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cadmium	(Cd)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Calcium	(Ca)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chromium	(Cr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chromium, Hexavalent	(CrVI)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cobalt	(Co)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Copper	(Cu)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Iron	(Fe)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lead	(Pb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Magnesium	(Mg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Manganese	(Mn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mercury	(Hg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Molybdenum	(Mo)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Nickel	(Ni)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Potassium	(K)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Selenium	(Se)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Silicon	(Si)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Silver	(Ag)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sodium	(Na)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Strontium	(Sr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Thallium	(Tl)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tin	(Sn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Titanium	(Ti)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Vanadium	(V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Zinc	(Zn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RCRA Hazardous Waste						
Ignitability (Flash Pt.)	(FP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Corrosivity	(Corr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Reactivity (CN & S)	(RXCNS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-Metals	(TM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-Pest/Herb	(TP/H)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-BNA	(TBNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-VOA	(TVOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RADIOLOGICAL						
Gross Alpha		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Gross, Beta		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Radium, T.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Radium, 226/228		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SPECIFIC ORGANICS						
Volatiles	(VOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Semi-Volatiles	(BNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pesticides/PCB)	(PEST/PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCB Only	(PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPH/Diesel	(TPH/D)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPH/Gasoline	(TPH/G)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BTEX	(BTEX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
THM's	(THM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other (Define)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
MICROBIOLOGY						
Fecal Coliform	(FC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Total Coliform	(TC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other (Define)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BIOASSAY / BIOTOXICITY						
Acute		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chronic		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Daphnia magna/pulex		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mysid shrimp		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pimephales promelas		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ceriodaphnia		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cyprinodon		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

ANALYTICAL AND ENVIRONMENTAL TESTING

TOXICITY SAMPLE FLOW SHEET

It is imperative that this form be completely filled out.

Client MAWSS
Site C.C. Williams WWTP
Initial Flow Meter Reading 39823498
UNITS OF FLOW MGD 22.453

Date of Collection	Time of Collection	Flow Meter Reading
6-18-13	2400	39845951

This information will be used to calculate the flow weighted composite aliquots.

Analytical & Environmental Testing, Inc.

Sample Receipt Check List--Required for Regulatory Samples only!!

filename:g:\administration\forms & letters\lab forms\Samp Last revised: 07/15/2009

Date: 6-19-13
 Login Person: BCD

Project Number: 1306295

Samples received by [AET, UPS, FedEx, BUS] **CIRCLE ONE**
MUST ATTACH SHIPPING BILL OR COPY TO COC

	YES	NO	N/A	Comments
COC Present, Correct, & Complete? (name/address, sample id, division, client type)	✓	*		
SAMPLES WITHIN HOLDING TIME?	✓	*		
Customer must not be allowed to leave until this is verified				
Samples delivered on ice?	✓	*		
Temperature of Samples	-1.4	*		N/A if sample date=received date
COC and Sample Labels Agree?	✓	*		
Preserved to <2 (Metals, TOC, COD, NH3, TKN TPHOS, O&G, PHENOL, HARD) Circle Failure		*	✓	N/A if testing other than listed
Preserved to >12 CN, >9 S Circle Failure		*	✓	N/A if testing other than listed
Correct Sample Containers?	✓	*		
Containers intact?	✓	*		
Volume adequate?	✓	*		
Zero Headspace VOA/TOX		*	✓	
Custody seal on shipping container?			✓	not a requirement
Custody seal on bottles?	✓			not a requirement

*** A "NO" response mandates a "Sample Condition Notification" to be either signed on dock upon delivery or faxed to the customer ASAP**



Analytical Request Form / Chain of Custody

23rd Edition 03/2004

AET Project No.: 1306265

Log In Person: KFW

Log In Date/Time: 06/21/13

Sample Site: Clifton C. Williams WWTP 0011

Division: MOB Client Type: Approved [X] NPDES [X] RCRA [] Drinking Water [] Other

Sample Date: Please Document in

Sample Time: Comments

Matrix Code: A

Storage Upon Arrival At Lab Temp C ICE Y N

AET Sample No. 3

All samples are preserved per EPA protocol

Comments

Company: MAWSS

Site Contact: Mike Sims

Report To: Mike Sims

Address: 1600 Yeend St.

City: Mobile, AL

State & Zip Code: 36603

Phone#: (251) 378-3503 - Ext.

FAX#: (251) 433-4090 - Ext.

SAMPLER

Authorized By:

Sampler: [X] Client [] AET Transporter: [] Client [X] AET Bottles: [] Client [X] AET

Table with columns: Matrix Codes, Turnaround Hrs., Surcharge. Rows include A=Water, B=Sludge, C=Soil, D=Oil, E=Acid, F=Caustic, G=100% Organic, H=Solids&Misc.

NOTE: Multiphase MUST BE split into separate subsamples

CHAIN OF CUSTODY

Relinquished by: [Signature] Date: 6-21-13 Time: 0600

Received by: [Signature] Date: 6-21-13 Time: 0600

Relinquished by: [Signature] Date: 6-21-13 Time: 09:00

Received by: [Signature] Date: 06/21/13 Time: 0900

Relinquished by: [Signature] Date: 06/21/13 Time: 11:00am

Received by: [Signature] Date: 6/24/13 Time: 1100

Relinquished by: Date: Time:

Received by: Date: Time:

Main analytical table with columns for parameters (Alkalinity, Ammonia Nitrogen, etc.) and checkboxes for testing results.

Comments section containing: QUARTERLY March/June, SAMPLE START DATE 6-17-13, SAMPLE END DATE 6-20-13, EMAIL: msims@mawss.com

NOTE: A Positive Response Below Mandates Additional Information on Back Page!!

Table for METALS, Total, RCRA Hazardous Waste, RADIOLOGICAL, SPECIFIC ORGANICS, MICROBIOLOGY, BIOASSAY/BIO TOXICITY, OTHER (Define)

1306265

AET Sample No.						Comments	
METALS	Aluminum (Al)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Antimony (Sb)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Arsenic (As)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Barium (Ba)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Beryllium (Be)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Bismuth (Bi)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Boron (B)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Cadmium (Cd)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Calcium (Ca)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Chromium (Cr)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Chromium, Hexavalent (CrVI)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Cobalt (Co)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Copper (Cu)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Iron (Fe)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Lead (Pb)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Magnesium (Mg)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Manganese (Mn)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Mercury (Hg)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Molybdenum (Mo)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Nickel (Ni)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Potassium (K)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Selenium (Se)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Silicon (Si)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Silver (Ag)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sodium (Na)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Strontium (Sr)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Thallium (Tl)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Tin (Sn)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Titanium (Ti)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Vanadium (V)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Zinc (Zn)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
RCRA Hazardous Waste	Ignitability (Flash Pt.) (FP)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Corrosivity (Corr)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Reactivity (CN & S) (RXCNS)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TCLP-Metals (TM)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TCLP-Pest/Herb (TP/H)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TCLP-BNA (TBNA)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TCLP-VOA (TVOA)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RADIOLOGICAL	Gross Alpha		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Gross, Beta		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Radium, T.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Radium, 226/228		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SPECIFIC ORGANICS	Volatiles (VOA)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Semi-Volatiles (BNA)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Pesticides/PCB (PEST/PCB)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	PCB Only (PCB)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TPH/Diesel (TPH/D)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TPH/Gasoline (TPH/G)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	BTEX (BTEX)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	THM's (THM)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Other (Define)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
MICROBIOLOGY	Fecal Coliform (FC)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Total Coliform (TC)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Other (Define)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BIOASSAY / BIOTOXICITY	Acute		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Chronic		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Daphnia magna/pulex		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Mysid shrimp		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Pimephales promelas		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Ceriodaphnia		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Cyprinodon		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

OTHER ANALYSES REQUESTED
#1

#2

#3

#4

306265

ANALYTICAL AND ENVIRONMENTAL TESTING

TOXICITY SAMPLE FLOW SHEET

It is imperative that this form be completely filled out.

Client MAWS S

Site C.C. Williams

Initial Flow Meter Reading ~~39866361~~^{cf} 39866361

UNITS OF FLOW 20.333

Date of Collection	Time of Collection	Flow Meter Reading
<u>6-20-13</u>	<u>2358</u>	39866361 ^{cf} <u>3986694</u> 3986694

This information will be used to calculate the flow weighted composite aliquots.

Analytical & Environmental Testing, Inc.

Sample Receipt Check List--Required for Regulatory Samples only!!

filename:g:\administration\forms & letters\lab forms\Samp Last revised: 07/15/2009

Date: 06/21/13
Login Person: KFW

Project Number: 1306265

Samples received by [AET, UPS, FedEx, BUS] **CIRCLE ONE**
MUST ATTACH SHIPPING BILL OR COPY TO COC

	YES	NO	N/A	Comments
COC Present, Correct, & Complete? (name/address, sample id, division, client type)	✓	*		
SAMPLES WITHIN HOLDING TIME?	✓	*		
Customer must not be allowed to leave until this is verified				
Samples delivered on ice?	✓	*		
Temperature of Samples		*	✓	N/A if sample date=received date
COC and Sample Labels Agree?	✓	*		
Preserved to <2 (Metals, TOC, COD, NH3, TKN TPHOS, O&G, PHENOL, HARD) Circle Failure		*	✓	N/A if testing other than listed
Preserved to >12 CN, >9 S Circle Failure		*	✓	N/A if testing other than listed
Correct Sample Containers?	✓	*		
Containers intact?	✓	*		
Volume adequate?	✓	*		
Zero Headspace VOA/TOX		*	✓	
Custody seal on shipping container?			✓	not a requirement
Custody seal on bottles?	✓			not a requirement

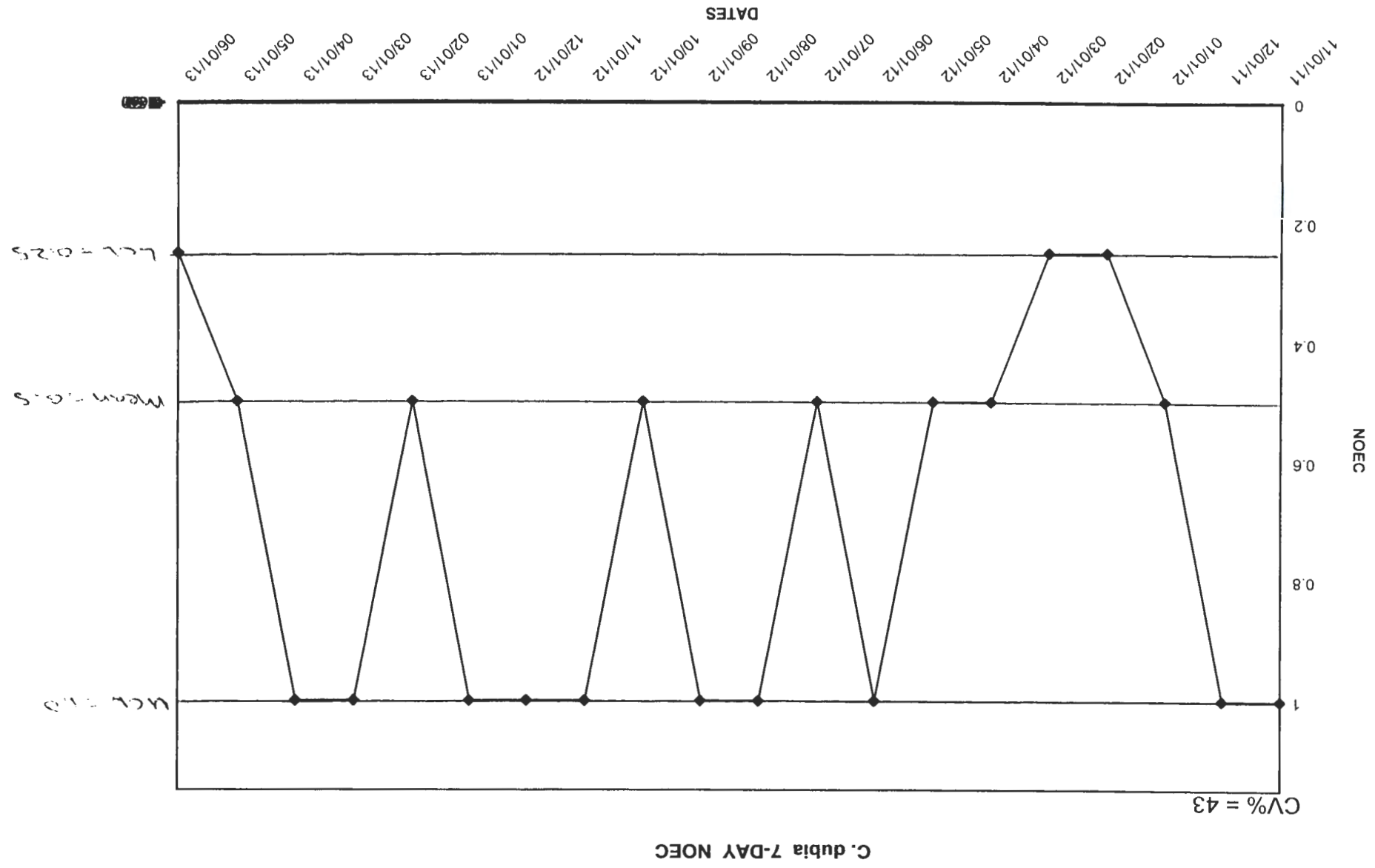
* A "NO" response mandates a "Sample Condition Notification" to be either signed on dock upon delivery or faxed to the customer ASAP

STATISTICAL CALCULATIONS

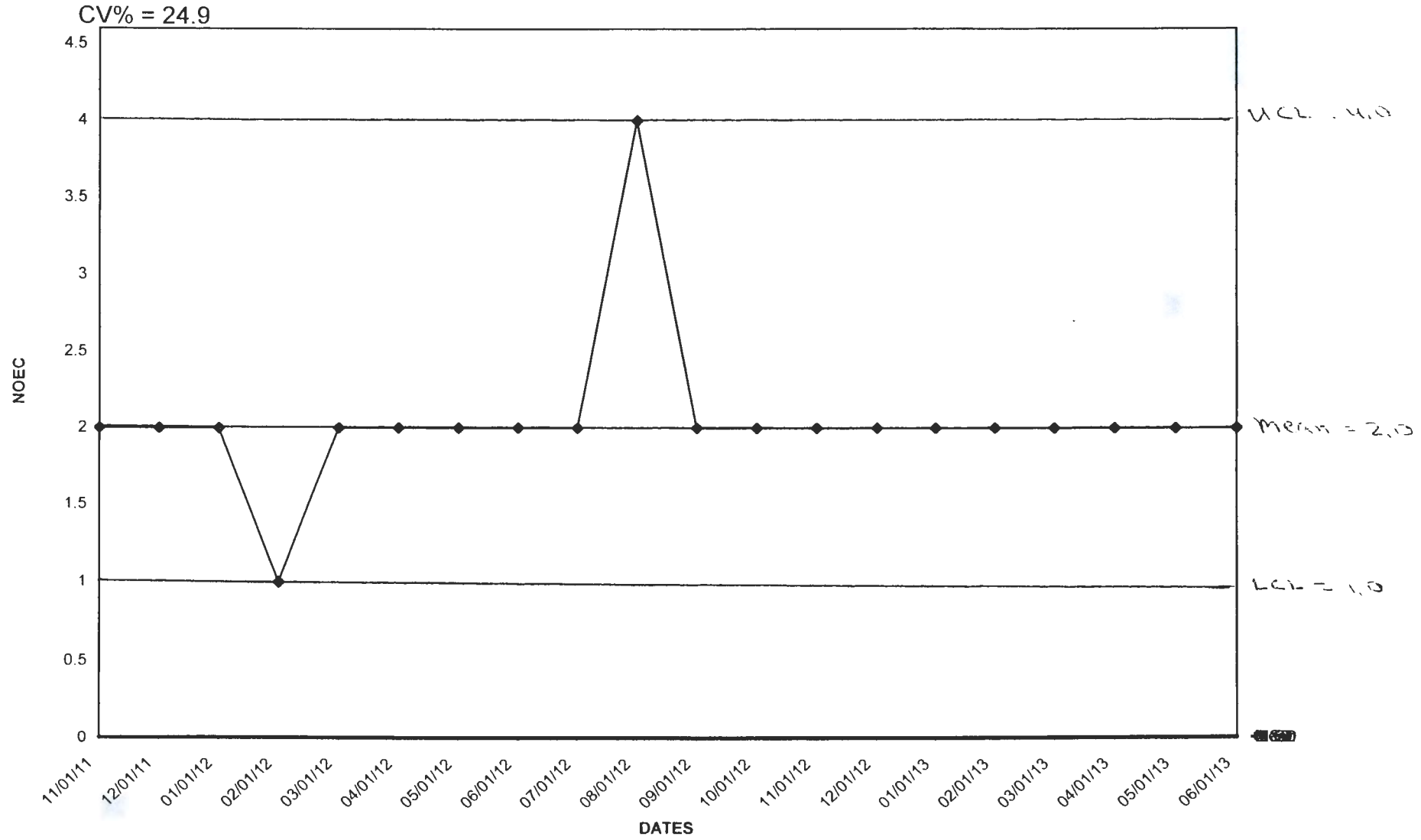
Ceriodaphnia dubia										
Normality Shapiro Wilks										
Last Modified 12/27/96										
						0%	19%	All		
Filename:f:\bioassay\CD_repro.xls						0%	19%	Squared	Squared	Sorted
		0%	19%	Centered	Centered	Centered	Centered	Cen.Data		
Control	a	28	28	4.1	0.6	16.81	0.36	-20.1		
	b	28	26	4.1	-1.4	16.81	1.96	-12.3		
	c	21	28	-2.9	0.6	8.41	0.36	-8.1		
	d	21	24	-2.9	-3.4	8.41	11.56	-6.3		
	e	22	28	-1.9	0.6	3.61	0.36	-2.3		
	f	25	28	1.1	0.6	1.21	0.36	-2.1		
	g	24	27	0.1	-0.4	0.01	0.16	-2.1		
	h	23	30	-0.9	2.6	0.81	6.76	-1.3		
	i	23	29	-0.9	1.6	0.81	2.56	-0.3		
	j	24	26	0.1	-1.4	0.01	1.96	-0.1		
Average		23.9	27.4		Sum Sq=	56.9	26.4	1.7		
									1.9	
									2.7	
Overall Mean of Centered Observation						-5.5		4.7		
						99		83.3	5.7	
Denominator (D)						88.8			5.9	
									7.7	
Coeffiance of Difference		DeltaX				Square of		7.9		
i	Ai	X(n-i+1)-X(i)		Ai*DeltaX	Ai*DeltaX			7.9		
1	0.4734	29		13.7286	188.47446			8.9		
2	0.3211	20.2		6.48622	42.07105					
3	0.2565	16		4.104	16.842816					
4	0.2085	14		2.919	8.520561					
5	0.1686	8.2		1.38252	1.9113616					
6	0.1334	7.8		1.04052	1.0826819					
7	0.1013	6.8		0.68884	0.4745005					
8	0.0711	4		0.2844	0.0808834					
9	0.0422	2.2		0.09284	0.0086193					
10	0.014	1.8		0.0252	0.000635					
Total:				30.75214	259.46757					
Test Static W=		10.649708	Sq Total:		945.69411					
Limit =		0.868	Normal							
Normal=W>Limit										
Two Tailed F Test		For variance numbers use toxstat 3.3 run stat summary								
Variance Control=		35.8								
Variance 100%=		80.1								
F=		2.2374302	Variances Homogenous							
Critical F Limit=		8.1								
F < Critical F										
F > Critical F										
Equal Variance T-Test										
Unequal Variance T-Test										
t=		-1.028079								
t=		Not Applicable								
Replicates		10	Replicates =						10	
Critical t w/ 18 deg of freedom=		1.74	Adj. Deg. of Freedom, df=		Not Applicable					
Sp=		7.6124897	C=		Not Applicable					
Different: NO										
Sample is Different if t > Critical t				Revised Equal Variance T-Test						
				Critical t with Adjusted Deg. of Freedom =		2.354			LOOK UP	
				Significantly Different		Not Applicable				
				Sample is different if t > Adjusted Critical t						

Normality Shapiro Wilks									
Fathead Minnow									
Last Modified 12/27/96									
Filename: PP_grow.xls									
		Wt_fin	Wt_ini	Gain/10	Mean	Centered	Squared	Sorted	
						Centered		Cen.Data	
Control	a	12.641	8.04	0.4601	0.505925	-0.04582	0.0021	-0.06838	
	b	14.503	9.319	0.5184		0.012475	0.000156	-0.0677	
	c	15.058	9.86	0.5198		0.013875	0.000193	-0.00857	
	d	14.108	8.854	0.5254		0.019475	0.000379	-0.00418	
							0.002827	-0.0013	
			Wt_ini	Gain/10	Mean	Centered		0.0339	
19%	a	13.202	8.183	0.5019	0.5454	-0.0435	0.001892	0.0351	
	b	13.314	8.175	0.5139		-0.0315	0.000992	0.081125	
	c	13.744	7.842	0.5902		0.0448	0.002007		
	d	13.687	7.931	0.5756		0.0302	0.000912		
							0.005804		
		Overall Mean of Centered Observation					-3.5E-17		
		Sum of Squared Centered Observations.					0.008631		
				Denominator (D)			0.008631		
Coefficiance of Difference		DeltaX			Square of				
i	Ai	X(n-i+1)-X(i)		Ai*DeltaX	Ai*DeltaX				
1	0.6052	0.1495		0.090477	0.008186				
2	0.3164	0.1028		0.032526	0.001058				
3	0.1743	0.042475		0.007403	5.48E-05				
4	0.0561	0.002875		0.000161	2.6E-08				
				Total:	0.130568				
				Sq Total:	0.017048				
Test Static W=	1.975223								
Limit =	0.749	Normal							
Two Tailed F Test Run toxstat 3.3 to obtain variance numbers									
Variance C	0.002								
Variance 100%	0.004								
	F=	2 Variances Homogenous							
	Critical F Limit=	11.3							
F < Critical F					F > Critical F				
Equal Variance T-Test					Unequal Variance T-Test				
t=	-1.01924				t=	Not Applicable			
Relicates	4				Replicates =	4			
Critical t w/ 6 deg of freedom	1.944	Adj. Deg. of Freedom, df=			Not Applicable				
Sp=	0.054772	C=			Not Applicable				
Different: NO									
Revised Equal Variance T-Test									
Critical t with Adjusted Deg. of Freedom =					2.354				
Sample is Different if t > Critical t					Significantly Different Not Applicable				
					Sample is different if t > Adjusted Critical t				

REFERENCE TOXICANT DATA



P. promelas 7-DAY NOEC



CHRONIC BIOASSAY CONTROL AND 100% EFFLUENT CHEMICAL TABLE

AET PROJECT NO.: REF Tox JUNE 2013

CLIENT: AET

SAMPLE DATE/DESIGNATION: 6/4/13 / NaCl

BEGINNING DATE OF BIOASSAY: 6/4/13

SPECIES (circle): C. dubia P. promelas

INITIAL CHEMISTRIES- CONTROL 0% MEASURE EACH NEW BATCH							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	6/4/13	6/5/13	6/6/13	6/7/13	6/8/13	6/9/13	6/10/13
TIME	10:05 am	10:30 am	11:25 am	10:20 am	11:30 am	11:20 am	1:35 pm
INITIALS	SP	SP	AJC	SP	AJC	AJC	AJC
ALK	62			62			
COND	322			316			
DO	8.45			7.83			
HARD	92			92			
pH	8.04			8.12			
TRC	0.01			0.01			
100 % EFFLUENT SAMPLE MEASURE EACH NEW SAMPLE (pH - daily)							
DATE	6/4/13	6/5/13					
TIME	10:05 am	10:30 am					
INITIALS	SP	SP					
ALK	62						
COND	2100						
DO	7.81						
HARD	120						
pH	7.80						
TRC	0.01						
The pH of the effluent sample must be run daily.							
NOTES:							

CHRONIC BIOASSAY INITIAL CHEMICAL TABLE

AET PROJECT NO.: REF TOX JUNE 2013
 CLIENT: AET
 SAMPLE DATE/DESIGNATION: 6/4/13 / 1241
 BEGINNING DATE OF BIOASSAY: 6/4/13
 SPECIES (circle): C. dubia P. promelas

INITIAL CHEMISTRIES- CONTROL 0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	6/4/13	6/5/13	6/6/13	6/7/13	6/8/13	6/9/13	6/10/13
TIME	10:05am	10:30am	11:25am	10:20am	11:30am	11:20am	1:35pm
INITIAL	SP	SP	AJC	SP	AJC	AJC	AJC
DO	8.45	7.58	8.00	7.83	8.24	8.38	7.97
DILUTION 1 - 0.25 PPT							
DO	8.27	7.70	7.94	8.30	8.07	NT	NT
DILUTION 2 - 0.5 PPT							
DO	8.25	7.86	8.01	7.89	8.09	NT	NT
DILUTION 3 - 1 PPT							
DO	8.30	8.01	7.94	8.01	8.20	8.44	8.12
DILUTION 4 - 2 PPT							
DO	8.28	8.00	7.96	8.02	8.11	8.31	8.06
DILUTION 5 - 4 PPT							
DO	8.29	7.96	8.00	7.96	8.16	8.23	7.96
DILUTION 6 - 8 PPT							
DO	8.20	7.88	8.07	8.11	8.25	8.58	8.05
DILUTION 7 - 16 PPT							
DO	8.31						
TIME = Time the dilution was made.							
NOTES:							

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

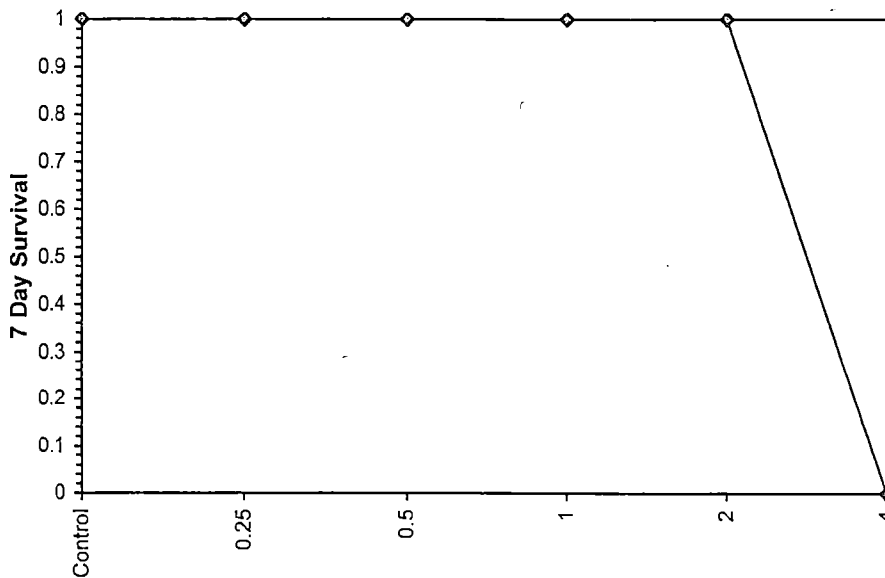
Start Date: 6/4/2013 11:00 Test ID: REF TOX Sample ID: REF-Ref Toxicant
 End Date: 6/9/2013 12:30 Lab ID: REF TOX Sample Type: NACL-Sodium chloride
 Sample Date: 6/3/2013 10:05 Protocol: EPAF 94-EPA Freshwater Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-ppt	1	2	3	4	5	6	7	8	9	10
Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical
Control	1.0000	1.0000	0	10	10	10		
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500
2	1.0000	1.0000	0	10	10	10	1.0000	0.0500
4	0.0000	0.0000	10	0	10	10		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	2	4	2.82843	
Treatments vs Control				

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-Reproduction

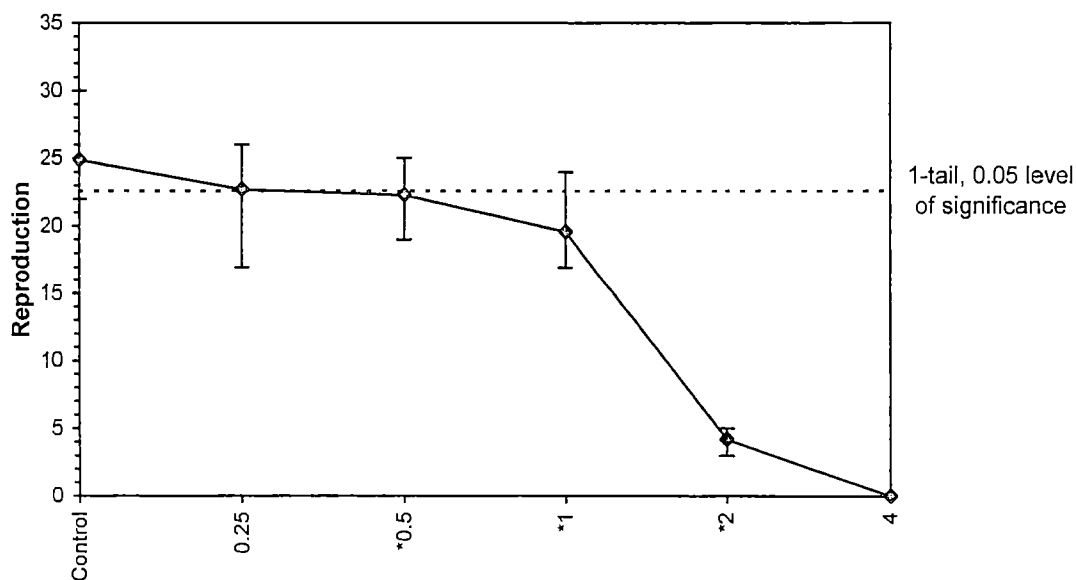
Start Date: 6/4/2013 11:00 Test ID: REF TOX Sample ID: REF-Ref Toxicant
 End Date: 6/9/2013 12:30 Lab ID: REF TOX Sample Type: NACL-Sodium chloride
 Sample Date: 6/3/2013 10:05 Protocol: EPAF 94-EPA Freshwater Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-ppt	1	2	3	4	5	6	7	8	9	10
Control	26.000	22.000	23.000	24.000	23.000	25.000	28.000	25.000	23.000	30.000
0.25	25.000	18.000	22.000	23.000	22.000	26.000	26.000	24.000	17.000	24.000
0.5	23.000	19.000	25.000	22.000	21.000	23.000	25.000	19.000	22.000	24.000
1	19.000	21.000	18.000	17.000	19.000	24.000	20.000	17.000	20.000	21.000
2	5.000	5.000	4.000	5.000	3.000	4.000	5.000	3.000	4.000	4.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-ppt	Mean	N-Mean	Transform: Untransformed					N	t-Stat	1-Tailed Critical	MSD
			Mean	Min	Max	CV%					
Control	24.900	1.0000	24.900	22.000	30.000	10.098	10				
0.25	22.700	0.9116	22.700	17.000	26.000	13.626	10	2.171	2.223	2.253	
*0.5	22.300	0.8956	22.300	19.000	25.000	9.699	10	2.565	2.223	2.253	
*1	19.600	0.7871	19.600	17.000	24.000	10.810	10	5.230	2.223	2.253	
*2	4.200	0.1687	4.200	3.000	5.000	18.781	10	20.425	2.223	2.253	
4	0.000	0.0000	0.000	0.000	0.000	0.000	10				

Auxiliary Tests	Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.98684	0.93	-0.13	0.4757						
Bartlett's Test indicates equal variances (p = 0.01)	12.9998	13.2767								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	0.25	0.5	0.35355		2.25327	0.09049	696.13	5.13556	1.7E-24	4, 45
Treatments vs Control										

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 6/4/2013 11:00 Test ID: REF TOX Sample ID: REF-Ref Toxicant
 End Date: 6/9/2013 12:30 Lab ID: REF TOX Sample Type: NACL-Sodium chloride
 Sample Date: 6/3/2013 10:05 Protocol: EPAF 94-EPA Freshwater Test Species: CD-Ceriodaphnia dubia
 Comments:

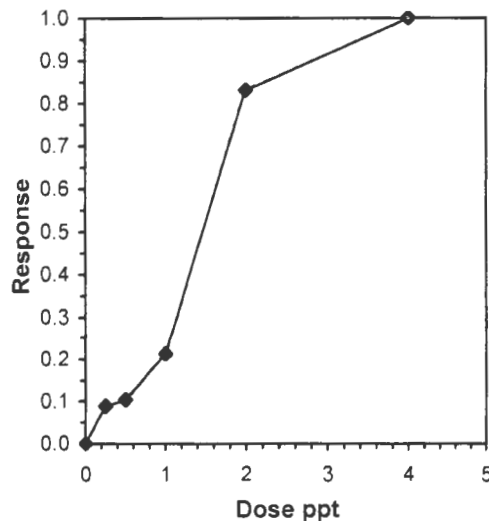
Conc-ppt	1	2	3	4	5	6	7	8	9	10
Control	26.000	22.000	23.000	24.000	23.000	25.000	28.000	25.000	23.000	30.000
0.25	25.000	18.000	22.000	23.000	22.000	26.000	26.000	24.000	17.000	24.000
0.5	23.000	19.000	25.000	22.000	21.000	23.000	25.000	19.000	22.000	24.000
1	19.000	21.000	18.000	17.000	19.000	24.000	20.000	17.000	20.000	21.000
2	5.000	5.000	4.000	5.000	3.000	4.000	5.000	3.000	4.000	4.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-ppt	Transform: Untransformed							Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
Control	24.900	1.0000	24.900	22.000	30.000	10.098	10	24.900	1.0000
0.25	22.700	0.9116	22.700	17.000	26.000	13.626	10	22.700	0.9116
0.5	22.300	0.8956	22.300	19.000	25.000	9.699	10	22.300	0.8956
1	19.600	0.7871	19.600	17.000	24.000	10.810	10	19.600	0.7871
2	4.200	0.1687	4.200	3.000	5.000	18.781	10	4.200	0.1687
4	0.000	0.0000	0.000	0.000	0.000	0.000	10	0.000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.98684	0.93	-0.13	0.4757
Bartlett's Test indicates equal variances (p = 0.01)	12.9998	13.2767		

Linear Interpolation (200 Resamples)					
Point	ppt	SD	95% CL		Skew
IC05*	0.1415	0.1325	0.0771	0.5502	1.2870
IC10	0.4313	0.1860	0.1542	0.7284	0.1407
IC15	0.7102	0.1777	0.2313	0.9546	-0.9070
IC20	0.9407	0.1099	0.6759	1.0687	-0.8351
IC25	1.0601	0.0561	0.9008	1.1431	-1.1684
IC40	1.3026	0.0371	1.2280	1.3665	-0.2721
IC50	1.4643	0.0304	1.4052	1.5163	-0.2435

* indicates IC estimate less than the lowest concentration



CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: REF Tox June 2013CLIENT: AETSAMPLE DATE/DESIGNATION: 6/4/13 / NaClBEGINNING DATE OF BIOASSAY: 6/4/13SPECIES (circle): C. dubia P. promelas

FINAL CHEM.- CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	6/5/13	6/6/13	6/7/13	6/8/13	6/9/13		
INITIALS	AJC	AJC	SBM	AJC	AJC		
DO	7.39	7.17	7.04	7.50	8.31		
pH	8.15	8.05	8.08	8.08	7.96		
TEMP	25.0	25.0	24.7	24.8	24.7		
DILUTION 1- 0.25 PPT %							
DO	7.47	7.16	7.54	7.55	7.82		
pH	8.09	7.89	8.03	8.04	7.94		
TEMP	25.0	25.0	24.7	24.8	24.7		
DILUTION 2- 0.5 PPT %							
DO	7.53	7.30	7.55	7.50	8.01		
pH	8.02	7.87	8.01	8.00	7.91		
TEMP	25.0	25.0	24.7	24.8	24.7		
DILUTION 3- 1 PPT %							
DO	7.51	7.32	7.51	7.39	7.93		
pH	7.97	7.82	7.99	7.94	7.88		
TEMP	25.0	25.0	24.7	24.8	24.7		
DILUTION 4- 2 PPT %							
DO	7.60	7.24	7.01	7.51	8.14		
pH	7.92	7.80	7.96	7.92	7.89		
TEMP	25.0	25.0	24.7	24.8	24.7		
DILUTION 5- 4 PPT %							
DO	7.61						
pH	7.86						
TEMP	25.0						

All final temperatures must be taken from the ghost cups in the chamber.

Larval Fish Growth and Survival Test-7 Day Survival

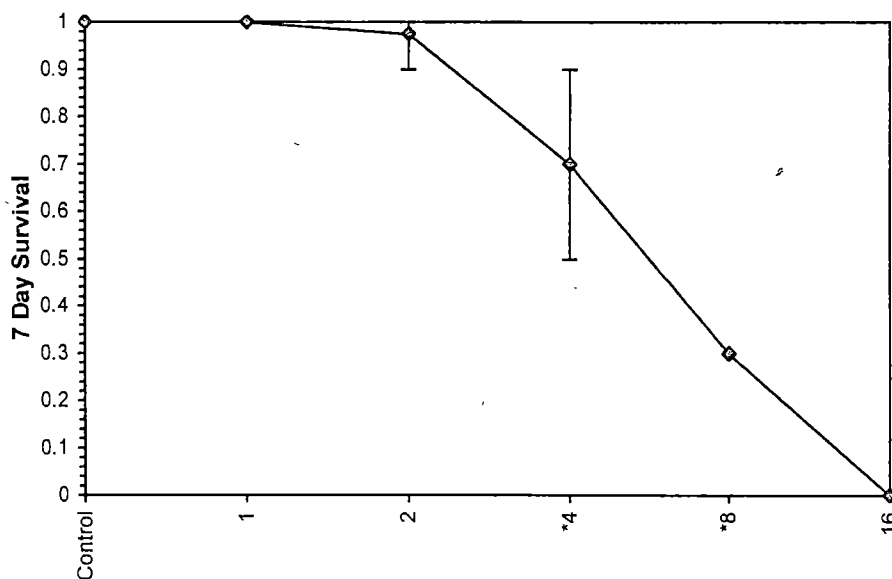
Start Date: 6/4/2013 16:00 Test ID: REF TOX Sample ID: REF-Ref Toxicant
 End Date: 6/11/2013 12:20 Lab ID: REF TOX Sample Type: NACL-Sodium chloride
 Sample Date: 6/3/2013 10:05 Protocol: EPAF 94-EPA Freshwater Test Species: PP-Pimephales promelas
 Comments:

Conc-ppt	1	2	3	4
Control	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000
2	0.9000	1.0000	1.0000	1.0000
4	0.6000	0.5000	0.8000	0.9000
8	0.3000	0.3000	0.3000	0.3000
16	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Mean	N-Mean	Transform: Arcsin Square Root				N	Rank Sum	1-Tailed Critical
			Mean	Min	Max	CV%			
Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4		
1	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4	18.00	10.00
2	0.9750	0.9750	1.3713	1.2490	1.4120	5.942	4	16.00	10.00
*4	0.7000	0.7000	1.0069	0.7854	1.2490	20.859	4	10.00	10.00
*8	0.3000	0.3000	0.5796	0.5796	0.5796	0.000	4	10.00	10.00
16	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	4		

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01) Equality of variance cannot be confirmed	0.79413	0.868	0.07696	3.649
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	2	4	2.82843	
Treatments vs Control				

Dose-Response Plot



Larval Fish Growth and Survival Test-7 Day Growth

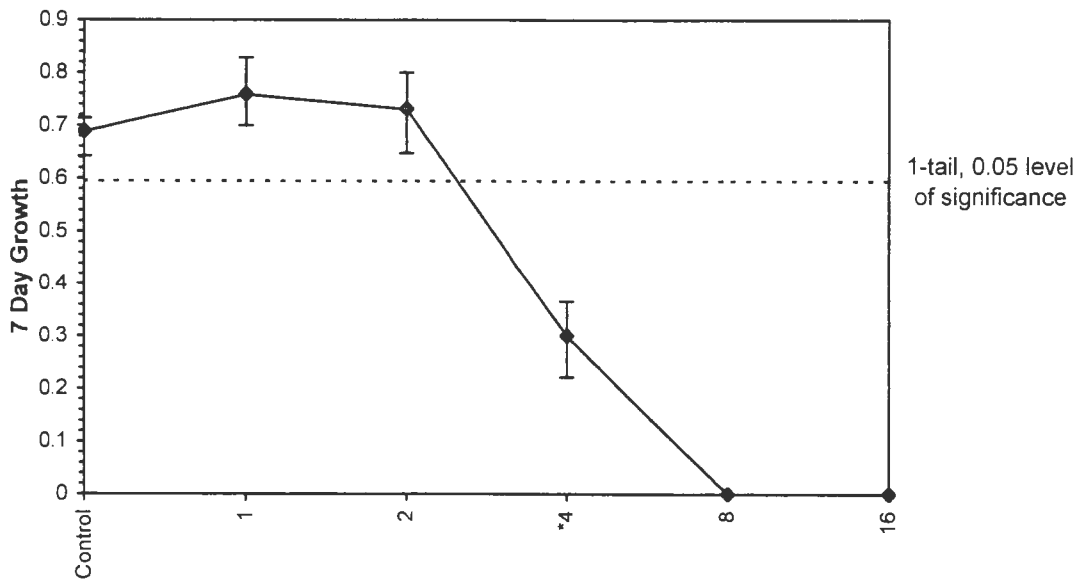
Start Date: 6/4/2013 16:00 Test ID: REF TOX Sample ID: REF-Ref Toxicant
 End Date: 6/11/2013 12:20 Lab ID: REF TOX Sample Type: NACL-Sodium chloride
 Sample Date: 6/3/2013 10:05 Protocol: EPAF 94-EPA Freshwater Test Species: PP-Pimephales promelas
 Comments:

Conc-ppt	1	2	3	4
Control	0.6964	0.7029	0.7135	0.6413
1	0.7990	0.8293	0.7087	0.7005
2	0.6475	0.7423	0.8002	0.7343
4	0.2726	0.2214	0.3399	0.3663
8	0.0000	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Mean	N-Mean	Transform: Untransformed					t-Stat	1-Tailed	
			Mean	Min	Max	CV%	N		Critical	MSD
Control	0.6885	1.0000	0.6885	0.6413	0.7135	4.686	4			
1	0.7594	1.1029	0.7594	0.7005	0.8293	8.498	4	-1.726	2.290	0.0940
2	0.7311	1.0618	0.7311	0.6475	0.8002	8.615	4	-1.037	2.290	0.0940
*4	0.3001	0.4358	0.3001	0.2214	0.3663	21.868	4	9.465	2.290	0.0940
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4			
16	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4			

Auxiliary Tests	Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.92976	0.844	-0.2295	-1.2042						
Bartlett's Test indicates equal variances (p = 0.69)	1.46049	11.3449								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs Control	2	4	2.82843		0.09399	0.13651	0.1851	0.00337	2.8E-07	3, 12

Dose-Response Plot



Larval Fish Growth and Survival Test-7 Day Growth

Start Date: 6/4/2013 16:00	Test ID: REF TOX	Sample ID: REF-Ref Toxicant
End Date: 6/11/2013 12:20	Lab ID: REF TOX	Sample Type: NACL-Sodium chloride
Sample Date: 6/3/2013 10:05	Protocol: EPAF 94-EPA Freshwater	Test Species: PP-Pimephales promelas

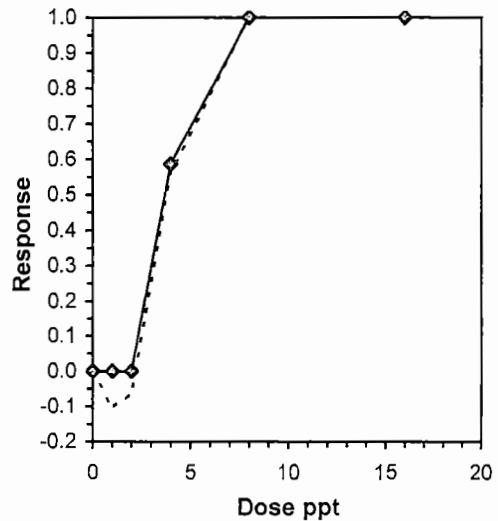
Comments:

Conc-ppt	1	2	3	4
Control	0.6964	0.7029	0.7135	0.6413
1	0.7990	0.8293	0.7087	0.7005
2	0.6475	0.7423	0.8002	0.7343
4	0.2726	0.2214	0.3399	0.3663
8	0.0000	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Transform: Untransformed							Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
Control	0.6885	1.0000	0.6885	0.6413	0.7135	4.686	4	0.7263	1.0000
1	0.7594	1.1029	0.7594	0.7005	0.8293	8.498	4	0.7263	1.0000
2	0.7311	1.0618	0.7311	0.6475	0.8002	8.615	4	0.7263	1.0000
4	0.3001	0.4358	0.3001	0.2214	0.3663	21.868	4	0.3001	0.4131
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4	0.0000	0.0000
16	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4	0.0000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$)	0.92976	0.844	-0.2295	-1.2042
Bartlett's Test indicates equal variances ($p = 0.69$)	1.46049	11.3449		

Linear Interpolation (200 Resamples)					
Point	ppt	SD	95% CL(Exp)		Skew
IC05	2.1704	0.1547	1.2468	2.2048	-2.6796
IC10	2.3408	0.0837	1.9001	2.4095	-1.9518
IC15	2.5112	0.0774	2.1219	2.6143	-1.4923
IC20	2.6816	0.0746	2.3329	2.8191	-0.9318
IC25	2.8519	0.0750	2.5424	3.0239	-0.3971
IC40	3.3631	0.0931	3.1061	3.6513	0.1519
IC50	3.7039	0.1145	3.3879	4.0756	0.1034



CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: REF Tox June 2013

CLIENT: AET

SAMPLE DATE/DESIGNATION: 6/4/13 / NaCl

BEGINNING DATE OF BIOASSAY: 6/4/13

SPECIES (circle): C. dubia, P. promelas

FINAL CHEM.- CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	6/5/13	6/6/13	6/7/13	6/8/13	6/9/13	6/10/13	6/11/13
INITIALS	AJC	AJC	SBM	AJC	AJC	AJC	SKM
DO	7.45	7.33	7.03	7.13	7.36	7.82	6.64
pH	8.05	7.80	8.00	7.99	7.97	7.93	7.74
TEMP	25.0	25.0	24.7	24.8	24.7	25.0	24.7
DILUTION 1- 1 PPT %							
DO	7.64	7.14	7.42	7.31	8.20	7.55	6.52
pH	7.88	7.67	7.88	7.83	7.81	7.77	8.00
TEMP	25.0	25.0	24.7	24.8	24.7	25.0	24.7
DILUTION 2- 2 PPT %							
DO	7.60	6.84	7.26	7.11	7.74	7.45	8.26
pH	7.87	7.62	7.86	7.79	7.78	7.71	7.75
TEMP	25.0	25.0	24.7	24.8	24.7	25.0	24.7
DILUTION 3- 4 PPT %							
DO	7.20	6.92	7.43	7.14	7.32	7.15	7.95
pH	7.80	7.54	7.80	7.72	7.72	7.66	7.70
TEMP	25.0	25.0	24.7	24.8	24.7	25.0	24.7
DILUTION 4- 8 PPT %							
DO	7.09	6.99	7.29	7.10	7.05	7.44	7.15
pH	7.77	7.50	7.76	7.66	7.63	7.60	7.75
TEMP	25.0	25.0	24.7	24.8	24.7	25.0	24.7
DILUTION 5- 16 PPT %							
DO	7.13						
pH	7.73						
TEMP	25.0						

7.02
 7.83
 6.90
 7.81

All final temperatures must be taken from the ghost cups in the chamber.

CHRONIC P.p. BIOASSAY ORGANISM TABLE

CLIENT: AET AET PROJECT NO.: REF Tox JUNE 2013
 SAMPLE DATE: 6/4/13 SAMP. DESIGNATION: NaCl
 BEGINNING DATE: 6/4/13 ENDING DATE: 6/11/13
 RANDOMIZATION TEMPLATE #: 2 P. promelas LOT #: 3123

HOUR	DAY1	DAY2	DAY3	DAY4	DAY5	DAY6	DAY7	END
INITIALS	AJC	AJC	AJC	AJC	AJC	AJC	AJC	AJC
TIME	4:00 pm	3:30 pm	3:40 pm	12:30 pm	2:30 pm	2:50 pm	3:00 pm	12:20 pm
CONTROL - 0%								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E	_____							
DILUTION 1 - 1 PPT %								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E	_____							
DILUTION 2 - 2 PPT %								
LIVE A	10	10	10	10	10	10	9	9
LIVE B	↓	↓	↓	↓	↓	↓	10	10
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E	_____							
DILUTION 3 - 4 PPT %								
LIVE A	10	10	9	8	8	7	6	6
LIVE B	↓	↓	10	10	9	7	5	5
LIVE C	↓	↓	↓	9	9	8	8	8
LIVE D	↓	↓	↓	10	10	10	9	9
LIVE E	_____							
DILUTION 4 - 8 PPT %								
LIVE A	10	10	8	6	4	4	4	3
LIVE B	↓	↓	8	8	8	4	3	3
LIVE C	↓	↓	7	6	6	3	3	3
LIVE D	↓	↓	8	8	7	3	3	3
LIVE E	_____							
DILUTION 5 - 16 PPT %								
LIVE A	10	0	_____					
LIVE B	↓	↓	_____					
LIVE C	↓	↓	_____					
LIVE D	↓	↓	_____					
LIVE E	_____							

TIME = The time the organisms are placed into new dilution water. This

Last Modified: 10/20/11 by ANC

Filename: G:/benchshe/BTR Current/P.promelas Wt Gain.xls

Company Name: REF TOX AET

Initials: AJC

Project Number: JUNE 2013

Beginning Oven Temp: 115°C

Time: 12:35 pm

Organism Name: P. promelas

Date: 6/11/13

Beginning Date of Test: 6/4/13

End Oven Temp: 110°C

Time: 9:30 am

Ending Date of Test: 6/11/13

Date: 6/12/13

Concentration		Initial Wt of Pad (mg)	Final Wt of Pad (mg)
0 PPT	A	7.938	14.902
	B	7.773	14.802
	C	7.498	14.633
	D	7.394	13.807
	E		
3693			
1 PPT	A	11.396	19.386
	B	11.278	19.571
	C	11.202	18.289
	D	11.098	18.103
	E		
3701			
2 PPT	A	10.444	16.919
	B	9.197	16.620
	C	7.844	15.846
	D	7.904	15.247
	E		
3702			
4 PPT	A	10.197	12.923
	B	10.343	12.557
	C	9.697	13.096
	D	9.832	13.495
	E		
3703			
	A		
	B		
	C		
	D		
	E		
	A		
	B		
	C		
	D		
	E		

COPIES OF HANDWRITTEN RAW DATA SHEETS

CHRONIC BIOASSAY CONTROL AND 100% EFFLUENT CHEMICAL TABLE

AET PROJECT NO.: 1306265-

CLIENT: Maas CC Williams

SAMPLE DATE/DESIGNATION: 6/15-16/13/CO1

BEGINNING DATE OF BIOASSAY: 6/18/13

SPECIES (circle): C. dubia, P. promelas

INITIAL CHEMISTRIES- CONTROL 0% MEASURE EACH NEW BATCH							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	6/18/13	6/19/13	6/20/13	6/21/13	6/22/13	6/23/13	6/24/13
TIME	9:30 am	9:25 am	9:25 am	10:10 am	11:02 am	11:15 am	11:20 am
INITIALS	SP	SP	SP	SP	GRA	SP	SP
ALK	62		172 172	62	80		
COND	305			326			
DO	8.08			9.38			
HARD	88			104			
pH	8.09			8.18			
TRC	0.02			0.01			
100 % EFFLUENT SAMPLE MEASURE EACH NEW SAMPLE (pH - daily)							
DATE	6/18/13	6/19/13	6/20/13	6/21/13	6/22/13	6/23/13	6/24/13
TIME	9:30 am	9:25 am	9:25 am	10:10 am	11:02 am	11:15 am	11:20 am
INITIALS	SP	SP	SP	SP	GRA	SP	SP
ALK	100		172		80		
COND	826		1024		748		
DO	8.85		8.84		9.10		
HARD	92		128		96		
pH	7.19	6.93	7.22	7.76	7.26	7.02	7.69
TRC	0.01		0.05		0.01		
The pH of the effluent sample must be run daily.							
NOTES:							

CHRONIC BIOASSAY INITIAL CHEMICAL TABLE

AET PROJECT NO.: 1306265
 CLIENT: Marius CC Williams
 SAMPLE DATE/DESIGNATION: 6/15-16/13 /001
 BEGINNING DATE OF BIOASSAY: 6/18/13
 SPECIES (circle): C. dubia, P. promelas

INITIAL CHEMISTRIES- CONTROL 0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	6/18/13	6/19/13	6/20/13	6/21/13	6/22/13	6/23/13	6/24/13
TIME	9:30a	9:25am	9:25am	10:10a	11:02a	11:15a	11:20a
INITIALS	SP	SP	SP	SP	GA	SP	SP
DO	8.08	8.42	8.15	9.38	8.15	8.38	8.10
DILUTION 1 -		19 %					
DO	8.03	8.27	8.04	8.89	7.71	8.05	8.13
DILUTION 2 -		%					
DO							
DILUTION 3 -		%					
DO							
DILUTION 4 -		%					
DO							
DILUTION 5 -		%					
DO							
TIME = Time the dilution was made.							
NOTES:							

CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: 1306265

CLIENT: Manns CC Williams

SAMPLE DATE/DESIGNATION: 6/15-16/13 1001

BEGINNING DATE OF BIOASSAY: 6/18/13

SPECIES (circle): C. dubia P. promelas

FINAL CHEM.- CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	6/19/13	6/20/13	6/21/13	6/22/13	6/23/13		
INITIALS	AJC	AJC	GRA	AJC	SP		
DO	7.88	7.34	8.46	7.60	7.28		
pH	7.82	7.96	8.07	8.10	8.11		
TEMP	24.9	24.8	24.8	24.8	24.7		
DILUTION 1-		19	%				
DO	7.77	7.45	8.26	7.44	7.06		
pH	7.71	7.90	8.15	8.19	7.78		
TEMP	24.9	24.8	24.8	24.8	24.7		
DILUTION 2-			%				
DO							
pH							
TEMP							
DILUTION 3-			%				
DO							
pH							
TEMP							
DILUTION 4 -			%				
DO							
pH							
TEMP							
DILUTION 5 -			%				
DO							
pH							
TEMP							

All final temperatures must be taken from the ghost cups in the chamber.

CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: 1306265
 CLIENT: Maxis CC Williams
 SAMPLE DATE/DESIGNATION: 6/15-16/13/001
 BEGINNING DATE OF BIOASSAY: 6/18/13
 SPECIES (circle): C. dubia, P. promelas

FINAL CHEM.- CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	6/19/13	6/20/13	6/21/13	6/22/13	6/23/13	6/24/13	6/25/13
INITIALS	AJC	AJC	GRA	AJC	SP	AJC	AJC
DO	7.69	8.06	6.73	7.67	6.77	7.65	7.16
pH	7.90	7.92	7.94	8.08	7.83	7.93	7.69
TEMP	24.9	24.8	24.8	24.8	24.7	25.0	25.0
DILUTION 1- 19 %							
DO	7.34	6.99	7.23	7.60	7.38	7.44	6.80
pH	7.71	7.84	7.89	7.96	8.16	7.86	7.64
TEMP	24.9	24.9	24.8	24.8	24.7	25.0	25.0
DILUTION 2- %							
DO							
pH							
TEMP							
DILUTION 3- %							
DO							
pH							
TEMP							
DILUTION 4 - %							
DO							
pH							
TEMP							
DILUTION 5 - %							
DO							
pH							
TEMP							

All final temperatures must be taken from the ghost cups in the chamber.

C. dubia

LEDGER

#a – Number of Aborted neonates

#B – Brood number

check mark – one mother has been added to the test chamber, it also means that the mother is still alive.

#d – Number of neonates born dead.

perpendicular line – means that all test chambers are the same as above.

- number of neonates born

⤵ - split brood

X - Death of mother

0 – Zero neonates

CHRONIC P.p. BIOASSAY ORGANISM TABLE

CLIENT: Maurus CC Wilkins AET PROJECT NO.: 1306265
 SAMPLE DATE: 6/15-16/13 SAMP. DESIGNATION: CO1
 BEGINNING DATE: 6/18/13 ENDING DATE: 6/25/13
 RANDOMIZATION TEMPLATE #: 2 P. promelas LOT #: 3137

HOUR	DAY1	DAY2	DAY3	DAY4	DAY5	DAY6	DAY7	END
INITIALS	AJC	AJC	AJC	AJC	GRA	SP	AJC	AJC
TIME	11:35am	10:50am	10:00am	11:15am	11:30a	11:40a	11:30am	10:10am
CONTROL - 0%								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E								
DILUTION 1 - 19 %								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E								
DILUTION 2 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								
DILUTION 3 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								
DILUTION 4 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								
DILUTION 5 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								

TIME = The time the organisms are placed into new dilution water. This

Last Modified: 10/20/11 by ANC

Filename: G:/benchshe/BTR Current/P.promelas Wt Gain.xls

Company Name: MAWSS (CC Williams)

Initials: ANC

Project Number: 1306265

Beginning Oven Temp: 112°C

Time: 10:30 am

Organism Name: P. promelas

Date: 6/25/13

Beginning Date of Test: 6/18/13

End Oven Temp: 115°C

Time: 8:45 am

Ending Date of Test: 6/25/13

Date: 6/26/13

Concentration		Initial Wt of Pad (mg)	Final Wt of Pad (mg)
0%	A	8.040	12.641
	B	9.319	14.503
	C	9.860	15.058
3455	D	8.854	14.108
	E		
19%	A	8.183	13.202
	B	8.175	13.614
	C	7.842	13.744
3457	D	7.931	13.687
	E		
	A		
	B		
	C		
	D		
	E		
	A		
	B		
	C		
	D		
	E		
	A		
	B		
	C		
	D		
	E		

E2 Receipt

Here is your report submission receipt. [Click here to print.](#)

Submission ID: 46877

Submitted on 10/24/2013 10:50:52 AM, at 69.85.232.2

Submitted by: Mike Sims
Mobile Clifton C Williams Wwtp
1600 Yeend St
Mobile, AL 36603
251-378-3503
msims@mawss.com

Report Detail

Summary Discharge Monitoring Report
Facility Name Mobile Clifton C Williams Wwtp
Permit Number AL0023086
Report Frequency MONTHLY
Report Period 09/01/2013 - 09/30/2013

Attachment Detail

Online Attachments

Mail Attachments

Mail to Address:

Mail in the following attachment(s):

Thank you for using E2 system!



Corporate: 1717 Seaboard Drive • Baton Rouge, LA 70810 • 800-364-1930
Louisiana Division: Baton Rouge, LA • (225) 769-1930
Alabama Division: Mobile, AL • (251) 344-9915
Texas Division: Bryan, TX • 800-364-1930

September 20, 2013

Mike Sims
Mobile Water
1600 Yeend St.
Mobile, AL 36603

RE: AET Project # 1309124

Dear Mike,

On September 9, 2013, the first of three composite samples was submitted to A & E Testing, Inc. labeled Clifton C. Williams WWTP 001 (Permit AL0023086, Mobile Water, Mobile County) for the Quarterly ADEM bioassay. The Bioassay/Biototoxicity evaluation was performed as per EPA publication 821-R-02-013. The species requested were Pimephales promelas and Ceriodaphnia dubia. The chronic results were calculated by the Shapiro Wilks Test, the F-Test, the Equal Variance T-test, and the Steels Many-One Rank Test where applicable.

The following is a tabulation of the data generated:

WWTP 001 - 19% Effluent

P. promelas

Survival data = No significant difference between 19% effluent and the control.

Growth data = No significant difference between 19 % effluent and the control.

C. dubia

Survival data = No significant difference between 19% effluent and the control.

Reproduction data = No significant difference between 19% effluent and the control.

Sincerely,

A handwritten signature in black ink that reads "Marie Levy".

Marie Levy
Toxicity Project Officer

SUBMIT TO MUNICIPAL BRANCH

[ONE COPY OF PAGE 1 OF THE ADEM REPORT FORM ONLY, WITHOUT LAB SUPPPORT DATA, IS TO BE
SUBMITTED TO THE MUNICIPAL BRANCH.]

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
TOXICITY TEST REPORT FORM

1. GENERAL:

NPDES PERMIT NO.: AL0023086 DSN: 001 COUNTY: Mobile
 Permittee: Board of Water and Sewer Commissioners of the City of Mobile
 Facility Name: Clifton C. Williams WWTP
 Agent Submitting Report: Mike Sims
 Lab Conducting Toxicity Test(s): Analytical and Environmental Testing, Inc.

Months Toxicity Test(s) Required: Quarterly This Report for Test in Month of: September 2013
 Scheduled Test(s): X Accelerated Test(s): _____
 Number _____ of _____ for failed test of (date): _____
 Test Type Required: _____ 48-hr Acute Screening: _____ 24-hr Acute Screening
X Short-term Chronic Screening _____ Other (specify) _____

Sample #	Test Organism: Pimephales promelas					Test Organism: Ceriodaphnia dubia				
	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid
1	9/10/13	11:45 am	9/17/13	11:35 am	yes	9/10/13	10:38 am	9/16/13	9:30 am	yes

2A. SUMMARY OF RESULTS FOR SCREENING TESTS:

Test Org.	Effluent Conc.	Test Number 1			Test Number 2			Test Number 3			Test Number 4		
		Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow	Supr	Repr	Grow
Pp	19 %	Pass		Pass									
Cd	19 %	Pass	Pass										

2B. SUMMARY OF RESULTS FOR DEFINITIVE TEST:

Test Org.	Test Solution Concentration (%)					LC50	NOEC	Not Determined

3. LABORATORY ANALYSIS OF UNDILUTED SAMPLES:

Sample ID	CBOD ₅ mg/L	TSS mg/L	NH ₃ -N mg/L	pH s.u.	TRC mg/L	Alkalinity mg/L	Hardness (Eff.)mg/L	Hardness (Strm.)mg/L
1	4	9	12.2	6.7	2.1	136	120	
2	5	6	19.45	6.6	2	180	148	
3	8	4	14.3	6.7	1.3	108	108	
4								

Municipal Facilities Only

Sample ID	Arsenic µg/L	Cadium µg/L	Chromium µg/L	Copper µg/L	Lead µg/L	Hexavalent Chromium µg/L
Sample ID	Mercury µg/L	Nickel µg/L	Silver µg/L	Zinc µg/L	Total Cyanide µg/L	Other(s) µg/L

Chemical Analyses Performed By (Lab): Board of Water and Sewer Commissioners of the City of Mobile, AET
 Instantaneous Flow: (1) _____ GPM (2) _____ GPM (3) _____ GPM (4) _____ GPM
 Total 24-hr Flow: (1) 17.808 MGD (2) 20.370 MGD (3) 23.331 MGD (4) _____ GPM
 Comments: C. dubia test ended two days early due to 60% of the control mothers having 3 broods

I certify under the 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 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 RESPONSIBLE OFFICIAL: _____ DATE: _____

SUBMIT TO TOXICS UNIT

[SUBMIT ALL TOXICITY REPORT FORMS, ALL SUPPORTING LAB DATA, AND COPIES OF BENCH SHEETS.]

ADEM REPORT FORM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
TOXICITY TEST REPORT FORM

I. GENERAL:

NPDES PERMIT NO.: AL0023086 DSN: 001 COUNTY: Mobile
 Permittee: Board of Water and Sewer Commissioners of the City of Mobile
 Facility Name: Clifton C. Williams WWTP
 Agent Submitting Report: Mike Sims
 Lab Conducting Toxicity Test(s): Analytical and Environmental Testing, Inc.

Months Toxicity Test(s) Required: Quarterly This Report for Test in Month of: September 2013
 Scheduled Test(s): X Accelerated Test(s): _____
 Number _____ of _____ for failed test of (date): _____
 Test Type Required: _____ 48-hr Acute Screening: _____ 24-hr Acute Screening
X Short-term Chronic Screening _____ Other (specify) _____

Sample #	Test Organism: Pimephales promelas					Test Organism: Ceriodaphnia dubia				
	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid
1	9/10/13	11:45 am	9/17/13	11:35 am	yes	9/10/13	10:38 am	9/16/13	9:30 am	yes

2A. SUMMARY OF RESULTS FOR SCREENING TESTS:

Test Org.	Effluent Conc.	Test Number 1			Test Number 2			Test Number 3			Test Number 4		
		Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow	Supr	Repr	Grow
Pp	19 %	Pass		Pass									
Cd	19 %	Pass	Pass										

2B. SUMMARY OF RESULTS FOR DEFINITIVE TEST:

Test Org.	Test Solution Concentration (%)					LC50	NOEC	Not Determined

3. LABORATORY ANALYSIS OF UNDILUTED SAMPLES:

Sample ID	CBOD ₅ mg/L	TSS mg/L	NH ₃ -N mg/L	pH s.u.	TRC mg/L	Alkalinity mg/L	Hardness (Eff.)mg/L	Hardness (Strm.)mg/L
1	4	9	12.2	6.7	2.1	136	120	
2	5	6	19.45	6.6	2	180	148	
3	8	4	14.3	6.7	1.3	108	108	
4								

Municipal Facilities Only

Sample ID	Arsenic µg/L	Cadium µg/L	Chromium µg/L	Copper µg/L	Lead µg/L	Hexavalent Chromium µg/L
Sample ID	Mercury µg/L	Nickel µg/L	Silver µg/L	Zinc µg/L	Total Cyanide µg/L	Other(s) µg/L

Chemical Analyses Performed By (Lab): Board of Water and Sewer Commissioners of the City of Mobile, AET
 Instantaneous Flow: (1) _____ GPM (2) _____ GPM (3) _____ GPM (4) _____ GPM
 Total 24-hr Flow: (1) 17.808 MGD (2) 20.370 MGD (3) 23.331 MGD (4) _____ GPM
 Comments: C. dubia test ended two days early due to 60% of the control mothers having 3 broods

I certify under the 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 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 RESPONSIBLE OFFICIAL: _____ DATE: _____

Facility Name: Clifton C. Williams WWTP NPDES #: AL0023086 DSN: 001 DATE: 09/20/13

4. SAMPLE COLLECTION:

Split Samples: N/A X Yes _____ (Explain) _____

Samples Collected as Specified in the NPDES Permit: Yes X No _____ (Explain) _____

Receiving Water: Mobile Bay
Design Flow: 28 (MGD)

Sample ID	Sample(s) Collected				Arrival Temp. (°C)	Used in Test(s)			
	MM/DD/YY	HH:MM	-	MM/DD/YY		HH:MM	MM/DD/YY	-	MM/DD/YY
1	9/7/13	2355	-	9/8/13	2355	4.0	9/10/13	-	9/11/13
2	9/9/13	2350	-	9/10/13	2350	4.0	9/12/13	-	9/13/13
3	9/11/13	2358	-	9/12/13	2358	4.0	9/14/13	-	9/17/13
4			-					-	

5. CONTROL / DILUTION WATER:

Type	Prepared MM/DD/YY	Begin Use MM/DD/YY	Initial Water Chemistries					
			Hard.	Alk.	pH	Cond.	@	°C
MHRW	9/9/13	9/10/13	84	64	8.17	341	@	25
MHRW	9/12/13	9/13/13	84	62	8.19	310	@	25
							@	
							@	

6. TOXICITY TEST INFORMATION:

Test	Organism	Organism	Test Solution Concentrations (%)					
Species	Age	Source						
C. d.	< 24 Hours	In House Culture	0	19				
P. p.	< 24 Hours	In House Culture	0	19				

Test	Test Vessel	Vessel	Solution	Org. / Test	Replicates
Species	Type	Vol. (mL)	Vol. (mL)	Vessel	Per Conc.
C. d.	Disposable plastic cup	30	15	1	10
P. p.	Disposable plastic cup	300	250	10	4

Test	Temp. Range	D. O. Range	pH Range	Light Intensity
Species	(°C)	(mg/L)	(s.u.)	Average (ft.-can.)
C. d.	24.6 - 24.7	7.53 - 8.70	7.33 - 7.90	55 - 60
P. p.	24.6 - 24.7	7.53 - 8.70	7.33 - 7.90	55 - 60

7. FEEDING

Not Fed: _____ Fed Daily: X Fed Irregularly: _____ (explain in comments below)
 Brine Shrimp: Fed 0.1 mL suspension of newly hatched larvae 2 times daily
 Yct: Fed 0.1 mL suspension containing 2.06 g/L TSS daily
 Algae: Fed 0.1 mL suspension containing 3.1 X 10⁷ algal cells / mL daily

COMMENTS:

C. dubia test ended two days early due to 60% of the control mothers having 3 broods

Facility Name: Clifton C. Williams WWTP NPDES #: AL0023086 DSN: 001 DATE: 09/20/13

8. REFERENCE TOXICANT TESTS:

TOXICANT: NaCl SOURCE: Sigma-Aldrich 2BT-06-12 CAS #: 7647-14-5
 Solution Concentration Unit: mg/L _____ g/L X % _____ Other (specify) PPT

Test Org.	Test Date MM/DD - MM/DD	Control Water	Reference Test Solution Concentrations (Control to Highest Conc.)						
			0	0.25	0.5	1	2	4	
C. d.	9/10/13 - 9/16/13	MHRW	0	0.25	0.5	1	2	4	
P. p.	9/10/13 - 9/17/13	MHRW	0	1	2	4	8	16	

Test Org.	Results and 95% Confidence Interval		This Test Upper and Lower CUSUM Chart Control Limit		Number (N)
	7 day NOEC =	95% CI	Upper	Lower	
C. d.	0.5	0.25 - 1.0	0.25	1.0	20
P. p.	2.0	1.0 - 4.0	1.0	4.0	20

9. TEST CONDITION VARIABILITY:

9A. DEVIATIONS FROM STANDARD TEST CONDITIONS:

9B. TEST SOLUTION MANIPULATIONS OR TEST MODIFICATIONS:

10. REQUIRED REPORT ATTACHMENTS:

Attach copies of chain-of-custody forms, reference toxicant tests, and raw data (bench sheets) pertaining to physical, chemical, and biological measurements for all tests. Include suspended, interrupted, or discontinued toxicity tests data.

COMMENTS:

11C. CHRONIC SCREENING TOXICITY TESTS RESULTS (Freshwater):

TEST ORGANISM: *Ceriodaphnia dubia*

Were the neonates used to begin the test within eight (8) hours of the same age?: YES: X NO:
 Did 60% of the CONTROL females produce their third brood?: YES: X NO:

SURVIVAL

CHRONIC TOXICITY INDICATED: YES: NO: X
 NO SURVIVAL STATISTICAL ANALYSIS NECESSARY: X
 CONTROL (%) 24h 100 48h 100 END 100 EFFLUENT (%) 24h 100 48h 100 END 100
 Fishers Exact Test: A = See stats, B = , a = , b =

REPRODUCTION (Average Neonates / Female)

CHRONIC TOXICITY INDICATED: YES: NO: X
 CONTROL: 26.3 EFFLUENT: 28
 NO REPRODUCTION STATISTICAL ANALYSIS NECESSARY: X
 Normally Distributed: Yes No:
 Test Statistic: Critical Value: 0.868 (Parametric)
 Equal Variance: Unequal Variance:
 F Statistic: Critical F: 8.1
 t Test Statistic: t Test Critical Value: 1.74
 Sample Rank Sum: # Reprs.: Critical Rank Sum: (Non-Parametric)

Comments: C. dubia test ended two days early due to 60% of the control mothers having 3 broods

TEST ORGANISM: *Pimephales promelas*

SURVIVAL

CHRONIC TOXICITY INDICATED: YES: NO: X
 NO SURVIVAL STATISTICAL ANALYSIS NECESSARY: X
 CONTROL (%) 24h 100 48h 100 7day 100 EFFLUENT (%) 24h 100 48h 100 7day 100
 Normally Distributed: Yes No:
 Test Statistic: Critical Value: (Parametric)
 Equal Variance: Unequal Variance:
 F Statistic: Critical F:
 t Test Statistic: t Test Critical Value:
 Sample Rank Sum: # Reprs.: Critical Rank Sum: (Non-Parametric)

GROWTH (Mean Dry Weight - mg)

CHRONIC TOXICITY INDICATED: YES: NO: X
 CONTROL: 0.56675 EFFLUENT: 0.5712
 NO GROWTH STATISTICAL ANALYSIS NECESSARY: X
 Normally Distributed: Yes No: X
 Test Statistic: Critical Value: 0.749 (Parametric)
 Equal Variance: Unequal Variance:
 F Statistic: Critical F: 11.3
 t Test Statistic: t Test Critical Value: 1.944
 Sample Rank Sum: # Reprs.: Critical Rank Sum: (Non-Parametric)

Comments:

ANALYTICAL & ENVIRONMENTAL TESTING'S REPORT FORM

Mobile Water
September 20, 2013

INTRODUCTION

Permit number: AL0023086

Toxicity testing requirements of permit: The permittee shall perform chronic static renewal tests on Mobile Water's 001 effluent with a control and a 19% dilution using Pimephales promelas and Ceriodaphnia dubia in accordance with EPA 821-R-02-013. The critical dilution is defined as 19% effluent. Approved toxicity test methods are: 1000.0 and 1002.0 respectively

Plant Location: Mobile, Alabama

Name of receiving water body: Mobile Bay

Contractor: Analytical and Environmental Testing, INC.

(225) 769-1930

1717 Seaboard Dr.

Baton Rouge, LA 70810

Contact: Marie Levy

PLANT OPERATION

Product: Not Applicable

Raw materials: Not Applicable

Operating schedule: 24-hours 7-days

Description of waste treatment: Activated Sludge

Schematic of waste treatment: On file at ADEM

Retention time: 16 Hours

Volume of waste flow: Rated-28 MGD

Total flow:

Design flow of treatment facility at time of sampling: On file at ADEM

SOURCE OF EFFLUENT (AMBIENT) AND DILUTION WATER

Effluent Samples

a. Sampling point: 001

b. Collection dates and times:

Sample	Collection Dates	Collection Times	Lapsed time
WWTP 001			Collection-delivery
Sample # 1	9/7/13-9/8/13	2355 - 2355	16 hours 35 minutes
Sample # 2	9/9/13-9/10/13	2350 - 2350	16 hours 5 minutes
Sample # 3	9/11/13-9/12/13	2358 - 2358	16 hours 6 minutes

Corresponding Total Flows (MGD): 17.808, 20.370, and 23.331

c. Sample collection method: Flow proportional auto flow sampler

Mobile Water
September 20, 2013

SOURCE OF EFFLUENT (AMBIENT) AND DILUTION WATER

Continued

d. Physical and chemical data: At Lab site upon sample receipt

LAB RESULTS	ALK mg/L	AMMONIA mg/L	TRC mg/L	COND. Umhos/c	DO mg/L	HARD. mg/L	pH su	TEMP. C
Sample #1	136	13.5	0.01	944	9.66	120	7.78	4.0
Sample #2	180	22.5	0.01	1402	10.04	148	7.90	4.0
Sample #3	108	17	0.02	910	9.14	108	7.48	4.0

Surface Water Samples: None taken

Dilution Water

a. Source: Moderately-Hard reconstituted water, laboratory prepared

b. Pretreatment: Filtered to remove predatory species

c. Physical and chemical data: See raw data sheets

TEST METHODS

Toxicity test methods: EPA-821-R-02-013 method 1000.0 and 1002.0

End points of test: P. promelas: survival and growth

C. dubia: survival and reproduction

Deviations from reference method: none

Species	Test begin	Time	Test End	Time
<u>P. promelas</u>	9/10/13	11:45 am	9/17/13	11:35 am
<u>C. dubia</u>	9/10/13	10:38 am	9/16/13	9:30 am

Type and volume of test chambers:

P. promelas plastic disposable 250ml cups

C. dubia plastic disposable 30ml graduated medicine cups

Volume of solution used per chamber: P. promelas 250ml/chamber

C. dubia 15ml/chamber

Number of organisms per test chamber: P. promelas 10/chamber

C. dubia 1/chamber

Number of replicate test chambers per treatment:

P. promelas: 4/treatment

C. dubia: 10/treatment

Acclimation of test organisms: P. promelas none needed.

C. dubia none needed.

Mobile Water
September 20, 2013

TEST METHODS

Continued

Test temperature: range = 24.6-24.7 C

Initial test temperature: 25 degrees C prior to renewal.

Was aeration needed? No.

Feeding:

P. promelas: Artemia <24-h fed at 9AM, and 5PM amount: 0.1 ml per feeding.

C. dubia: 0.1ml of YCT and algal suspension once daily.

Were pH control measures implemented? No

TEST ORGANISMS

Scientific name: Pimephales promelas and Ceriodaphnia dubia

Determined by visual taxonomic key reference

Age: P. promelas <24 hours C. dubia <24 hours within 8 hours

Life stage: P. promelas Larval C. dubia neonate

Mean length and weight: Not applicable until the termination of the test

Source: P. promelas In House Culture

C. dubia In House Culture

Diseases and treatment: Methylene blue dip used to treat P.promelas eggs to inhibit fungus growth.

QUALITY ASSURANCE

CHRONIC REFERENCE TOXICANT

Standard toxicant used: NaCl

Source: Sigma-Aldrich Control #: 2BT-06-12

Date and Time of monthly reference toxicant test:

9/10/13 2:40 pm - P. promelas

9/10/13 12:00 pm - C. dubia

Dilution water used in test: Moderately-Hard Reconstituted

Results: P. promelas NOEC: 2.00 PPT Accept. Range(1.0 PPT - 4.0 PPT) PMSD = 8.28 %

C. dubia NOEC: 0.5 PPT Acceptable Range(0.25 PPT - 1.0 PPT) PMSD = 8.66 %

Physical and chemical methods used: Physical testing: EPA-821-R-02-013 and methods for chemical analysis: pH, DO, Temperature-150.1, 360.1, 170.1

Results

P. promelas: Survival NOEC: 19%

Growth NOEC: 19%

C. dubia: Survival NOEC: 19%

Reproduction NOEC: 19%

Mobile Water
September 20, 2013

CONCLUSIONS AND RECOMMENDATIONS

Relationship between test endpoints and permit limits:

P. promelas: **PASS SURVIVAL**
PASS GROWTH

C. dubia: **PASS SURVIVAL**
PASS REPRODUCTION

Actions to be taken: None.

Schedule: The results generated from this bioassay event satisfy the ongoing quarterly permitted toxicity criteria for the Third Quarter of 2013. The next routinely scheduled bioassay event for DSN 001 will be December 2013.

Permit Expiration: July 31, 2009.

ORIGINAL CHAINS-OF-CUSTODY

AET Workorder Number

1309124

METALS

OTHER ANALYSES REQUESTED

#1

#2

#3

#4

RCRA Hazardous Waste

RADIOLOGICAL

SPECIFIC ORGANICS

MICROBIOLOGY

BIOASSAY / BIOTOXICITY

AET Sample No.						Comments
Aluminum	(Al)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Antimony	(Sb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Arsenic	(As)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Barium	(Ba)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Beryllium	(Be)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bismuth	(Bi)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boron	(B)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cadmium	(Cd)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Calcium	(Ca)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chromium	(Cr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chromium, Hexavalent	(CrVI)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cobalt	(Co)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Copper	(Cu)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Iron	(Fe)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lead	(Pb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Magnesium	(Mg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Manganese	(Mn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mercury	(Hg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Molybdenum	(Mo)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Nickel	(Ni)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Potassium	(K)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Selenium	(Se)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Silicon	(Si)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Silver	(Ag)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sodium	(Na)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Strontium	(Sr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Thallium	(Tl)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tin	(Sn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Titanium	(Ti)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Vanadium	(V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Zinc	(Zn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ignitability (Flash Pt.)	(FP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Corrosivity	(Corr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Reactivity (CN & S)	(RXCNS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-Metals	(TM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-Pest/Herb	(TP/H)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-BNA	(TBNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-VOA	(TVOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Gross Alpha		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Gross, Beta		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Radium, T.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Radium, 226/228		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Volatiles	(VOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Semi-Volatiles	(BNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pesticides/PCB)	(PEST/PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCB Only	(PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPH/Diesel	(TPH/D)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPH/Gasoline	(TPH/G)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BTEX	(BTEX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
THM's	(THM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other (Define)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fecal Coliform	(FC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Total Coliform	(TC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other (Define)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Acute		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chronic		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Daphnia magna/pulex		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mysid shrimp		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pimephales promelas		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ceriodaphnia		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cyprinodon		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

ANALYTICAL AND ENVIRONMENTAL TESTING

TOXICITY SAMPLE FLOW SHEET

It is imperative that this form be completely filled out.

Client MAWSS
 Site CC Williams
 Initial Flow Meter Reading 1774.049
UNITS OF FLOW 17.808 MGD

1309124

Date of Collection	Time of Collection	Flow Meter Reading
9-8-13	2355	1791.857

This information will be used to calculate the flow weighted composite aliquots.

Analytical & Environmental Testing, Inc.

Sample Receipt Check List--Required for Regulatory Samples only!!

filename:g:\chcklist\Sample Receipt Checklist 2009.xls

Last revised: 07/15/2009

Date: 09/09/13
Login Person: KTW

Project Number: 1309124

Samples received by [AET, UPS, FedEx, BUS] **CIRCLE ONE**
MUST ATTACH SHIPPING BILL OR COPY TO COC

	YES	NO	N/A	Comments
COC Present, Correct, & Complete? (name/address, sample id, division, client type)	✓	*		
SAMPLES WITHIN HOLDING TIME?	✓	*		
Customer must not be allowed to leave until this is verified				
Samples delivered on ice?	✓	*		
Temperature of Samples		*	✓	N/A if sample date=received date
COC and Sample Labels Agree?	✓	*		
Preserved to <2 (Metals, TOC, COD, NH3, TKN TPHOS, O&G, PHENOL, HARD) Circle Failure		*	✓	N/A if testing other than listed
Preserved to >12 CN, >9 S2 Circle Failure		*	✓	N/A if testing other than listed
Correct Sample Containers?	✓	*		
Containers intact?	✓	*		
Volume adequate?	✓	*		
Zero Headspace VOA/TOX		*	✓	
Custody seal on shipping container?			✓	not a requirement
Custody seal on bottles?	✓			not a requirement

* A "NO" response mandates a "Sample Condition Notification" to be either signed on dock upon delivery or faxed to the customer ASAP



AET Project No.: 1309124
Log In Person: KFW
Log In Date/Time: 09/11/13

Company: MAWSS
Site Contact: Mike Sims
Report To: Mike Sims
Address: 1600 Yeend St.
City: Mobile, AL
State & Zip Code: 36603
Phone#: (251) 378-3503 - Ext.
FAX#: (251) 433-4090 - Ext.
SAMPLER: [Signature]
Authorized By:
Sampler: [X] Client [] AET
Transporter: [] Client [X] AET
Bottles: [] Client [X] AET
Matrix Codes Turnaround Surcharge
A=Water [] 24 hrs. 200%
B=Sludge [] 48 hrs. 150%
C=Soil [] 1 week 50%
D=Oil [X] 2 weeks
E=Acid [] 3 weeks
F=Caustic
G=100% Organic
H=Solids&Misc.

NOTE: Multiphase MUST BE split into separate subsamples

CHAIN OF CUSTODY

Relinquished by: [Signature]
Date: 9-11-13 Time: 0600
Received by: [Signature]
Date: 9-11-13 Time: 0600
Relinquished by: [Signature]
Date: 9-11-13 Time: 0855
Received by: [Signature]
Date: 9/11/13 Time: 0855
Relinquished by: [Signature]
Date: 09/11/13 Time: 11:25AM
Received by: [Signature]
Date: 9-11-13 Time: 11:25AM
Relinquished by: [Signature]
Date: 9-11-13 Time: 1:25PM
Received by: [Signature]
Date: 9/1/13 Time: 1:55PM

Analytical Request Form / Chain of Custody

Table with columns for Sample Site, Sample Date, Sample Time, Matrix Code, Storage Upon Arrival At Lab, AET Sample No., and various chemical parameters (Alkalinity, Ammonia Nitrogen, etc.) with checkboxes for testing and handwritten values.

Client Type: [] DPW [X] NPDES [] RCRA [] Drinking Water [] Other
Approved By: KFW
All samples are preserved per EPA protocol

Comments: QUARTERLY March/June Sept/Dec First Week CHRONIC
SAMPLE START DATE: 9-9-13 TIME: 2350
SAMPLE END DATE: 9-10-13 TIME: 2350
Prefered Communication Cell:(251) 463-7042
EMAIL: msims@mawss.com or Emily Tuggle 251-378-3501

NOTE: A Positive Response Below Mandates Additional Information on Back Page!!
METALS, Total []
RCRA Hazardous Waste []
RADIOLOGICAL []
SPECIFIC ORGANICS []
MICROBIOLOGY []
BIOASSAY/BIOOTOXICITY [X]
OTHER (Define) []

1309124

METALS

OTHER ANALYSES REQUESTED

#1

#2

#3

#4

RCRA Hazardous Waste

RADIOLOGICAL

SPECIFIC ORGANICS

MICROBIOLOGY

BIOASSAY / BIOTOXICITY

AET Sample No.						Comments
Aluminum	(Al)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Antimony	(Sb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Arsenic	(As)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Barium	(Ba)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Beryllium	(Be)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bismuth	(Bi)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boron	(B)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cadmium	(Cd)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Calcium	(Ca)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chromium	(Cr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chromium, Hexavalent	(CrVI)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cobalt	(Co)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Copper	(Cu)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Iron	(Fe)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lead	(Pb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Magnesium	(Mg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Manganese	(Mn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mercury	(Hg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Molybdenum	(Mo)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Nickel	(Ni)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Potassium	(K)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Selenium	(Se)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Silicon	(Si)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Silver	(Ag)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sodium	(Na)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Strontium	(Sr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Thallium	(Tl)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tin	(Sn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Titanium	(Ti)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Vanadium	(V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Zinc	(Zn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ignitability (Flash Pt.)	(FP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Corrosivity	(Corr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Reactivity (CN & S)	(RXCNS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-Metals	(TM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-Pest/Herb	(TP/H)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-BNA	(TBNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-VOA	(TVOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Gross Alpha		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Gross, Beta		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Radium, T.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Radium, 226/228		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Volatiles	(VOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Semi-Volatiles	(BNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pesticides/PCB)	(PEST/PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCB Only	(PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPH/Diesel	(TPH/D)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPH/Gasoline	(TPH/G)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BTEX	(BTEX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
THM's	(THM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other (Define)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fecal Coliform	(FC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Total Coliform	(TC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other (Define)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Acute		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chronic		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Daphnia magna/pulex		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mysid shrimp		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pimephales promelas		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ceriodaphnia		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cyprinodon		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

ANALYTICAL AND ENVIRONMENTAL TESTING

1309124

TOXICITY SAMPLE FLOW SHEET

It is imperative that this form be completely filled out.

Client MAWSS / C.C. Williams
Site Effluent
Initial Flow Meter Reading 1811.126
UNITS OF FLOW MGD 28.370

Date of Collection	Time of Collection	Flow Meter Reading
9-10-13	2350	1831.4 1831.496

This information will be used to calculate the flow weighted composite aliquots.

Analytical & Environmental Testing, Inc.

Sample Receipt Check List--Required for Regulatory Samples only!!

filename:g:\chcklist\Sample Receipt Checklist 2009.xls

Last revised: 07/15/2009

Date: 09/11/13
 Login Person: KFW

Project Number: 1309124

Samples received by [AET, UPS, FedEx, BUS] **CIRCLE ONE**
MUST ATTACH SHIPPING BILL OR COPY TO COC

	YES	NO	N/A	Comments
COC Present, Correct, & Complete? (name/address, sample id, division, client type)	✓	*		
SAMPLES WITHIN HOLDING TIME?	✓	*		
Customer must not be allowed to leave until this is verified				
Samples delivered on ice?	✓	*		
Temperature of Samples	2.8°	*		N/A if sample date=received date
COC and Sample Labels Agree?	✓	*		
Preserved to <2 (Metals, TOC, COD, NH3, TKN TPHOS, O&G, PHENOL, HARD) Circle Failure		*	✓	N/A if testing other than listed
Preserved to >12 CN, >9 S2 Circle Failure		*	✓	N/A if testing other than listed
Correct Sample Containers?	✓	*		
Containers intact?	✓	*		
Volume adequate?	✓	*		
Zero Headspace VOA/TOX		*	✓	
Custody seal on shipping container?			✓	not a requirement
Custody seal on bottles?	✓			not a requirement

*** A "NO" response mandates a "Sample Condition Notification" to be either signed on dock upon delivery or faxed to the customer ASAP**



AET Project No.: 1309124
Log In Person: KFW
Log In Date/Time: 09/13/13

Analytical Request Form / Chain of Custody

Sample Site: Clifton C. Williams WWTP 0011
Client ID:
Sample Date: Please Refer to 12
Sample Time: Comments
Matrix Code: A
Storage Upon Arrival At Lab: Temp C ICE Y N
AET Sample No. 3

Division: MOB
Client Type: Approved
[] DPW
[X] NPDES
[] RCRA
[] Drinking Water
[] Other

All samples are preserved per EPA protocol

Comments

Company: MAWSS
Site Contact: Mike Sims
Report To: Mike Sims
Address: 1600 Yeend St.
City: Mobile, AL
State & Zip Code: 36603
Phone#: (251) 378-3503 - Ext.
FAX#: (251) 433-4090 - Ext.
SAMPLER: Chris Freeman

Table with columns for parameter name, units, and checkboxes for various methods (Alk, NH3, Ash, BOD-5 day, Bromide, BTU, Chloride, Chlorine, Res., COD, Color, Conductivity, Cyanide, Cyanide-ATC, Density, Dissolved Oxygen, Flow, Fluoride, Halogens, Total, Hardness, Moisture%, Nitrite, Nitrate, Oil & Grease, pH, Phenol, Phosphate, Ortho, Phosphorus, Total, Solids, Total, Sulfate, Sulfide, Sulfur, Total, Surfactants, TDS, Temperature, Thiocyanate, TKN, TOC, TON, TOX, TPHC, TSS, Turbidity, VSS). Includes handwritten values like 1.08, 1.7, 0.02, 9.14, 9.10, 7.48.

Date:
Time:
Analyst:

QUARTERLY
March/June
Sept/Dec
First Week
CHRONIC

SAMPLE
START
DATE: 9-11-13
TIME: 2358

SAMPLE
END
DATE: 9-12-13
TIME: 2358

Prefered
Communication
Cell:(251) 463-7042

EMAIL:
msims@
mawss.com

or
Emily Tuggle
251-378-3501

Flow
23.331 m6d

Authorized By:
Sampler: [X] Client [] AET
Transporter: [] Client [X] AET
Bottles: [] Client [X] AET
Matrix Codes Turnaround Surcharge
A=Water [] 24 hrs. 200%
B=Sludge [] 48 hrs. 150%
C=Soil [] 1 week 50%
D=Oil [X] 2 weeks
E=Acid [] 3 weeks
F=Cautic
G=100% Organic
H=Solids&Misc.

NOTE: Multiphase MUST BE split into separate subsamples

CHAIN OF CUSTODY

Relinquished by: Freeman
Date: 9-13-13 Time: 0600
Received by: Kozlowski
Date: 9-13-13 Time: 0600
Relinquished by: Kozlowski
Date: 9-13-13 Time: 9:31am
Received by: Kim Walker
Date: 9/13/13 Time: 9:31am
Relinquished by: Kim Walker
Date: 09/13/13 Time: 2:04pm
Received by: D...
Date: 9/13/13 Time: 2:04p

NOTE: A Positive Response Below Mandates Additional Information on Back Page!!

Table with columns for METALS, Total; RCRA Hazardous Waste; RADIOLOGICAL; SPECIFIC ORGANICS; MICROBIOLOGY; BIOASSAY/BIOTOXICITY; OTHER (Define).

AET Workorder Number:

1309124

METALS

OTHER ANALYSES REQUESTED

#1

#2

#3

#4

AET Sample No.					Comments	
Aluminum	(Al)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Antimony	(Sb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Arsenic	(As)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Barium	(Ba)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Beryllium	(Be)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bismuth	(Bi)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Boron	(B)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cadmium	(Cd)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Calcium	(Ca)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chromium	(Cr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chromium, Hexavalent	(CrVI)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cobalt	(Co)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Copper	(Cu)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Iron	(Fe)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Lead	(Pb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Magnesium	(Mg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Manganese	(Mn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mercury	(Hg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Molybdenum	(Mo)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Nickel	(Ni)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Potassium	(K)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Selenium	(Se)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Silicon	(Si)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Silver	(Ag)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sodium	(Na)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Strontium	(Sr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Thallium	(Tl)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tin	(Sn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Titanium	(Ti)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Vanadium	(V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Zinc	(Zn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RCRA Hazardous Waste						
Ignitability (Flash Pt.)	(FP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Corrosivity	(Corr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Reactivity (CN & S)	(RXCNS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-Metals	(TM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-Pest/Herb	(TP/H)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-BNA	(TBNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TCLP-VOA	(TVOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RADIOLOGICAL						
Gross Alpha		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Gross, Beta		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Radium, T.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Radium, 226/228		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SPECIFIC ORGANICS						
Volatiles	(VOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Semi-Volatiles	(BNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pesticides/PCB)	(PEST/PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
PCB Only	(PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPH/Diesel	(TPH/D)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
TPH/Gasoline	(TPH/G)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BTEX	(BTEX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
THM's	(THM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other (Define)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
MICROBIOLOGY						
Fecal Coliform	(FC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Total Coliform	(TC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other (Define)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BIOASSAY / BIOTOXICITY						
Acute		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Chronic		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Daphnia magna/pulex		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mysid shrimp		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pimephales promelas		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ceriodaphnia		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cyprinodon		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

1309124

ANALYTICAL AND ENVIRONMENTAL TESTING

TOXICITY SAMPLE FLOW SHEET

It is imperative that this form be completely filled out.

Client MAWSS
Site C.C. Williams
Initial Flow Meter Reading 1851.907
UNITS OF FLOW 23.331 m³D

Date of Collection	Time of Collection	Flow Meter Reading
9-12-13	2358	1875.238

This information will be used to calculate the flow weighted composite aliquots.

Analytical & Environmental Testing, Inc.

Sample Receipt Check List--Required for Regulatory Samples only!!

filename:g:\chcklist\Sample Receipt Checklist 2009.xls

Last revised: 07/15/2009

Date: 09/13/13
 Login Person: KTW

Project Number: 1309124 AET Workorder Number

Samples received by [AET, UPS, FedEx, BUS] **CIRCLE ONE**
MUST ATTACH SHIPPING BILL OR COPY TO COC

	YES	NO	N/A	Comments
COC Present, Correct, & Complete? (name/address, sample id, division, client type)	✓	*		
SAMPLES WITHIN HOLDING TIME?	✓	*		
Customer must not be allowed to leave until this is verified				
Samples delivered on ice?	✓	*		
Temperature of Samples		*		N/A if sample date=received date
COC and Sample Labels Agree?	✓	*		
Preserved to <2 (Metals, TOC, COD, NH3, TKN TPHOS, O&G, PHENOL, HARD) Circle Failure	✓	*		N/A if testing other than listed
Preserved to >12 CN, >9 S2 Circle Failure		*	✓	N/A if testing other than listed
Correct Sample Containers?	✓	*		
Containers intact?	✓	*		
Volume adequate?	✓	*		
Zero Headspace VOA/TOX		*	✓	
Custody seal on shipping container?			✓	not a requirement
Custody seal on bottles?	✓			not a requirement

*** A "NO" response mandates a "Sample Condition Notification" to be either signed on dock upon delivery or faxed to the customer ASAP**

STATISTICAL CALCULATIONS

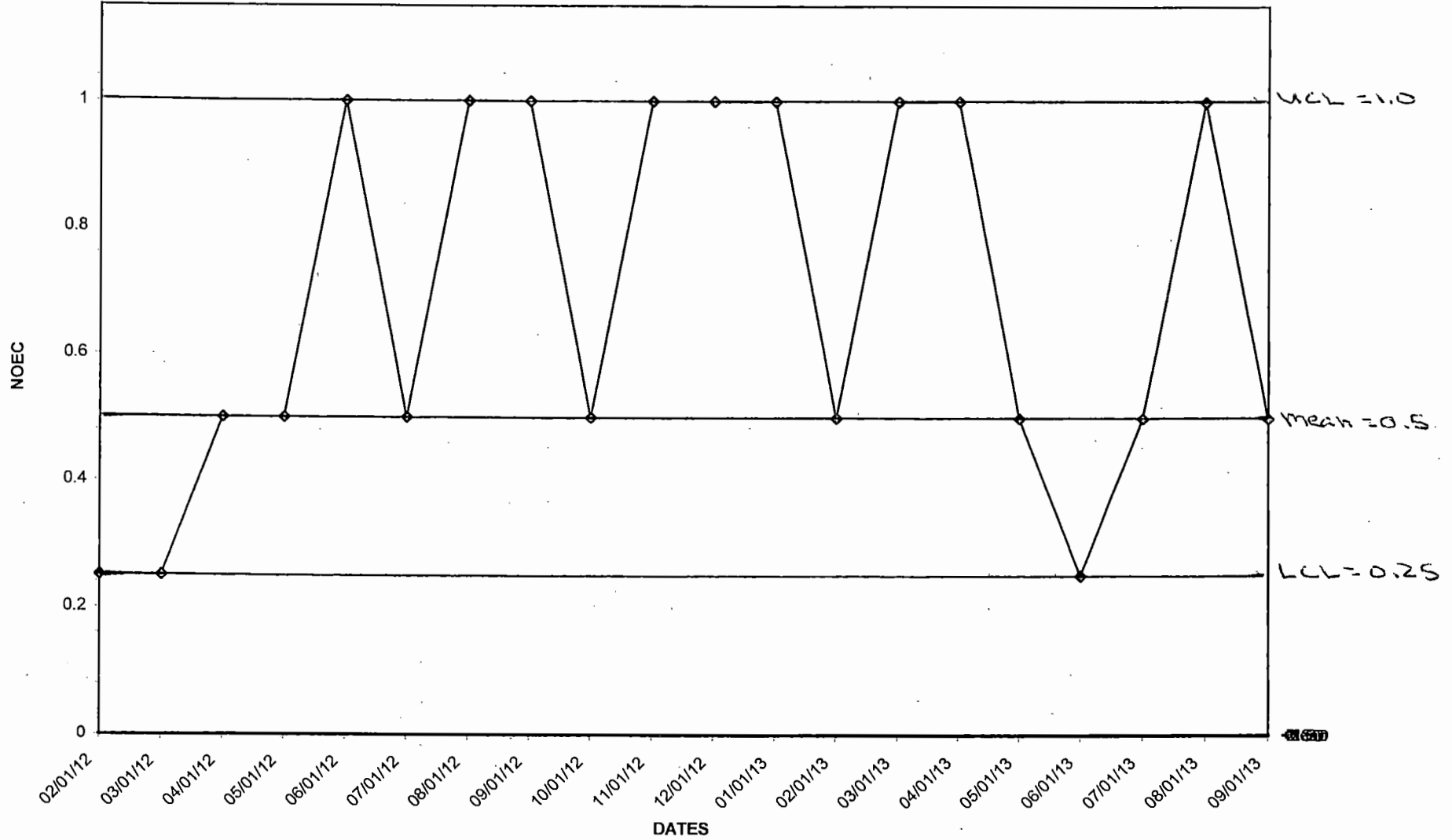
Ceriodaphnia dubia										
Normality Shapiro Wilks										
Last Modified 12/27/96										
Filename:f:\bioassay\CD_repro.xls		0%	19%	0%	19%	Squared	Squared	Sorted	All	
Control	a	29	28	Centered	Centered	Centered	Centered	Centered	Cen.Data	
	b	29	30	2.7	2	7.29	4	-20.1		
	c	25	30	-1.3	2	1.69	4	-12.3		
	d	24	25	-2.3	-3	5.29	9	-8.1		
	e	24	20	-2.3	-8	5.29	64	-6.3		
	f	26	30	-0.3	2	0.09	4	-2.3		
	g	25	31	-1.3	3	1.69	9	-2.1		
	h	28	27	1.7	-1	2.89	1	-2.1		
	i	27	27	0.7	-1	0.49	1	-1.3		
	j	26	32	-0.3	4	0.09	16	-0.3		
	Average	26.3	28		Sum Sq=	32.1	112	-0.1	1.7	
									1.9	
									2.7	
		Overall Mean of Centered Observation					-5.5			4.7
		99					144.1			5.7
				Denominator (D)			149.6			5.9
										7.7
Coeffiance of Difference		DeltaX			Square of					7.9
i	Ai	X(n-i+1)-X(i)		Ai*DeltaX	Ai*DeltaX					7.9
1	0.4734	29		13.7286	188.47446					8.9
2	0.3211	20.2		6.48622	42.07105					
3	0.2565	16		4.104	16.842816					
4	0.2085	14		2.919	8.520561					
5	0.1686	8.2		1.38252	1.9113616					
6	0.1334	7.8		1.04052	1.0826819					
7	0.1013	6.8		0.68884	0.4745005					
8	0.0711	4		0.2844	0.0808834					
9	0.0422	2.2		0.09284	0.0086193					
10	0.014	1.8		0.0252	0.000635					
				Total:	30.75214	259.46757				
Test Static W=	6.3214847			Sq Total:	945.69411					
Limit =	0.868	Normal								
		Normal=W>Limit								
Two Tailed F Test	For variance numbers use toxstat 3.3 run stat summary									
Variance Control=	35.8									
Variance 100%=	80.1									
F=	2.2374302	Variances Homogenous								
Critical F Limit=	8.1									
F < Critical F							F > Critical F			
Equal Variance T-Test							Unequal Variance T-Test			
t=	-0.499352						t=	Not Applicable		
Replicates	10						Replicates =	10		
Critical tw/	18 deg of freedom=	1.74		Adj. Deg. of Freedom,	df=			Not Applicable		
Sp=	7.6124897						C=	Not Applicable		
Different	NO									
Sample is Different if t > Critical t				Revised Equal Variance T-Test						
				Critical t with Adjusted	Deg. of Freedom =	2.354	LOOK UP			
					Significantly Different	Not Applicable				
					Sample is different if t > Adjusted Critical t					

Normality Shapiro Wilks								
Fathead Minnow								
Last Modified 12/27/96								
Filename: PP_grow.xls								
		Wt_fin	Wt_ini	Gain/10	Mean	Centered	Squared	Sorted
Control	a	13.68	8.052	0.5628	0.56675	-0.00395	1.56E-05	-0.06838
	b	14.166	8.821	0.5345		-0.03225	0.00104	-0.0677
	c	13.814	8.125	0.5689		0.00215	4.62E-06	-0.00857
	d	13.49	7.482	0.6008		0.03405	0.001159	-0.00418
							0.00222	-0.0013
			Wt_ini	Gain/10	Mean	Centered		0.0339
19%	a	14.121	8.737	0.5384	0.5712	-0.0328	0.001076	0.0351
	b	14.052	8.163	0.5889		0.0177	0.000313	0.081125
	c	16.003	10.09	0.5913		0.0201	0.000404	
	d	14.463	8.801	0.5662		-0.005	0.000025	
							0.001818	
Overall Mean of Centered Observation						-3.5E-17		
Sum of Squared Centered Observations.						0.004038		
Denominator (D)						0.004038		
Coeffiance of Difference		DeltaX			Square of			
i	Ai	X(n-i+1)-X(i)			Ai*DeltaX	Ai*DeltaX		
1	0.6052	0.1495			0.090477	0.008186		
2	0.3164	0.1028			0.032526	0.001058		
3	0.1743	0.042475			0.007403	5.48E-05		
4	0.0561	0.002875			0.000161	2.6E-08		
Total:					0.130568	0.009299		
Test Static W=	4.22207	Sq Total:			0.017048			
Limit =	0.749	Normal						
Two Tailed F Test		Run toxstat 3.3 to obtain variance numbers						
Variance C	0.002							
Variance 100%	0.004							
F=	2	Variances Homogenous						
Critical F Limit=	11.3							
F < Critical F					F > Critical F			
Equal Variance T-Test					Unequal Variance T-Test			
t=	-0.1149				t=	Not Applicable		
Relicates	4				Replicates =	4		
Critical t w/ 6 deg of freedom	1.944	Adj. Deg. of Freedom, df=			Not Applicable			
Sp=	0.054772				C= Not Applicable			
Different:	NO							
Revised Equal Variance T-Test								
Critical t with Adjusted Deg. of Freedom =					2.354			
Significantly Different					Not Applicable			
Sample is Different if t > Critical t					Sample is different if t > Adjusted Critical t			

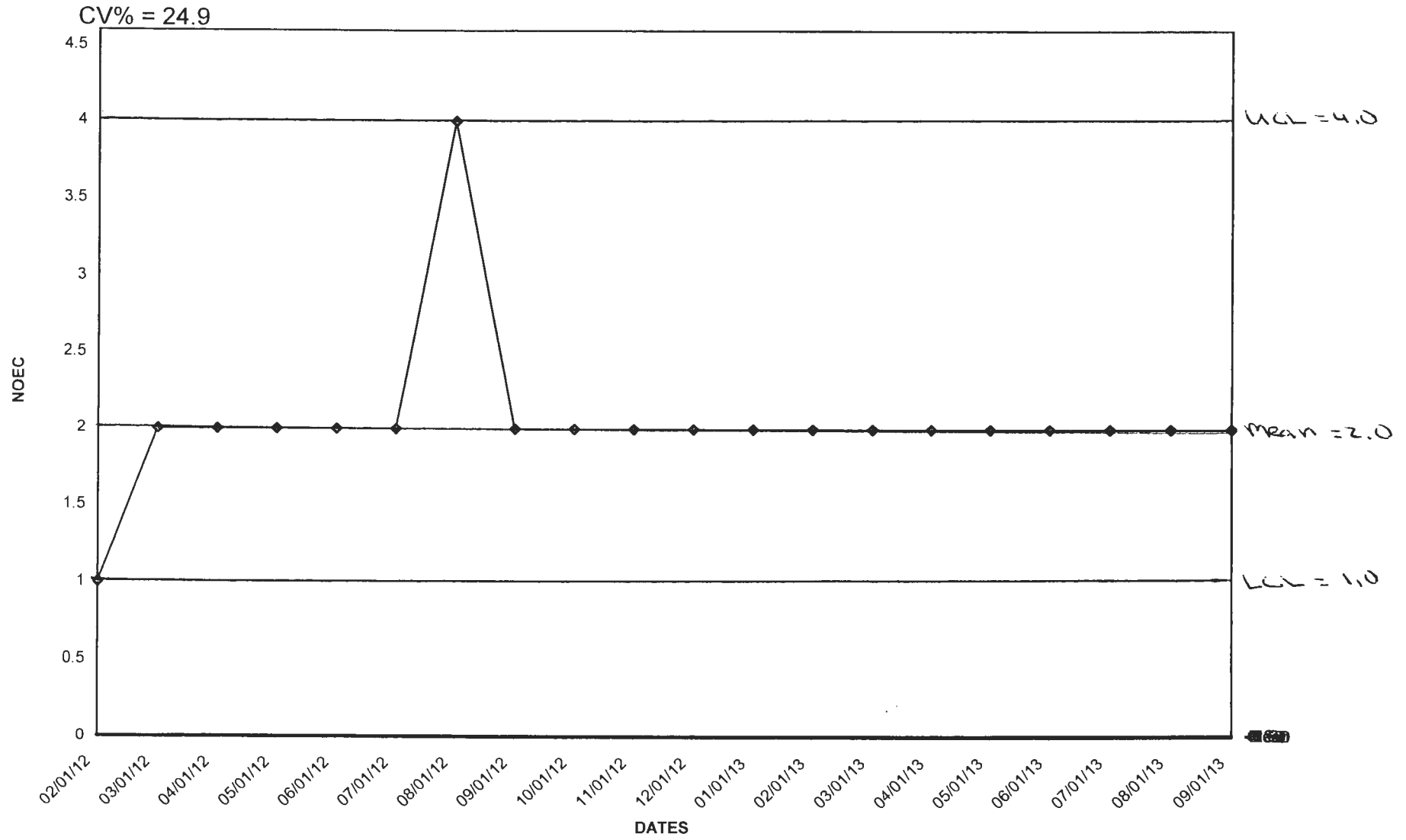
REFERENCE TOXICANT DATA

C. dubia 7-DAY NOEC

CV% = 43.9



P. promelas 7-DAY NOEC



CHRONIC BIOASSAY CONTROL AND 100% EFFLUENT CHEMICAL TABLE

AET PROJECT NO.: September Ref Tox

CLIENT: AET

SAMPLE DATE/DESIGNATION: 9/10/13 NaCl

BEGINNING DATE OF BIOASSAY: 9/10/13

SPECIES (circle): C. dubia P. promelas

INITIAL CHEMISTRIES- CONTROL 0% MEASURE EACH NEW BATCH							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	9/10/13	9/11/13	9/12/13	9/13/13	9/14/13	9/15/13	9/16/13
TIME	11:05am	11:15am	10:00am	10:10am	10:04am	11:02am	1:20pm
INITIALS	SP	SP	SP	GRA	GRA	GRA	SP
ALK	64			62			
COND	341			310			
DO	7.50			7.85			
HARD	84			84			
pH	8.17			8.19			
TRC	0.02			0.00			

100 % EFFLUENT SAMPLE MEASURE EACH NEW SAMPLE (pH - daily)							
DATE	9/10/13	9/11/13	9/12/13	9/13/13	9/14/13	9/15/13	9/16/13
TIME	11:05am	11:15am	10:00am	10:10am	10:04am	11:02am	9:20pm
INITIALS	SP	SP	SP	GRA	GRA	GRA	SP
ALK	58						
COND	21800						
DO	8.34						
HARD	96						
pH	7.97						
TRC	0.01						

The pH of the effluent sample must be run daily.

NOTES:

CHRONIC BIOASSAY INITIAL CHEMICAL TABLE

AET PROJECT NO.: September Ref Tox
 CLIENT: AET
 SAMPLE DATE/DESIGNATION: 9/10/13 / NaCl
 BEGINNING DATE OF BIOASSAY: 9/10/13
 SPECIES (circle): C. dubia P. promelas

INITIAL CHEMISTRIES - CONTROL 0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	9/10/13	9/11/13	9/12/13	9/13/13	9/14/13	9/15/13	9/16/13
TIME	11:05 am	11:15 am	10:00 am	10:10 am	10:04 am	11:02 am	1:20 pm
INITIALS	SP	SP	SP	GRA	GRA	GRA	SP
DO	7.50	7.80	8.15	7.80	7.47	7.73	7.96
DILUTION 1 - 0.25 PPT							
DO	7.96	7.63	7.84	7.74	7.29	7.80	7.83
DILUTION 2 - 0.5 PPT							
DO	7.82	8.61 7.50	7.95	7.72	7.30	7.59	7.51
DILUTION 3 - 1 PPT							
DO	7.90	7.54	7.63	7.75	7.54	7.47	7.57
DILUTION 4 - 2 PPT							
DO	7.92	7.37	7.77	7.77	7.42	7.62	7.28
DILUTION 5 - 4 PPT							
DO	7.89	7.29	7.91	7.86	7.58	7.59	7.44
DILUTION 6 - 8 PPT							
DO	7.93	7.54	7.98	7.79	7.75	7.78	7.49
DILUTION 7 - 16 PPT ^{to} _{SPM} ^{9/11/13}							
DO	8.07	7.66	/	/	/	/	/
TIME = Time the dilution was made.							
NOTES:							

DE
SPM
9/10/13

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

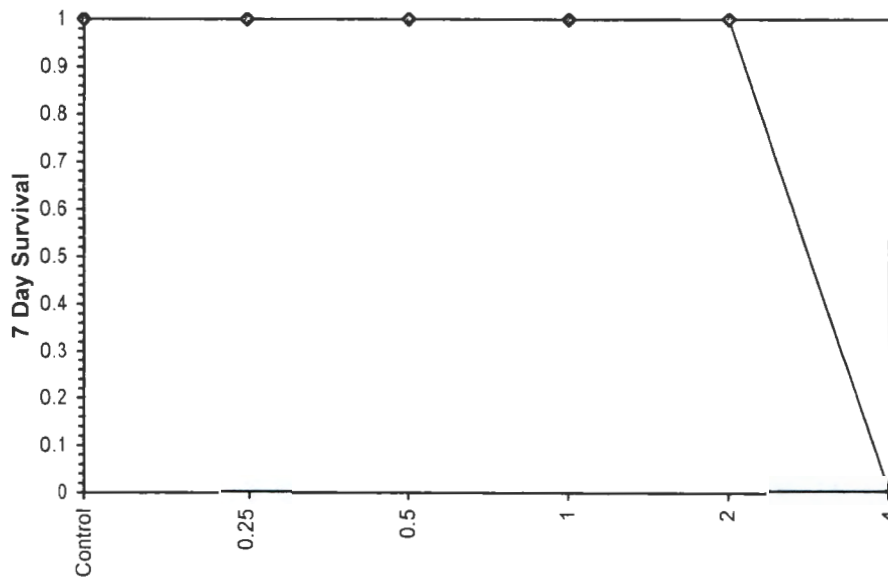
Start Date: 9/10/2013 12:00 Test ID: Ref Tox Sample ID: REF-Ref Toxicant
 End Date: 9/16/2013 10:00 Lab ID: Ref Tox Sample Type: NACL-Sodium chloride
 Sample Date: 9/10/2013 11:05 Protocol: EPAF 94-EPA Freshwater Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-ppt	1	2	3	4	5	6	7	8	9	10
Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical
Control	1.0000	1.0000	0	10	10	10		
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500
2	1.0000	1.0000	0	10	10	10	1.0000	0.0500
4	0.0000	0.0000	10	0	10	10		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	2	4	2.82843	
Treatments vs Control				

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-Reproduction

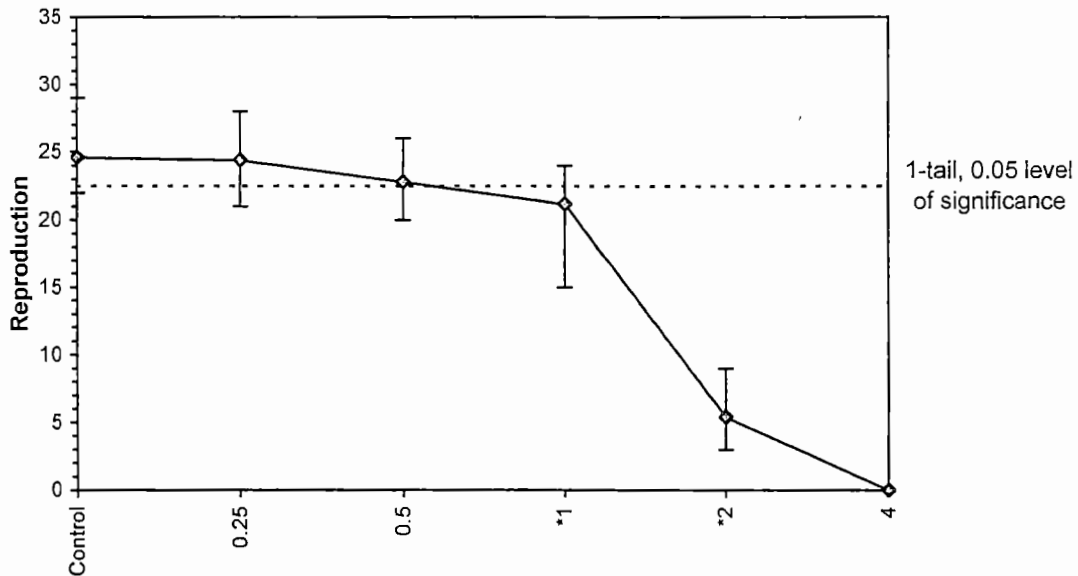
Start Date: 9/10/2013 12:00 Test ID: Ref Tox Sample ID: REF-Ref Toxicant
 End Date: 9/16/2013 10:00 Lab ID: Ref Tox Sample Type: NACL-Sodium chloride
 Sample Date: 9/10/2013 11:05 Protocol: EPAF 94-EPA Freshwater Test Species: CD-Ceriodaphnia dubia
 Comments:

Conc-ppt	1	2	3	4	5	6	7	8	9	10
Control	22.000	23.000	25.000	25.000	24.000	29.000	26.000	23.000	23.000	26.000
0.25	25.000	26.000	21.000	28.000	24.000	26.000	25.000	22.000	25.000	22.000
0.5	22.000	20.000	25.000	26.000	23.000	24.000	24.000	21.000	20.000	23.000
1	24.000	15.000	21.000	22.000	21.000	24.000	23.000	20.000	21.000	21.000
2	6.000	6.000	3.000	4.000	3.000	6.000	6.000	6.000	9.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-ppt	Transform: Untransformed							t-Stat	1-Tailed Critical	MSD
	Mean	N-Mean	Mean	Min	Max	CV%	N			
Control	24.600	1.0000	24.600	22.000	29.000	8.397	10			
0.25	24.400	0.9919	24.400	21.000	28.000	8.896	10	0.209	2.223	2.129
0.5	22.800	0.9268	22.800	20.000	26.000	8.965	10	1.879	2.223	2.129
*1	21.200	0.8618	21.200	15.000	24.000	12.139	10	3.550	2.223	2.129
*2	5.400	0.2195	5.400	3.000	9.000	32.896	10	20.046	2.223	2.129
4	0.000	0.0000	0.000	0.000	0.000	0.000	10			

Auxiliary Tests	Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates normal distribution ($p > 0.01$)	0.97808	0.93	-0.3116	0.64009						
Bartlett's Test indicates equal variances ($p = 0.87$)	1.25495	13.2767								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	0.5	1	0.70711		2.12945	0.08656	656.12	4.58667	5.7E-25	4, 45
Treatments vs Control										

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 9/10/2013 12:00 Test ID: Ref Tox Sample ID: REF-Ref Toxicant
 End Date: 9/16/2013 10:00 Lab ID: Ref Tox Sample Type: NACL-Sodium chloride
 Sample Date: 9/10/2013 11:05 Protocol: EPAF 94-EPA Freshwater Test Species: CD-Ceriodaphnia dubia
 Comments:

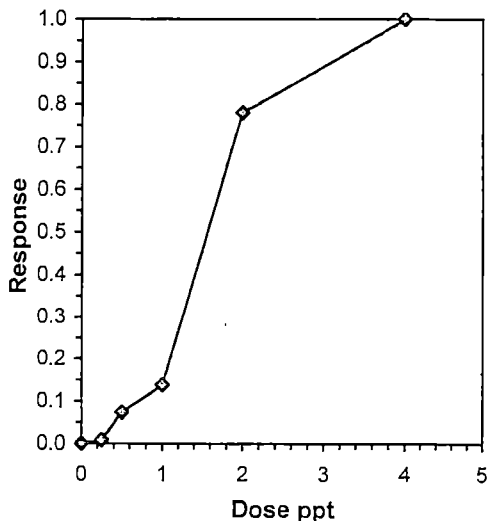
Conc-ppt	1	2	3	4	5	6	7	8	9	10
Control	22.000	23.000	25.000	25.000	24.000	29.000	26.000	23.000	23.000	26.000
0.25	25.000	26.000	21.000	28.000	24.000	26.000	25.000	22.000	25.000	22.000
0.5	22.000	20.000	25.000	26.000	23.000	24.000	24.000	21.000	20.000	23.000
1	24.000	15.000	21.000	22.000	21.000	24.000	23.000	20.000	21.000	21.000
2	6.000	6.000	3.000	4.000	3.000	6.000	6.000	6.000	9.000	5.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-ppt	Transform: Untransformed							Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
Control	24.600	1.0000	24.600	22.000	29.000	8.397	10	24.600	1.0000
0.25	24.400	0.9919	24.400	21.000	28.000	8.896	10	24.400	0.9919
0.5	22.800	0.9268	22.800	20.000	26.000	8.965	10	22.800	0.9268
1	21.200	0.8618	21.200	15.000	24.000	12.139	10	21.200	0.8618
2	5.400	0.2195	5.400	3.000	9.000	32.896	10	5.400	0.2195
4	0.000	0.0000	0.000	0.000	0.000	0.000	10	0.000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.97808	0.93	-0.3116	0.64009
Bartlett's Test indicates equal variances (p = 0.87)	1.25495	13.2767		

Linear Interpolation (200 Resamples)

Point	ppt	SD	95% CL		Skew
IC05	0.4109	0.1418	0.1697	0.6813	0.3905
IC10	0.7063	0.1986	0.3907	1.0271	0.1276
IC15	1.0184	0.1261	0.6844	1.1000	-1.6760
IC20	1.0962	0.0512	0.9826	1.1728	-0.8080
IC25	1.1741	0.0445	1.0762	1.2462	-0.3325
IC40	1.4076	0.0358	1.3314	1.4643	-0.3404
IC50	1.5633	0.0318	1.4969	1.6113	-0.2808



CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: September Ref Tox
 CLIENT: AET
 SAMPLE DATE/DESIGNATION: 9/10/13 / NaCl
 BEGINNING DATE OF BIOASSAY: 9/10/13
 SPECIES (circle): C. dubio, P. promelas

FINAL CHEM.- CONTROL-0% ppt							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	9/11/13	9/12/13	9/13/13	9/14/13	9/15/13	9/16/13	
INITIALS	SMW	SP	ALC	SMW	SP	SP	
DO	7.71	7.62	7.29	7.17	7.47	7.31	
pH	7.91	8.06	8.01	8.04	8.26	8.27	
TEMP	24.7	24.7	24.7	24.7	24.6	24.7	
DILUTION 1- 0.25 ppt %							
DO	7.74	7.46	7.18	7.17	7.62	7.24	
pH	7.90	8.01	7.92	8.00	8.14	8.14	
TEMP	24.7	24.7	24.7	24.7	24.6	24.7	
DILUTION 2- 0.5 ppt %							
DO	7.87	7.54	7.34	7.07	7.71	7.28	
pH	7.95	8.02	7.90	7.99	8.08	8.07	
TEMP	24.7	24.7	24.7	24.7	24.6	24.7	
DILUTION 3- 1 ppt %							
DO	7.45	7.52	7.25	7.24	7.39	7.39	
pH	7.97	8.02	7.87	7.97	8.02	8.01	
TEMP	24.7	24.7	24.7	24.7	24.6	24.7	
DILUTION 4 - 2 ppt %							
DO	8.66	7.47	7.45	7.41	7.62	7.56	
pH	7.91	7.99	7.88	7.93	7.99	7.95	
TEMP	24.7	24.7	24.7	24.7	24.6	24.7	
DILUTION 5 - 4 ppt %							
DO	8.19						
pH	7.93						
TEMP	24.7	24.7					

All final temperatures must be taken from the ghost cups in the chamber.

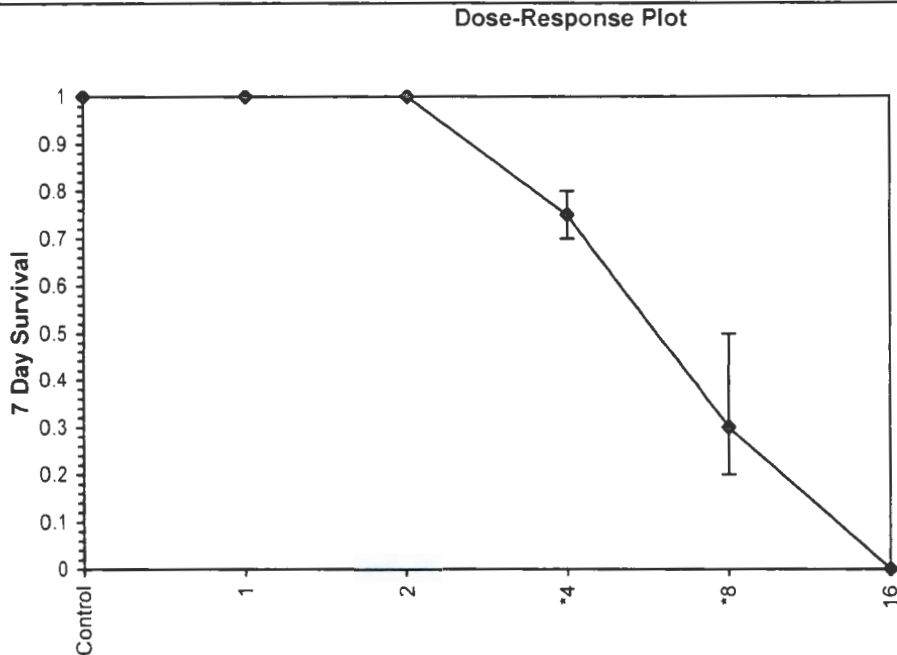
Larval Fish Growth and Survival Test-7 Day Survival

Start Date: 9/10/2013 14:40 Test ID: Ref Tox Sample ID: REF-Ref Toxicant
 End Date: 9/17/2013 14:00 Lab ID: Ref Tox Sample Type: NACL-Sodium chloride
 Sample Date: 9/10/2013 11:05 Protocol: EPAF 94-EPA Freshwater Test Species: PP-Pimephales promelas
 Comments:

Conc-ppt	1	2	3	4
Control	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000
2	1.0000	1.0000	1.0000	1.0000
4	0.7000	0.7000	0.8000	0.8000
8	0.5000	0.2000	0.2000	0.3000
16	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Mean	N-Mean	Transform: Arcsin Square Root				N	Rank Sum	1-Tailed Critical
			Mean	Min	Max	CV%			
Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4		
1	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4	18.00	10.00
2	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4	18.00	10.00
*4	0.7500	0.7500	1.0492	0.9912	1.1071	6.383	4	10.00	10.00
*8	0.3000	0.3000	0.5731	0.4636	0.7854	26.477	4	10.00	10.00
16	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	4		

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.75303	0.868	1.41973	5.513
Equality of variance cannot be confirmed				
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	2	4	2.82843	
Treatments vs Control				



Larval Fish Growth and Survival Test-7 Day Growth

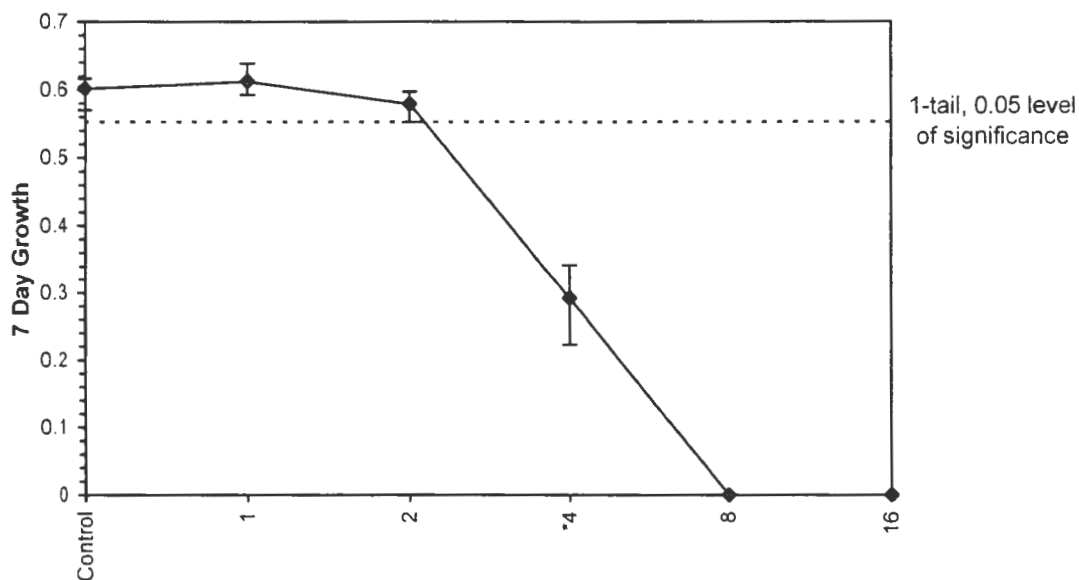
Start Date: 9/10/2013 14:40 Test ID: Ref Tox Sample ID: REF-Ref Toxicant
 End Date: 9/17/2013 14:00 Lab ID: Ref Tox Sample Type: NACL-Sodium chloride
 Sample Date: 9/10/2013 11:05 Protocol: EPAF 94-EPA Freshwater Test Species: PP-Pimephales promelas
 Comments:

Conc-ppt	1	2	3	4
Control	0.5705	0.6167	0.6113	0.6113
1	0.6387	0.6065	0.5929	0.6117
2	0.5763	0.5970	0.5525	0.5896
4	0.3423	0.2918	0.3109	0.2222
8	0.0000	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Mean	N-Mean	Transform: Untransformed					N	t-Stat	1-Tailed Critical	MSD
			Mean	Min	Max	CV%					
Control	0.6025	1.0000	0.6025	0.5705	0.6167	3.561	4				
1	0.6125	1.0166	0.6125	0.5929	0.6387	3.137	4	-0.459	2.290	0.0499	
2	0.5789	0.9608	0.5789	0.5525	0.5970	3.376	4	1.083	2.290	0.0499	
*4	0.2918	0.4844	0.2918	0.2222	0.3423	17.429	4	14.258	2.290	0.0499	
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4				
16	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4				

Auxiliary Tests	Statistic	Critical	Skew	Kurt						
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.94282	0.844	-0.8387	1.89139						
Bartlett's Test indicates equal variances (p = 0.25)	4.15518	11.3449								
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test Treatments vs Control	2	4	2.82843		0.04989	0.08282	0.0945	0.00095	9.6E-09	3, 12

Dose-Response Plot



Larval Fish Growth and Survival Test-7 Day Growth

Start Date: 9/10/2013 14:40 Test ID: Ref Tox Sample ID: REF-Ref Toxicant
 End Date: 9/17/2013 14:00 Lab ID: Ref Tox Sample Type: NACL-Sodium chloride
 Sample Date: 9/10/2013 11:05 Protocol: EPAF 94-EPA Freshwater Test Species: PP-Pimephales promelas
 Comments:

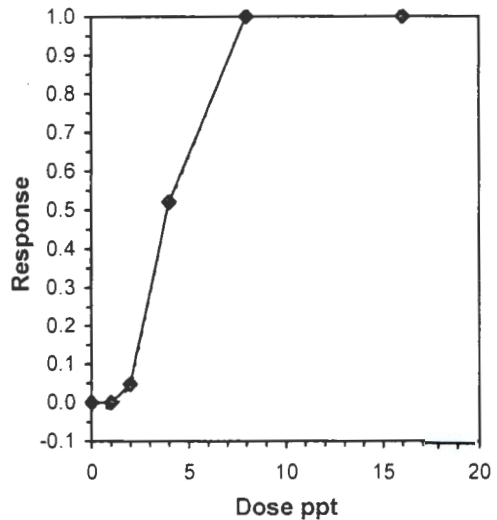
Conc-ppt	1	2	3	4
Control	0.5705	0.6167	0.6113	0.6113
1	0.6387	0.6065	0.5929	0.6117
2	0.5763	0.5970	0.5525	0.5896
4	0.3423	0.2918	0.3109	0.2222
8	0.0000	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Transform: Untransformed							Isotonic	
	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
Control	0.6025	1.0000	0.6025	0.5705	0.6167	3.561	4	0.6075	1.0000
1	0.6125	1.0166	0.6125	0.5929	0.6387	3.137	4	0.6075	1.0000
2	0.5789	0.9608	0.5789	0.5525	0.5970	3.376	4	0.5789	0.9529
4	0.2918	0.4844	0.2918	0.2222	0.3423	17.429	4	0.2918	0.4804
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4	0.0000	0.0000
16	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4	0.0000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.94282	0.844	-0.8387	1.89139
Bartlett's Test indicates equal variances (p = 0.25)	4.15518	11.3449		

Linear Interpolation (200 Resamples)

Point	ppt	SD	95% CL(Exp)		Skew
IC05	2.0123	0.1506	1.3582	2.2073	-1.0757
IC10	2.2240	0.0647	1.9891	2.4026	-0.2938
IC15	2.4356	0.0655	2.2209	2.6322	-0.1982
IC20	2.6472	0.0704	2.4206	2.8666	-0.0859
IC25	2.8588	0.0786	2.5946	3.1007	0.0139
IC40	3.4937	0.1150	3.1093	3.8702	0.1804
IC50	3.9169	0.1708	3.4442	4.5872	0.6264



CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: September Ref Test

CLIENT: AET

SAMPLE DATE/DESIGNATION: 9/10/13 / NaCl

BEGINNING DATE OF BIOASSAY: 9/10/13

SPECIES (circle): C. dubia P. promelas

FINAL CHEM.- CONTROL-0% ppt							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	9/11/13	9/12/13	9/13/13	9/14/13	9/15/13	9/16/13	9/17/13
INITIALS	SMW	SP	ADC	SMW	SP	SP	SRM
DO	7.64	7.02	7.03	6.97	7.64	7.23	6.63
pH	7.91	7.99	7.97	7.72	8.16	8.15	7.60
TEMP	24.7	24.7	24.7	24.7	24.6	24.7	24.7
DILUTION 1- 1 ppt %							
DO	7.29	7.01	7.25	6.57	7.39	7.39	6.26
pH	7.86	7.84	7.83	7.70	7.93	7.87	7.55
TEMP	24.7	24.7	24.7	24.7	24.6	24.7	24.7
DILUTION 2- 2 ppt %							
DO	7.45	6.91	7.31	7.08	7.48	7.36	6.47
pH	7.87	7.79	7.81	7.68	7.88	7.82	7.54
TEMP	24.7	24.7	24.7	24.7	24.6	24.7	24.7
DILUTION 3- 4 ppt %							
DO	7.47	6.90	7.43	6.98	7.29	7.45	6.41
pH	7.88	7.69	7.77	7.64	7.81	7.83	7.51
TEMP	24.7	24.7	24.7	24.7	24.6	24.7	24.7
DILUTION 4- 8 ppt %							
DO	7.63	6.76	7.21	6.82	7.20	7.11	6.04
pH	7.83	7.62	7.69	7.55	7.70	7.63	7.41
TEMP	24.7	24.7	24.7	24.7	24.6	24.7	24.7
DILUTION 5- 16 ppt %							
DO	7.45						
pH	7.85						
TEMP	24.7	24.7					

All final temperatures must be taken from the ghost cups in the chamber.

CHRONIC P.p. BIOASSAY ORGANISM TABLE

CLIENT: AET AET PROJECT NO.: September Ref Tox
 SAMPLE DATE: 9/10/13 SAMP. DESIGNATION: NaCl
 BEGINNING DATE: 9/10/13 ENDING DATE: 9/17/13
 RANDOMIZATION TEMPLATE #: 12 P. promelas LOT #: 3220

HOUR	DAY1	DAY2	DAY3	DAY4	DAY5	DAY6	DAY7	END
INITIALS	ASG	ASG	ASG	ASG	GRA	GRA	ASG	A.C
TIME	2:40 pm	1:35 pm	1:30 pm	1:00 pm	12:55 pm	1:05 pm	3:00 pm	2:00 pm
CONTROL - 0% ppt								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E								
DILUTION 1 - 1 ppt %								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E								
DILUTION 2 - 2 ppt %								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E								
DILUTION 3 - 4 ppt %								
LIVE A	10	10	10	10	10	10	7	7
LIVE B	↓	↓	↓	↓	↓	↓	7	7
LIVE C	↓	↓	↓	↓	↓	↓	8	8
LIVE D	↓	↓	↓	↓	↓	↓	9	8
LIVE E								
DILUTION 4 - 8 ppt %								
LIVE A	10	10	10	10	4	9	7	5
LIVE B	↓	↓	8	6	6	5	3	2
LIVE C	↓	↓	10	9	6	5	3	2
LIVE D	↓	↓	10	7	4	4	3	3
LIVE E								
DILUTION 5 - 16 ppt %								
LIVE A	10	0	—————					
LIVE B	↓	↓						
LIVE C	↓	↓						
LIVE D	↓	↓						
LIVE E								

TIME = The time the organisms are placed into new dilution water. This

Last Modified: 10/20/11 by ANC

Filename: G:/benchsheet/NewLims/P.promelas Wt Gain.xls

Company Name : AET

Initials : AJC

Project Number : REF Tox SEPT. 2013

Beginning Oven Temp: 110°C

Time : 8:30pm

Organism Name : P.promelas

Date : 9/17/13

End Oven Temp: 110°C

Beginning Date of Test : 9/10/13

Time : 9:00am

Ending Date of Test : 9/17/13

Date : 9/18/13

Concentration		Initial Wt of Pad (mg)	Final Wt of Pad (mg)
0 PPT	A	8.364	14.069
	B	8.289	14.456
	C	8.308	14.421
	RT 1	8.387	14.500
	E		
1 PPT	A	8.362	14.749
	B	8.388	14.453
	C	8.575	14.504
	RT 2	8.806	14.923
	E		
2 PPT	A	8.508	14.271
	B	8.514	14.484
	C	6.582	12.107
	RT 3	7.104	13.000
	E		
4 PPT	A	10.539	13.962
	B	8.695	11.613
	C	7.566	10.675
	RT 4	7.508	9.730
	E		
	A		
	B		
	C		
	D		
	E		
	A		
	B		
	C		
	D		
	E		

COPIES OF HANDWRITTEN RAW DATA SHEETS

CHRONIC BIOASSAY CONTROL AND 100% EFFLUENT CHEMICAL TABLE

AET PROJECT NO.: 1309124

CLIENT: MAWSS (CC Williams)

SAMPLE DATE/DESIGNATION: 9/7 - 8/13 1001

BEGINNING DATE OF BIOASSAY: 9/10/13

SPECIES (circle): C. dubia, P. promelas

INITIAL CHEMISTRIES- CONTROL 0% MEASURE EACH NEW BATCH							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	9/10/13	9/11/13	9/12/13	9/13/13	9/14/13	9/15/13	9/16/13
TIME	9:50am	10:20am	9:25am	9:35	9:22am	10:20am	10:55am
INITIALS	SP	SP	SP	GRA	GRA	GRA	AJC
ALK	64			62			
COND	341			310			
DO	7.50			7.85			
HARD	84			84			
pH	8.17			8.19			
TRC	0.02			0.00			
100 % EFFLUENT SAMPLE MEASURE EACH NEW SAMPLE (pH - daily)							
DATE	9/10/13	9/11/13	9/12/13	9/13/13	9/14/13	9/15/13	9/16/13
TIME	9:50 am	10:20am	9:25am	9:35am	9:22am	10:20am	10:55am
INITIALS	SP	SP	SP	GRA	GRA	GRA	AJC
ALK	136		180		108		
COND	944		1402		910		
DO	9.66		10.04		9.14		
HARD	120		148		108		
pH	7.78	7.60	7.90	7.70	7.48	7.33	7.67
TRC	0.01		0.01		0.02		
The pH of the effluent sample must be run daily.							
NOTES:							

CHRONIC BIOASSAY INITIAL CHEMICAL TABLE

AET PROJECT NO.: 130 9124
 CLIENT: MAWSS (CC Williams)
 SAMPLE DATE/DESIGNATION: 9/7-8/13 1001
 BEGINNING DATE OF BIOASSAY: 9/10/13
 SPECIES (circle): C. dubia / P. promelas

INITIAL CHEMISTRIES- CONTROL 0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	9/10/13	9/11/13	9/12/13	9/13/13	9/14/13	9/15/13	9/16/13
TIME	9:50a	10:20a	9:25a	9:35a	9:22a	10:20a	10:55a
INITIALS	SP	SP	SP	GRA	GRA	GRA	ASC
DO	7.50	7.80	8.15	7.80	7.77	7.73	7.96
DILUTION 1 -		19 %					
DO	7.93	8.70	7.76	7.81	7.61	7.76	7.53
DILUTION 2 -		%					
DO							
DILUTION 3 -		%					
DO							
DILUTION 4 -		%					
DO							
DILUTION 5 -		%					
DO							
TIME = Time the dilution was made.							
NOTES:							

CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: 1309124
 CLIENT: MAWSS (CC Williams)
 SAMPLE DATE/DESIGNATION: 9/7 - 8/13 /001
 BEGINNING DATE OF BIOASSAY: 9/10/13
 SPECIES (circle): C. dubia P. promelas

FINAL CHEM.- CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	9/10/13	9/12/13	9/13/13	9/14/13	9/15/13	9/16/13	
INITIALS	SP	SP	ALC	SMW	SP	SP	
DO	8.38	7.64	7.55	7.00	7.87	7.64	
pH	7.94	7.95	7.95	8.02	8.10	7.95	
TEMP	24.7	24.7	24.7	24.7	24.6		
DILUTION 1- 19 %							
DO	7.84	7.56	7.27	7.37	7.51	7.51	
pH	7.92	7.99	8.01	7.99	8.08	7.99	
TEMP	24.7	24.7	24.7	24.7	24.6	24.7	
DILUTION 2 - %							
DO							
pH							
TEMP							
DILUTION 3- %							
DO							
pH							
TEMP							
DILUTION 4 - %							
DO							
pH							
TEMP							
DILUTION 5 - %							
DO							
pH							
TEMP							

All final temperatures must be taken from the ghost cups in the chamber.

CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: 1309124
 CLIENT: MAWSS (CC Williams)
 SAMPLE DATE/DESIGNATION: 9/7-8/13 1001
 BEGINNING DATE OF BIOASSAY: 9/10/13
 SPECIES (circle): C. dubia, P. promelas

FINAL CHEM.- CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	9/11/13	9/12/13	9/13/13	9/14/13	9/15/13	9/16/13	9/17/13
INITIALS	ASC	SP	ASC	SMW	SP	SP	SBM
DO	9.01	7.26	7.28	6.88	7.49	7.57	6.65
pH	8.04	7.86	7.89	7.81	8.00	7.94	7.85
TEMP	24.7	24.7	24.7	24.7	24.6	24.7	24.7
DILUTION 1- 19 %							
DO	9.13	7.15	7.07	6.95	7.09	7.21	6.14
pH	8.01	7.88	7.87	7.79	7.91	7.89	7.67
TEMP	24.7	24.7	24.7	24.7	24.6	24.7	24.7
DILUTION 2- %							
DO							
pH							
TEMP							
DILUTION 3- %							
DO							
pH							
TEMP							
DILUTION 4 - %							
DO							
pH							
TEMP							
DILUTION 5 - %							
DO							
pH							
TEMP							

All final temperatures must be taken from the ghost cups in the chamber.

C. dubia

LEDGER

#a - Number of Aborted neonates

#B - Brood number

check mark - one mother has been added to the test chamber, it also means that the mother is still alive.

#d - Number of neonates born dead.

perpendicular line - means that all test chambers are the same as above.

- number of neonates born

⤵ - split brood

X - Death of mother

0 - Zero neonates

CHRONIC P.p. BIOASSAY ORGANISM TABLE

CLIENT: Mawss (CC Williams) AET PROJECT NO.: 1309124
 SAMPLE DATE: 9/8/13 SAMP. DESIGNATION: 001
 BEGINNING DATE: 9/10/13 ENDING DATE: 9/17/13
 RANDOMIZATION TEMPLATE #: 4 P. promelas LOT #: 3220

HOUR	DAY1	DAY2	DAY3	DAY4	DAY5	DAY6	DAY7	END
INITIALS	AJC	AJC	AJC	AJC	GRA	GRA	AJC	AJC
TIME	11:45am	11:00am	11:15am	11:20am	11:27am <i>PE 9/14/13 GRA</i>	11:35am	11:30am	11:35am
CONTROL - 0%								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E	↓	↓	↓	↓	↓	↓	↓	↓
DILUTION 1 - %								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E	↓	↓	↓	↓	↓	↓	↓	↓
DILUTION 2 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								
DILUTION 3 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								
DILUTION 4 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								
DILUTION 5 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								

TIME = The time the organisms are placed into new dilution water. This

Analytical and Environmental Testing, Inc.

P.promelas Wt. Gain Benchsheet

Last Modified: 10/20/11 by ANC

Filename: G:/benchsheet/NewLims/P.promelas Wt Gain.xls

Company Name: MAWSS

Initials: ASC

Project Number: 1309124

Beginning Oven Temp: 110°C

Time: 8:30 pm

Organism Name: P.promelas

Date: 9/17/13

Beginning Date of Test: 9/10/13

End Oven Temp: 110°C

Time: 9:00am

Ending Date of Test: 9/17/13

Date: 9/18/13

Concentration		Initial Wt of Pad (mg)	Final Wt of Pad (mg)	
0%	A	8.052	13.680	
	B	8.821	14.166	
	C	8.125	13.814	
	M1	D	7.482	13.490
	E			
19%	A	8.737	14.121	
	B	8.163	14.052	
	C	10.090	16.003	
	M2	D	8.801	14.463
	E			
	A			
	B			
	C			
	D			
	E			
	A			
	B			
	C			
	D			
	E			
	A			
	B			
	C			
	D			
	E			



January 24, 2013

Alabama Department of Environmental Management
Water Division/Municipal Section
Post Office Box 301463
Montgomery, AL 36130-1463

Attn: Ms. Emily Anderson

Re: NPDES AL 0023086 Clifton C. Williams WWTP Toxicity Report
NPDES AL 0023094 Wright Smith Jr. WWTP Toxicity Report

Enclosed are the fourth quarter of 2012 DMR toxicity results for the above referenced wastewater treatment plants.

Should you have any questions, please advise.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Sims", is written over a white background.

Michael Sims
Chief Treatment Plant Operator

MS: eh

Enclosures

Cc: Volkert & Associates, Tim Patton

E2 Receipt

Here is your report submission receipt. Click [here](#) to print.

Submission ID: 33710

Submitted on 1/24/2013 8:05:32 AM, at 69.85.232.2

Submitted by: Mike Sims
Mobile Clifton C Williams Wwtp
1600 Yeend St
Mobile, AL 36603
251-378-3503
msims@mawss.com

Report Detail

Summary Discharge Monitoring Report
Facility Name Mobile Clifton C Williams Wwtp
Permit Number AL0023086
Report Frequency MONTHLY
Report Period 12/01/2012 - 12/31/2012

Attachment Detail

Online Attachments

Mail Attachments

Mail to Address:

Mail in the following attachment(s):

Thank you for using E2 system!

Alabama Department of Environmental Management Discharge Monitoring Report (DMR)

PERMITTEE NAME: Mobile Area Water and Sewer System
MAILING ADDRESS: PO BOX 2368
 Mobile, AL 36652
FACILITY: Mobile Clifton C Williams Wwtp
LOCATION: 1600 Yeend Street
 Mobile, AL 36603

PERMIT NUMBER: AL0023086

MONITORING POINT: 001T

COUNTY:

Mobile

Monitoring Period : 2012-12-01 To: 2012-12-31

NO DISCHARGE FROM SITE:

()

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		*****	0		*****	*****	*****				
TOXICITY, CERIODAPHNIA CHRONIC PARAM CODE: 61426 Stage Code: 1 Final Effluent	Sample Measurement	*****	0	9A pass(0)/fail (1)	*****	*****	*****		0	See Permit Requirements	24-Hr Composite
	Permit Requirement	*****	0 Single Sample		*****	*****	*****			See Permit Requirements	24-Hr Composite
TOXICITY, PIMEPHALES CHRONIC PARAM CODE: 61428 Stage Code: 1 Final Effluent	Sample Measurement	*****	0	9A pass(0)/fail (1)	*****	*****	*****		0	See Permit Requirements	24-Hr Composite
	Permit Requirement	*****	0 Single Sample		*****	*****	*****			See Permit Requirements	24-Hr Composite

Name/Title of Principal Executive Officer Or Authorized Agent <i>Chief TPO</i>	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION. I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319 (Penalties under these statutes may include fines up to \$10,000 and or maximum imprisonment of between 6 months to 5 years.)	Signature of Principal Executive Officer Or Authorized Agent <i>[Signature]</i>	Telephone No (251) 378-3503	Date (MM/DD/YY) 01/24/13
		COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)		



Corporate: 1717 Seaboard Drive • Baton Rouge, LA 70810 • 800-364-1930
Louisiana Division: Baton Rouge, LA • (225) 769-1930
Alabama Division: Mobile, AL • (251) 344-9915
Texas Division: Bryan, TX • 800-364-1930

December 13, 2012

Mike Sims
Mobile Water
1600 Yeend St.
Mobile, AL 36603

RE: AET Project # 1212005

Dear Mike,

On December 3, 2012, the first of four composite samples was submitted to A & E Testing, Inc. labeled Clifton C. Williams WWTP 001 (Permit AL0023086, Mobile Water, Mobile County) for the Quarterly ADEM bioassay. The Bioassay/Biototoxicity evaluation was performed as per EPA publication 821-R-02-013. The species requested were Pimephales promelas and Ceriodaphnia dubia. The chronic results were calculated by the Shapiro Wilks Test, the F-Test, the Equal Variance T-test, and the Steels Many-One Rank Test where applicable.

The following is a tabulation of the data generated:

WWTP 001 - 19% Effluent

P. promelas

Survival data = No significant difference between 19% effluent
and the control.

Growth data = No significant difference between 19 % effluent:
and the control.

C. dubia

Survival data = No significant difference between 19% effluent
and the control.

Reproduction data = No significant difference between 19% effluent
and the control.

Sincerely,

A handwritten signature in black ink, appearing to read "Marie Levy", is written over the typed name.

Marie Levy
Toxicity Project Officer

SUBMIT TO MUNICIPAL BRANCH

[ONE COPY OF PAGE 1 OF THE ADEM REPORT FORM ONLY, WITHOUT LAB SUPPORT DATA, IS TO BE
SUBMITTED TO THE MUNICIPAL BRANCH.]

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
TOXICITY TEST REPORT FORM

1. GENERAL:

NPDES PERMIT NO.: AL0023086 DSN: 001 COUNTY: Mobile
 Permittee: Board of Water and Sewer Commissioners of the City of Mobile
 Facility Name: Clifton C. Williams WWTP
 Agent Submitting Report: Mike Sims
 Lab Conducting Toxicity Test(s): Analytical and Environmental Testing, Inc.

Months Toxicity Test(s) Required: Quarterly This Report for Test in Month of: December 2012
 Scheduled Test(s): X Accelerated Test(s): _____
 Number _____ of _____ for failed test of (date): _____
 Test Type Required: _____ 48-hr Acute Screening: _____ 24-hr Acute Screening
X Short-term Chronic Screening _____ Other (specify) _____

Sample #	Test Organism: Pimephales promelas					Test Organism: Ceriodaphnia dubia				
	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid
1	12/4/12	11:40 am	12/11/12	9:45 am	yes	12/6/12	10:50 am	12/12/12	10:10 am	yes

2A. SUMMARY OF RESULTS FOR SCREENING TESTS:

Test Org.	Effluent Conc.	Test Number 1			Test Number 2			Test Number 3			Test Number 4		
		Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow	Supr	Repr	Grow
Pp	19 %	Pass		Pass									
Cd	19 %	Pass	Pass										

2B. SUMMARY OF RESULTS FOR DEFINITIVE TEST:

Test Org.	Test Solution Concentration (%)					LC50	NOEC	Not Determined

3. LABORATORY ANALYSIS OF UNDILUTED SAMPLES:

Sample ID	CBOD ₅ mg/L	TSS mg/L	NH ₃ -N mg/L	pH s.u.	TRC mg/L	Alkalinity mg/L	Hardness (Eff.)mg/L	Hardness (Strm.)mg/L
1	3	8	3	6.2	1.5	82	116	
2	4	8	4	6.4	1.1	86	144	
3	3	6	4	6.6	1.93	98	120	
4	11	7	2	6.4	0.8	64	124	

Municipal Facilities Only

Sample ID	Arsenic μg/L	Cadium μg/L	Chromium μg/L	Copper μg/L	Lead μg/L	Hexavalent Chromium μg/L
Sample ID	Mercury μg/L	Nickel μg/L	Silver μg/L	Zinc μg/L	Total Cyanide μg/L	Other(s) μg/L

Chemical Analyses Performed By (Lab): Board of Water and Sewer Commissioners of the City of Mobile, AET
 Instantaneous Flow: (1) _____ GPM (2) _____ GPM (3) _____ GPM (4) _____ GPM
 Total 24-hr Flow: (1) 17.927 MGD (2) 21.139 MGD (3) 21.252 MGD (4) 20.221 GPM
 Comments: C. dubia test ended one day early due to 60% of the control mothers having 3 broods

I certify under the 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 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 RESPONSIBLE OFFICIAL: _____ DATE: 01/24/13

SUBMIT TO TOXICS UNIT

[SUBMIT ALL TOXICITY REPORT FORMS, ALL SUPPORTING LAB DATA, AND COPIES OF BENCH SHEETS.]

ADEM REPORT FORM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
TOXICITY TEST REPORT FORM

1. GENERAL:

NPDES PERMIT NO.: AL0023086 DSN: 001 COUNTY: Mobile
 Permittee: Board of Water and Sewer Commissioners of the City of Mobile
 Facility Name: Clifton C. Williams WWTP
 Agent Submitting Report: Mike Sims
 Lab Conducting Toxicity Test(s): Analytical and Environmental Testing, Inc.

Months Toxicity Test(s) Required: Quarterly This Report for Test in Month of: December 2012
 Scheduled Test(s): X Accelerated Test(s): _____
 Number _____ of _____ for failed test of (date): _____
 Test Type Required: _____ 48-hr Acute Screening: _____ 24-hr Acute Screening
X Short-term Chronic Screening _____ Other (specify) _____

Sample #	Test Organism: Pimephales promelas					Test Organism: Ceriodaphnia dubia				
	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid	Date/Time MM/DD/YY	Start HH:MM	Date/Time MM/DD/YY	Ended HH:MM	Control Valid
1	12/4/12	11:40 am	12/11/12	9:45 am	yes	12/6/12	10:50 am	12/12/12	10:10 am	yes

2A. SUMMARY OF RESULTS FOR SCREENING TESTS:

Test Org.	Effluent Conc.	Test Number 1			Test Number 2			Test Number 3			Test Number 4		
		Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow	Surv	Repr	Grow
Pp	19 %	Pass		Pass									
Cd	19 %	Pass	Pass										

2B. SUMMARY OF RESULTS FOR DEFINITIVE TEST:

Test Org.	Test Solution Concentration (%)	LC50	NOEC	Not Determined

3. LABORATORY ANALYSIS OF UNDILUTED SAMPLES:

Sample ID	CBOD ₅ mg/L	TSS mg/L	NH ₃ -N mg/L	pH s.u.	TRC mg/L	Alkalinity mg/L	Hardness (Eff.)mg/L	Hardness (Strm.)mg/L
1	3	8	3	6.2	1.5	82	116	
2	4	8	4	6.4	1.1	86	144	
3	3	6	4	6.6	1.93	98	120	
4	11	7	2	6.4	0.8	64	124	

Municipal Facilities Only

Sample ID	Arsenic µg/L	Cadium µg/L	Chromium µg/L	Copper µg/L	Lead µg/L	Hexavalent Chromium µg/L
Sample ID	Mercury µg/L	Nickel µg/L	Silver µg/L	Zinc µg/L	Total Cyanide µg/L	Other(s) µg/L

Chemical Analyses Performed By (Lab):

Board of Water and Sewer Commissioners of the City of Mobile, AET

Instantaneous Flow: (1) _____ GPM (2) _____ GPM (3) _____ GPM (4) _____ GPM
 Total 24-hr Flow: (1) 17.927 MGD (2) 21.139 MGD (3) 21.252 MGD (4) 20.221 GPM

Comments: C. dubia test ended one day early due to 60% of the control mothers having 3 broods

I certify under the 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 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 RESPONSIBLE OFFICIAL: _____

[Handwritten Signature]

DATE: 01/24/13

4. **SAMPLE COLLECTION:**

Split Samples: N/A X Yes _____ (Explain) _____

Samples Collected as Specified in the NPDES Permit: Yes X No _____ (Explain) _____

Receiving Water: Mobile Bay
Design Flow: 28 (MGD)

Sample ID	Sample(s) Collected				Arrival Temp. (°C)	Used in Test(s)			
	MM/DD/YY	HH:MM	-	MM/DD/YY		HH:MM	MM/DD/YY	-	MM/DD/YY
1	12/1/12	2345	-	12/2/12	2355	4.0	12/4/12	-	12/5/12
2	12/3/12	2350	-	12/4/12	2350	4.0	12/6/12	-	12/7/12
3	12/6/12	2355	-	12/7/12	2355	4.0	12/8/12	-	12/9/12
4	12/8/12	2355	-	12/9/12	2355	4.0	12/10/12	-	12/12/12

5. **CONTROL / DILUTION WATER:**

Type	Prepared MM/DD/YY	Begin Use MM/DD/YY	Initial Water Chemistries					
			Hard.	Alk.	pH	Cond.	@	°C
MHRW	12/3/12	12/4/12	88	64	7.67	325	@	25
MHRW	12/6/12	12/7/12	92	64	7.25	328	@	25
MHRW	12/10/12	12/11/12	88	62	8.18	312	@	25
							@	

6. **TOXICITY TEST INFORMATION:**

Test	Organism	Organism	Test Solution Concentrations (%)				
Species	Age	Source					
C. d.	< 24 Hours	In House Culture	0	19			
P. p.	< 24 Hours	In House Culture	0	19			

Test	Test Vessel	Vessel	Solution	Org. / Test	Replicates
Species	Type	Vol. (mL)	Vol. (mL)	Vessel	Per Conc.
C. d.	Disposable plastic cup	30	15	1	10
P. p.	Disposable plastic cup	300	250	10	4

Test	Temp. Range	D. O. Range	pH Range	Light Intensity
Species	(°C)	(mg/L)	(s.u.)	Average (ft.-can.)
C. d.	24.0 - 24.7	7.59 - 8.33	6.17 - 7.00	55 - 60
P. p.	24.0 - 24.7	7.59 - 8.33	6.17 - 7.00	55 - 60

7. **FEEDING**

Not Fed: _____ Fed Daily: X Fed Irregularly: _____ (explain in comments below)
 Brine Shrimp: Fed 0.1 mL suspension of newly hatched larvae 2 times daily
 Yct: Fed 0.1 mL suspension containing 2.06 g/L TSS daily
 Algae: Fed 0.1 mL suspension containing 3.1 X 10⁷ algal cells / mL daily

COMMENTS:

C. dubia test ended one day early due to 60% of the control mothers having 3 broods

Facility Name: Clifton C. Williams WWTP NPDES #: AL0023086 DSN: 001 DATE: 12/13/12

8. REFERENCE TOXICANT TESTS:

TOXICANT: NaCl SOURCE: Sigma-Aldrich 2BT-06-12 CAS #: 7647-14-5

Solution Concentration Unit: mg/L _____ g/L X % _____ Other (specify) PPT

Test	Test Date	Control	Reference Test Solution Concentrations						
Org.	MM/DD - MM/DD	Water	(Control to Highest Conc.)						
C. d.	11/6 - 11/11	MHRW	0	0.25	0.5	1	2	4	
P. p.	11/6 - 11/13	MHRW	0	1	2	4	8	16	

Test	Results and 95% Confidence Interval		This Test Upper and Lower		Number
Org.			CUSUM Chart Control Limit		(N)
C. d.	7 day NOEC = 1.0	0.25 - 1.0	0.25	1.0	20
P. p.	7 day NOEC = 2.0	1.0 - 4.0	1.0	4.0	20

9. TEST CONDITION VARIABILITY:

9A. DEVIATIONS FROM STANDARD TEST CONDITIONS:

9B. TEST SOLUTION MANIPULATIONS OR TEST MODIFICATIONS:

10. REQUIRED REPORT ATTACHMENTS:

Attach copies of chain-of-custody forms, reference toxicant tests, and raw data (bench sheets) pertaining to physical, chemical, and biological measurements for all tests. Include suspended, interrupted, or discontinued toxicity tests data.

COMMENTS:

11C. CHRONIC SCREENING TOXICITY TESTS RESULTS (Freshwater):

TEST ORGANISM: *Ceriodaphnia dubia*

Were the neonates used to begin the test within eight (8) hours of the same age?: YES: X NO: _____
 Did 60% of the CONTROL females produce their third brood?: YES: X NO: _____

SURVIVAL

CHRONIC TOXICITY INDICATED: YES: _____ NO: X
 NO SURVIVAL STATISTICAL ANALYSIS NECESSARY: X
 CONTROL (%) 24h 100 48h 100 END 100 EFFLUENT (%) 24h 100 48h 100 END 100
 Fishers Exact Test: A = See stats, B = _____, a = _____, b = _____

REPRODUCTION (Average Neonates / Female)

CHRONIC TOXICITY INDICATED: YES: _____ NO: X
 CONTROL: 18.8 EFFLUENT: 23.9
 NO REPRODUCTION STATISTICAL ANALYSIS NECESSARY: X
 Normally Distributed: Yes _____ No: _____
 Test Statistic: _____ Critical Value: 0.868 (Parametric)
 Equal Variance: _____ Unequal Variance: _____
 F Statistic: _____ Critical F: 8.1
 t Test Statistic: _____ t Test Critical Value: 1.74
 Sample Rank Sum: _____ # Reps.: _____ Critical Rank Sum: _____ (Non-Parametric)

Comments: C. dubia test ended one day early due to 60% of the control mothers having 3 broods

TEST ORGANISM: *Pimephales promelas*

SURVIVAL

CHRONIC TOXICITY INDICATED: YES: _____ NO: X
 NO SURVIVAL STATISTICAL ANALYSIS NECESSARY: X
 CONTROL (%) 24h 100 48h 100 7day 100 EFFLUENT (%) 24h 100 48h 100 7day 100
 Normally Distributed: Yes _____ No: _____
 Test Statistic: _____ Critical Value: _____ (Parametric)
 Equal Variance: _____ Unequal Variance: _____
 F Statistic: _____ Critical F: _____
 t Test Statistic: _____ t Test Critical Value: _____
 Sample Rank Sum: _____ # Reps.: _____ Critical Rank Sum: _____ (Non-Parametric)

GROWTH (Mean Dry Weight - mg)

CHRONIC TOXICITY INDICATED: YES: _____ NO: X
 CONTROL: 0.7583 EFFLUENT: 0.7404
 NO GROWTH STATISTICAL ANALYSIS NECESSARY: _____
 Normally Distributed: Yes _____ No: X
 Test Statistic: 1.046114 Critical Value: 0.749 (Parametric)
 Equal Variance: X Unequal Variance: _____
 F Statistic: 2 Critical F: 11.3
 t Test Statistic: 0.462463 t Test Critical Value: 1.944
 Sample Rank Sum: _____ # Reps.: _____ Critical Rank Sum: _____ (Non-Parametric)

Comments: _____

ANALYTICAL & ENVIRONMENTAL TESTING'S REPORT FORM

Mobile Water
December 13, 2012

INTRODUCTION

Permit number: AL0023086

Toxicity testing requirements of permit: The permittee shall perform chronic static renewal tests on Mobile Water's 001 effluent with a control and a 19% dilution using Pimephales promelas and Ceriodaphnia dubia in accordance with EPA 821-R-02-013. The critical dilution is defined as 19% effluent. Approved toxicity test methods are: 1000.0 and 1002.0 respectively

Plant Location: Mobile, Alabama

Name of receiving water body: Mobile Bay

Contractor: Analytical and Environmental Testing, INC.

(225) 769-1930

1717 Seabord Dr.

Baton Rouge, LA 70810

Contact: Marie Levy

PLANT OPERATION

Product: Not Applicable

Raw materials: Not Applicable

Operating schedule: 24-hours 7-days

Description of waste treatment: Activated Sludge

Schematic of waste treatment: On file at ADEM

Retention time: 16 Hours

Volume of waste flow: Rated-28 MGD

Total flow:

Design flow of treatment facility at time of sampling: On file at ADEM

SOURCE OF EFFLUENT (AMBIENT) AND DILUTION WATER

Effluent Samples

a. Sampling point: 001

b. Collection dates and times:

Sample WWTP 001	Collection Dates	Collection Times	Lapsed time Collection-delivery
Sample # 1	12/1/12-12/2/12	2345 - 2355	13 hours 30 minutes
Sample # 2	12/3/12-12/4/12	2350 - 2350	15 hours 45 minutes
Sample # 3	12/5/12-12/6/12	2358 - 2358	15 hours 17 minutes
Sample # 4	12/8/12-12/9/12	2355 - 2355	15 hours 5 minutes

Corresponding Total Flows (MGD): 17.927, 21.139, 21.252, and 20.221

b. Sample collection method: Flow proportional auto flow sampler

Mobile Water
December 13, 2012

SOURCE OF EFFLUENT (AMBIENT) AND DILUTION WATER

Continued

d. Physical and chemical data: At Lab site upon sample receipt

LAB RESULTS	ALK mg/L	AMMONIA mg/L	TRC mg/L	COND. Umhos/c	DO mg/L	HARD. mg/L	pH su	TEMP. C
Sample #1	82	5.6	0.01	1112	10.07	116	6.26	4.0
Sample #2	86	4.4	0.01	1185	11.40	144	6.17	4.0
Sample #3	98	9.0	0.02	1506	8.65	120	6.6	4.0
Sample #4	64	4	0.01	841	9.91	124	6.92	4.0

Surface Water Samples: None taken

Dilution Water

- a. Source: Moderately-Hard reconstituted water, laboratory prepared
- b. Pretreatment: Filtered to remove predatory species
- c. Physical and chemical data: See raw data sheets

TEST METHODS

Toxicity test methods: EPA-821-R-02-013 method 1000.0 and 1002.0

End points of test: P. promelas: survival and growth

C. dubia: survival and reproduction

Deviations from reference method: none

Species	Test begin	Time	Test End	Time
<u>P. promelas</u>	12/4/12	11:40 am	12/11/12	9:45 am
<u>C. dubia</u>	12/6/12	10:50 am	12/12/12	10:10 am

Type and volume of test chambers:

P. promelas plastic disposable 250ml cups

C. dubia plastic disposable 30ml graduated medicine cups

Volume of solution used per chamber: P. promelas 250ml/chamber

C. dubia 15ml/chamber

Number of organisms per test chamber: P. promelas 10/chamber

C. dubia 1/chamber

Number of replicate test chambers per treatment:

P. promelas: 4/treatment

C. dubia: 10/treatment

Acclimation of test organisms: P. promelas none needed.

C. dubia none needed.

Mobile Water
December 13, 2012

TEST METHODS

Continued

Test temperature: range = 24.0-24.7 C
Initial test temperature: 25 degrees C prior to renewal.
Was aeration needed? No.
Feeding:
P. promelas: Artemia <24-h fed at 9AM, and 5PM amount: 0.1 ml per feeding.
C. dubia: 0.1ml of YCT and algal suspension once daily.
Were pH control measures implemented? No

TEST ORGANISMS

Scientific name: Pimephales promelas and Ceriodaphnia dubia
Determined by visual taxonomic key reference
Age: P. promelas <24 hours C. dubia <24 hours within 8 hours
Life stage: P. promelas Larval C. dubia neonate
Mean length and weight: Not applicable until the termination of the test
Source: P. promelas In House Culture
C. dubia In House Culture
Diseases and treatment: Methylene blue dip used to treat P.promelas eggs to inhibit fungus growth.

QUALITY ASSURANCE

CHRONIC REFERENCE TOXICANT
Standard toxicant used: NaCl
Source: Sigma-Aldrich Control #: 2BT-06-12
Date and Time of monthly reference toxicant test:
11/6/12 5:00 pm - P. promelas
11/6/12 12:54 pm - C. dubia
Dilution water used in test: Moderately-Hard Reconstituted
Results: P. promelas NOEC: 2.0 PPT Accept. Range (1.0 PPT - 4.0 PPT) PMSD = 16.2 %
C. dubia NOEC: 1.0 PPT Acceptable Range(0.25 PPT - 1.0 PPT) PMSD = NG %
Physical and chemical methods used: Physical testing: EPA-821-R-02-013 and methods
for chemical analysis: pH, DO, Temperature-150.1, 360.1, 170.1

Results

P. promelas: Survival NOEC: 19%
Growth NOEC: 19%
C. dubia: Survival NOEC: 19%
Reproduction NOEC: 19%

Mobile Water
December 13, 2012

CONCLUSIONS AND RECOMMENDATIONS

Relationship between test endpoints and permit limits:

P. promelas: **PASS SURVIVAL**
PASS GROWTH

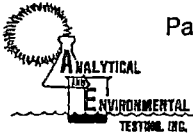
C. dubia: **PASS SURVIVAL**
PASS REPRODUCTION

Actions to be taken: None.

Schedule: The results generated from this bioassay event satisfy the ongoing quarterly permitted toxicity criteria for the Fourth Quarter of 2012. The next routinely scheduled bioassay event for DSN 001 will be March 2013.

Permit Expiration: July 31, 2009.

ORIGINAL CHAINS-OF-CUSTODY



AET Project No.: 1212005
Log In Person: CRT
Log In Date/Time: 12/03/12

Company: MAWSS
Site Contact: Mike Sims
Report To: Mike Sims
Address: 1600 Yeend St.
City: Mobile, AL
State & Zip Code: 36603

Phone#: (251) 378-3503 - Ext.
FAX#: (251) 433-4090 - Ext.

SAMPLER Aneclatic
Authorized By:
Sampler: [X] Client [] AET
Transporter: [] Client [X] AET
Bottles: [] Client [X] AET

Matrix Codes	Turnaround Hrs.	Surcharge
A=Water	[] 24 hrs.	150%
B=Sludge	[] 48 hrs.	100%
C=Soil	[] 1 week	50%
D=Oil	[X] 2 weeks	
E=Acid	[] 3 weeks	
F=Caustic		
G=100% Organic		
H=Solids&Misc.		

NOTE: Multiphase MUST BE split into separate subsamples

CHAIN OF CUSTODY

Relinquished by: [Signature]
Date: 12-3-12 Time: 0600

Received by: [Signature]
Date: 12-3-12 Time: 0600

Relinquished by: [Signature]
Date: 12-3-12 Time: 0910

Received by: [Signature]
Date: 12/03/12 Time: 9:10am

Relinquished by: [Signature]
Date: 12/03/12 Time: 9:50AM

Received by: [Signature]
Date: 12-3-12 Time: 9:50AM

Relinquished by: [Signature]
Date: 12-3-12 Time: 11:55 AM

Received by: [Signature]
Date: 12/3/12 Time: 11:55

Analytical Request Form / Chain of Custody

Sample Site: or Client ID:	Clifton C. Williams WWTP 0011	Division:	MOB
Sample Date:	12-2-12	Client Type:	Approved By <u>[Signature]</u>
Sample Time:	348-2355	<input type="checkbox"/> DPW <input checked="" type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Drinking Water <input type="checkbox"/> Other	
Matrix Code:	A	All samples are preserved per EPA protocol	
Storage Upon Arrival At Lab	Temp C ICE Y N	Temp C ICE Y N	Temp C ICE Y N
AET Sample No.	1	Comments	

Alkalinity (Alk)	[X] 82	[]	[]	[]
Ammonia Nitrogen (NH3)	[X] 5.6	[]	[]	[]
Ash (Ash)	[]	[]	[]	[]
BOD-5 day (BOD)	[]	[]	[]	[]
Bromide (Br)	[]	[]	[]	[]
BTU (BTU)	[]	[]	[]	[]
Chloride (Cl)	[]	[]	[]	[]
Chlorine, Res. (TRC)	[X] 0.01	[]	[]	[]
COD (COD)	[]	[]	[]	[]
Color (Color)	[]	[]	[]	[]
Conductivity (Cond)	[X] 112	[]	[]	[]
Cyanide (CN)	[]	[]	[]	[]
Cyanide-ATC (CNATC)	[]	[]	[]	[]
Density (DEN)	[]	[]	[]	[]
Dissolved Oxygen (DO)	[X] 10.07	[]	[]	[]
Flow (GPM)(field) (Flow)	[X]	[]	[]	[]
Fluoride (F)	[]	[]	[]	[]
Halogens, Total (TX)	[]	[]	[]	[]
Hardness (Hard)	[X] 116	[]	[]	[]
Moisture% (%M)	[]	[]	[]	[]
Nitrite (NO2)	[]	[]	[]	[]
Nitrate (NO3)	[]	[]	[]	[]
Oil & Grease (O&G)	[]	[]	[]	[]
pH (field) (pH)	[X] 6.20	[]	[]	[]
Phenol (Phenol)	[]	[]	[]	[]
Phosphate, Ortho (O Phos)	[]	[]	[]	[]
Phosphorus, Total (T Phos)	[]	[]	[]	[]
Solids, Total (TS)	[]	[]	[]	[]
Sulfate (SO4)	[]	[]	[]	[]
Sulfide (S2)	[]	[]	[]	[]
Sulfur, Total (T Sulfur)	[]	[]	[]	[]
Surfactants (Surf)	[]	[]	[]	[]
TDS (TDS)	[]	[]	[]	[]
Temperature (field) (Temp)	[]	C []	C []	C []
Thiocyanate (SCN)	[]	[]	[]	[]
TKN (TKN)	[]	[]	[]	[]
TOC (TOC)	[]	[]	[]	[]
TON (TON)	[]	[]	[]	[]
TOX (TOX)	[]	[]	[]	[]
TPHC (TPHC)	[]	[]	[]	[]
TSS (TSS)	[]	[]	[]	[]
Turbidity (Turb)	[]	[]	[]	[]
VSS (VSS)	[]	[]	[]	[]

QUARTERLY
March/June
Sept Dec
First Week
CHRONIC

SAMPLE START
DATE: 12-1-12
TIME: 2345

SAMPLE END
DATE: 12-2-12
TIME: 2355

Preferred Communication
Cell: (251) 463-7042

EMAIL:
msims@mawss.com

or
Emily Tuggle
251-378-3501

Flow

17.927 m60

NOTE: A Positive Response Below Mandates Additional Information on Back Page!

METALS, Total	[]	[]	[]	[]
RCRA Hazardous Waste	[]	[]	[]	[]
RADIOLOGICAL	[]	[]	[]	[]
SPECIFIC ORGANICS	[]	[]	[]	[]
MICROBIOLOGY	[]	[]	[]	[]
BIOASSAY/BIO TOXICITY	[X]	[]	[]	[]
OTHER (Define)	[]	[]	[]	[]

AET Sample No.					Comments
METALS					
OTHER ANALYSES REQUESTED					
#1	Aluminum (Al)				
	Antimony (Sb)				
	Arsenic (As)				
	Barium (Ba)				
	Beryllium (Be)				
	Bismuth (Bi)				
	Boron (B)				
	Cadmium (Cd)				
	Calcium (Ca)				
	Chromium (Cr)				
	Chromium, Hexavalent (CrVI)				
#2	Cobalt (Co)				
	Copper (Cu)				
	Iron (Fe)				
	Lead (Pb)				
#3	Magnesium (Mg)				
	Manganese (Mn)				
	Mercury (Hg)				
	Molybdenum (Mo)				
#4	Nickel (Ni)				
	Potassium (K)				
	Selenium (Se)				
	Silicon (Si)				
	Silver (Ag)				
	Sodium (Na)				
	Strontium (Sr)				
	Thallium (Tl)				
	Tin (Sn)				
	Titanium (Ti)				
	Vanadium (V)				
	Zinc (Zn)				
RCRA Hazardous Waste					
	Ignitability (Flash Pt.) (FP)				
	Corrosivity (Corr)				
	Reactivity (CN & S) (RXCNS)				
	TCLP-Metals (TM)				
	TCLP-Pest/Herb (TPH)				
	TCLP-BNA (TBNA)				
	TCLP-VOA (TVOA)				
RADIOLOGICAL					
	Gross Alpha				
	Gross, Beta				
	Radium, T.				
	Radium, 226/228				
SPECIFIC ORGANICS					
	Volatiles (VOA)				
	Semi-Volatiles (BNA)				
	Pesticides/PCB (PEST/PCB)				
	PCB Only (PCB)				
	TPH/Diesel (TPH/D)				
	TPH/Gasoline (TPH/G)				
	BTEX (BTEX)				
	THM's (THM)				
	Other (Define)				
MICROBIOLOGY					
	Fecal Coliform (FC)				
	Total Coliform (TC)				
	Other (Define)				
BIOASSAY / BIOTOXICITY					
	Acute				
	Chronic	X			
	Daphnia magna/pulex				
	Myxid shrimp				
	Pimephales promelas	X			
	Ceriodaphnia	X			
	Cyprinodon				

METALS

OTHER ANALYSES REQUESTED

#1

#2

#3

#4

RCRA Hazardous Waste

RADIOLOGICAL

SPECIFIC ORGANICS

MICROBIOLOGY

BIOASSAY / BIOTOXICITY

1212005

Analytical and Environmental Testing, Inc.
G:\Bioassay\FLOW WEIGHTED\Flow sheet.doc

ANALYTICAL AND ENVIRONMENTAL TESTING

TOXICITY SAMPLE FLOW SHEET

It is imperative that this form be completely filled out.

Client MAWSS
Site CC Williams - 0011
Initial Flow Meter Reading 2725.158
UNITS OF FLOW 17.927 MGD

Date of Collection	Time of Collection	Flow Meter Reading
12-2-12	2355	2743.085

This information will be used to calculate the flow weighted composite aliquots.

1212005

Analytical & Environmental Testing, Inc.**Sample Receipt Check List--Required for Regulatory Samples only!!**

filepath: G:\PLING DEPT

Last revised: 6/7/2011

Date: 12/03/12

Work Order Number: 1212005

Login Person: CRT

Samples received by (AET, UPS, FedEx, BUS) **CIRCLE ONE****MUST ATTACH SHIPPING BILL OR COPY TO COC**

	YES	NO	N/A	Comments
COC Present, Correct, & Complete? (name/address, sample id, division, client type)	✓	*		Chronic tox.
SAMPLES WITHIN HOLDING TIME?	✓	*		
Customer must not be allowed to leave until this is verified				
Samples delivered on ice?	✓	*		
Temperature of Samples	4°C	*		N/A if sample date=received date
COC and Sample Labels Agree?	✓	*		
Preserved to <2 (Metals, TOC, COD, NH3, TKN TPHOS, O&G, PHENOL, HARD) Circle Failure		*	✓	N/A if testing other than listed
Preserved to >12 CN, >9 S Circle Failure		*	✓	N/A if testing other than listed
Correct Sample Containers?	✓	*		
Containers intact?	✓	*		
Volume adequate?	✓	*		
Zero Headspace VOATOX		*	✓	
Custody seal on shipping container?			✓	not a requirement
Custody seal on bottles?	✓			not a requirement

*** A "NO" response mandates a "Sample Condition Notification" to be either signed on dock upon delivery or faxed to the customer ASAP**



AET Project No.: 1212005
Log In Person: CRT
Log In Date/Time: 12/5/12

Company: MAWSS
Site Contact: Mike Sims
Report To: Mike Sims
Address: 1600 Yeend St.
City: Mobile, AL
State & Zip Code: 36603
Phone#: (251) 378-3503 - Ext.
FAX#: (251) 433-4090 - Ext.

SAMPLER: *Korik Wata*
Authorized By: _____
Sampler: Client AET
Transporter: Client AET
Bottles: Client AET

Matrix Codes Turnaround Surcharge
_Hrs. 200%
A=Water 24 hrs. 150%
B=Sludge 48 hrs. 100%
C=Soil 1 week 50%
D=Oil 2 weeks
E=Acid 3 weeks
F=Cautic
G=100% Organic
H=Solids&Misc.

NOTE: Multiphase MUST BE split into separate subsamples

CHAIN OF CUSTODY

Relinquished by: *Korik Wata*
Date: 12-5-12 Time: 06:00
Received by: *Ben Sid*
Date: 12-5-12 Time: 0600
Relinquished by: *Ben Sid*
Date: 12-5-12 Time: 9:38
Received by: *Charity Taylor*
Date: 12/5/12 Time: 9:38am
Relinquished by: *Charity Taylor*
Date: 12/5/12 Time: 1:00pm
Received by: *Ben Sid*
Date: 12-5-12 Time: 2:15 PM
Relinquished by: *Ben Sid*
Date: 12/5/12 Time: 2:18 pm

Analytical Request Form / Chain of Custody

23rd Edition 03/2004

Sample Site: Clifton C. Williams WWTP 0011
Client ID: 0011
Sample Date: 12-4-12
Sample Time: 23:50
Matrix Code: A
Storage Upon Arrival At Lab: Temp ICE Y N
AET Sample No.: 2

Division: MOB
Client Type: DPW NPDES RCRA Drinking Water Other
Approved By: _____
All samples are preserved per EPA protocol

Alkalinity (Alk)	<input checked="" type="checkbox"/>	86	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ammonia Nitrogen (NH3)	<input checked="" type="checkbox"/>	4.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ash (Ash)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BOD-5 day (BOD)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bromide (Br)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BTU (BTU)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chloride (Cl)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chlorine, Res. (TRC)	<input checked="" type="checkbox"/>	0.01	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COD (COD)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Color (Color)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conductivity (Cond)	<input checked="" type="checkbox"/>	1185	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cyanide (CN)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cyanide-ATC (CNATC)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Density (DEN)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dissolved Oxygen (DO)	<input checked="" type="checkbox"/>	11.40	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flow (GPM)(field)	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fluoride (F)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Halogens, Total (TX)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hardness (Hard)	<input checked="" type="checkbox"/>	144	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moisture% (%M)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nitrite (NO2)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nitrate (NO3)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oil & Grease (O&G)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
pH (field) (pH)	<input checked="" type="checkbox"/>	6.17	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Phenol (Phenol)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Phosphate, Ortho (O Phos)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Phosphorus, Total (T Phos)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solids, Total (TS)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sulfate (SO4)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sulfide (S2)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sulfur, Total (T Sulfur)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surfactants (Surf)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TDS (TDS)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temperature (field) (Temp)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thiocyanate (SCN)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TKN (TKN)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOC (TOC)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TON (TON)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TOX (TOX)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TPHC (TPHC)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TSS (TSS)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turbidity (Turb)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VSS (VSS)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: QUARTERLY March/June Sept Dec First Week CHRONIC
SAMPLE START DATE: 12-3-12 TIME: 23:50
SAMPLE END DATE: 12-4-12 TIME: 23:50
Preferred Communication Cell: (251) 463-7042
EMAIL: msims@mawss.com
or Emily Tuggle 251-378-3501

NOTE: A Positive Response Below Mandates Additional Information on Back Page!!

METALS, Total	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RCRA Hazardous Waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RADIOLOGICAL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SPECIFIC ORGANICS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MICROBIOLOGY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BIOASSAY/BIO TOXICITY	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OTHER (Define)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Analytical and Environmental Testing, Inc.
G:\Bioassay\FLOW WEIGHTED\Flow sheet.doc

ANALYTICAL AND ENVIRONMENTAL TESTING

TOXICITY SAMPLE FLOW SHEET

It is imperative that this form be completely filled out.

Client MAWSS
Site C.C. Williams - 0011
Initial Flow Meter Reading 2764.414
UNITS OF FLOW MGD 21.139

Date of Collection	Time of Collection	Flow Meter Reading
<u>12-4-12</u>	<u>23:50</u>	<u>2785.553</u>

This information will be used to calculate the flow weighted composite aliquots.

1212005

Analytical & Environmental Testing, Inc.**Sample Receipt Check List--Required for Regulatory Samples only!!**

filepath: G:\PLING DEPT

Last revised: 6/7/2011

Date: 12/5/12

Work Order Number: 1212005

Login Person: CRT

Samples received by (AET, NPS, FedEx, BUS) **CIRCLE ONE**
MUST ATTACH SHIPPING BILL OR COPY TO COC

	YES	NO	N/A	Comments
COC Present, Correct, & Complete? (name/address, sample id, division, client type)	✓	*		Chronic Tox.
SAMPLES WITHIN HOLDING TIME? Customer must not be allowed to leave until this is verified	✓	*		
Samples delivered on ice?	✓	*		
Temperature of Samples	4°C	*		N/A if sample date=received date
COC and Sample Labels Agree?	✓	*		
Preserved to <2 (Metals, TOC, COD, NH3, TKN TPHOS, O&G, PHENOL, HARD) Circle Failure		*	✓	N/A if testing other than listed
Preserved to >12 CN, >9 S Circle Failure		*	✓	N/A if testing other than listed
Correct Sample Containers?	✓	*		
Containers intact?	✓	*		
Volume adequate?	✓	*		
Zero Headspace VOATOX		*	✓	
Custody seal on shipping container?			✓	not a requirement
Custody seal on bottles?	✓			not a requirement

* A "NO" response mandates a "Sample Condition Notification" to be either signed on dock upon delivery or faxed to the customer ASAP

1212005



Analytical Request Form / Chain of Custody

23rd Edition 03/2004

AET Project No.: 1212005
Log In Person: CBT
Log In Date/Time: 12/7/12 11:05am

Company: MAWSS

Site Contact: Mike Sims

Report To: Mike Sims

Address: 1600 Yeend St.

City: Mobile, AL

State & Zip Code: 36603

Phone#: (251) 378-3503 - Ext.

FAX#: (251) 433-4090 - Ext.

SAMPLER: C. Freeman

Authorized By:

Sampler: [X] Client [] AET
Transporter: [] Client [X] AET
Bottles: [] Client [X] AET

Table with columns: Matrix Codes, Turnaround Hrs., Surcharge. Rows include A=Water, B=Sludge, C=Soil, D=Oil, E=Acid, F=Cautic, G=100% Organic, H=Solids&Misc.

NOTE: Multiphase MUST BE split into separate subsamples

CHAIN OF CUSTODY

Relinquished by: C. Freeman
Date: 12-7-12 Time: 06:00

Received by: S. Sims
Date: 12-7-12 Time: 06:40

Relinquished by: S. Sims
Date: 12-7-12 Time: 9:15

Received by: Charity Taylor
Date: 12/7/12 Time: 9:15am

Relinquished by: Charity Taylor
Date: 12/7/12 Time: 11:30am

Received by: [Signature]
Date: 12-7-12 Time: 11:30AM

Relinquished by: [Signature]
Date: 12-7-12 Time: 11:45AM

Received by: [Signature]
Date: 12-7-12 Time: 11:45am

Header section of the form containing fields for Sample Site (Clifton C. Williams WWTP 0011), Division (MOB), Client Type (NPDES), Sample Date (12/7/12), Sample Time (2358), Matrix Code (A), Storage Upon Arrival At Lab, and AET Sample No. (3).

Main analytical results table with columns for parameter name, units, and checkboxes for detection. Parameters include Alkalinity, Ammonia Nitrogen, Ash, BOD-5 day, Bromide, BTU, Chloride, Chlorine, Res., COD, Color, Conductivity, Cyanide, Cyanide-ATC, Density, Dissolved Oxygen, Flow (GPM)(field), Fluoride, Halogens, Total, Hardness, Moisture%, Nitrite, Nitrate, Oil & Grease, pH (field), Phenol, Phosphate, Ortho, Phosphorus, Total, Solids, Total, Sulfate, Sulfide, Sulfur, Total, Surfactants, TDS, Temperature (field), Thiocyanate, TKN, TOC, TON, TOX, TPHC, TSS, Turbidity, VSS. Values are provided for several parameters like Alkalinity (9.8), Ammonia Nitrogen (9.0), Chlorine, Res. (0.02), Conductivity (1506), Dissolved Oxygen (8.65), pH (6.69), Hardness (120).

Table for METALS, Total; RCRA Hazardous Waste; RADIOLOGICAL; SPECIFIC ORGANICS; MICROBIOLOGY; BIOASSAY/BIOTOXICITY; OTHER (Define). Includes checkboxes for each category.

Comments: QUARTERLY March/June Sept/Dec First Week CHRONIC

SAMPLE START DATE: 12-7-12 TIME: 2358

SAMPLE END DATE: 12-7-12 TIME: 2358

Wrong date 2010 INWH Preferred Communication Cell: (251) 463-7042

EMAIL: msims@mawss.com

or Emily Tuggle 251-378-3501

Flow 21.252 gpd

NOTE: A Positive Response Below Mandates Additional Information on Back Page!!

AET Sample No.				Comments	
METALS					
OTHER ANALYSES REQUESTED					
#1	Aluminum (Al)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Antimony (Sb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Arsenic (As)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Barium (Ba)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Beryllium (Be)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Bismuth (Bi)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Boron (B)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Cadmium (Cd)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Calcium (Ca)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Chromium (Cr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Chromium, Hexavalent (Cr(VI))	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
#2	Cobalt (Co)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Copper (Cu)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Iron (Fe)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Lead (Pb)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
#3	Magnesium (Mg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Manganese (Mn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Mercury (Hg)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Molybdenum (Mo)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Nickel (Ni)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Potassium (K)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Selenium (Se)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Silicon (Si)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Silver (Ag)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Sodium (Na)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Strontium (Sr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Thallium (Tl)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Tin (Sn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Titanium (Ti)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Vanadium (V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Zinc (Zn)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RCRA Hazardous Waste					
	Ignitability (Flash Pt.) (FP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Corrosivity (Corr)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Reactivity (CN & S) (RXCONS)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TCLP-Metals (TM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TCLP-Pest/Herb (TP/H)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TCLP-BNA (TBNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TCLP-VOA (TVOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RADIOLOGICAL					
	Gross Alpha	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Gross, Beta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Radium, T.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Radium, 226/228	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
SPECIFIC ORGANICS					
	Volatiles (VOA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Semi-Volatiles (BNA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Pesticides/PCB (PEST/PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	PCB Only (PCB)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TPH/Diesel (TPH/D)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	TPH/Gasoline (TPH/G)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	BTEX (BTEX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	THM's (THM)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Other (Define)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
MICROBIOLOGY					
	Fecal Coliform (FC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Total Coliform (TC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Other (Define)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
BIOASSAY / BIOTOXICITY					
	Acute	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Chronic	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Daphnia magna/pulex	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Mysid shrimp	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Pimephales promelas	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Ceriodaphnia	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Cyprinodon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

METALS

OTHER ANALYSES REQUESTED

#1

#2

#3

#4

RCRA Hazardous Waste

RADIOLOGICAL

SPECIFIC ORGANICS

MICROBIOLOGY

BIOASSAY / BIOTOXICITY

1212005

Analytical and Environmental Testing, Inc.
G:\Bioassay\FLOW WEIGHTED\Flow sheet.doc

ANALYTICAL AND ENVIRONMENTAL TESTING

TOXICITY SAMPLE FLOW SHEET

It is imperative that this form be completely filled out.

Client MAWSS
Site C.C. Williams
Initial Flow Meter Reading 2806.459
UNITS OF FLOW 21.252 mL

Date of Collection	Time of Collection	Flow Meter Reading
12-7-12	2358	2827.711

This information will be used to calculate the flow weighted composite aliquots.

1212005

Analytical & Environmental Testing, Inc.

Sample Receipt Check List--Required for Regulatory Samples only!!

filepath: G:\SAMPLING DEPT

Last revised: 6/7/2011

Date: 12/7/12
 Login Person: CRT

Work Order Number : 1212005

Samples received by [AET, UPS, FedEx, BUS] **CIRCLE ONE**
MUST ATTACH SHIPPING BILL OR COPY TO COC

	YES	NO	N/A	Comments
COC Present, Correct, & Complete? (name/address, sample id, division, client type)	✓	*		Chronic Tox.
SAMPLES WITHIN HOLDING TIME? Customer must not be allowed to leave until this is verified	✓	*		
Samples delivered on ice?	✓	*		
Temperature of Samples	4°C	*		N/A if sample date=received date
COC and Sample Labels Agree?	✓	*		
Preserved to <2 (Metals, TOC, COD, NH3, TKN TPHOS, O&G, PHENOL, HARD) Circle Failure		*	✓	N/A if testing other than listed
Preserved to >12 CN, >9 S Circle Failure		*	✓	N/A if testing other than listed
Correct Sample Containers?	✓	*		
Containers intact?	✓	*		
Volume adequate?	✓	*		
Zero Headspace VOA/TOX		*	✓	
Custody seal on shipping container?			✓	not a requirement
Custody seal on bottles?	✓			not a requirement

*** A "NO" response mandates a "Sample Condition Notification" to be either signed on dock upon delivery or faxed to the customer ASAP**

1212005



Analytical Request Form / Chain of Custody

23rd Edition 03/2004

AET Project No.: 1212005
Log In Person: CRT
Log In Date/Time: 12/10/12

Company: MAWSS

Site Contact: Mike Sims

Report To: Mike Sims

Address: 1600 Yeend St.

City: Mobile, AL

State & Zip Code: 36603

Phone#: (251) 378-3503 - Ext.

FAX#: (251) 433-4090 - Ext.

SAMPLER: By Jih

Authorized By:

Sampler: [X] Client [] AET

Transporter: [] Client [X] AET

Bottles: [] Client [X] AET

Matrix Codes Turnaround Surcharge

A=Water [] 24 hrs. 150%

B=Sludge [] 48 hrs. 100%

C=Soil [] 1 week 50%

D=Oil [X] 2 weeks

E=Acid [] 3 weeks

F=Caustic

G=100% Organic

H=Solids&Misc.

NOTE: Multiphase MUST BE split into separate subsamples

CHAIN OF CUSTODY

Relinquished by: By Jih

Date: 12-10-12 Time: 0600

Received by: C. Jih

Date: 12-10-12 Time: 0600

Relinquished by: S. Jih

Date: 12-10-2012 Time: 1009

Received by: Charity Jaylor

Date: 12/10/12 Time: 10:09am

Relinquished by: Charity Jaylor

Date: 12/10/12 Time: 11:10am

Received by: Brandon Davis

Date: 12-10-12 Time: 11:10AM

Relinquished by: Brandon Davis

Date: 12-10-12 Time: 1:30 PM

Received by: Heather

Date: 12-10-12 Time: 1:30 pm

Sample Site: Clifton C. Williams WWTP 0011
Sample Date:
Sample Time:
Matrix Code: A
Storage Upon Arrival At Lab: Temp ICE Y N
AET Sample No.

Table with columns for Analyte, Units, and checkboxes. Rows include Alkalinity, Ammonia Nitrogen, Ash, BOD-5 day, Bromide, BTU, Chloride, Chlorine, Res., COD, Color, Conductivity, Cyanide, Cyanide-ATC, Density, Dissolved Oxygen, Flow (GPM)(field), Fluoride, Halogens, Total, Hardness, Moisture%, Nitrite, Nitrate, Oil & Grease, pH (field), Phenol, Phosphate, Ortho, Phosphorus, Total, Solids, Total, Sulfate, Sulfide, Sulfur, Total, Surfactants, TDS, Temperature (field), Thiocyanate, TKN, TOC, TON, TOX, TPHC, TSS, Turbidity, VSS.

NOTE: A Positive Response Below Mandates Additional Information on Back Page!!
METALS, Total
RCRA Hazardous Waste
RADIOLOGICAL
SPECIFIC ORGANICS
MICROBIOLOGY
BIOASSAY/BIOTOXICITY
OTHER (Define)

Division: MOB
Client Type:
Approved By:
[] DPW
[X] NPDES
[] RCRA
[] Drinking Water
[] Other
All samples are preserved per EPA protocol
Comments

QUARTERLY March/June Sept Dec
First Week CHRONIC
SAMPLE START DATE: 12-8-12 TIME: 2355
SAMPLE END DATE: 12-9-12 TIME: 2355
Preferred Communication Cell: (251) 463-7042
EMAIL: msims@mawss.com
or Emily Tuggle 251-378-3501
Eff. Flow: MGD 20.2

	AET Sample No.				Comments
METALS	Aluminum (Al)	[]	[]	[]	[]
	Antimony (Sb)	[]	[]	[]	[]
	Arsenic (As)	[]	[]	[]	[]
	Barium (Ba)	[]	[]	[]	[]
	Beryllium (Be)	[]	[]	[]	[]
	Bismuth (Bi)	[]	[]	[]	[]
	Boron (B)	[]	[]	[]	[]
	Cadmium (Cd)	[]	[]	[]	[]
	Calcium (Ca)	[]	[]	[]	[]
	Chromium (Cr)	[]	[]	[]	[]
	Chromium, Hexavalent (CrVI)	[]	[]	[]	[]
	Cobalt (Co)	[]	[]	[]	[]
	Copper (Cu)	[]	[]	[]	[]
	Iron (Fe)	[]	[]	[]	[]
	Lead (Pb)	[]	[]	[]	[]
	Magnesium (Mg)	[]	[]	[]	[]
	Manganese (Mn)	[]	[]	[]	[]
	Mercury (Hg)	[]	[]	[]	[]
	Molybdenum (Mo)	[]	[]	[]	[]
	Nickel (Ni)	[]	[]	[]	[]
	Potassium (K)	[]	[]	[]	[]
	Selenium (Se)	[]	[]	[]	[]
	Silicon (Si)	[]	[]	[]	[]
	Silver (Ag)	[]	[]	[]	[]
	Sodium (Na)	[]	[]	[]	[]
	Strontium (Sr)	[]	[]	[]	[]
	Thallium (Tl)	[]	[]	[]	[]
	Tin (Sn)	[]	[]	[]	[]
	Titanium (Ti)	[]	[]	[]	[]
	Vanadium (V)	[]	[]	[]	[]
	Zinc (Zn)	[]	[]	[]	[]
RCRA Hazardous Waste	Ignitability (Flash Pt.) (FP)	[]	[]	[]	[]
	Corrosivity (Corr)	[]	[]	[]	[]
	Reactivity (CN & S) (RXCN S)	[]	[]	[]	[]
	TCLP-Metals (TM)	[]	[]	[]	[]
	TCLP-Pest/Herb (TP/H)	[]	[]	[]	[]
	TCLP-BNA (TBNA)	[]	[]	[]	[]
	TCLP-VOA (TVOA)	[]	[]	[]	[]
RADIOLOGICAL	Gross Alpha	[]	[]	[]	[]
	Gross, Beta	[]	[]	[]	[]
	Radium, T.	[]	[]	[]	[]
	Radium, 226/228	[]	[]	[]	[]
SPECIFIC ORGANICS	Volatiles (VOA)	[]	[]	[]	[]
	Semi-Volatiles (BNA)	[]	[]	[]	[]
	Pesticides/PCB (PEST/PCB)	[]	[]	[]	[]
	PCB Only (PCB)	[]	[]	[]	[]
	TPH/Diesel (TPH/D)	[]	[]	[]	[]
	TPH/Gasoline (TPH/G)	[]	[]	[]	[]
	BTEX (BTEX)	[]	[]	[]	[]
	THM's (THM)	[]	[]	[]	[]
	Other (Define)	[]	[]	[]	[]
MICROBIOLOGY	Fecal Coliform (FC)	[]	[]	[]	[]
	Total Coliform (TC)	[]	[]	[]	[]
	Other (Define)	[]	[]	[]	[]
BIOASSAY / BIOTOXICITY	Acute	[]	[]	[]	[]
	Chronic	☒	[]	[]	[]
	Daphnia magna/pulex	[]	[]	[]	[]
	Myxid shrimp	[]	[]	[]	[]
	Pimephales promelas	☒	[]	[]	[]
	Ceriodaphnia	☒	[]	[]	[]
	Cyprinodon	[]	[]	[]	[]

METALS

OTHER ANALYSES REQUESTED
#1

#2

#3

#4

RCRA Hazardous Waste

RADIOLOGICAL

SPECIFIC ORGANICS

MICROBIOLOGY

BIOASSAY / BIOTOXICITY

ANALYTICAL AND ENVIRONMENTAL TESTING

TOXICITY SAMPLE FLOW SHEET

It is imperative that this form be completely filled out.

Client MAWSS

Site CC WILLIAMS - 0011

Initial Flow Meter Reading 2869.008

UNITS OF FLOW 20,221 MGD

Date of Collection	Time of Collection	Flow Meter Reading
12-10-12	2355	2889.229

This information will be used to calculate the flow weighted composite aliquots.

1212005

Analytical & Environmental Testing, Inc.

Sample Receipt Check List--Required for Regulatory Samples only!!

filepath: G:\SAMPLING DEPT

Last revised: 6/7/2011

Date: 12/10/12
 Login Person: CBT

Work Order Number : 1212005

Samples received by [AET, UPS, FedEx, BUS] **CIRCLE ONE**
MUST ATTACH SHIPPING BILL OR COPY TO COC

	YES	NO	N/A	Comments
COC Present, Correct, & Complete? (name/address, sample id, division, client type)	✓	*		Chronic Tox.
SAMPLES WITHIN HOLDING TIME?	✓	*		
Customer must not be allowed to leave until this is verified				
Samples delivered on ice?	✓	*		
Temperature of Samples	49c	*		N/A if sample date=received date
COC and Sample Labels Agree?	✓	*		
Preserved to <2 (Metals, TOC, COD, NH3, TKN TPHOS, O&G, PHENOL, HARD) Circle Failure		*	✓	N/A if testing other than listed
Preserved to >12 CN, >9 S Circle Failure		*	✓	N/A if testing other than listed
Correct Sample Containers?	✓	*		
Containers intact?	✓	*		
Volume adequate?	✓	*		
Zero Headspace VOATOX		*	✓	
Custody seal on shipping container?			✓	not a requirement
Custody seal on bottles?	✓			not a requirement

*** A "NO" response mandates a "Sample Condition Notification" to be either signed on dock upon delivery or faxed to the customer ASAP**

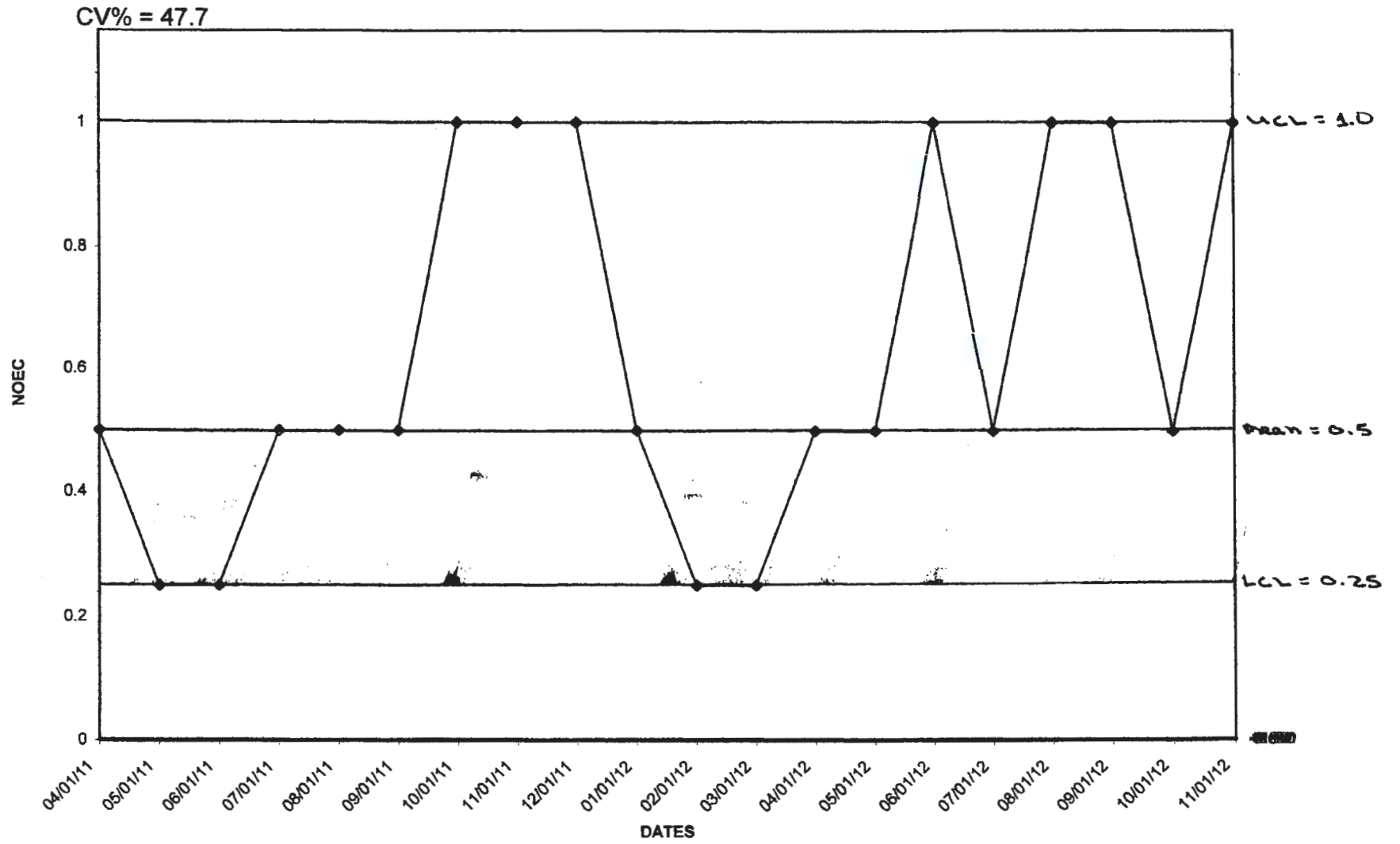
STATISTICAL CALCULATIONS

Ceriodaphnia dubia								
Normality Shapiro Wilks								
Last Modified 12/27/96								
Filename: f:\bioassay\CD_repro.xls		0%	19%	Centered	Centered	Squared	Squared	Sorted
		0%	19%	Centered	Centered	Centered	Centered	Can.Data
Control	a	19	23	0.2	-0.9	0.04	0.81	-20.1
	b	20	34	1.2	10.1	1.44	102.01	-12.3
	c	19	19	0.2	-4.9	0.04	24.01	-8.1
	d	17	29	-1.8	5.1	3.24	26.01	-6.3
	e	16	27	-2.8	3.1	7.84	9.61	-2.3
	f	21	22	2.2	-1.9	4.84	3.61	-2.1
	g	19	22	0.2	-1.9	0.04	3.61	-2.1
	h	19	19	0.2	-4.9	0.04	24.01	-1.3
	i	21	20	2.2	-3.9	4.84	15.21	-0.3
	j	17	24	-1.8	0.1	3.24	0.01	-0.1
	Average	18.8	23.9			Sum Sq=	25.6	208.9
Overall Mean of Centered Observation								
						-5.5		4.7
99							234.5	5.7
						Denominator (D)	240	5.9
Coefficient of Difference								
i	Ai			DeltaX				Square of
				$X(n+1)-X(i)$	$A_i \Delta X$	$A_i^2 \Delta X$		
1	0.4734			29	13.7286	188.47446		7.9
2	0.3211			20.2	6.48622	42.07105		7.9
3	0.2565			16	4.104	16.842816		8.9
4	0.2085			14	2.919	8.520561		
5	0.1686			8.2	1.38252	1.9113616		
6	0.1334			7.8	1.04052	1.0826819		
7	0.1013			6.8	0.68884	0.4745005		
8	0.0711			4	0.2844	0.0808834		
9	0.0422			2.2	0.09284	0.0086193		
10	0.014			1.8	0.0252	0.000635		
				Total:	30.75214	259.46757		
Test Statistic W=		3.9403921	Sq Total:		945.69411			
Limit =		0.868	Normal					
		Normal=W>Limit						
Two Tailed F Test For variance numbers use toxstat 3.3 run stat summary								
Variance Control=		35.8						
Variance 100%=		88.1						
F=		2.2374302	Variances Homogenous					
Critical F Limit=		8.1						
F < Critical F			F > Critical F					
Equal Variance T-Test								
t=	-1.498057		Unequal Variance T-Test					
Replicates	10		Replicates = 10					
Critical t w/	18 deg of freedom=	1.74	Adj. Deg. of Freedom, df=					
Sp=	7.6124897		C=					
Different	NO							
Sample is Different if t > Critical t								
				Revised Equal Variance T-Test				
				Critical t with Adjusted Deg. of Freedom = 2.354 LOOK UP				
				Significantly Different Not Applicable				
				Sample is different if t > Adjusted Critical t				

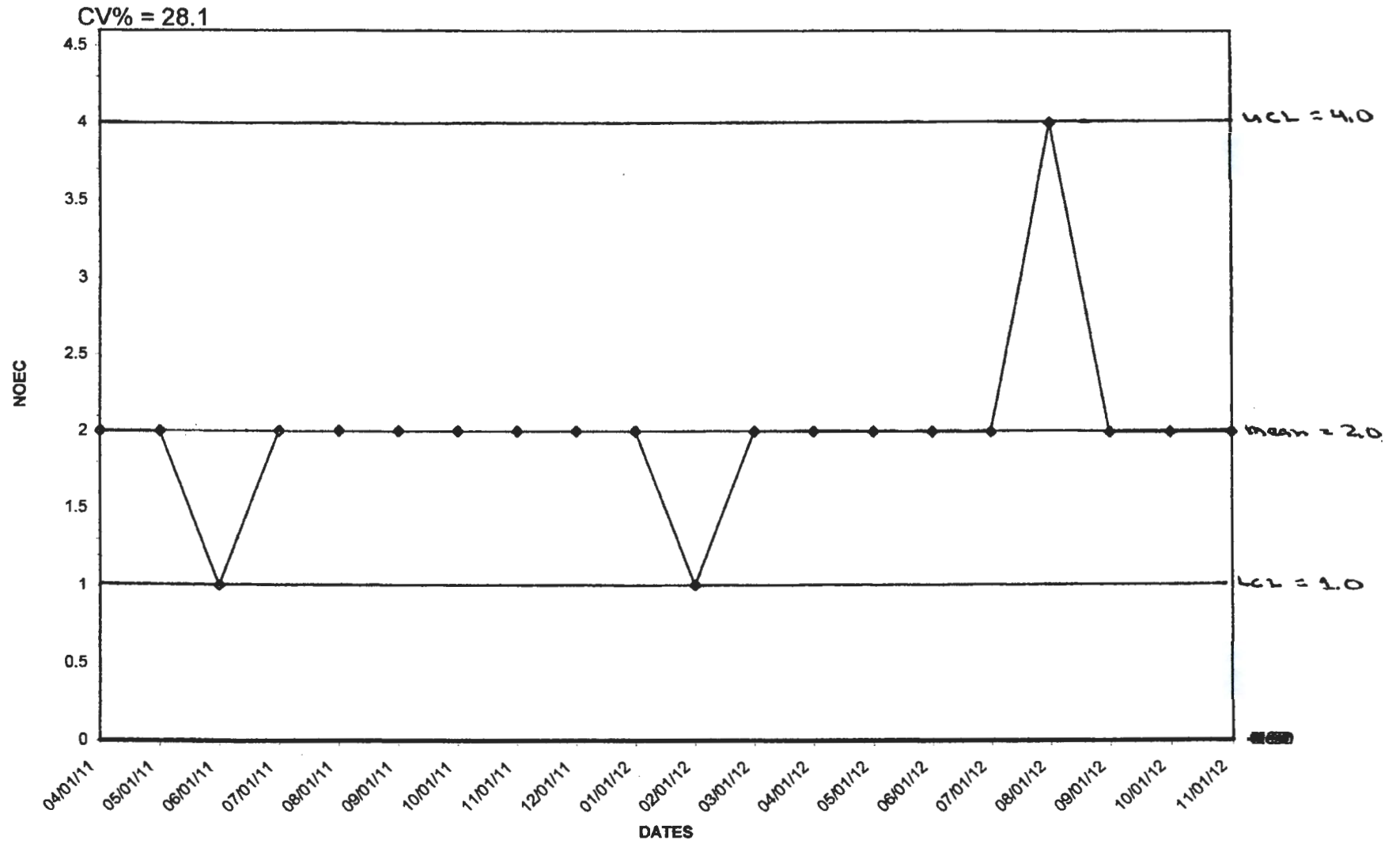
Normality Shapiro Wilks								
Fathead Minnow								
Last Modified 12/27/96								
Filename: PP_grow.xls								
							Squared	Sorted
		Wt_fin	Wt_ini	Gain/10	Mean	Centered	Centered	Cent.Data
Control	a	15.391	7.547	0.7844	0.758336	0.026064	0.000679	-0.06838
	b	15.405	8.043	0.7362		-0.02214	0.00049	-0.0677
	c	14.937	8.144	0.6793		-0.07904	0.006247	-0.00857
	d	15.326	7.825	0.833444		0.075108	0.005641	-0.00418
							0.013057	-0.0013
		Wt_fin		Gain/10	Mean	Centered		0.0339
13%	a	17.301	9.793	0.7508	0.740425	0.010375	0.000108	0.0351
	b	16.333	9.251	0.7082		-0.03222	0.001038	0.081125
	c	16.012	8.194	0.7818		0.041375	0.001712	
	d	16.823	9.614	0.7209		-0.01952	0.000381	
							0.003239	
Overall Mean of Centered Observation						-3.5E-17		
Sum of Squared Centered Observations.						0.016297		
Denominator (D)						0.016297		
Coeffiance of Difference		DeltaX			Square of			
i	Ai	X(n-i+1)-X(i)			Ai*DeltaX	Ai*DeltaX		
1	0.6052	0.1495			0.090477	0.008186		
2	0.3164	0.1028			0.032526	0.001058		
3	0.1743	0.042475			0.007403	5.48E-05		
4	0.0561	0.002875			0.000161	2.6E-08		
Total:					0.130568	0.009299		
Test Static W=		1.046114	Sq Total:		0.017048			
Limit =		0.749	Normal					
Two Tailed F Test		Run toxstat 3.3 to obtain variance numbers						
Variance C		0.002						
Variance 100%		0.004						
F=		2 Variances Homogenous						
Critical F Limit=		11.3						
F < Critical F				F > Critical F				
Equal Variance T-Test				Unequal Variance T-Test				
t=		0.462463			t=		Not Applicable	
Replicates		4			Replicates =		4	
Critical t w/		6 deg of freedom		1.944		Adj. Deg. of Freedom, df=		Not Applicable
Sp=		0.054772			C=		Not Applicable	
Different:		NO						
				Revised Equal Variance T-Test				
				Critical t with Adjusted Deg. of Freedom =				
				2.354				
				Significantly Different				
				Not Applicable				
Sample is Different if t > Critical t				Sample is different if t > Adjusted Critical t				

REFERENCE TOXICANT DATA

C. dubia 7-DAY NOEC



P. promelas 7-DAY NOEC



CHRONIC BIOASSAY CONTROL AND 100% EFFLUENT CHEMICAL TABLE

AET PROJECT NO.: Ref Tox Nov. 2012

CLIENT: Ref Tox AET

SAMPLE DATE/DESIGNATION: 11/6/12 1 NaCl

BEGINNING DATE OF BIOASSAY: 11/6/12

SPECIES (circle): C. dubia, P. promelas

INITIAL CHEMISTRIES- CONTROL 0% MEASURE EACH NEW BATCH							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	11/6/12	11/7/12	11/8/12	11/9/12	11/10/12	11/11/12	11/12/12
TIME	12:35pm	11:30am	11:15am	10:35am	9:40am	11:00am	10:10am
INITIALS	ASC	ASC	SP	SP	ASC	ASC	SP
ALK	64			62			
COND	313			305			
DO	7.86			8.21			
HARD	88			96			
pH	7.92			7.62			
TRC	0.01			0.00			
100 % EFFLUENT SAMPLE MEASURE EACH NEW SAMPLE (pH - daily)							
DATE	11/6/12	11/7/12	11/8/12	11/9/12	11/10/12	11/11/12	11/12/12
TIME	12:35pm	11:30am	11:15am	10:35am	9:40am	11:00am	10:10am
INITIALS	ASC	ASC	SP	SP	ASC	ASC	SP
ALK	58						
COND	21080						
DO	8.19						
HARD	88						
pH	7.78	7.69					
TRC	0.01						

The pH of the effluent sample must be run daily.

NOTES:

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CHRONIC BIOASSAY INITIAL CHEMICAL TABLE

AET PROJECT NO.: Ref Tox Nov. 2012

CLIENT: Ref Tox AET

SAMPLE DATE/DESIGNATION: _____ /NaCl

BEGINNING DATE OF BIOASSAY: _____

SPECIES (circle): C. dubia P. promelas

INITIAL CHEMISTRIES- CONTROL 0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	11/16/12	11/17/12	11/18/12	11/19/12	11/20/12	11/21/12	11/22/12
TIME	12:35 pm	11:30 am	12:20 pm	10:35 am	9:40 am	11:00 am	10:10 am
INITIALS	ASC	ASC	SP	SP	ASC	ASC	SP
DO	7.86	8.50	8.30	8.21	10.22	8.14	
DILUTION 1 - 0.25 PPT							
DO	7.79	8.42	8.08	8.09	10.95	8.10	
DILUTION 2 - 0.5 PPT							
DO	8.02	8.12	8.67	8.59	10.55	8.23	
DILUTION 3 - 1 PPT							
DO	7.82	8.01	8.10	8.12	10.77	8.26	5.91
DILUTION 4 - 2 PPT							
DO	7.83	8.00	8.14	8.03	12.11	8.13	5.76
DILUTION 5 - 4 PPT							
DO	7.80	8.12	7.95	8.09	10.36	8.18	5.86
DILUTION 6 - 8 PPT							
DO	8.07	8.27	8.22	8.22	10.02	8.55	
DILUTION 7 - 16 PPT							
DO							5.86
TIME = Time the dilution was made.							
NOTES:							

Ceriodaphnia Survival and Reproduction Test-7 Day Survival

Start Date: 11/6/2012 12:54 Test ID: REF TOX Sample ID: REF-Ref Toxicant
 End Date: 11/11/2012 13:30 Lab ID: REF TOX Sample Type: NACL-Sodium chloride
 Sample Date: 11/6/2012 12:35 Protocol: EPAF 94-EPA Freshwater Test Species: CD-Ceriodaphnia dubia

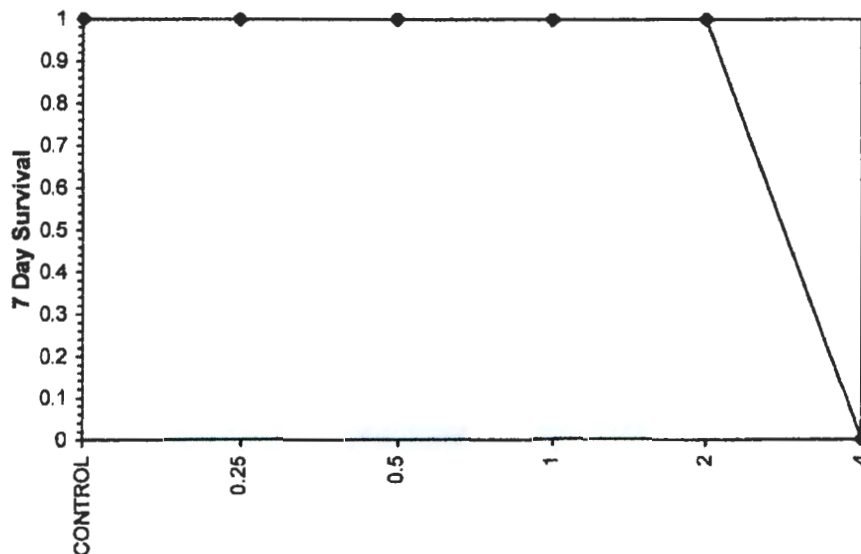
Comments:

Conc-ppt	1	2	3	4	5	6	7	8	9	10
CONTROL	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.25	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's 1-Tailed Exact P	Critical
CONTROL	1.0000	1.0000	0	10	10	10		
0.25	1.0000	1.0000	0	10	10	10	1.0000	0.0500
0.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500
1	1.0000	1.0000	0	10	10	10	1.0000	0.0500
2	1.0000	1.0000	0	10	10	10	1.0000	0.0500
4	0.0000	0.0000	10	0	10	10		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	2	4	2.82843	
Treatments vs CONTROL				

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 11/6/2012 12:54 Test ID: REF TOX Sample ID: REF-Ref Toxicant
 End Date: 11/11/2012 13:30 Lab ID: REF TOX Sample Type: NACL-Sodium chloride
 Sample Date: 11/6/2012 12:35 Protocol: EPAF 94-EPA Freshwater Test Species: CD-Ceriodaphnia dubia
 Comments:

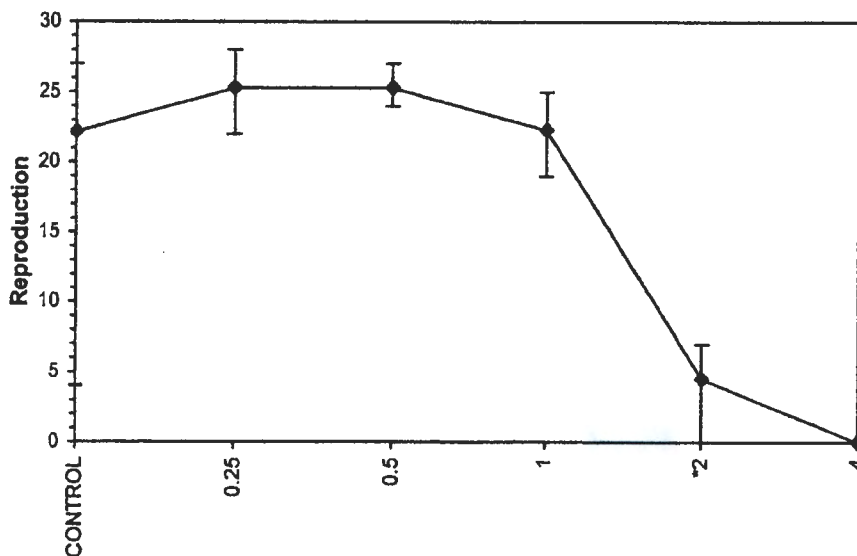
Conc-ppt	1	2	3	4	5	6	7	8	9	10
CONTROL	24.000	21.000	24.000	24.000	25.000	27.000	24.000	4.000	25.000	24.000
0.25	27.000	22.000	25.000	23.000	27.000	25.000	26.000	26.000	28.000	24.000
0.5	24.000	25.000	25.000	24.000	26.000	24.000	25.000	26.000	27.000	27.000
1	25.000	20.000	21.000	24.000	19.000	24.000	25.000	20.000	23.000	22.000
2	4.000	4.000	0.000	7.000	3.000	6.000	4.000	4.000	6.000	7.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-ppt	Mean	N-Mean	Transform: Untransformed				N	Rank Sum	1-Tailed Critical
			Mean	Min	Max	CV%			
CONTROL	22.200	1.0000	22.200	4.000	27.000	29.561	10		
0.25	25.300	1.1396	25.300	22.000	28.000	7.465	10	126.50	76.00
0.5	25.300	1.1396	25.300	24.000	27.000	4.583	10	129.50	76.00
1	22.300	1.0045	22.300	19.000	25.000	9.926	10	88.50	76.00
*2	4.500	0.2027	4.500	0.000	7.000	47.140	10	61.00	76.00
4	0.000	0.0000	0.000	0.000	0.000	0.000	10		

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.69981	0.93	-3.6865	19.9606
Bartlett's Test indicates unequal variances (p = 1.48E-06)	32.5501	13.2767		
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	1	2	1.41421	

Treatments vs CONTROL

Dose-Response Plot



Ceriodaphnia Survival and Reproduction Test-Reproduction

Start Date: 11/6/2012 12:54 Test ID: REF TOX Sample ID: REF-Ref Toxicant
 End Date: 11/11/2012 13:30 Lab ID: REF TOX Sample Type: NACL-Sodium chloride
 Sample Date: 11/6/2012 12:35 Protocol: EPAF 94-EPA Freshwater Test Species: CD-Ceriodaphnia dubia
 Comments:

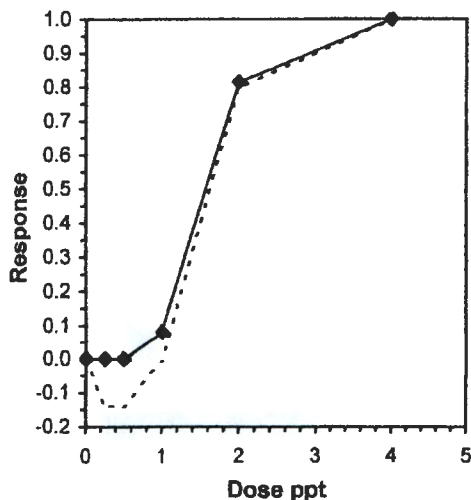
Conc-ppt	1	2	3	4	5	6	7	8	9	10
CONTROL	24.000	21.000	24.000	24.000	25.000	27.000	24.000	4.000	25.000	24.000
0.25	27.000	22.000	25.000	23.000	27.000	25.000	26.000	26.000	28.000	24.000
0.5	24.000	25.000	25.000	24.000	26.000	24.000	25.000	26.000	27.000	27.000
1	25.000	20.000	21.000	24.000	19.000	24.000	25.000	20.000	23.000	22.000
2	4.000	4.000	0.000	7.000	3.000	6.000	4.000	4.000	6.000	7.000
4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Conc-ppt	Mean	N-Mean	Transform: Untransformed					N	Isotonic	
			Mean	Min	Max	CV%	Mean		N-Mean	
CONTROL	22.200	1.0000	22.200	4.000	27.000	29.561	10	24.267	1.0000	
0.25	25.300	1.1396	25.300	22.000	28.000	7.465	10	24.267	1.0000	
0.5	25.300	1.1396	25.300	24.000	27.000	4.583	10	24.267	1.0000	
1	22.300	1.0045	22.300	19.000	25.000	9.926	10	22.300	0.9190	
2	4.500	0.2027	4.500	0.000	7.000	47.140	10	4.500	0.1854	
4	0.000	0.0000	0.000	0.000	0.000	0.000	10	0.000	0.0000	

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.69981	0.93	-3.6865	19.9606
Bartlett's Test indicates unequal variances (p = 1.48E-06)	32.5501	13.2767		

Linear Interpolation (200 Resamples)

Point	ppt	SD	95% CL		Skew
IC05	0.8085	0.1253	0.6631	1.0596	0.4398
IC10	1.0258	0.0787	0.8314	1.1209	-0.8411
IC15	1.0940	0.0493	0.9972	1.1814	-0.3297
IC20	1.1622	0.0448	1.0728	1.2426	-0.1069
IC25	1.2303	0.0422	1.1470	1.3065	-0.1054
IC40	1.4348	0.0355	1.3642	1.4982	-0.0825
IC50	1.5712	0.0327	1.5063	1.6280	-0.0415



CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: Ref Tox Nov. 2012

CLIENT: Ref Tox AET

SAMPLE DATE/DESIGNATION: NaCl

BEGINNING DATE OF BIOASSAY: _____

SPECIES (circle): C. dubia P. promelas

FINAL CHEM. - CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	11/7/12	11/8/12	11/9/12	11/10/12	11/11/12		
INITIALS	SP	SP	SP	ABK	AGB		
DO	7.32	7.61	7.49	7.89	7.68		
pH	7.64	7.99	7.81	7.74	7.92		
TEMP	24.7	24.7	25.0	25.2	25.8		
DILUTION 1 - 0.25 ppt %							
DO	7.30	7.65	7.70	7.66	7.51		
pH	7.65	7.93	7.80	7.79	7.78		
TEMP	24.7	24.7	25.0	25.2	25.8		
DILUTION 2 - 0.5 ppt %							
DO	7.56	7.71	7.82	7.67	7.61		
pH	7.72	8.23	7.77	7.81	7.77		
TEMP	24.7	24.7	25.0	25.2	25.8		
DILUTION 3 - 1 ppt %							
DO	7.52	7.74	7.88	7.52	7.61		
pH	7.74	8.32	7.76	7.83	7.76		
TEMP	24.7	24.7	25.0	25.2	25.8		
DILUTION 4 - 2 ppt %							
DO	7.66	7.64	7.94	7.46	7.66		
pH	7.72	8.17	7.77	7.83	7.78		
TEMP	24.7	24.7	25.0	25.2	25.8		
DILUTION 5 - 4 ppt %							
DO	7.59						
pH	7.71						
TEMP	24.7		25.0	25.2			

All final temperatures must be taken from the ghost cups in the chamber.

Chronic C. dubia Organism Table AET #: Ref Tox ^{new} 2012 Samp. Date: 11/6/12

Block Parentage: or N (circle one)

Client: Ref Tox AET Beg. Date: 11/6/12 End Date: 11/11/12 Rand. Temp.: 11 Lot #: 1476

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8/9	Total #
Time:	12:54	11:44	10:58	11:42	12:00 pm	1:30 pm			
Initials:	GRA	GRA	GRA	GRA	AJC	AJC			
Dilution									
0% A1	✓	✓	✓	2	10	12			24
B2				3	8	10			21
C3				4	8	12			24
D4				4	10	10			24
E5				5	10	10			25
F6				4	9	14			27
G7				4	9	11			24
H8				0	0	4			4
I9				4	8	13			25
J10				4	10	10			24
.25% A1				4	10	13			27
B2				4	7	11			22
C3				4	9	12			25
D4				3	10	10			23
E5				4	10	13			27
F6				3	9	13			25
G7				4	11	11			26
H8				1	10	12			26
I9					10	14			28
J10					8	12			24
.5 % A1					8	12			24
B2					10	11			25
C3					9	12			25
D4					8	12			24
E5					8	14			26
F6					8	12			24
G7				↓	9	12			25
H8				3	10	11			26
I9				4	11	12			27
J10				4	9	14			27
1 % A1				3	12	10			25
B2				3	8	9			20
C3				3	10	8			21
D4				4	11	9			24
E5					7	8			19
F6					8	12			24
G7					11	10			25
H8					8	8			20
I9					9	10			23
J10				↓	8	10			22
2 % A1				2a	2a	0			4
B2				1a	0	3a			4
C3				0	0	0			0
D4				2+2a	0	1+2a			7
E5				1+1a	1	0			3
F6				1+1a	0	1+3a			6
G7				2	1a+1	0			4
H8				2	0	2			4
I9				2+2a	0	2			6
J10				1+2a	0	3			7
4 % A1		x	↓						X
B2									
C3									
D4									
E5									
F6									
G7									
H8									
I9									
J10									

2 11/7/12 - some data not due to contaminated dilution containing 2% reflected notes from same rows; see block parentage

Larval Fish Growth and Survival Test-7 Day Survival

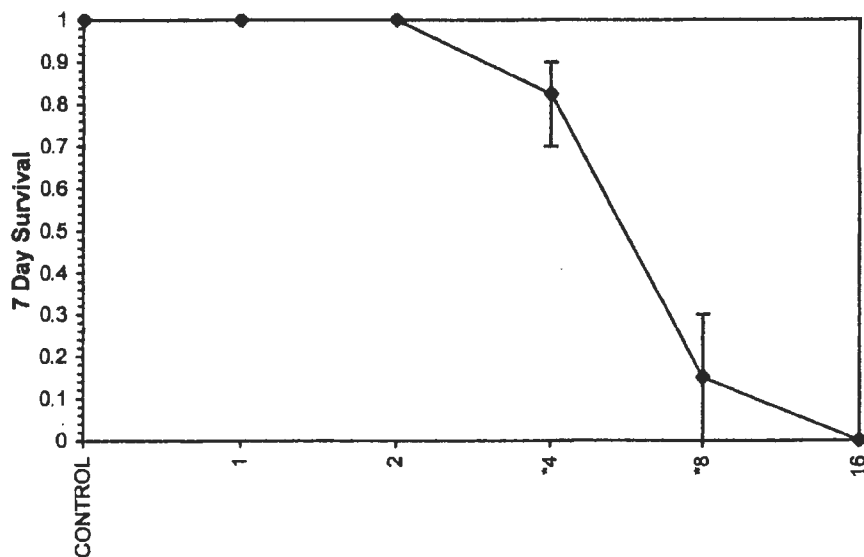
Start Date: 11/6/2012 17:00 Test ID: REF TOX Sample ID: REF-Ref Toxicant
 End Date: 11/13/2012 15:45 Lab ID: REF TOX Sample Type: NACL-Sodium chloride
 Sample Date: 11/6/2012 12:35 Protocol: EPAF 94-EPA Freshwater Test Species: PP-Pimephales promelas
 Comments:

Conc-ppt	1	2	3	4
CONTROL	1.0000	1.0000	1.0000	1.0000
1	1.0000	1.0000	1.0000	1.0000
2	1.0000	1.0000	1.0000	1.0000
4	0.9000	0.8000	0.9000	0.7000
8	0.3000	0.0000	0.1000	0.2000
16	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Mean	N-Mean	Transform: Arcsin Square Root				N	Rank Sum	1-Tailed Critical
			Mean	Min	Max	CV%			
CONTROL	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4		
1	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4	18.00	10.00
2	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4	18.00	10.00
*4	0.8250	0.8250	1.1491	0.9912	1.2490	10.856	4	10.00	10.00
*8	0.1500	0.1500	0.3810	0.1588	0.5796	47.729	4	10.00	10.00
16	0.0000	0.0000	0.1588	0.1588	0.1588	0.000	4		

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.83433	0.868	-0.4158	2.4408
Equality of variance cannot be confirmed				
Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	2	4	2.82843	
Treatments vs CONTROL				

Dose-Response Plot



Larval Fish Growth and Survival Test-7 Day Growth

Start Date: 11/6/2012 17:00	Test ID: REF TOX	Sample ID: REF-Ref Toxicant
End Date: 11/13/2012 15:45	Lab ID: REF TOX	Sample Type: NACL-Sodium chloride
Sample Date: 11/6/2012 12:35	Protocol: EPAF 94-EPA Freshwater	Test Species: PP-Pimephales promelas

Conc-ppt	1	2	3	4
CONTROL	1.0938	1.1069	1.0582	1.0744
1	1.0843	1.1769	1.4025	1.1467
2	1.1989	1.1686	1.2763	1.0830
4	0.5894	0.6122	0.8025	0.4529
8	0.0000	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000	0.0000

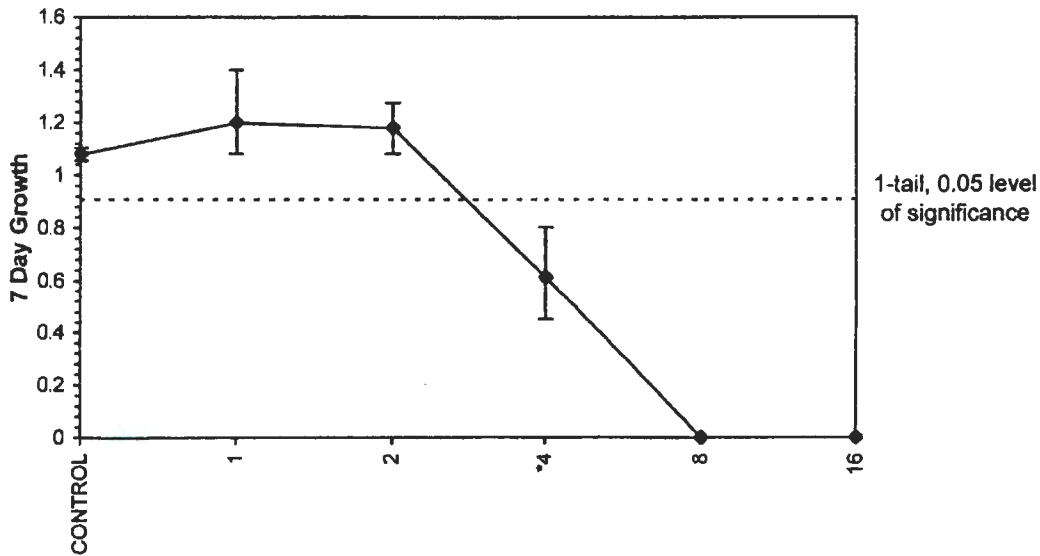
Conc-ppt	Mean	N-Mean	Transform: Untransformed				N	t-Stat	1-Tailed Critical	MSD
			Mean	Min	Max	CV%				
CONTROL	1.0833	1.0000	1.0833	1.0582	1.1089	1.977	4			
1	1.2028	1.1101	1.2026	1.0843	1.4025	11.536	4	-1.560	2.290	0.1751
2	1.1817	1.0908	1.1817	1.0830	1.2763	6.763	4	-1.286	2.290	0.1751
*4	0.6143	0.5670	0.6143	0.4529	0.8025	23.422	4	6.134	2.290	0.1751
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4			
16	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4			

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.91746	0.844	0.71386	0.74289
Bartlett's Test indicates equal variances (p = 0.06)	7.30998	11.3449		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	2	4	2.82843		0.17513	0.16166	0.30418	0.0117	1.5E-05	3, 12

Treatments vs CONTROL

Dose-Response Plot



Larval Fish Growth and Survival Test-7 Day Growth

Start Date: 11/6/2012 17:00	Test ID: REF TOX	Sample ID: REF-Ref Toxicant
End Date: 11/13/2012 15:45	Lab ID: REF TOX	Sample Type: NACL-Sodium chloride
Sample Date: 11/6/2012 12:35	Protocol: EPAF 94-EPA Freshwater	Test Species: PP-Pimephales promelas

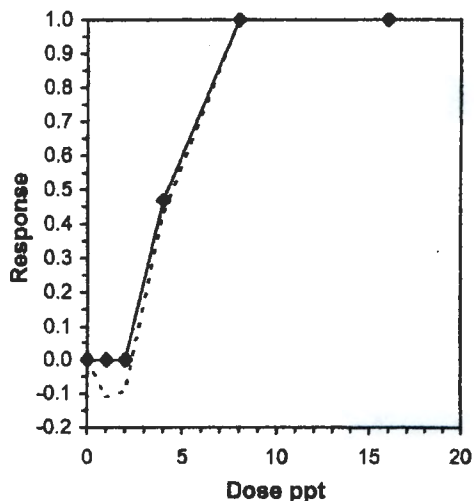
Comments:

Conc-ppt	1	2	3	4
CONTROL	1.0938	1.1069	1.0582	1.0744
1	1.0843	1.1769	1.4025	1.1467
2	1.1989	1.1686	1.2763	1.0830
4	0.5894	0.6122	0.8025	0.4529
8	0.0000	0.0000	0.0000	0.0000
16	0.0000	0.0000	0.0000	0.0000

Conc-ppt	Mean	N-Mean	Transform: Untransformed					N	Isotonic	
			Mean	Min	Max	CV%	Mean		N-Mean	
CONTROL	1.0833	1.0000	1.0833	1.0582	1.1069	1.977	4	1.1559	1.0000	
1	1.2026	1.1101	1.2026	1.0843	1.4025	11.536	4	1.1559	1.0000	
2	1.1817	1.0908	1.1817	1.0830	1.2763	6.763	4	1.1559	1.0000	
4	0.6143	0.5670	0.6143	0.4529	0.8025	23.422	4	0.6143	0.5314	
8	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4	0.0000	0.0000	
16	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4	0.0000	0.0000	

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.91746	0.844	0.71386	0.74289
Bartlett's Test indicates equal variances (p = 0.06)	7.30998	11.3449		

Linear Interpolation (200 Resamples)					
Point	ppt	SD	95% CL(Exp)	Skew	
IC05	2.2134	0.0763	1.8926	2.3113	-3.5330
IC10	2.4268	0.0755	2.1388	2.6227	-0.4612
IC15	2.6402	0.0954	2.3666	2.9340	0.4317
IC20	2.8536	0.1189	2.5773	3.2453	0.7787
IC25	3.0670	0.1443	2.7342	3.5566	0.9107
IC40	3.7073	0.2259	3.2397	4.5538	0.9238
IC50	4.2365	0.3259	3.4946	5.2399	0.3635



CHRONIC BIOASSAY FINAL CHEMICAL TABLEAET PROJECT NO.: Ref Tox Nov 2012CLIENT: Ref Tox AETSAMPLE DATE/DESIGNATION: NaCl

BEGINNING DATE OF BIOASSAY: _____

SPECIES (circle): C. dubia, P. promelas

FINAL CHEM.- CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	11/7/12	11/8/12	11/9/12	11/10/12	11/11/12	11/12/12	11/13/12
INITIALS	SP	CCB	SP	ABK	A613	CCB	CCB
DO	7.23	6.77	6.75	7.01	7.19	4.81	6.05
pH	7.60	7.21	7.58	7.57	7.51	7.72	7.32
TEMP	24.7	24.7	25.0	25.2	25.8	24.7	
DILUTION 1- 1 ppt %							
DO	7.37	6.74	7.18	7.16	7.06	5.14	5.91
pH	7.58	7.37	7.57	7.58	7.50	7.69	7.36
TEMP	24.7	24.7	25.0	25.2	25.8	24.7	
DILUTION 2- 2 ppt %							
DO	7.00	6.84	7.20	6.99	7.16	5.02	6.20
pH	7.54	7.43	7.57	7.67	7.49	7.69	7.47
TEMP	24.7	24.7	25.0	25.2	25.8	24.7	
DILUTION 3- 4 ppt %							
DO	7.02	6.64	7.21	6.98	6.15	5.04	7.01
pH	7.53	7.42	7.56	7.65	7.43	7.72	7.53
TEMP	24.7	24.7	25.0	25.2	25.8	24.7	
DILUTION 4- 8 ppt %							
DO	6.98	6.47	7.22	6.91	6.33	4.97	6.17
pH	7.50	7.39	7.56	7.64	7.41	7.73	7.52
TEMP	24.7	24.7	25.0	25.2	25.8	24.7	
DILUTION 5- 16 ppt %							
DO	7.40						
pH	7.57						
TEMP	24.7						

All final temperatures must be taken from the ghost cups in the chamber.

Analytical and Environmental Testing, Inc.

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CHRONIC P.p. BIOASSAY ORGANISM TABLE

CLIENT: Ref Tox AET AET PROJECT NO.: Ref Tox Nov 2012

SAMPLE DATE: 11/6/12 SAMP. DESIGNATION: NaCl

BEGINNING DATE: 11/6/12 ENDING DATE: 11/13/12

RANDOMIZATION TEMPLATE #: 4 P. promelas LOT #: 2913

HOUR	DAY1	DAY2	DAY3	DAY4	DAY5	DAY6	DAY7	END	
INITIALS	AJC	AJC	AJC	AJC	AJC	AJC	62A	AJC	
TIME	5:00pm	3:45pm	3:30pm	3:20pm	3:30pm	3:40pm	3:12pm	3:45pm	
CONTROL - 0%									
LIVE A	10	10	10	10	10	10	10	10	
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓	
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓	
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓	
LIVE E									
DILUTION 1 - 1 ppt %									
LIVE A	10	10	10	10	10	10	10	10	
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓	
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓	
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓	
LIVE E									
DILUTION 2 - 2 ppt %									
LIVE A	10	10	10	10	10	10	10	10	
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓	
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓	
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓	
LIVE E									
DILUTION 3 - 4 ppt %									
LIVE A	10	10	10	10	10	10	10	9	
LIVE B	↓	↓	↓	9	8	8	8	8	
LIVE C	↓	↓	↓	10	10	9	9	9	
LIVE D	↓	↓	↓	9	9	9	7	7	
LIVE E									
DILUTION 4 - 8 ppt %									
LIVE A	10	8	8	4	4	4	4	3	
LIVE B	↓	9	6	3	2	2	2	0	
LIVE C	↓	10	7	5	2	2	2	1	
LIVE D	↓	10	7	3	3	3	3	2	
LIVE E									
DILUTION 5 - 16 ppt %									
LIVE A	10	0	/						
LIVE B	↓	↓							
LIVE C	↓	↓							
LIVE D	↓	↓							
LIVE E									

TIME = The time the organisms are placed into new dilution water. This must be within +/- 2 hours or the beginning time.

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 Filename: G:\benchshe/BTR Current/P.promelas Wt Gain.xls

P.promelas Wt. Gain Benchsheet

Company Name : AET

Initials : AJK

Project Number : Ref Tox Nov. 2012

Beginning Oven Temp: 115°C

Time : 4:00 pm

Organism Name : P. promelas

Date : 11/13/12

Beginning Date of Test : 11/6/12

End Oven Temp: 110°C

Time : 5:10 pm

Ending Date of Test : 11/13/12

Date : 11/13/12

Concentration		Initial Wt of Pad (mg)	Final Wt of Pad (mg)
0 PPT	A	7.607	18.545
	B	7.263	18.332
	C	7.547	18.129
6250	D	7.257	18.001
	E		
1 PPT	A	8.124	18.967
	B	8.080	19.849
	C	7.954	21.979
6256	D	8.061	19.528
	E		
2 PPT	A	8.819	20.808
	B	8.242	19.928
	C	8.262	21.025
6258	D	8.233	19.063
	E		
4 PPT	A	8.751	14.645
	B	10.104	16.226
	C	8.174	16.199
6963	D	7.474	12.003
	E		
8 PPT	A	7.201	
	B	1.200	
	C	7.189	
6964	D	8.197	
	E		
	A		
	B		
	C		
	D		
	E		

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Revision # 13, 8

CHRONIC BIOASSAY CONTROL AND 100% EFFLUENT CHEMICAL TABLE

AET PROJECT NO.: 1212005

CLIENT: Mawss (CC Williams)

SAMPLE DATE/DESIGNATION: 12/3-4/12 / 001

BEGINNING DATE OF BIOASSAY: 12/6/12

SPECIES (circle): C. dubia P. promelas

INITIAL CHEMISTRIES- CONTROL 0% MEASURE EACH NEW BATCH							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	12/6/12	12/7/12	12/8/12	12/9/12	12/10/12	12/11/12	
TIME	9:00am	10:20am	10:30am	10:20am	9:10am	9:10am	
INITIALS	SP	SP	ASC	ASC	SP	SP	
ALK	64	64				62	
COND	325	328				312	
DO	7.82	7.66				8.25	
HARD	88	92				88	
pH	7.67	7.25				8.18	
TRC	0.00	0.01				0.01	
100 % EFFLUENT SAMPLE MEASURE EACH NEW SAMPLE (pH - daily)							
DATE	12/6/12	12/7/12	12/8/12	12/9/12	12/10/12	12/11/12	
TIME	9:00am	10:20am	10:30am	10:20am	9:10am	9:10am	
INITIALS	SP	SP	ASC	ASC	SP	SP	
ALK	86		98			64	
COND	1185		1506			841	
DO	11.40		8.65			9.91	
HARD	144		120			124	
pH	6.17	7.00	6.60	6.82	6.94	6.92	
TRC	0.01		0.02			0.01	
The pH of the effluent sample must be run daily.							
NOTES:							

CHRONIC BIOASSAY CONTROL AND 100% EFFLUENT CHEMICAL TABLE

AET PROJECT NO.: 1212005

CLIENT: Mawss (CC Williams)

SAMPLE DATE/DESIGNATION: 12/11 - 2/12 / 001

BEGINNING DATE OF BIOASSAY: 12/4/12

SPECIES (circle): P. promelas

INITIAL CHEMISTRIES- CONTROL 0% MEASURE EACH NEW BATCH							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	12/4/12	12/5/12	12/6/12	12/7/12	12/8/12	12/9/12	12/10/12
TIME	9:10am	9:10am	9:00am	10:20a	10:30am	10:20am	9:10 am
INITIALS	SP	SP	SP	SP	AJC	AJC	SP
ALK	64			64			
COND	325			328			
DO	7.82			7.66			
HARD	88			92			
pH	7.67			7.25			
TRC	0.00			0.01			
100 % EFFLUENT SAMPLE MEASURE EACH NEW SAMPLE (pH - daily)							
DATE	12/4/12	12/5/12	12/6/12	12/7/12	12/8/12	12/9/12	12/10/12
TIME	9:10am	9:10am	9:00am	10:20am	10:30am	10:20am	9:10am
INITIALS	SP	SP	SP	SP	AJC	AJC	SP
ALK	82		86		98		
COND	1112		1185		1506		
DO	10.07		11.40		8.65		
HARD	116		144		120		
pH	6.24	6.76	6.17	7.00	6.60	6.82	6.94
TRC	0.01		0.01		0.02		

The pH of the effluent sample must be run daily.

NOTES:

CHRONIC BIOASSAY INITIAL CHEMICAL TABLE

AET PROJECT NO.: 1212005
 CLIENT: Mauzy (C.C. Williams)
 SAMPLE DATE/DESIGNATION: 12/3-4/12 / 001
 BEGINNING DATE OF BIOASSAY: 12/6/12
 SPECIES (circle): C. dubia P. promelas

INITIAL CHEMISTRIES- CONTROL 0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	12/6/12	12/7/12	12/8/12	12/9/12	12/10/12	12/11/12	12/12/12
TIME	9:00a	10:20a	10:30am	10:20a	9:10a	9:10a	5:10pm
INITIALS	SP	SP	ASC	ASC	SP	SP	AB
DO	7.30	7.66	7.86	7.16	7.96	8.25	8.06
DILUTION 1 -		19%					
DO	7.63	7.59	8.33	7.92	8.18	8.09	8.0
DILUTION 2 -		%					
DO							
DILUTION 3 -		%					
DO							
DILUTION 4 -		%					
DO							
DILUTION 5 -		%					
DO							
TIME = Time the dilution was made.							
NOTES:							

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 12/12/12

CHRONIC BIOASSAY INITIAL CHEMICAL TABLE

AET PROJECT NO.: 1212005
CLIENT: Mawss (cc Williams)
SAMPLE DATE/DESIGNATION: 12/11 - 2/12 / 001
BEGINNING DATE OF BIOASSAY: 12/14/12
SPECIES (circle): P. promelas

INITIAL CHEMISTRIES- CONTROL 0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	12/14/12	12/15/12	12/16/12	12/17/12	12/18/12	12/19/12	12/10/12
TIME	9:10am	9:10am	9:00am	10:20am	10:30am	10:20am	9:10am
INITIALS	SP	SP	SP	SP	AV	AV	SP
DO	7.82	7.69	7.30	7.66	7.86	7.16	7.96
DILUTION 1 -		19 %					
DO	7.92	7.83	7.63	7.59	8.33	7.92	8.10
DILUTION 2 -		%					
DO							
DILUTION 3 -		%					
DO							
DILUTION 4 -		%					
DO							
DILUTION 5 -		%					
DO							
TIME = Time the dilution was made.							
NOTES:							

CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: 1212005

CLIENT: Mowss (CC Williams)

SAMPLE DATE/DESIGNATION: 12/3-4/12 / 1001

BEGINNING DATE OF BIOASSAY: 12/6/12

SPECIES (circle): C. dubia P. promelas

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FINAL CHEM. - CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	12/7/12	12/8/12	12/9/12	12/10/12	12/11/12	12/12/12	
INITIALS	SP	AJC	SBM	AJC	AGB	AGB	
DO	6.91	7.50	7.30	7.97	7.67	8.06	
pH	7.20	7.79	7.36	7.98	7.85	7.90	
TEMP	24.7	24.7	24.7	24.5	24.0	24.2	
DILUTION 1- 19 %							
DO	7.13	7.61	7.38	7.88	7.73	8.05	
pH	7.28	7.76	7.45	8.00	7.89	7.83	
TEMP	24.7	24.7	24.7	24.5	24.0	24.2	
DILUTION 2- %							
DO							
pH							
TEMP							
DILUTION 3- %							
DO							
pH							
TEMP							
DILUTION 4 - %							
DO							
pH							
TEMP							
DILUTION 5 - %							
DO							
pH							
TEMP							

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12/12/12

All final temperatures must be taken from the ghost cups in the chamber.

CHRONIC BIOASSAY FINAL CHEMICAL TABLE

AET PROJECT NO.: 1212005
 CLIENT: Mawss (CC Williams)
 SAMPLE DATE/DESIGNATION: 12/1-2/12 1001
 BEGINNING DATE OF BIOASSAY: 12/4/12
 SPECIES (circle): C. dubia, P. promelas

FINAL CHEM.- CONTROL-0%							
HOUR	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7
DATE	12/5/12	12/6/12	12/7/12	12/8/12	12/9/12	12/10/12	12/11/12
INITIALS	SP	CCB	SP	AJC	SBM	AJC	AGB
DO	4.88	6.07	6.82	7.37	6.72	7.01	7.34
pH	7.00	7.26	7.47	7.68	7.30	7.72	7.92
TEMP	24.7	24.7	24.7	24.7	24.7	24.5	24.0
DILUTION 1- 19%							
DO	5.41	5.76	6.47	8.22	6.76	6.96	6.75
pH	7.07	7.20	7.37	7.50	7.18	7.59	7.65
TEMP	24.7	24.7	24.7	24.7	24.7	24.5	24.0
DILUTION 2 %							
DO							
pH							
TEMP							
DILUTION 3- %							
DO							
pH							
TEMP							
DILUTION 4 - %							
DO							
pH							
TEMP							
DILUTION 5 - %							
DO							
pH							
TEMP							

All final temperatures must be taken from the ghost cups in the chamber.

Analytical and Environmental Testing, Inc.

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CHRONIC P.p. BIOASSAY ORGANISM TABLE

CLIENT: MAUSS (cc Williams) AET PROJECT NO.: 1212005

SAMPLE DATE: 12/1-2/12 SAMP. DESIGNATION: 001

BEGINNING DATE: 12/4/12 ENDING DATE: 12/11/12

RANDOMIZATION TEMPLATE #: 2 P. promelas LOT #: 2941

HOUR	DAY1	DAY2	DAY3	DAY4	DAY5	DAY6	DAY7	END
INITIALS	AJC	AJC	AJC	GRA	AJC	AJC	AJC	AJC
TIME	11:40am	10:40am	10:30am	11:02am	11:15am	11:20am	10:45am	9:45am
CONTROL - 0%								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E								
DILUTION 1 - 19%								
LIVE A	10	10	10	10	10	10	10	10
LIVE B	↓	↓	↓	↓	↓	↓	↓	↓
LIVE C	↓	↓	↓	↓	↓	↓	↓	↓
LIVE D	↓	↓	↓	↓	↓	↓	↓	↓
LIVE E								
DILUTION 2 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								
DILUTION 3 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								
DILUTION 4 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								
DILUTION 5 - %								
LIVE A								
LIVE B								
LIVE C								
LIVE D								
LIVE E								

TIME = The time the organisms are placed into new dilution water. This must be within +/- 2 hours or the beginning time.

Analytical and Environmental Testing, Inc.

P.promelas Wt. Gain Benchsheet

Last Modified: 10/20/11 by ANC

Filename: G:\benchshe/BTR Current/P.promelas Wt Gain.xls

Company Name: Mawss (CC Williams)

Initials: ASC

Project Number: 1212005

Beginning Oven Temp: 115°C

Organism Name: P. promelas

Time: 11:00am

Date: 12/11/12

Beginning Date of Test: 12/4/12

End Oven Temp: 115°

Ending Date of Test: 12/11/12

Time: 3:20pm

Date: 12/11/12

DC
12/11/12
ASC

Concentration		Initial Wt of Pad (mg)	Final Wt of Pad (mg)
0%	A	7.547	15.391
	B	8.043	15.405
	C	8.144	14.937
	D	7.825	15.326
	E		
19%	A	9.793	17.301
	B	9.251	16.333
	C	8.194	16.012
	D	9.614	16.823
	E		
 	A		
	B		
	C		
	D		
	E		
 	A		
	B		
	C		
	D		
	E		
 	A		
	B		
	C		
	D		
	E		