

ATTACHMENT 1

CHRONIC TOXICITY STUDY
PERFORMED ON PRE-TECT 9002 HP

Submitted to:

Mr. Brian LaPlante
Calgon Corporation
P.O. Box 1346
Pittsburgh, PA 15230

≡

Prepared by:

Biological Monitoring, Inc.
P.O. Box 184
Blacksburg, VA 24063

Phone: 703-953-2821
Fax: 703-951-1481

April 27, 1995

c:\ep\work\pre-TECT\052.rpt

9509250303 950920
PDR ADOCK 05000413
P PDR

BMC BIOLOGICAL MONITORING, INC.

P.O. Box 184 • Blacksburg, Virginia 24063 • Telephone 703-953-2321 • Fax 703-951-1481

STUDY PROTOCOL

Title: Chronic Toxicity Study 1111 Project Number: 2372

Purpose: To determine the chronic toxicity of Pre-Tect 9002 HP to Ceriodaphnia dubia

Project Scientist(s): Anthony Smith

Study Director: William J. Rasnake

Name and Address of Sponsor or Test Facility: Mr. Brian LaPlante
Calgon Corporation

P.O. Box 1346

Pittsburgh, PA 15230

Proposed Starting and Completion Dates: 4 / 17 / 95 - 4 / 24 / 95

Test Mode and Justification: 7 day static with renewal short term chronic test

Test Species Information: Species: Ceriodaphnia dubia Age: 18-24 h

No. per Replicate: 1 Sex: F Source: EMI Strain: NA

Experimental Design Description (SOP number or summarize and attach detailed description)

SOP # H.1.1 EPA 600/4-89/001

Test Article Preparation: Solvents: NA Emulsifiers: NA

Other: _____ Route of Exposure: _____

Feeding Regime and Diet: NA

Records to Be Maintained: Daily counts and water chemistry

Test Endpoints and Statistical Methods to be used: NOEC and LOEC for survival and reproduction
EPA Program

Date of Protocol Approval by Sponsor or Regulatory Agency: / /

Study Director: (Signature) _____

(Title): Senior Project Coordinator

1.0 INTRODUCTION

Calgon Corporation, Pittsburgh, Pennsylvania, contracted Biological Monitoring, Inc. (BMI) of Blacksburg, Virginia, to perform a short term chronic toxicity test on the product Pre-Tect 9002 HP. The Ceriodaphnia dubia was used as the test organism.

2.0 MATERIALS and METHODS

2.1 Dilution Water

Blacksburg, Virginia, municipal tapwater, dechlorinated, deionized and 0.2 micron filtered (BMI-DMW) was reconstituted with Evian brand mineral water and used as the dilution water. This water is BMI's standard dilution water for chronic Ceriodaphnia dubia testing and is used to culture and maintain the Ceriodaphnia dubia at BMI. Dechlorination was accomplished by activated carbon filtration. No total residual chlorine was detected in the dilution water used in this study (detection limit = 0.01 mg/L). Deionization was accomplished using 2 mixed bed deionization tanks and a Milli-Pore, Milli-Q, UV plus system (final resistivity = 18.2 megohm).

2.2 Product Sample

The product sample was labeled Pre-Tect 9002 HP. The product was a slightly viscous liquid with a pronounced odor and was received in a 125 mL amber glass container on April 5, 1995. The product was noted to be relatively volatile. The product sample was stored in a flammable storage cabinet at room temperature ($20 \pm 1^\circ\text{C}$) until use.

2.3 Test Organism - Ceriodaphnia dubia

The invertebrate used in this study was the Ceriodaphnia dubia. Ceriodaphnia dubia are continuously cultured and maintained at BMI. 18-24 hour old neonates were obtained as per BMI

Standard Operating Procedure (Appendix A). The results of the reference toxicant test conducted during the month of the study indicated that the Ceriodaphnia dubia were of normal health.

2.4 Ceriodaphnia dubia Toxicity Test Methods

Test concentrations for the 7 day short-term chronic definitive study were based on a four day range-finding test. (See Appendix B). This range-finding test indicated that 0, 62.5, 125, 250, 500, and 1000 mg/L would be appropriate concentrations for the definitive test. The methods used in the test conformed to the recommended guidelines specified by EPA for chronic toxicity tests (EPA/600/4-89/001) (See BMI SOP's, Appendix A).

For the definitive test, ten organisms, one organism per replicate, were randomly selected and exposed to each treatment of the definitive test. Twenty-two mL polystyrene cups, rinsed with dilution water, were used as test chambers and the test volume was 15 mL per replicate. The test temperature was $25 \pm 1^\circ\text{C}$. The test was renewed daily with a freshly prepared stock solution of the product, Pre-Tect 9002 HP. All test organisms were fed 0.1 mL YCT (See BMI SOPs F.1.1) and 0.1 mL Algae (Selenastrum capricornutum from outside source) once per day at the renewal.

Physiochemical measurements, such as temperature, Dissolved Oxygen (mg/L), pH, and Conductivity (umhos), were made daily on all test concentrations, both before and after renewal. Alkalinity and hardness (mg/L CaCO_3) of the diluent were measured on each dilution water batch used. The number of surviving organisms, the total number of neonates produced, and time of renewal were recorded daily. (See Appendix C).

3.0 RESULTS and DISCUSSION

Table 1 presents a summary of the results of the short term chronic Ceriodaphnia dubia toxicity test. The 7 day NOEC (No Observed Effect Concentration) for product Pre-Tect 9002 HP, for survival and reproduction, was 1000 mg/L. This indicates that the survival and reproduction of all test concentrations were not significantly lower than survival and reproduction in the control. The chronic toxicity of Pre-Tect 9002 HP to vertebrates is not known, further testing would be required.

4.0 QUALITY CONTROL/QUALITY ASSURANCE

To ensure that the test organisms were of normal health, chronic reference toxicant tests are performed. These tests are conducted at least once a month on the fathead minnows and Ceriodaphnia dubia cultured at BMI. Fish or other organisms received from outside suppliers are also tested with a reference toxicant (usually sodium chloride) (See Appendix D). For the Ceriodaphnia dubia reference test performed during the month of this study, the chronic value fell well within the appropriate range of acceptability.

The Study Protocols prepared for this toxicity study are included as Page i and ii. These summarize the test conditions and protocols followed.

TABLE 1
 BIOLOGICAL MONITORING, INC.
 Toxicity Test Condition Summary

Client: Calgon Corporation

Prepared by: Jennifer Maloney

VPDES Permit #: N/A

Experiment ID#: CAL041795-1

Test Organism: Ceriodaphnia dubia

Test Type: Short-term Chronic

Organism Age at Start of Test: 18-24h

Sample Tested: Pre-Tect 9002 HP

Sample Type: Compound

Sample Collection Dates and Times: Compound stock prepared daily

Sample Collector: N/A

Delivered by: Overnight Courier

Test Solution Renewal Frequency: Daily

Dilution Water Used: DMW

Test Temperature: 25 ± 1C

No. of Replicates per conc.: 10

No. of Organisms per Replicate: 1

Chamber Size: 22 mL PS

Test Volume: 15 mL

Feeding prior to test: None

Feeding Regime: 1 x Daily

Photo Period: 16h light/8h dark

Test Duration: 7d

Start of Test: Date: 04/17/95

Time: 1435

End of Test: Date: 04/24/95

Time: 1035

Equipment:

pH Meter: SA 720 (c)

DO Meter: YSI 58 (A)

SCT Meter: YSI 33 (e)

°C Measurement: Calibrated Thermometer

Salinity: SCT Meter

Chlorine: Fisher/Porter Amperometric Titrator

Test Method Reference: U.S. EPA. 1989. Short-term methods for estimating the Chronic toxicity of effluents and receiving waters to freshwater organisms. EPA/600/4-89/001.

TABLE 1 (CONT.)

BIOLOGICAL MONITORING, INC.
Chronic Toxicity Test Data Summary

Client	Calgon Corporation	NPDES Permit #	N/A	
Test Organism	<i>Ceriodaphnia dubia</i>	Date	Time	
Experiment ID	CAL041795-1	Start Test	04/17/95	1435
Sample Tested	Pre-Test 9002 HP	End Test	04/24/95	1035

RESULTS

Water Chemistry Analyses (Range)							Survival and Reproduction	
Conc. (%)	Temp. (°C)	D.O. (mg/l)	pH	Initial Alkalinity mg/l as CaCO ₃	Initial Hardness mg/l as CaCO ₃	Cond. (µmhos)	Survival (%) 40h / 7d	Total Offspring
0	25-26	7.2-7.9	7.1-7.9					
42.5	25-26	7.2-7.9	7.1-7.9	80	90	170-180	100/90	200
125	25-26	7.2-7.9	7.2-8.1			175-185	100/100	220
250	25-26	7.2-7.9	7.2-8.3			180-190	100/100	159
500	25-26	7.2-8.0	7.2-8.6			180-200	100/100	202
1000	25-26	7.2-8.0	7.3-8.9	N/A	N/A	185-200	100/100	209
						190-205	100/90	145

STATISTICAL ANALYSES

Test Method	End Point		
Fisher's	Survival	NCEC = 100%	LOEC = N/A
Dunnnett's	Reproduction	NOEC = 100%	LOEC = N/A

NOEC = No Observed Effect Concentration LOEC = Lowest Observed Effect Concentration

SURVIVAL DATA

1. No Transformation was used.
2. *Ceriodaphnia dubia* survival in all effluent concentrations was not significantly lower than survival in the control using Fisher's Test, (p>0.05).

REPRODUCTION DATA

1. No transformation was used.
2. Data PASS normality test using Chi-Squared Test.
3. Data PASS homogeneity test using Bartlett's Test.
4. *Ceriodaphnia dubia* reproduction in the all effluent concentrations was not significantly lower than reproduction in the control using Dunnnett's Test, (p>0.05).

Comments:

MATERIAL SAFETY DATA SHEET

ATTACHMENT 2



P.O. Box 1346
Pittsburgh, PA 15230-1346

24 Hour Emergency Telephone-(412)777-8000

Section 1. PRODUCT IDENTIFICATION

PRODUCT NAME: Pre-Tect 9002

CHEMICAL DESCRIPTION: Aqueous amine solution
PRODUCT CLASS: Boiler water treatment
MSDS CODE: 0F04

Section 2. HAZARDOUS INGREDIENTS AND EXPOSURE LIMITS

<u>Chemical Name</u>	<u>CAS Number</u>	<u>% by Weight</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Dimethylamine (DMA)	124-40-3	2	TWA 10 ppm, 18 mg/m ³	TWA 5 ppm, 9.2 mg/m ³ ; STEL 15 ppm, 27.6 mg/m ³

Section 3. HAZARDS IDENTIFICATION

***** EMERGENCY OVERVIEW *****

DANGER!

- May cause severe eye and skin damage.
- May be harmful if swallowed.
- May cause allergic skin reaction.
- May cause respiratory tract irritation.
- Combustible liquid and vapor.
- May form suspected cancer-causing nitrosamines if mixed with nitrites.

PRIMARY ROUTES OF ENTRY: Eye and skin contact, inhalation, skin absorption, ingestion

TARGET ORGANS: Eye, skin, lung, mucous membranes, liver

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

- Asthma
- Skin disorders and allergies
- Chronic respiratory disease, e.g., bronchitis, emphysema
- Eye disease

MATERIAL SAFETY DATA SHEET

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: This product may cause irreversible eye damage upon contact depending on the length of exposure, solution concentration and first aid measures. Product vapor in low concentrations can cause tearing, conjunctivitis and corneal edema when absorbed into the tissue of the eye from the atmosphere. Corneal edema may give rise to a perception of "blue haze" or "fog" around lights. The condition is transient and has no known residual effect.

SKIN CONTACT: This product may produce burns upon contact with the skin. The severity of the burn is generally determined by the concentration of the solution and the duration of the exposure. The vapors may also be irritating to the skin. DMA may cause an allergic skin reaction and may be absorbed through the skin causing nausea, headache, and general discomfort.

INGESTION: Ingestion of this product may cause severe irritation or burns of the mucous membranes of the mouth, throat, esophagus and stomach.

INHALATION: DMA vapors are irritating to the respiratory tract. Inhalation of vapors may produce chemical pneumonitis, pulmonary edema, and delayed scarring of the airway and other affected organs. Repeated and/or prolonged exposure to vapors may cause chronic irritation of the respiratory tract, bronchopneumonia, and other adverse respiratory effects such as cough, tightness of chest, or shortness of breath.

SUBCHRONIC, CHRONIC:

DMA added to the diet of rats at 150 mg/kg for 3.5 months increased liver demethylase activity even in the presence of the enzyme inducer casein. In a subchronic study, 15 rats, 15 guinea pigs, 3 rabbits, 2 dogs, and 3 monkeys were exposed continuously by inhalation at approximately 5 ppm of DMA for 90 days. There were no deaths or signs of toxicity and all hematologic values were normal. On histopathologic examination, interstitial inflammatory changes were noted in the lungs of each species. Further, the 3 rabbits and 2 monkeys showed dilatation of the bronchi.

In a 2-year inhalation study, groups of 95 male and 95 female rats and mice were exposed 6 hours/day, 5 days/week at 10, 50, or 175 ppm of DMA. Concentration-dependent toxicity was characterized by decreased body weight (175 ppm only) and progressive inflammatory, degenerative, and hyperplastic lesions of the nasal passages. Nasal toxicity was similar in both rats and mice (no sex differences) affecting respiratory and olfactory epithelia. Lesions were severe at 175 ppm, moderate at 50 ppm, and focal and mild at 10 ppm.

CARCINOGENICITY:

NTP:

No ingredients listed in this section

IARC:

No ingredients listed in this section

OSHA:

No ingredients listed in this section

Section 4. FIRST AID MEASURES

EYE CONTACT: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Seek medical aid immediately.

MATERIAL SAFETY DATA SHEET

- SKIN CONTACT:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Seek medical aid immediately. Wash clothing before reuse. Destroy contaminated leather apparel. Victims with major skin contact should be maintained under medical observation for at least 24 hours due to the possibility of delayed reaction.
- INGESTION:** If swallowed, do NOT induce vomiting. Give large quantities of water. Seek medical aid immediately. Never give anything by mouth to an unconscious person.
- Note to Physicians: This product is highly injurious to all tissues, similar to that of ammonia or ammonia gas. Chemical pneumonitis, pulmonary edema, laryngeal edema and delayed scarring of the airway or other affected tissues may occur following exposure. There is no specific treatment. Clinical management is based on supportive treatment, which is similar to that for thermal burns.
- INHALATION:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical aid. Prevent aspiration of vomit. Turn victim's head to the side. Assure mucous does not obstruct airway.

Section 5. FIRE-FIGHTING MEASURES

- FLASH POINT:** 127 °F (COQ)
This product is a combustible liquid.
- LOWER FLAMMABLE LIMIT:** Not available **UPPER FLAMMABLE LIMIT:** Not available
- AUTO-IGNITION TEMPERATURE:** Not available
- EXTINGUISHING MEDIA:** Use CO₂, dry chemical, alcohol foam.
- FIRE-FIGHTING INSTRUCTIONS:** Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential.
Use water to keep fire-exposed containers cool.
- FIRE & EXPLOSION HAZARDS:** Product emits toxic gases under fire conditions. Product vapors are heavier than air and may travel a considerable distance to a source of ignition and flash back. Vapors may collect in closed spaces such as sewers, caves or closed structures.
- DECOMPOSITION PRODUCTS:** Upon decomposition, ammonia vapors are liberated. Upon combustion in the presence of sufficient oxygen, product generates harmful carbon monoxide, carbon dioxide, and nitrogen oxide gases. Nitrogen oxide can react with water vapor to yield nitric acid. Combustion of product under oxygen-starved conditions can be expected to produce numerous toxic products including: nitriles, cyanic acid, isocyanates, cyanogens, nitrosamines, amides, carbamates.
- NFPA RATINGS:** Health = 3 Flammability = 2 Reactivity = 0 Special Hazard = None
- Hazard rating scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

MATERIAL SAFETY DATA SHEET

Section 6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Ventilate area of spill. Eliminate all ignition sources. Approach release from upwind. Use water spray to cool and disperse vapors, protect personnel, and dilute spills to form nonflammable mixtures. Five percent sulfuric acid may be used to neutralize diluted pools. Wearing appropriate personal protective equipment, contain spill, collect onto noncombustible absorbent like sand or earth and place into suitable container. Vapors tend to remain close to the ground and collect in out-of-the-way places. Use non-sparking blowers or ventilation facilities to remove potential explosive or toxic accumulations.

Section 7. HANDLING AND STORAGE

HANDLING: Do not get in eyes, on skin or clothing.
Avoid breathing vapor or mist.
Keep away from heat and flame.
Use with adequate ventilation.
Wash thoroughly after handling.
Keep container closed when not in use.
Remove all equipment which may be a source of ignition from vicinity while handling.
Empty containers may contain explosive vapors. Flush empty containers with water to remove residual flammable liquid and vapors.

STORAGE: Keep away from oxidizers, heat or flames. Store away from ignition sources. Ground all containers during transfer. Store in steel containers preferably located outdoors, above ground, and surrounded by dikes to contain spills or leaks. Electrical installations should be in accordance with Article 501 of the National Electrical Code for Class I Division 2 locations.

Section 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT:

EYE/FACE PROTECTION: Chemical splash goggles and face shield

SKIN PROTECTION: Chemical resistant gloves and protective clothing

RESPIRATORY PROTECTION: If airborne concentrations exceed published exposure limits, use a NIOSH approved respirator in accordance with OSHA respiratory protection requirements (29 CFR 1910.134).

ENGINEERING CONTROLS: Local exhaust ventilation may be required in addition to general room ventilation to maintain airborne concentrations below exposure limits.

WORK PRACTICES: Eye wash station and safety shower should be accessible in the immediate area of use.

UNSATISFACTORY MATERIALS OF CONSTRUCTION: DMA corrodes copper, aluminum, zinc, and galvanized surfaces.

MATERIAL SAFETY DATA SHEET

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: Not available
 SOLUBILITY IN WATER: Complete
 VAPOR PRESSURE: 2 torr @ 10°C (for DMA)
 SPECIFIC GRAVITY: Not available
 VAPOR DENSITY (air = 1): 1.55 (for DMA)
 pH: Basic
 % VOLATILE BY WEIGHT: 100
 FREEZING POINT: Not available
 APPEARANCE AND ODOR: Clear, colorless liquid with ammoniacal/fishy odor.

Section 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable
 HAZARDOUS POLYMERIZATION: Will not occur
 CONDITIONS TO AVOID: Keep away from heat and flame.
 INCOMPATIBILITY: Strong oxidizers, acids, copper, aluminum, zinc and galvanized surfaces.
 DECOMPOSITION PRODUCTS: Upon decomposition, ammonia vapors are liberated. Upon combustion in the presence of sufficient oxygen, product generates harmful carbon monoxide, carbon dioxide, and nitrogen oxide gases. Nitrogen oxide can react with water vapor to yield nitric acid. Combustion of product under oxygen-starved conditions can be expected to produce numerous toxic products including: nitriles, cyanic acid, isocyanates, cyanogens, nitrosamines, anides, carbamates.

Section 11. TOXICOLOGICAL INFORMATION

ON PRODUCT:
 See the following information on active ingredient.

ON INGREDIENTS:

<u>Chemical Name</u>	<u>Oral LD₅₀</u> <u>(rat)</u>	<u>Dermal LD₅₀</u> <u>(rabbit)</u>	<u>Inhalation LC₅₀</u> <u>(rat)</u>
Dimethylamine (DMA)	698 mg/kg	Not available	4540 ppm/6H

Section 12. ECOLOGICAL INFORMATION

ON PRODUCT:
 Aquatic toxicity data on a 10% solution of DMA:
 48 hr LC₅₀ (Daphnia magna): 675 ppm
 96 hr LC₅₀ (fathead minnow): > 1000 ppm
 96 hr LC₅₀ (bluegill sunfish): > 1000 ppm

MATERIAL SAFETY DATA SHEET

Section 13. DISPOSAL CONSIDERATIONS

RCRA STATUS: The EPA Hazardous Waste Number is U092.

DISPOSAL: Dispose of in accordance with local, state and federal regulations. Incineration is acceptable and the preferred method of disposal. However, nitrogen oxide emission controls may be required to meet specifications. Chemical and/or biological degradation is feasible. A suitable industrial or municipal waste treatment system can be used depending on the quality and quantity of waste to be treated, the treatment plant capability, and discharge water quality standards. Incinerate in an open container. Do not dump into municipal sewers or enclosed drains that present a fire or explosion hazard.

Section 14. TRANSPORT INFORMATION

DOT CLASSIFICATION:

Class/Division: 3

Proper Shipping Name: Flammable liquid, corrosive, n.o.s. (Dimethylamine)

Label: Flammable liquid, Corrosive

Packing Group: III

ID Number: UN 2924

Section 15. REGULATORY INFORMATION

OSHA Hazard Communication Status: Hazardous

TSCA: The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CERCLA reportable quantity of EPA hazardous substances in product:

<u>Chemical Name</u>	<u>RQ</u>
Dimethylamine (DMA)	1000 lb

Product RQ: 50,000 lb (Notify EPA of product spills exceeding this amount.)

SARA TITLE III:

Section 302 Extremely Hazardous Substances:

<u>Chemical Name</u>	<u>CAS #</u>	<u>RQ</u>	<u>TPO</u>
No ingredients listed in this section			

Section 311 and 312 Health and Physical Hazards:

Immediate	Delayed	Fire	Pressure	Reactivity
[yes]	[yes]	[yes]	[no]	[no]

Section 313 Toxic Chemicals:

<u>Chemical Name</u>	<u>CAS #</u>	<u>% by Weight</u>
No ingredients listed in this section		

HAZARDOUS MATERIAL SAFETY DATA SHEET

Section 16. OTHER INFORMATION

HMS RATINGS: Health = 3* Flammability = 2 Reactivity = 0
Personal Protective Equipment = X (to be specified by user depending on use conditions)

*There are potential chronic health effects to consider.

Hazard rating scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

MSDS REVISION SUMMARY: Not applicable

While this information and recommendations set forth herein are believed to be accurate as of the date hereof, CALCON CORPORATION MAKES NO WARRANTY WITH RESPECT HERETO AND DISCLAIMS ALL LIABILITY FROM RELIANCE THEREON.

PREPARED BY: P.J. Maloney

South Carolina
DHEC

Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

Commissioner: Douglas E. Bryant

Board: John H. Burris, Chairman
Sandra J. Molander, Secretary

Richard E. Jabbour, DDS
William M. Hull, Jr., MD
Roger Leaks, Jr.

Promoting Health, Protecting the Environment

June 28, 1995

ENVIRONMENTAL PROTECTION SECTION

JUL 03 1995

Mr. Robert R. Wylie
Duke Power Company
Electric System Support Department
13339 Hagers Ferry Rd.
Huntersville, NC 28078-7929

FILE _____
 TICKLER DATE _____
 COPY _____
 ROUTE _____

Re: Maintenance Chemical Request
Duke PWR/Oconee Nuclear Station
Oconee County

Dear Mr. Wylie:

This letter is in regards to your May 30, 1995 request to use Calgon Corporation's Pre-Tect 9002 HP in Oconee Nuclear Station's feedwater system. Based upon the results of the toxicity tests you have submitted, use of this product is approvable.

This Office approves the use of Pre-Tect 9002 HP, with the condition that the concentration does not exceed the NOEC of 1000 ppm at Outfall(s) 002 and 004.

Should you have any questions, please contact me at 734-5248.

Sincerely,

William C. Botts

William C. Botts
Industrial & Agricultural Wastewater Division
Bureau of Water Pollution Control

cc: George Tomlin, App I EQC
Vernon Beaty, WQAE