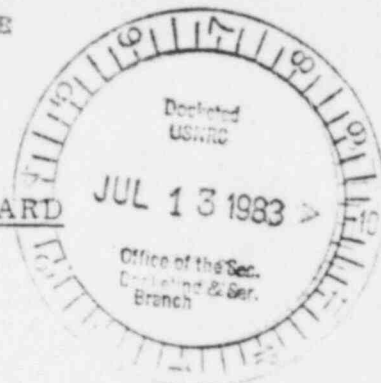


UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



In the Matter of )  
 )  
CAROLINA POWER & LIGHT COMPANY )  
AND NORTH CAROLINA EASTERN MUNICIPAL )  
POWER AGENCY )  
 )  
(Shearon Harris Nuclear Power Plant, )  
Units 1 & 2) )

Docket Nos. 50-400 OL  
50-401 OL

APPLICANTS' RESPONSE TO REQUEST FOR SUPPLEMENTATION OF ANSWERS TO  
INTERROGATORIES (LETTER FROM R. WILSON, MAY 23, 1983)

Through the process of informal resolution of discovery disputes, Dr. Richard Wilson has requested Applicants to supplement certain of the answers contained in Applicants' Response to Richard Wilson Interrogatories (May 10, 1983).

Applicants have considered Dr. Wilson's requests and provide the following responses. Applicants are providing these supplemental responses in an effort to achieve resolution of disagreements through the informal negotiation process encouraged by the Board. In providing these responses, Applicants do not concede that their previously filed responses were incomplete. Each request for supplementation is quoted at length below and is followed immediately by Applicants' response thereto.

Interrogatories [sic] 1(a)-1 and 1(a)-2 Your response presents a conclusion but no basis for that conclusion, as is called for in the general interrogatory and question 1(a)-2.

In addition, your response limits itself to Cl<sub>2</sub>, whereas most of the chlorine in the drift will be combined available chlorine. Please supplement your answer in accordance with these points.

ANSWER. Applicants have not performed an analysis of chlorine transport in the vapor and aerosol effluent from the Harris plant cooling towers. The absence of reported

findings of adverse environmental impacts caused by chlorine transport in cooling tower vapor and aerosol effluents at operating power plants supports Applicants' conclusion that there would be no adverse environmental impact caused by chlorine transport in the Harris plant cooling tower vapor and aerosol effluents.

Interrogatory No. 1(a)-1 referred to chlorine transport and Applicants, therefore, addressed chlorine as ( $\text{Cl}_2$ ) and not chlorine compounds.

Chlorine will be added as hypochlorite solution. For an explanation of resulting reactions involved in this process, see EPA Development Document for Effluent Limitations and Standards for the Steam Electric Point Source Category (draft) EPA 440/1-80/029-b pages 68-74.

The percentage or volume of the chlorine compounds which may be formed and dispersed has not been calculated by Applicants. However, Applicants believe that any chlorine compounds formed will not exist in great enough concentration upon deposition to cause adverse effects upon biota.

Any chlorine compounds present will be highly diluted and the concentrations reaching the ground will be negligible, and thus would be expected to have no adverse effects.

Because Applicants have performed no specific analysis of the chlorine transport in the vapor and aerosol effluent from the Harris Plant cooling towers, the answer to Interrogatory 1(a)-2(a) (1) through (9) continues to be as originally stated, i.e., not applicable.

Interrogatory 1(a)-3 You did not specify concentrations and durations that might be needed for any of the situations you mentioned. They can be reasonably well predicted. Please do so. Please include situations in which you may be granted a variance from the NPDES requirements.

ANSWER. Applicants stated in their original response that the concentrations and duration of chlorination under the various conditions mentioned would fall within the

normal range of operations. In Section 3.4.2.4 of the ER it is stated that the chlorine requirements are expected to be approximately 3-5 ppm. The NPDES permit limits free and total residual concentrations and these limits will not be exceeded even when maximum chlorination occurs.

Applicants do not anticipate seeking any variances from the limits imposed by the NPDES permit.

Interrogatory 1(a)-5 See comments on 1(a)-1 and 1(a)-2. Please supplement accordingly.

ANSWER. See answer to 1(a)-1 above.

Interrogatory 1(b)-1-3 Your response presents a conclusion but no basis for that conclusion, as is called for in the general interrogatory and 1(b)-2. If you have "performed no such specific study" how do you know there will be no adverse impacts? I am seeking a detailed quantitative answer.

ANSWER. Applicants have not performed an analysis of dispersal of chlorinated organic compounds in the vapor and aerosol from the Harris Plant cooling towers. The facts mentioned in Applicants' original answer plus the absence of any reported findings of adverse environmental impacts resulting from dispersal of chlorinated organic compounds in the vapor and aerosol from cooling towers at operating power plants support Applicants' conclusion that dispersal of chlorinated organics in vapor or aerosol from the Harris Plant cooling towers will have no adverse impact on the "biosphere".

Interrogatory 1(b)-5 Please specify the type of monitoring which you have begun.

ANSWER. In January 1983, monitoring of selected cations, anions, nutrients and trace elements in the Harris Plant reservoir was initiated as part of a biological monitoring program. The purpose of this monitoring is to characterize the system in terms of the general physical and chemical limnology as it relates to the aquatic biota.

Interrogatory 1(b)-6 Please explain how chlorination "eliminates" organic chemical compounds.

ANSWER. Applicants' original answer to Interrogatory 1(b)-6 was perhaps unclear. In that answer, the word "organics" was intended to refer to organic matter, such as algae, bacteria, fungi, etc. and not to organic chemicals as such.

Interrogatory 1(b)-9 Contention 1(b) and 1(d) show a broad concern with compounds which may be dispersed in the atmosphere. The exact percentage of the 129 compounds which are chlorinated organics (approx. 33%) is irrelevant. Please respond to the question as it is written.

ANSWER. Applicants are willing to provide to Dr. Wilson the information set forth below in the interest of finally resolving the disagreement between them concerning appropriateness of Interrogatory 1(b)-9. In providing this information, however, Applicants do not waive their position that Interrogatory 1(b)-9 is improper as seeking information which is beyond the scope of Wilson Contention 1(b) and is irrelevant thereto and do not concede that any of the information provided is relevant.

Statistics concerning nuclear power plants in operation or under construction in the United States are set forth in a document entitled "Commercial Nuclear Power Plants, Edition 15" (February 13, 1983) issued by NUS Corporation. The term "comparable in design" is too vague to permit Applicants to provide further response to this portion of the Interrogatory.

Applicants do not have the results of priority pollutant analyses performed for power plants owned or operated by other utilities.

Copies of Applicant CP&L's submittal to the EPA with respect to its Brunswick and Robinson Plants are attached hereto.

Interrogatory 1(d)3,4 My general concern is with compounds which may be dispersed into the atmosphere from cooling towers. Whether you add the compounds to the water in the tower or before the water reaches the tower (i.e. in the lake) is irrelevant. Please respond to the questions as written.

ANSWER. Applicants are willing to provide to Dr. Wilson the information set forth below in the interest of finally resolving their disagreement concerning appropriateness



of Interrogatories 1(d)-3 and -4. In providing this information, however, Applicants do not waive their position that these interrogatories are improper in that they seek information which is beyond the scope of Wilson Contention 1(d) and is irrelevant and do not concede that any of the information provided is relevant.

ANSWER 1(d)-3. None of the three species is known to be present in either of the Harris reservoirs. This is based on surveys of those reservoirs by personnel of the Applicants' Environmental Technology Section during the Spring of 1983.

Hydrilla could become established in the reservoir(s). Water hyacinth and/or alligator-weed are not expected to become established in either reservoir, based on their habitat requirements, present distributions, or temperature tolerances. See "A Manual of Marsh and Aquatic Vascular Plants of North Carolina with Habitat Data" by E. O. Beal, N. C. Ag. Exp. Sta. Tech. Bull. 247, pages 149 and 176; "Manual of the Vascular Flora of the Carolinas," by A. E. Radford et al., UNC Press, pages 272 and 422.

Hydrilla has been controlled with various aquatic herbicides, biological organisms, and mechanical methods.

The most effective method of controlling hydrilla has been achieved with aquatic herbicides. Biological control has been achieved with the use of grass carp (Ctenopharyngodon idella), but present regulations prevent that species from being stocked in public waters in North Carolina except in confined experimental areas approved by the North Carolina Wildlife Resources Commission. Mechanical control, while producing immediate results, is slow and expensive.

Herbicides registered and commonly used for hydrilla control include Diquat, various formulations of copper complexes, and Endothall (Aquathol K) (North Carolina Agricultural Chemicals Manual, page 221).

Application rates or doses for the above listed herbicides are available in product label instructions.

If hydrilla becomes established in the Harris reservoir and if herbicides are utilized for control purposes, the expected frequency of use of any of the above mentioned chemicals is one time per year. Duration of the application would be related to how long the herbicides remain active after their application. There is no interval over which the treatment is made. Typically, these herbicides either break down or are immobilized in from one to 14 days, (Technical Information Manual for Endothall, page 6; Diquat Technical Information, 4/78), depending on temperature, water turbidity, and other factors.

ANSWER 1(d)-4(a). None of the above mentioned herbicides is expected to be released in the cooling tower plume. This is because of the rapid breakdown and/or immobilization of the compounds that would occur before they would be drawn into the cooling tower makeup water intake structure.

ANSWER 1(d)-4(b). Not applicable. Chemicals would not be expected to enter the cooling tower water.

ANSWER 1(d)-4(c). Not applicable.

ANSWER 1(d)-4(d). Applicants assume that the intervenor's intent in asking this question is to determine the fate of herbicides on the ground after they were deposited by way of the cooling tower plume. Because this is not expected to occur, the answer is not applicable.

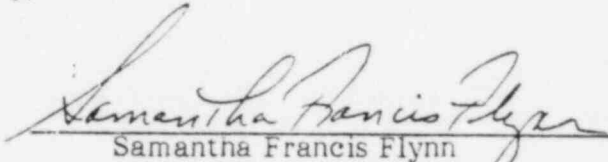
Interrogatory 1(e)-5 Your answer does not indicate whether you are aware of any studies of toxic materials in the river.

ANSWER. Applicants have no knowledge of any studies of toxic materials in the Cape Fear River.

Interrogatory 1(e)-6 This question is posed in the context of exploring potential dangers from toxic chemicals in the river. Please explain the monitoring program in a manner responsive to the intent of the question.

ANSWER. The Cape Fear River quality is monitored as part of a biological monitoring program. The purpose is to characterize the general physical and chemical limnology of the river water. Monitoring is not intended to explore the "potential dangers from toxic chemicals in the river."

This the 11<sup>th</sup> day of July, 1983.



---

Samantha Francis Flynn  
Associate General Counsel  
Carolina Power & Light Company  
Post Office Box 1551  
Raleigh, North Carolina 27602  
Telephone: 919-836-7707

Thomas A. Baxter, Esquire  
John H. O'Neill, Jr., Esquire  
Shaw, Pittman, Potts & Trowbridge  
1800 M Street, N.W.  
Washington, D. C. 20036

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD



In the Matter of )  
 )  
CAROLINA POWER & LIGHT COMPANY ) Docket Nos. 50-400 OL  
AND NORTH CAROLINA EASTERN ) 50-401 OL  
MUNICIPAL POWER AGENCY )  
 )  
(Shearon Harris Nuclear Power )  
Plant, Units 1 and 2) )

AFFIDAVIT OF WILLIAM T. HOGARTH

County of Wake )  
 )  
State of North Carolina )

William T. Hogarth, being duly sworn according to law, deposes and says that he is Manager - Environmental Technology Section of Carolina Power & Light Company; that the responses contained in "Applicants' Response to Request for Supplementation of Answers to Interrogatories" of Richard Wilson are true and correct to the best of his information, knowledge and belief; and that the sources of his information are officers, employees, agents and contractors of Carolina Power & Light Company.

William T. Hogarth  
William T. Hogarth

Sworn to and subscribed before  
me this 11 day of July, 1983.

Amir Lake George  
Notary Public

My commission expires \_\_\_\_\_

March 27, 1981



Mr. John K. Yeager, Manager  
NPDES Administration Section  
Enforcement and NPDES Administration Division  
Department of Health and  
Environmental Control  
2600 Bull Street  
Columbia, South Carolina 29201

RE: ROBINSON STEAM ELECTRIC PLANT  
NPDES PERMIT NO. SC0002925

Dear Mr. Yeager:

As requested by your letter dated October 17, 1980 to Mr. B. J. Furr, Carolina Power & Light Company has conducted analyses of Robinson Impoundment waters (at the plant intake and in the upper reaches) and the discharge canal at the Robinson Steam Electric Plant in accordance with 40 CFR 122.53 (NPDES permit renewal requirements for determining effluent characteristics). The attached analytical results are submitted in support of renewal of the Robinson NPDES permit.

The data provided is considered to be reflective of the quality and quantity of the wastewater discharges associated with plant operations (Unit Nos. 1 and 2 in service) at the time of sample collection. It should be noted that intake water quality variations may have primary influence on variation in discharge water quality.

Should you have any questions concerning this submittal, please contact Mr. T. J. Crawford in Raleigh (telephone: 919-836-6920).

Yours very truly,

A handwritten signature in dark ink, appearing to read "P. W. Howe".

P. W. Howe  
Vice President  
Technical Services

PWH/tl  
Attachment

bcc: Dr. W. T. Hogarth  
Mr. R. E. Jones  
Mr. E. A. Morgan  
Mr. W. T. Traylor

3308 East Chapel Hill/Nelson Highway  
P.O. Box 12652  
Research Triangle Park, NC 27709

MeadCompuChem

Telephone: 919-549-8263  
800-334-8525

17 March 81

Mr. Bill Wolf  
Carolina Power & Light Co.  
Shearon Harris E & E Center  
Route 1, Box 327  
New Hill, North Carolina 27562

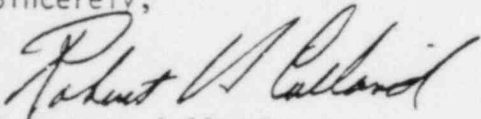
Dear Mr. Wolf:

Thank you for selecting Mead CompuChem for your recent sample analysis. We have completed the analysis that you requested and have enclosed a summary of the CompuChem data for your review. Additional data details are available for purchase if you require them.

As you know, EPA has promulgated detection limits for the priority pollutants in the December 3, 1979, Federal Register, and we have reported all priority pollutant concentrations which have exceeded these limits. In addition, we have permanently stored a complete record of your data on magnetic tape. This includes chromatograms, mass spectra, calibration and quality control data for the organics. Therefore, your original data is readily available for future reference. Should you require additional information from your data base, please contact us at 1/800-334-8525.

Your confidence in our CompuChem service is appreciated. We look forward to a continuing association.

Sincerely,



Robert H. Calland  
Vice President, Marketing

RHC/mm  
Enclosure:

Report	Intake A thru F	-	4065
	Discharge A thru F	-	4066
	Head Waters A thru F	-	4067





REPORT OF DATA

CUSTOMER PURCHASE NUMBER: 747710

SAMPLE IDENTIFIER: INTAKE A THRU F

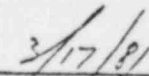
COMPU/CHEM SAMPLE NUMBER: 4065

SUBMITTED TO:

MR. BILL WOLF  
CAROLINA POWER & LIGHT  
SHEARON HARRIS E & E CENTER  
ROUTE 1, BOX 327  
NEW HILL, N.C. 27562

SUBMITTED BY:

  
R. L. MYERS PH. D.

  
DATE

SAMPLE IDENTIFIER: INTAKE A THRU F  
COMPU/CHEM SAMPLE NUMBER: 4065

1. ANALYTICAL METHODOLOGY

THE SAMPLES WERE PREPARED AND ANALYZED ACCORDING TO TWO (2) GENERAL PROCEDURES: (1) "SAMPLING AND ANALYSIS PROCEDURES FOR SCREENING OF INDUSTRIAL EFFLUENTS FOR PRIORITY POLLUTANTS," REVISED APRIL 1977, US-EPA, AND (2) EPA METHOD 624, "ORGANICS BY PURGE AND TRAP," AND METHOD 625, "BASE/NEUTRALS, ACIDS, AND PESTICIDES," US-EPA, REVISED DECEMBER 3, 1979, FEDERAL REGISTER (GUIDELINES ESTABLISHING TEST PROCEDURES FOR THE ANALYSIS OF POLLUTANTS). THE LABORATORY PROCEDURES USED FOLLOW THOSE IN METHODS 608, 624, OR 625. QUALITY ASSURANCE, SAMPLE CUSTODY, AND DOCUMENT CONTROL PROCEDURES WERE FOLLOWED WHICH MEET OR EXCEED EPA REQUIREMENTS.

2. SAMPLE RECORD

DATE

A. RECEIVED/REFRIGERATED

02/18/81

B. ORGANICS

1. EXTRACTED

02/20/81

2. ANALYZED

VOLATILES

02/21/81

BASE/NEUTRALS

02/23/81

ACIDS

02/23/81

PESTICIDES/PCBS

02/23/81

C. METALS (CYANIDE & PHENOL)

ANALYZED

NOT REQUESTED

SAMPLE IDENTIFIER: INTAKE A THRU F  
COMPU/CHEM SAMPLE NUMBER: 4065

### 3. PRIORITY POLLUTANT ANALYSIS REPORT

COMPOUNDS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
1V. ACROLEIN	BDL	100
2V. ACRYLONITRILE	BDL	100
3V. BENZENE	BDL	10
4V. BIS (CHLOROMETHYL) ETHER	BDL	10
5V. BROMOFORM	BDL	10
6V. CARBON TETRACHLORIDE	BDL	10
7V. CHLOROBENZENE	BDL	10
8V. CHLORODIBROMOMETHANE	BDL	10
9V. CHLOROETHANE	BDL	10
10V. 2-CHLOROETHYL VINYL ETHER	BDL	10
11V. CHLOROFORM	BDL	10
12V. DICHLOROBROMOMETHANE	BDL	10
13V. DICHLORODIFLUOROMETHANE	BDL	10
14V. 1,1-DICHLOROETHANE	BDL	10
15V. 1,2-DICHLOROETHANE	BDL	10
16V. 1,1-DICHLOROETHYLENE	BDL	10
17V. 1,2-DICHLOROPROPANE	BDL	10
18V. 1,3-DICHLOROPROPYLENE	BDL	10
19V. ETHYLBENZENE	BDL	10
20V. METHYL BROMIDE	BDL	10
21V. METHYL CHLORIDE	BDL	10
22V. METHYLENE CHLORIDE	BDL	10
23V. 1,1,2,2-TETRACHLOROETHANE	47	10
24V. TETRACHLOROETHYLENE	BDL	10
25V. TOLUENE	BDL	10
26V. 1,2-TRANS-DICHLOROETHYLENE	BDL	10
27V. 1,1,1-TRICHLOROETHANE	BDL	10
28V. 1,1,2-TRICHLOROETHANE	BDL	10
29V. TRICHLOROETHYLENE	BDL	10
30V. TRICHLOROFLUOROMETHANE	BDL	10
31V. VINYL CHLORIDE	BDL	10
1A. 2-CHLOROPHENOL	BDL	25
2A. 2,4-DICHLOROPHENOL	BDL	25
3A. 2,4-DIMETHYLPHENOL	BDL	25
4A. 4,6-DINITRO-O-CRESOL	BDL	25
5A. 2,4-DINITROPHENOL	BDL	250
6A. 2-NITROPHENOL	BDL	250
7A. 4-NITROPHENOL	BDL	25
8A. P-CHLORO-M-CRESOL	BDL	25
9A. PENTACHLOROPHENOL	BDL	25
10A. PHENOL	BDL	25
11A. 2,4,6-TRICHLOROPHENOL	BDL	25
1B. ACENAPHTHENE	BDL	10
2B. ACENAPHTHYLENE	BDL	10
3B. ANTHRACENE	BDL	10

BDL= BELOW DETECTION LIMIT

SAMPLE IDENTIFIER: INTAKE A THRU F  
COMPU/CHEM SAMPLE NUMBER: 4065

COMPOUNDS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
4B. BENZIDINE	BDL	10
5B. BENZO (A) ANTHRACENE	BDL	10
6B. BENZO (A) PYRENE	BDL	10
7B. 3,4-BENZOFUORANTHENE	BDL	10
8B. BENZO (GHI) PERYLENE	BDL	25
9B. BENZO (K) FLUORANTHENE	BDL	10
10B. BIS (2-CHLOROETHOXY) METHANE	BDL	10
11B. BIS (2-CHLOROETHYL) ETHER	BDL	10
12B. BIS (2-CHLOROISOPROPYL) ETHER	BDL	10
13B. BIS (2-ETHYLHEXYL) PHTHALATE	BDL	10
14B. 4-BROMOPHENYL PHENYL ETHER	BDL	10
15B. BUTYL BENZYL PHTHALATE	BDL	10
16B. 2-CHLORONAPHTHALENE	BDL	10
17B. 4-CHLOROPHENYL PHENYL ETHER	BDL	10
18B. CHRYSENE	BDL	10
19B. DIBENZO (A,H) ANTHRACENE	BDL	25
20B. 1,2-DICHLOROBENZENE	BDL	10
21B. 1,3-DICHLOROBENZENE	BDL	10
22B. 1,4-DICHLOROBENZENE	BDL	10
23B. 3,3'-DICHLOROBENZIDINE	BDL	10
24B. DIETHYL PHTHALATE	BDL	10
25B. DIMETHYL PHTHALATE	BDL	10
26B. DI-N-BUTYL PHTHALATE	BDL	10
27B. 2,4-DINITROTOLUENE	BDL	10
28B. 2,6-DINITROTOLUENE	BDL	10
29B. DI-N-OCTYL PHTHALATE	BDL	10
30B. 1,2-DIPHENYLHYDRAZINE	BDL	10
31B. FLUORANTHENE	BDL	10
32B. FLUORENE	BDL	10
33B. HEXACHLOROBENZENE	BDL	10
34B. HEXACHLOROBUTADIENE	BDL	10
35B. HEXACHLOROCYCLOPENTADIENE	BDL	10
36B. HEXACHLOROETHANE	BDL	10
37B. INDENO (1,2,3-CD) PYRENE	BDL	25
38B. ISOPHORONE	BDL	10
39B. NAPHTHALENE	BDL	10
40B. NITROBENZENE	BDL	10
41B. N-NITROSODIMETHYLAMINE	BDL	10
42B. N-NITROSODI-N-PROPYLAMINE	BDL	10
43B. N-NITROSODIPHENYLAMINE	BDL	10
44B. PHENANTHRENE	BDL	10
45B. PYRENE	BDL	10
46B. 1,2,4-TRICHLOROBENZENE	BDL	10
1P. ALDRIN	BDL	10
2P. ALPHA-BHC	BDL	10

BDL= BELOW DETECTION LIMIT

SAMPLE IDENTIFIER: INTAKE A THRU F  
COMPU/CHEM SAMPLE NUMBER: 4065

COMPOUNDS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
3P. BETA-BHC	BDL	10
4P. GAMMA-BHC	BDL	10
5P. DELTA-BHC	BDL	10
6P. CHLORDANE	BDL	10
7P. 4, 4'-DDT	BDL	10
8P. 4, 4'-DDE	BDL	10
9P. 4, 4'-DDD	BDL	10
10P. DIELDRIN	BDL	10
11P. ALPHA-ENDOSULFAN	BDL	10
12P. BETA-ENDOSULFAN	BDL	10
13P. ENDOSULFAN SULFATE	BDL	10
14P. ENDRIN	BDL	10
15P. ENDRIN ALDEHYDE	BDL	10
16P. HEPTACHLOR	BDL	10
17P. HEPTACHLOR EPOXIDE	BDL	10
18P. PCB-1242	BDL	10
19P. PCB-1254	BDL	10
20P. PCB-1221	BDL	10
21P. PCB-1232	BDL	10
22P. PCB-1248	BDL	10
23P. PCB-1260	BDL	10
24P. PCB-1016	BDL	10
25P. TOXAPHENE	BDL	10

SAMPLE IDENTIFIER: INTAKE A THRU F  
COMPU/CHEM SAMPLE NUMBER: 4065

4. SPECIAL ANALYSIS

COMPOUNDS	CONCENTRATION	DETECTION LIMIT
1. CYANIDES, TOTAL	BDL	0.01 MG/L
2. PHENOLS, TOTAL	0.02	0.01 MG/L





REPORT OF DATA

CUSTOMER PURCHASE NUMBER: 747710

SAMPLE IDENTIFIER: DISCHARGE A THRU F

COMPU/CHEM SAMPLE NUMBER: 4066

SUBMITTED TO:

MR. BILL WOLF  
CAROLINA POWER & LIGHT  
SHEARON HARRIS E & E CENTER  
ROUTE 1, BOX 327  
NEW HILL, N.C. 27562

SUBMITTED BY:

  
R. L. MYERS, PH. D.

3/7/9  
DATE

SAMPLE IDENTIFIER: DISCHARGE A THRU F  
COMPU/CHEM SAMPLE NUMBER: 4066

1. ANALYTICAL METHODOLOGY

THE SAMPLES WERE PREPARED AND ANALYZED ACCORDING TO TWO (2) GENERAL PROCEDURES: (1) "SAMPLING AND ANALYSIS PROCEDURES FOR SCREENING OF INDUSTRIAL EFFLUENTS FOR PRIORITY POLLUTANTS," REVISED APRIL 1977, US-EPA, AND (2) EPA METHOD 624, "ORGANICS BY PURGE AND TRAP," AND METHOD 625, "BASE/NEUTRALS, ACIDS, AND PESTICIDES," US-EPA, REVISED DECEMBER 3, 1979, FEDERAL REGISTER (GUIDELINES ESTABLISHING TEST PROCEDURES FOR THE ANALYSIS OF POLLUTANTS). THE LABORATORY PROCEDURES USED FOLLOW THOSE IN METHODS 608, 624, OR 625. QUALITY ASSURANCE, SAMPLE CUSTODY, AND DOCUMENT CONTROL PROCEDURES WERE FOLLOWED WHICH MEET OR EXCEED EPA REQUIREMENTS.

2. SAMPLE RECORD

DATE

A. RECEIVED/REFRIGERATED

02/18/81

B. ORGANICS

1. EXTRACTED

02/20/81

2. ANALYZED

VOLATILES

02/23/81

BASE/NEUTRALS

02/24/81

ACIDS

02/23/81

PESTICIDES/PCBS

02/24/81

C. METALS (CYANIDE & PHENOL)

ANALYZED

03/04/81

SAMPLE IDENTIFIER: DISCHARGE A THRU F  
COMPU/CHEM SAMPLE NUMBER: 4066

### 3. PRIORITY POLLUTANT ANALYSIS REPORT

COMPOUNDS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
1V. ACROLEIN	BDL	100
2V. ACRYLONITRILE	BDL	100
3V. BENZENE	BDL	10
4V. BIS (CHLORD METHYL) ETHER	BDL	10
5V. BROMOFORM	BDL	10
6V. CARBON TETRACHLORIDE	BDL	10
7V. CHLOROBENZENE	BDL	10
8V. CHLORODIBROMOMETHANE	BDL	10
9V. CHLOROETHANE	BDL	10
10V. 2-CHLOROETHYL VINYL ETHER	BDL	10
11V. CHLOROFORM	BDL	10
12V. DICHLOROBROMOMETHANE	BDL	10
13V. DICHLORODIFLUOROMETHANE	BDL	10
14V. 1,1-DICHLOROETHANE	BDL	10
15V. 1,2-DICHLOROETHANE	BDL	10
16V. 1,1-DICHLOROETHYLENE	BDL	10
17V. 1,2-DICHLOROPROPANE	BDL	10
18V. 1,3-DICHLOROPROPYLENE	BDL	10
19V. ETHYLBENZENE	BDL	10
20V. METHYL BROMIDE	BDL	10
21V. METHYL CHLORIDE	BDL	10
22V. METHYLENE CHLORIDE	BDL	10
23V. 1,1,2,2-TETRACHLOROETHANE	63 BDL	10
24V. TETRACHLOROETHYLENE	BDL	10
25V. TOLUENE	BDL	10
26V. 1,2-TRANS-DICHLOROETHYLENE	BDL	10
27V. 1,1,1-TRICHLOROETHANE	BDL	10
28V. 1,1,2-TRICHLOROETHANE	BDL	10
29V. TRICHLOROETHYLENE	BDL	10
30V. TRICHLOROFLUOROMETHANE	BDL	10
31V. VINYL CHLORIDE	BDL	10
1A. 2-CHLOROPHENOL	BDL	25
2A. 2,4-DICHLOROPHENOL	BDL	25
3A. 2,4-DIMETHYLPHENOL	BDL	25
4A. 4,6-DINITRO-O-CRESOL	BDL	25
5A. 2,4-DINITROPHENOL	BDL	250
6A. 2-NITROPHENOL	BDL	250
7A. 4-NITROPHENOL	BDL	25
8A. P-CHLORO-M-CRESOL	BDL	25
9A. PENTACHLOROPHENOL	BDL	25
10A. PHENOL	BDL	25
11A. 2,4,6-TRICHLOROPHENOL	BDL	25
1B. ACENAPHTHENE	BDL	10
2B. ACENAPHTHYLENE	BDL	10
3B. ANTHRACENE	BDL	10

BDL= BELOW DETECTION LIMIT

SAMPLE IDENTIFIER: DISCHARGE A THRU F  
COMPU/CHEM SAMPLE NUMBER: 4066

COMPOUNDS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
4B. BENZIDINE	BDL	10
5B. BENZO (A) ANTHRACENE	BDL	10
6B. BENZO (A) PYRENE	BDL	10
7B. 3,4-BENZOFLUORANTHENE	BDL	10
8B. BENZO (GHI) PERYLENE	BDL	10
9B. BENZO (K) FLUORANTHENE	BDL	25
10B. BIS (2-CHLOROETHOXY) METHANE	BDL	10
11B. BIS (2-CHLOROETHYL) ETHER	BDL	10
12B. BIS (2-CHLOROISOPROPYL) ETHER	BDL	10
13B. BIS (2-ETHYLHEXYL) PHTHALATE	BDL	10
14B. 4-BROMOPHENYL PHENYL ETHER	BDL	10
15B. BUTYL BENZYL PHTHALATE	BDL	10
16B. 2-CHLORONAPHTHALENE	BDL	10
17B. 4-CHLOROPHENYL PHENYL ETHER	BDL	10
18B. CHRYSENE	BDL	10
19B. DIBENZO (A,H) ANTHRACENE	BDL	10
20B. 1,2-DICHLOROBENZENE	BDL	25
21B. 1,3-DICHLOROBENZENE	BDL	10
22B. 1,4-DICHLOROBENZENE	BDL	10
23B. 3,3'-DICHLOROBENZIDINE	BDL	10
24B. DIETHYL PHTHALATE	BDL	10
25B. DIMETHYL PHTHALATE	BDL	10
26B. DI-N-BUTYL PHTHALATE	BDL	10
27B. 2,4-DINITROTOLUENE	BDL	10
28B. 2,6-DINITROTOLUENE	BDL	10
29B. DI-N-OCTYL PHTHALATE	BDL	10
30B. 1,2-DIPHENYLHYDRAZINE	BDL	10
31B. FLUORANTHENE	BDL	10
32B. FLUORENE	BDL	10
33B. HEXACHLOROBENZENE	BDL	10
34B. HEXACHLOROBUTADIENE	BDL	10
35B. HEXACHLOROCYCLOPENTADIENE	BDL	10
36B. HEXACHLOROETHANE	BDL	10
37B. INDENO (1,2,3-CD) PYRENE	BDL	10
38B. ISOPHORONE	BDL	25
39B. NAPHTHALENE	BDL	10
40B. NITROBENZENE	BDL	10
41B. N-NITROSODIMETHYLAMINE	BDL	10
42B. N-NITROSODI-N-PROPYLAMINE	BDL	10
43B. N-NITROSODIPHENYLAMINE	BDL	10
44B. PHENANTHRENE	BDL	10
45B. PYRENE	BDL	10
46B. 1,2,4-TRICHLOROBENZENE	BDL	10
1P. ALDRIN	BDL	10
2P. ALPHA-BHC	BDL	10

BDL= BELOW DETECTION LIMIT

SAMPLE IDENTIFIER: DISCHARGE A THRU F  
COMPU/CHEM SAMPLE NUMBER: 4066

4. SPECIAL ANALYSIS

COMPOUNDS	CONCENTRATION	DETECTION LIMIT
1. CYANIDES, TOTAL	BDL	0.01 MG/L
2. PHENOLS, TOTAL	BDL	0.01 MG/L



REPORT OF DATA

CUSTOMER PURCHASE NUMBER: 747710


SAMPLE IDENTIFIER: HEAD WATERS A THRU F

COMPU/CHEM SAMPLE NUMBER: 4067

SUBMITTED TO:

MR. BILL WOLF  
CAROLINA POWER & LIGHT  
SHEARON HARRIS E & E CENTER  
ROUTE 1, BOX 327  
NEW HILL, N.C. 27562

SUBMITTED BY:

  
R. L. MYERS PH. D.

  
DATE



SAMPLE IDENTIFIER: DISCHARGE A THRU F  
COMPU/CHEM SAMPLE NUMBER: 4066

COMPOUNDS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
3P. BETA-BHC	BDL	10
4P. GAMMA-BHC	BDL	10
5P. DELTA-BHC	BDL	10
6P. CHLORDANE	BDL	10
7P. 4,4'-DDT	BDL	10
8P. 4,4'-DDE	BDL	10
9P. 4,4'-DDD	BDL	10
10P. DIELDRIN	BDL	10
11P. ALPHA-ENDOSULFAN	BDL	10
12P. BETA-ENDOSULFAN	BDL	10
13P. ENDOSULFAN SULFATE	BDL	10
14P. ENDRIN	BDL	10
15P. ENDRIN ALDEHYDE	BDL	10
16P. HEPTACHLOR	BDL	10
17P. HEPTACHLOR EPOXIDE	BDL	10
18P. PCB-1242	BDL	10
19P. PCB-1254	BDL	10
20P. PCB-1221	BDL	10
21P. PCB-1232	BDL	10
22P. PCB-1248	BDL	10
23P. PCB-1260	BDL	10
24P. PCB-1016	BDL	10
25P. TOXAPHENE	BDL	10

SAMPLE IDENTIFIER: HEAD WATERS A THRU F  
COMPU/CHEM SAMPLE NUMBER: 4067

1. ANALYTICAL METHODOLOGY

THE SAMPLES WERE PREPARED AND ANALYZED ACCORDING TO TWO (2) GENERAL PROCEDURES: (1) "SAMPLING AND ANALYSIS PROCEDURES FOR SCREENING OF INDUSTRIAL EFFLUENTS FOR PRIORITY POLLUTANTS," REVISED APRIL 1977, US-EPA, AND (2) EPA METHOD-624, "ORGANICS BY PURGE AND TRAP," AND METHOD 625, "BASE/NEUTRALS, ACIDS, AND PESTICIDES," US-EPA, REVISED DECEMBER 3, 1979, FEDERAL REGISTER (GUIDELINES ESTABLISHING TEST PROCEDURES FOR THE ANALYSIS OF POLLUTANTS). THE LABORATORY PROCEDURES USED FOLLOW THOSE IN METHODS 608, 624, OR 625. QUALITY ASSURANCE, SAMPLE CUSTODY, AND DOCUMENT CONTROL PROCEDURES WERE FOLLOWED WHICH MEET OR EXCEED EPA REQUIREMENTS.

2. SAMPLE RECORD

DATE

A. RECEIVED/REFRIGERATED

02/18/81

B. ORGANICS

1. EXTRACTED

02/20/81

2. ANALYZED

VOLATILES

02/23/81

BASE/NEUTRALS

02/24/81

ACIDS

02/23/81

PESTICIDES/PCBS

02/24/81

C. METALS (CYANIDE & PHENOL)

ANALYZED

03/06/81

SAMPLE IDENTIFIER: HEAD WATERS A THRU F  
COMPU/CHEM SAMPLE NUMBER: 4067

### 3. PRIORITY POLLUTANT ANALYSIS REPORT

COMPOUNDS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
1V. ACROLEIN	BDL	100
2V. ACRYLONITRILE	BDL	100
3V. BENZENE	BDL	10
4V. BIS (CHLOROMETHYL) ETHER	BDL	10
5V. BROMOFORM	BDL	10
6V. CARBON TETRACHLORIDE	BDL	10
7V. CHLOROBENZENE	BDL	10
8V. CHLORODIBROMOMETHANE	BDL	10
9V. CHLOROETHANE	BDL	10
10V. 2-CHLOROETHYL VINYL ETHER	BDL	10
11V. CHLOROFORM	BDL	10
12V. DICHLOROBROMOMETHANE	BDL	10
13V. DICHLORODIFLUOROMETHANE	BDL	10
14V. 1, 1-DICHLOROETHANE	BDL	10
15V. 1, 2-DICHLOROETHANE	BDL	10
16V. 1, 1-DICHLOROETHYLENE	BDL	10
17V. 1, 2-DICHLOROPROPANE	BDL	10
18V. 1, 3-DICHLOROPROPYLENE	BDL	10
19V. ETHYLBENZENE	BDL	10
20V. METHYL BROMIDE	BDL	10
21V. METHYL CHLORIDE	BDL	10
22V. METHYLENE CHLORIDE	BDL	10
23V. 1, 1, 2, 2-TETRACHLOROETHANE	56	10
24V. TETRACHLOROETHYLENE	BDL	10
25V. TOLUENE	BDL	10
26V. 1, 2-TRANS-DICHLOROETHYLENE	BDL	10
27V. 1, 1, 1-TRICHLOROETHANE	BDL	10
28V. 1, 1, 2-TRICHLOROETHANE	BDL	10
29V. TRICHLOROETHYLENE	BDL	10
30V. TRICHLOROFLUOROMETHANE	BDL	10
31V. VINYL CHLORIDE	BDL	10
1A. 2-CHLOROPHENOL	BDL	25
2A. 2, 4-DICHLOROPHENOL	BDL	25
3A. 2, 4-DIMETHYLPHENOL	BDL	25
4A. 4, 6-DINITRO-O-CRESOL	BDL	25
5A. 2, 4-DINITROPHENOL	BDL	250
6A. 2-NITROPHENOL	BDL	250
7A. 4-NITROPHENOL	BDL	25
8A. P-CHLORO-M-CRESOL	BDL	25
9A. PENTACHLOROPHENOL	BDL	25
10A. PHENOL	BDL	25
11A. 2, 4, 6-TRICHLOROPHENOL	BDL	25
1B. ACENAPHTHENE	BDL	25
2B. ACENAPHTHYLENE	BDL	10
3B. ANTHRACENE	BDL	10

BDL= BELOW DETECTION LIMIT

SAMPLE IDENTIFIER: HEAD WATERS A THRU F  
COMPU/CHEM SAMPLE NUMBER: 4067

COMPOUNDS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
4B. BENZIDINE	BDL	10
5B. BENZO (A) ANTHRACENE	BDL	10
6B. BENZO (A) PYRENE	BDL	10
7B. 3,4-BENZOFLUORANTHENE	BDL	10
8B. BENZO (GHI) PERYLENE	BDL	25
9B. BENZO (K) FLUORANTHENE	BDL	10
10B. BIS (2-CHLOROETHOXY) METHANE	BDL	10
11B. BIS (2-CHLOROETHYL) ETHER	BDL	10
12B. BIS (2-CHLOROISOPROPYL) ETHER	BDL	10
13B. BIS (2-ETHYLHEXYL) PHTHALATE	BDL	10
14B. 4-BROMOPHENYL PHENYL ETHER	BDL	10
15B. BUTYL BENZYL PHTHALATE	BDL	10
16B. 2-CHLORONAPHTHALENE	BDL	10
17B. 4-CHLOROPHENYL PHENYL ETHER	BDL	10
18B. CHRYSENE	BDL	10
19B. DIBENZO (A,H) ANTHRACENE	BDL	25
20B. 1,2-DICHLOROBENZENE	BDL	10
21B. 1,3-DICHLOROBENZENE	BDL	10
22B. 1,4-DICHLOROBENZENE	BDL	10
23B. 3,3'-DICHLOROBENZIDINE	BDL	10
24B. DIETHYL PHTHALATE	BDL	10
25B. DIMETHYL PHTHALATE	BDL	10
26B. DI-N-BUTYL PHTHALATE	BDL	10
27B. 2,4-DINITROTOLUENE	BDL	10
28B. 2,6-DINITROTOLUENE	BDL	10
29B. DI-N-OCTYL PHTHALATE	BDL	10
30B. 1,2-DIPHENYLHYDRAZINE	BDL	10
31B. FLUORANTHENE	BDL	10
32B. FLUORENE	BDL	10
33B. HEXACHLOROBENZENE	BDL	10
34B. HEXACHLOROBUTADIENE	BDL	10
35B. HEXACHLOROCYCLOPENTADIENE	BDL	10
36B. HEXACHLOROETHANE	BDL	10
37B. INDENO (1,2,3-CD) PYRENE	BDL	25
38B. ISOPHORONE	BDL	10
39B. NAPHTHALENE	BDL	10
40B. NITROBENZENE	BDL	10
41B. N-NITROSODIMETHYLAMINE	BDL	10
42B. N-NITROSODI-N-PROPYLAMINE	BDL	10
43B. N-NITROSODIPHENYLAMINE	BDL	10
44B. PHENANTHRENE	BDL	10
45B. PYRENE	BDL	10
46B. 1,2,4-TRICHLOROBENZENE	BDL	10
1P. ALDRIN	BDL	10
2P. ALPHA-BHC	BDL	10

BDL= BELOW DETECTION LIMIT

SAMPLE IDENTIFIER: HEAD WATERS A THRU F  
COMPU/CHEM SAMPLE NUMBER: 4067

COMPOUNDS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
3P. BETA-BHC	BDL	10
4P. GAMMA-BHC	BDL	10
5P. DELTA-BHC	BDL	10
6P. CHLORDANE	BDL	10
7P. 4,4'-DDT	BDL	10
8P. 4,4'-DDE	BDL	10
9P. 4,4'-DDD	BDL	10
10P. DIELDRIN	BDL	10
11P. ALPHA-ENDOSULFAN	BDL	10
12P. BETA-ENDOSULFAN	BDL	10
13P. ENDOSULFAN SULFATE	BDL	10
14P. ENDRIN	BDL	10
15P. ENDRIN ALDEHYDE	BDL	10
16P. HEPTACHLOR	BDL	10
17P. HEPTACHLOR EPOXIDE	BDL	10
18P. PCB-1242	BDL	10
19P. PCB-1254	BDL	10
20P. PCB-1221	BDL	10
21P. PCB-1232	BDL	10
22P. PCB-1248	BDL	10
23P. PCB-1260	BDL	10
24P. PCB-1016	BDL	10
25P. TOXAPHENE	BDL	10

SAMPLE IDENTIFIER: HEAD WATERS A THRU F  
COMPU/CHEM SAMPLE NUMBER: 4067

4. SPECIAL ANALYSIS

COMPOUNDS	CONCENTRATION	DETECTION LIMIT
1. CYANIDES, TOTAL	BDL	0.01 MG/L
2. PHENOLS, TOTAL	BDL	0.01 MG/L





CP&L

Carolina Power & Light Company



ANALYTICAL LABORATORY

LABORATORY ANALYSIS FORM

Requester Tom Crawford

Address \_\_\_\_\_

Laboratory Sample No. 81-582-584

Date Sampled 2-17-81

Date Received 2-18-81

Charge Number 2570 H11N65-506; 7570 H12N65-584

Description of Sample NPDES - priority Pollutant water samples - H.B. Robinson

Desired Analysis \_\_\_\_\_

Parameter	Sample		
	582 (Intake)	583 (Discharge)	584 (Interim)
Fecal Coliform, Colonies/100 ml	0	0	0
Oil and Grease, mg/L	1.3	1.5	5.0
5-Day B.O.D., mg/l	57	4.4	2.9
T.O.C., mg/L	5.5	4.5	5.6
C.O.D., mg/L	28	35	35
Suspended Solids @103°C, mg/L	1	2	41
Bromide, mg/L	42	42	42
Color, Chloroplatinate Units	25	25	30
Fluoride, mg/L	40.1	40.1	40.1
Nitrate-Nitrite (AsN), mg/L	0.02	0.05	0.02
Total Phosphorus, mg/L	0.02	0.02	0.02
Total Sulfate, mg/L	2.6	2.2	2.2
Total Sulfite, mg/L	41.0	41.0	41.0

REMARKS: \_\_\_\_\_

Analysis Performed by D. Black; G. Dean; I. Brannan; J. Evans

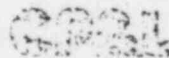
Checked by G. J. P. J.

Date Analysis Comp. 3-27-81

Lawrence L. Ball  
Supervisor - Analytical Laboratory



Carolina Power &amp; Light Company



ANALYTICAL LABORATORY  
LABORATORY ANALYSIS FORM

Requester \_\_\_\_\_

Address \_\_\_\_\_

Charge Number \_\_\_\_\_

Description of Sample \_\_\_\_\_

Laboratory Sample No. 81-582-584Date Sampled 2-17-81Date Received 2-18-81Desired Analysis H.B. Robinson NPDES Priority Pollutant

Parameter	Sample		
	582 (Intake)	583 (Discharge)	584 (Headwater)
Total Sulfide, mg/L	4.0	<1.0	<1.0
Surfactants, mg/L	<0.05	<0.05	<0.05
Total Organic Nitrogen, mg/L	0.45	0.67	0.48
Total Residual Chlorine, mg/L	<0.02	<0.02	<0.02
pH	6.1	6.1	6.3
Temperature, °C	16	21	20
Ammonia, mg/L	0.02	0.02	0.02
Radioactivity (Total Alpha, uCi/ml)	$41.23 \times 10^{-8}$	$41.23 \times 10^{-8}$	$48.72 \times 10^{-9}$
Radioactivity (Total Beta, uCi/ml)	$42.51 \times 10^{-8}$	$42.51 \times 10^{-8}$	$42.51 \times 10^{-8}$
Antimony, mg/L	0.08	0.06	<0.06
Arsenic, mg/L	0.001	0.001	0.001
Beryllium, mg/L	<0.025	<0.025	<0.025
Cadmium, mg/L	<0.004	<0.004	<0.004

REMARKS: \_\_\_\_\_

Analysis Performed by D. Black & G. Dean  
T. Brannon, J. Evans  
 Checked by A. B. G. J. E. H.  
 Date Analysis Comp. 3-27-81

*Laven R. Ball*  
 Supervisor - Analytical Laboratory



**CP&L**  
Carolina Power & Light Company



ANALYTICAL LABORATORY  
LABORATORY ANALYSIS FORM

Requester \_\_\_\_\_

Address \_\_\_\_\_

Charge Number \_\_\_\_\_

Description of Sample \_\_\_\_\_

Laboratory Sample No. 81-582-584

Date Sampled 2-17-81

Date Received 2-15-81

Desired Analysis H.B. Robinson NPDES Priority Pollutants

Parameter	Sample		
	582	583	584
	(Intake)	(Discharge)	(Groundwater)
Chromium, mg/L	<0.02	<0.02	<0.02
Copper, mg/L	0.03	0.02	0.02
Lead, mg/L	<0.02	<0.02	<0.02
Mercury, mg/L	0.0002	0.0002	0.0002
Nickel, mg/L	<0.05	<0.05	<0.05
Selenium, mg/L	0.001	<0.001	0.001
Silver, mg/L	<0.02	<0.02	<0.02
Thallium, mg/L	<0.05	<0.05	<0.05
Zinc, mg/L	0.03	0.03	0.03
Aluminum, mg/L	<0.1	<0.1	<0.1
Barium, mg/L	0.06	<0.05	<0.05
Boron, mg/L	<4.5	<4.5	<4.5
Cobalt, mg/L	<0.2	<0.2	<0.2

REMARKS: \_\_\_\_\_

Analysis Performed by G. Dean M. Niles

Checked by GD 11/11 Wm

Date Analysis Comp. 3-27-81

*James L. Ball*  
Supervisor - Analytical Laboratory



**CP&L**  
Carolina Power & Light Company



ANALYTICAL LABORATORY  
LABORATORY ANALYSIS FORM

Requestor \_\_\_\_\_  
Address \_\_\_\_\_  
Charge Number \_\_\_\_\_  
Description of Sample \_\_\_\_\_

Laboratory Sample No. 81-592-584  
Date Sampled 2-17-81  
Date Received 2-18-81

Desired Analysis H.B. Robinson NPDES Priority Pollutant

Parameter	Sample		
	582	583	584
	(Intake)	(Discharge)	(Headwater)
Iron, mg/L	0.37	0.32	0.29
Magnesium, mg/L	0.58	0.61	0.60
Molybdenum, mg/L	<0.05	<0.05	<0.05
Manganese, mg/L	0.03	0.04	0.03
Tin, mg/L	<0.2	<0.2	<0.2
Titanium, mg/L	0.42	<0.15	<0.15
Vanadium, mg/L	<0.04	<0.04	0.08
FLOW MGD		801	

REMARKS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Analysis Performed by G. Deane  
Checked by GD Wm  
Date Analysis Comp. 3-27-81

Steven Ball

Supervisor - Analytical Laboratory

October 31, 1980

Mr. A. C. Turnage, Jr. Manager  
Permits and Engineering Section  
Environmental Operations  
Division of Environmental Management  
P. O. Box 27697  
Raleigh, North Carolina 27611



RE: BRUNSWICK STEAM ELECTRIC PLANT  
NPDES PERMIT NO. NC 0007064

Dear Mr. Turnage:

Carolina Power & Light Company has conducted analyses of the intake waters and the ocean outfall discharge at the Brunswick Steam Electric Plant in accordance with 40 CFR 122.53 (NPDES permit renewal requirements for determining effluent characteristics). The attached analytical results are submitted in support of renewal of the Brunswick NPDES permit.

The data provided is considered to be reflective of the quality and quantity of the wastewater discharges associated with plant operations at the time of sample collection with both generating units in service. It should be noted that intake water quality variations may have primary influence on variation in discharge water quality.

It is our understanding that with receipt of the attached analytical data, DEM will be able to proceed with public notice and issuance of a "5 year" NPDES permit for the Brunswick Plant.

The cooperation of DEM personnel in this matter is most appreciated.

Yours very truly,

*for* P. W. Howe  
Vice President  
Technical Services

PWH/tl  
Attachments

cc: Mr. L. P. Benton, Jr.  
Mr. W. C. Mills  
Mr. Charles Wakild

bcc: Dr. W. T. Hogarth  
Mr. R. E. Jones  
Mr. E. A. Morgan  
Mr. Roger Pasteur





CP&L

Carolina Power & Light Company



ANALYTICAL LABORATORY

LABORATORY ANALYSIS FORM

Requester Tom Crawford

Address \_\_\_\_\_

Charge Number H2ON65-524

Description of Sample BSEP water sample for NPDES permit  
(Intake & Discharge)

Desired Analysis FLOW = 1530 MGD

Laboratory Sample No. 80-5114-5115

Date Sampled 10-1-80

Date Received 10-1-80

Parameter	Results	
	80-5114 (1)	80-5115 (2)
* Fecal Coliform, Colonies/100ml	3	5
* Oil and Grease, mg/L	3.5	1.8
5 - Day BOD, mg/L	7.6	5.6
Total Organic Carbon, mg/L	8.2	5.3
Chemical Oxygen Demand, mg/L	< 250	< 250
Suspended Solids @ 103°C, mg/L	28	22
Bromide, mg/L	60	64
Color, Chloroplatinate Units	20	20
Fluoride, mg/L	0.8	0.5
Nitrate - Nitrite (as N), mg/L	0.09	0.10
Total Phosphorus, mg/L	0.07	0.08
Total Sulfate, mg/L	2300	2200
Total Sulfite, mg/L	0.9	0.4
Total Sulfide, mg/L	0.6	1.0

REMARKS: \*Average of four (4) grab samples; All other results are single valves  
from 24 hr. composite samples.

(1) 80-5114: Intake

(2) 80-5115: Discharge

Analysis Performed by I. Brannan, B. Brandon  
M. Miles, D. Black, J. Evans

Checked by [Signature]

Date Analysis Comp. 10-30-80

[Signature]  
Supervisor - Analytical Laboratory



Carolina Power &amp; Light Company

ANALYTICAL LABORATORY

## LABORATORY ANALYSIS FORM

Requester Tom Crawford

Address \_\_\_\_\_

Charge Number \_\_\_\_\_

Description of Sample \_\_\_\_\_

Desired Analysis \_\_\_\_\_

Laboratory Sample No. 80-5114-5115Date Sampled 10-1-80Date Received 10-1-80

Parameter	Results	
	<u>80-5114 (1)</u>	<u>80-5115 (2)</u>
Surfactants, mg/L	< 0.4	< 0.4
Total Organic Nitrogen, mg/L	0.48	0.40
*Total Residual Chlorine, mg/L	< 0.2	< 0.2
*pH	7.4	7.3
*Temperature, °C	23.2	32.7
Ammonia, mg/L	< 0.02	< 0.02
Radioactivity (Total Alpha), $\mu\text{Ci/ml}$	$< 7.6 \times 10^{-8}$	$< 7.6 \times 10^{-8}$
Radioactivity (Total Beta), $\mu\text{Ci/ml}$	$4.3 \times 10^{-7}$	$4.5 \times 10^{-7}$

REMARKS: \* Average of four (4) grab samples; All other results are single valves from 24 hr. composite samples.

Analysis Performed by I. Brannan, B. BrandonChecked by LB E.B. WebbDate Analysis Comp. 10-30-80

Laver L Ball  
Supervisor - Analytical Laboratory



COMPU/CHEM  
Post Office Box 12652  
Research Triangle Park, NC 27709

Telephone 919-549-8264  
800-334-8525

## Mead Technology Laboratories

30 October 80

Mr. Bill Wolf  
Carolina Power and Light  
Harris Environmental Center  
New Hill, N.C. 27602

Dear Mr. Wolf:

Thank you for selecting Mead COMPU/CHEM for your recent sample analysis. We have completed the analysis that you requested and have enclosed a summary of the COMPU/CHEM data for your review.

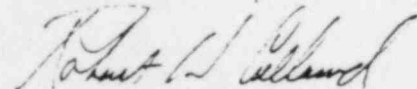
As a result of a laboratory accident, we were unable to complete the analysis of certain parameters. The results for these parameters are indicated as "LA". Should you wish to resubmit samples, we will analyze for these parameters free of charge.

As you know, EPA has promulgated detection limits for the priority pollutants in the December 3, 1979, Federal Register, and we have reported all priority pollutant concentrations which have exceeded these limits. In some instances, however, our analytical techniques and/or the particular nature of your sample enabled us to measure concentrations below the EPA detection limits, and we have reported these results for your information.

In addition, we have permanently stored a complete record of your data on magnetic tape. This includes chromatograms, mass spectra, and calibration data for the organics. Therefore, your original data is readily available for future reference. Should you require additional information from your data base, please contact us at 1/800-334-8525.

Your confidence in our COMPU/CHEM service is appreciated. We look forward to a continuing association.

Sincerely,



Robert H. Calland  
Vice President, Marketing

RHC/mm  
Enclosure:

Report	Discharge Sea Water	-	1802
	Intake Sea Water	-	1798



REPORT OF DATA

CUSTOMER PURCHASE NUMBER: 733013


SAMPLE IDENTIFIER: INTAKE SEA WATER

COMPU/CHEM SAMPLE NUMBER: 1798

SUBMITTED TO:

MR. BILL WOLF  
CAROLINA POWER AND LIGHT  
HARRIS CENTER  
NEW HILL, NC  
27602

SUBMITTED BY:

  
R. L. MYERS, PH. D.

10/30/82  
DATE

SAMPLE IDENTIFIER: INTAKE SEA WATER  
COMPU/CHEM SAMPLE NUMBER: 1798

1. ANALYTICAL METHODOLOGY

THE SAMPLES WERE PREPARED AND ANALYZED ACCORDING TO TWO (2) GENERAL PROCEDURES: (1) "SAMPLING AND ANALYSIS PROCEDURES FOR SCREENING OF INDUSTRIAL EFFLUENTS FOR PRIORITY POLLUTANTS," REVISED MARCH 1977, US-EPA, AND (2) EPA METHOD 624, "ORGANICS BY PURGE AND TRAP," AND METHOD 625, "BASE/NEUTRALS, ACIDS, AND PESTICIDES," US-EPA, REVISED DECEMBER 3, 1979, FEDERAL REGISTER (GUIDELINES ESTABLISHED TEST PROCEDURES FOR THE ANALYSIS OF POLLUTANTS). REQUIREMENTS OF BOTH PROTOCOLS WERE MET AND ANALYTICAL CONDITIONS SET BY METHOD 624 AND 625. QUALITY ASSURANCE, SAMPLE CUSTODY, AND DOCUMENT CONTROL PROCEDURES WERE FOLLOWED WHICH MEET OR EXCEED EPA REQUIREMENTS.

2. SAMPLE RECORD

DATE

A. RECEIVED/REFRIGERATED

10/2/80

B. ORGANICS

1. EXTRACTED

10/22/80

2. ANALYZED

VOLATILES

10/21/80

BASE/NEUTRALS

10/29/80

ACIDS

10/24/80

PESTICIDES/PCBS

10/29/80

ACROLEIN, -ACRYLONITRILE

10/7/80

C. METALS

1. DIGESTED

10/17/80

2. ANALYZED

10/20/80

SAMPLE IDENTIFIER: INTAKE SEA WATER  
COMPU/CHEM SAMPLE NUMBER: 1798

### 3. PRIORITY POLLUTANT ANALYSIS REPORT

COMPOUNDS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
1V. ACROLEIN	BDL	100
2V. ACRYLONITRILE	BDL	100
3V. BENZENE	BDL	10
4V. BIS (CHLOROMETHYL) ETHER	BDL	10
5V. BROMOFORM	BDL	10
6V. CARBON TETRACHLORIDE	BDL	10
7V. CHLOROBENZENE	BDL	10
8V. CHLORODIBROMOMETHANE	BDL	10
9V. CHLOROETHANE	BDL	10
10V. 2-CHLOROETHYL VINYL ETHER	BDL	10
11V. CHLOROFORM	BDL	10
12V. DICHLOROBROMOMETHANE	BDL	10
13V. DICHLORODIFLUOROMETHANE	BDL	10
14V. 1,1-DICHLOROETHANE	BDL	10
15V. 1,2-DICHLOROETHANE	BDL	10
16V. 1,1-DICHLOROETHYLENE	BDL	10
17V. 1,2-DICHLOROPROPANE	BDL	10
18V. 1,3-DICHLOROPROPYLENE	BDL	10
19V. ETHYLDENZENE	BDL	10
20V. METHYL BROMIDE	BDL	10
21V. METHYL CHLORIDE	BDL	10
22V. METHYLENE CHLORIDE	16	10
23V. 1,1,2,2-TETRACHLOROETHANE	BDL	10
24V. TETRACHLOROETHYLENE	BDL	10
25V. TOLUENE	BDL	10
26V. 1,2-TRANS-DICHLOROETHYLENE	BDL	10
27V. 1,1,1-TRICHLOROETHANE	BDL	10
28V. 1,1,2-TRICHLOROETHANE	BDL	10
29V. TRICHLOROETHYLENE	BDL	10
30V. TRICHLOROFLUOROMETHANE	BDL	10
31V. VINYL CHLORIDE	BDL	10
1A. 2-CHLOROPHENOL	BDL	25
2A. 2,4-DICHLOROPHENOL	BDL	25
3A. 2,4-DIMETHYLPHENOL	BDL	25
4A. 4,6-DINITRO-O-CRESOL	BDL	250
5A. 2,4-DINITROPHENOL	BDL	250
6A. 2-NITROPHENOL	BDL	25
7A. 4-NITROPHENOL	BDL	25
8A. P-CHLORO-M-CRESOL	BDL	25
9A. PENTACHLOROPHENOL	BDL	25
10A. PHENOL	BDL	25
11A. 2,4,6-TRICHLOROPHENOL	BDL	25
1B. ACENAPHTHENE	BDL	10
2B. ACENAPHTYLENE	BDL	10
3B. ANTHRACENE	BDL	10

BDL= BELOW DETECTION LIMIT

SAMPLE IDENTIFIER: INTAKE SEA WATER  
COMPU/CHEM SAMPLE NUMBER: 1798

COMPOUNDS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
4B. BENZIDINE	BDL	10
5B. BENZO (A) ANTHRACENE	BDL	10
6B. BENZO (A) PYRENE	BDL	10
7B. 3,4-BENZOFUORANTHENE	BDL	10
8B. BENZO (GHI) PERYLENE	BDL	25
9B. BENZO (K) FLUORANTHENE	BDL	10
10B. BIS (2-CHLOROETHOXY) METHANE	BDL	10
11B. BIS (2-CHLOROETHYL) ETHER	BDL	10
12B. BIS (2-CHLOROISOPROPYL) ETHER	BDL	10
13B. BIS (2-ETHYLHEXYL) PHTHALATE	130	10
14B. 4-BROMOPHENYL PHENYL ETHER	BDL	10
15B. BUTYL BENZYL PHTHALATE	BDL	10
16B. 2-CHLORONAPHTHALENE	BDL	10
17B. 4-CHLOROPHENYL PHENYL ETHER	BDL	10
18B. CHRYSENE	BDL	10
19B. DIBENZO (A,H) ANTHRACENE	BDL	25
20B. 1,2-DICHLOROBENZENE	BDL	10
21B. 1,3-DICHLOROBENZENE	BDL	10
22B. 1,4-DICHLOROBENZENE	BDL	10
23B. 3,3'-DICHLOROBENZIDINE	BDL	10
24B. DIETHYL PHTHALATE	BDL	10
25B. DIMETHYL PHTHALATE	BDL	10
26B. DI-N-BUTYL PHTHALATE	BDL	10
27B. 2,4-DINITROTOLUENE	BDL	10
28B. 2,6-DINITROTOLUENE	BDL	10
29B. DI-N-OCTYL PHTHALATE	BDL	10
30B. 1,2-DIPHENYLHYDRAZINE	BDL	10
31B. FLUORANTHENE	BDL	10
32B. FLUORENE	BDL	10
33B. HEXACHLOROBENZENE	BDL	10
34B. HEXACHLOROBUTADIENE	BDL	10
35B. HEXACHLOROCYCLOPENTADIENE	BDL	10
36B. HEXACHLOROETHANE	BDL	10
37B. INDENO (1,2,3-CD) PYRENE	BDL	25
38B. ISOPHORONE	BDL	10
39B. NAPHTHALENE	BDL	10
40B. NITROBENZENE	BDL	10
41B. N-NITROSODIMETHYLAMINE	BDL	10
42B. N-NITROSODI-N-PROPYLAMINE	BDL	10
43B. N-NITROSODIPHENYLAMINE	BDL	10
44B. PHENANTHRENE	BDL	10
45B. PYRENE	BDL	10
46B. 1,2,4-TRICHLOROBENZENE	BDL	10
1P. ALDRIN	BDL	10
2P. ALPHA-BHC	BDL	10

BDL= BELOW DETECTION LIMIT

SAMPLE IDENTIFIER: INTAKE SEA WATER  
COMPU/CHEM SAMPLE NUMBER: 1798

COMPOUNDS		CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
3P.	BETA-BHC	BDL	10
4P.	GAMMA-BHC	BDL	10
5P.	DELTA-BHC	BDL	10
6P.	CHLORDANE	BDL	10
7P.	4,4'-DDT	BDL	10
8P.	4,4'-DDE	BDL	10
9P.	4,4'-DDD	BDL	10
10P.	DIELDRIN	BDL	10
11P.	ALPHA-ENDOSULFAN	BDL	10
12P.	BETA-ENDOSULFAN	BDL	10
13P.	ENDOSULFAN SULFATE	BDL	10
14P.	ENDRIN	BDL	10
15P.	ENDRIN ALDEHYDE	BDL	10
16P.	HEPTACHLOR	BDL	10
17P.	HEPTACHLOR EPOXIDE	BDL	10
18P.	PCB-1242	BDL	10
19P.	PCB-1254	BDL	10
20P.	PCB-1221	BDL	10
21P.	PCB-1232	BDL	10
22P.	PCB-1248	BDL	10
23P.	PCB-1260	BDL	10
24P.	PCB-1016	BDL	10
25P.	TOXAPHENE	BDL	10
METALS		CONCENTRATION (MG/L)	DETECTION LIMIT (MG/L)
1M.	ANTIMONY, TOTAL	BDL	0.5
2M.	ARSENIC, TOTAL	BDL	0.05
3M.	BERYLLIUM, TOTAL	BDL	0.025
4M.	CADMIUM, TOTAL	BDL	0.025
5M.	CHROMIUM, TOTAL	BDL	0.1
6M.	COPPER, TOTAL	BDL	0.1
7M.	LEAD, TOTAL	BDL	0.5
8M.	MERCURY, TOTAL	0.0058	0.0002
9M.	NICKEL, TOTAL	BDL	0.15
10M.	SELENIUM, TOTAL	BDL	0.05
11M.	SILVER, TOTAL	BDL	0.06
12M.	THALLIUM, TOTAL	BDL	0.05
13M.	ZINC, TOTAL	BDL	0.02
14M.	CYANIDE, TOTAL	BDL	0.01
15M.	PHENOLS, TOTAL	0.13	0.01

SAMPLE IDENTIFIER: INTAKE SEA WATER  
COMPU/CHEM SAMPLE NUMBER: 1798

4. SPECIAL ANALYSIS

COMPOUNDS	CONCENTRATION	DETECTION LIMIT
1. ALUMINUM	BDL	10.0 MG/L
2. BARIUM	BDL	10.0 MG/L
3. BORON	BDL	100.0 MG/L
4. COBALT	BDL	1.0 MG/L
5. IRON	BDL	1.0 MG/L
6. MAGNESIUM	1150	0.1 MG/L
7. MANGANESE	BDL	0.5 MG/L
8. MOLYBDENUM	BDL	10.0 MG/L
9. TIN	BDL	10.0 MG/L
10. TITANIUM	BDL	20.0 MG/L
11. CYANIDES, TOTAL	LA	0.01 MG/L
12. PHENOLS, TOTAL	LA	0.01 MG/L
13. CYANIDES, TOTAL	BDL	0.01 MG/L
14. PHENOLS, TOTAL	0.12	0.01 MG/L
15. CYANIDES, TOTAL	BDL	0.01 MG/L
16. PHENOLS, TOTAL	0.068	0.01 MG/L

Items 11 & 12 - Intake 2  
Items 13 & 14 - Intake 3  
Items 15 & 16 - Intake 4





REPORT OF DATA

CUSTOMER PURCHASE NUMBER: 733013

SAMPLE IDENTIFIER: DISCHARGE SEA WATER

COMPU/CHEM SAMPLE NUMBER: 1802

SUBMITTED TO:

MR. BILL WOLF  
CAROLINA POWER AND LIGHT  
HARRIS CENTER  
NEW HILL, NC  
27602

SUBMITTED BY:

  
R. L. MYERS, PH. D.

  
DATE

SAMPLE IDENTIFIER: DISCHARGE SEA WATER  
COMPU/CHEM SAMPLE NUMBER: 1802

1. ANALYTICAL METHODOLOGY

THE SAMPLES WERE PREPARED AND ANALYZED ACCORDING TO TWO (2) GENERAL PROCEDURES: (1) "SAMPLING AND ANALYSIS PROCEDURES FOR SCREENING OF INDUSTRIAL EFFLUENTS FOR PRIORITY POLLUTANTS," REVISED MARCH 1977, US-EPA, AND (2) EPA METHOD 624, "ORGANICS BY PURGE AND TRAP," AND METHOD 625, "BASE/NEUTRALS, ACIDS, AND PESTICIDES," US-EPA, REVISED DECEMBER 3, 1979, FEDERAL REGISTER (GUIDELINES ESTABLISHED TEST PROCEDURES FOR THE ANALYSIS OF POLLUTANTS). REQUIREMENTS OF BOTH PROTOCOLS WERE MET AND ANALYTICAL CONDITIONS SET BY METHOD 624 AND 625. QUALITY ASSURANCE, SAMPLE CUSTODY, AND DOCUMENT CONTROL PROCEDURES WERE FOLLOWED WHICH MEET OR EXCEED EPA REQUIREMENTS.

2. SAMPLE RECORD

DATE

A. RECEIVED/REFRIGERATED

10/2/80

B. ORGANICS

1. EXTRACTED

10/13/80

2. ANALYZED

VOLATILES

10/21/80

BASE/NEUTRALS

10/24/80

ACIDS

10/24/80

PESTICIDES/PCBS

10/24/80

ACROLEIN, ACRYLONITRILE

10/7/80

C. METALS

1. DIGESTED

10/17/80

2. ANALYZED

10/20/80

SAMPLE IDENTIFIER: DISCHARGE SEA WATER  
COMPU/CHEM SAMPLE NUMBER: 1802

### 3. PRIORITY POLLUTANT ANALYSIS REPORT

COMPOUNDS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
1V. ACROLEIN	BDL	100
2V. ACRYLONITRILE	BDL	100
3V. BENZENE	BDL	10
4V. BIS (CHLOROMETHYL) ETHER	BDL	10
5V. BROMOFORM	BDL	10
6V. CARBON TETRACHLORIDE	BDL	10
7V. CHLOROBENZENE	BDL	10
8V. CHLORODIBROMOMETHANE	BDL	10
9V. CHLOROETHANE	BDL	10
10V. 2-CHLOROETHYL VINYL ETHER	BDL	10
11V. CHLOROFORM	BDL	10
12V. DICHLOROBROMOMETHANE	BDL	10
13V. DICHLORODIFLUOROMETHANE	BDL	10
14V. 1,1-DICHLOROETHANE	BDL	10
15V. 1,2-DICHLOROETHANE	BDL	10
16V. 1,1-DICHLOROETHYLENE	BDL	10
17V. 1,2-DICHLOROPROPANE	BDL	10
18V. 1,3-DICHLOROPROPYLENE	BDL	10
19V. ETHYLBENZENE	BDL	10
20V. METHYL BROMIDE	BDL	10
21V. METHYL CHLORIDE	BDL	10
22V. METHYLENE CHLORIDE	32	10
23V. 1,1,2,2-TETRACHLOROETHANE	BDL	10
24V. TETRACHLOROETHYLENE	BDL	10
25V. TOLUENE	BDL	10
26V. 1,2-TRANS-DICHLOROETHYLENE	BDL	10
27V. 1,1,1-TRICHLOROETHANE	BDL	10
28V. 1,1,2-TRICHLOROETHANE	BDL	10
29V. TRICHLOROETHYLENE	BDL	10
30V. TRICHLOROFLUOROMETHANE	BDL	10
31V. VINYL CHLORIDE	BDL	10
1A. 2-CHLOROPHENOL	BDL	25
2A. 2,4-DICHLOROPHENOL	BDL	25
3A. 2,4-DIMETHYLPHENOL	BDL	25
4A. 4,6-DINITRO-O-CRESOL	BDL	250
5A. 2,4-DINITROPHENOL	BDL	250
6A. 2-NITROPHENOL	BDL	25
7A. 4-NITROPHENOL	BDL	25
8A. P-CHLORO-M-CRESOL	BDL	25
9A. PENTACHLOROPHENOL	BDL	25
10A. PHENOL	BDL	25
11A. 2,4,6-TRICHLOROPHENOL	BDL	25
1B. ACENAPHTHENE	BDL	10
2B. ACENAPHTYLENE	BDL	10
3B. ANTHRACENE	BDL	10

BDL= BELOW DETECTION LIMIT

SAMPLE IDENTIFIER: DISCHARGE SEA WATER  
COMPU/CHEM SAMPLE NUMBER: 1802

COMPOUNDS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
4B. BENZIDINE	BDL	10
5B. BENZO (A) ANTHRACENE	BDL	10
6B. BENZO (A) PYRENE	BDL	10
7B. 3,4-BENZOFLUORANTHENE	BDL	10
8B. BENZO (GHI) PERYLENE	BDL	25
9B. BENZO (K) FLUORANTHENE	BDL	10
10B. BIS (2-CHLOROETHOXY) METHANE	BDL	10
11B. BIS (2-CHLOROETHYL) ETHER	BDL	10
12B. BIS (2-CHLOROISOPROPYL) ETHER	BDL	10
13B. BIS (2-ETHYLHEXYL) PHTHALATE	370	10
14B. 4-BROMOPHENYL PHENYL ETHER	BDL	10
15B. BUTYL BENZYL PHTHALATE	BDL	10
16B. 2-CHLORONAPHTHALENE	BDL	10
17B. 4-CHLOROPHENYL PHENYL ETHER	BDL	10
18B. CHRYSENE	BDL	10
19B. DIBENZO (A,H) ANTHRACENE	BDL	25
20B. 1,2-DICHLOROBENZENE	BDL	10
21B. 1,3-DICHLOROBENZENE	BDL	10
22B. 1,4-DICHLOROBENZENE	BDL	10
23B. 3,3'-DICHLOROBENZIDINE	BDL	10
24B. DIETHYL PHTHALATE	BDL	10
25B. DIMETHYL PHTHALATE	BDL	10
26B. DI-N-BUTYL PHTHALATE	BDL	10
27B. 2,4-DINITROTOLUENE	BDL	10
28B. 2,6-DINITROTOLUENE	BDL	10
29B. DI-N-OCTYL PHTHALATE	BDL	10
30B. 1,2-DIPHENYLHYDRAZINE	BDL	10
31B. FLUORANTHENE	BDL	10
32B. FLUORENE	BDL	10
33B. HEXACHLOROBENZENE	BDL	10
34B. HEXACHLOROBUTADIENE	BDL	10
35B. HEXACHLOROCYCLOPENTADIENE	BDL	10
36B. HEXACHLOROETHANE	BDL	10
37B. INDENO (1,2,3-CD) PYRENE	BDL	25
38B. ISOPHORONE	BDL	10
39B. NAPHTHALENE	BDL	10
40B. NITROBENZENE	BDL	10
41B. N-NITROSODIMETHYLAMINE	BDL	10
42B. N-NITROSODI-N-PROPYLAMINE	BDL	10
43B. N-NITROSODIPHENYLAMINE	BDL	10
44B. PHENANTHRENE	BDL	10
45B. PYRENE	BDL	10
46B. 1,2,4-TRICHLOROBENZENE	BDL	10
1P. ALDRIN	BDL	10
2P. ALPHA-BHC	BDL	10

BDL= BELOW DETECTION LIMIT

SAMPLE IDENTIFIER: DISCHARGE SEA WATER  
COMPU/CHEM SAMPLE NUMBER: 1802

COMPOUNDS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
3P. BETA-BHC	BDL	10
4P. GAMMA-BHC	BDL	10
5P. DELTA-BHC	BDL	10
6P. CHLORDANE	BDL	10
7P. 4,4'-DDT	BDL	10
8P. 4,4'-DDE	BDL	10
9P. 4,4'-DDD	BDL	10
10P. DIELDRIN	BDL	10
11P. ALPHA-ENDOSULFAN	BDL	10
12P. BETA-ENDOSULFAN	BDL	10
13P. ENDOSULFAN SULFATE	BDL	10
14P. ENDRIN	BDL	10
15P. ENDRIN ALDEHYDE	BDL	10
16P. HEPTACHLOR	BDL	10
17P. HEPTACHLOR EPOXIDE	BDL	10
18P. PCB-1242	BDL	10
19P. PCB-1254	BDL	10
20P. PCB-1221	BDL	10
21P. PCB-1232	BDL	10
22P. PCB-1248	BDL	10
23P. PCB-1260	BDL	10
24P. PCB-1016	BDL	10
25P. TOXAPHENE	BDL	10

METALS	CONCENTRATION (MG/L)	DETECTION LIMIT (MG/L)
1M. ANTIMONY, TOTAL	BDL	0.5
2M. ARSENIC, TOTAL	BDL	0.05
3M. BERYLLIUM, TOTAL	BDL	0.025
4M. CADMIUM, TOTAL	BDL	0.025
5M. CHROMIUM, TOTAL	BDL	0.1
6M. COPPER, TOTAL	BDL	0.1
7M. LEAD, TOTAL	BDL	0.5
8M. MERCURY, TOTAL	0.0014	0.0002
9M. NICKEL, TOTAL	BDL	0.15
10M. SELENIUM, TOTAL	BDL	0.05
11M. SILVER, TOTAL	BDL	0.05
12M. THALLIUM, TOTAL	BDL	0.05
13M. ZINC, TOTAL	BDL	0.02
14M. CYANIDE, TOTAL	BDL	0.01
15M. PHENOLS, TOTAL	0.13	0.01

SAMPLE IDENTIFIER: DISCHARGE SEA WATER  
COMPU/CHEM SAMPLE NUMBER: 1802

4. SPECIAL ANALYSIS

COMPOUNDS	CONCENTRATION	DETECTION LIMIT
1. ALUMINUM	BDL	10.0 MG/L
2. BARIUM	BDL	10.0 MG/L
3. BORON	BDL	100.0 MG/L
4. COBALT	BDL	1.0 MG/L
5. IRON	BDL	1.0 MG/L
6. MAGNESIUM	960	0.1 MG/L
7. MANGANESE	BDL	0.5 MG/L
8. MOLYBDENUM	BDL	10.0 MG/L
9. TIN	BDL	10.0 MG/L
10. TITANIUM	BDL	20.0 MG/L
11. CYANIDES, TOTAL	BDL	0.01 MG/L
12. PHENOLS, TOTAL	0.058	0.01 MG/L
13. CYANIDES, TOTAL	BDL	0.01 MG/L
14. PHENOLS, TOTAL	0.13	0.01 MG/L
15. CYANIDES, TOTAL	BDL	0.01 MG/L
16. PHENOLS, TOTAL	0.2	0.01 MG/L

Items 11 & 12 - Discharge 2  
Items 13 & 14 - Discharge 3  
Items 15 & 16 - Discharge 4

CERTIFICATE OF SERVICE

I hereby certify that a copy of "Applicants' Response to Request for Supplementation of Answers to Interrogatories" of Richard D. Wilson and have been served by deposit in the United States Mail, first class prepaid, addressed to the parties listed below this the 11th day of July, 1983.

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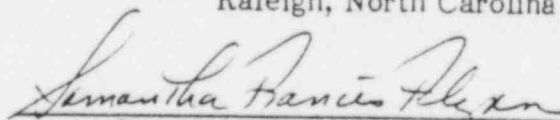
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