

FILE FOLDER

DESCRIPTION ON TAB:

11330 Water Treatment

(General)

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- Outside/inside of actual folder did contain hand written information**
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11330 WATER TREATMENT (GENERAL) (83)

OPEN

CLOSED

JANUARY - 1986 - DESTROY
SECNAVINST 5215.5B Part II
Chap. 11, par. 11300(2) 2 years ✓

Willard R. Price



UNITED STATES MARINE CORPS
CIVILIAN PERSONNEL DIVISION
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

IN REPLY REFER TO
12790
CPD
16 Jul 84

MEMORANDUM 3-84

From: Civilian Personnel Officer
To: All Supervisors of Civil Service Employees
Subj: ONSLOW COUNTY-CAMP LEJEUNE BLOODMOBILE VISIT
Ref: (a) BO 12630.1G

1. The Tidewater Regional Bloodmobile, sponsored by the Marine Corps Base Camp Lejeune Employees' Recreation and Welfare Association, will be at Marston Pavilion, Building 730, Marine Corps Base, from 1100 to 1500 on Monday, 30 July 1984. The quota for the Camp Lejeune one-day visit is 185 units.
2. You are urged to encourage--but not to coerce-- employee participation. I ask that you ensure that your employees are aware that we, in the Tidewater Region, currently have a total coverage blood program which benefits all employees and their families, regardless of where they reside.
3. Employees volunteering to donate at Marston Pavilion should be scheduled equitably by you at times throughout the donation period beginning at 1100. Supervisors should ensure that each prospective donor is advised of the time, date and place he/she is scheduled to donate and that the scheduled appointment must be observed in order to avoid congestion at the Bloodmobile. Appointment scheduling should consider car pools to the maximum extent possible.
4. The reference provides that employees who volunteer as donors will be excused from duty without charge to leave for the period of time necessary to donate blood and for recuperation following blood donations. The maximum excused time may not exceed four hours and must be shown on time cards.
5. You are requested to ensure that your employees are being excused in compliance with the intent of the regulations; that excused time shall not exceed four hours; that any absence over four hours is charged to other appropriate leave (sick leave, annual leave, or leave without pay); that only those employees who express an intent to return to duty after making a donation are scheduled for appointments before 1200; and that employees requesting excused time to donate be required to clock out or sign out as appropriate.
6. Employees should be advised that if they are excused to donate blood they must report to the Bloodmobile and donate or attempt to donate; that those who are deferred must return to duty and will be excused only for the period of time determined necessary to be deferred and to return to duty. The Civilian Personnel Division is provided a listing of all persons who donate or are deferred.

Subj: ONSLOW COUNTY-CAMP LEJEUNE BLOODMOBILE VISIT

7. During the previous Onslow County-Camp Lejeune Tidewater Regional Bloodmobile visit (25 May 1984), we were short of our quota by 26 units. The quota for the one-day visit was 185 units of blood. This quota was not met during any of the three Bloodmobile visits last year. Civilian employees deserve to be commended for their overall favorable support; however, the retention of the total blood program is based on our continued support. Please ensure that every employee is contacted and provided the information on this upcoming Bloodmobile. With your help in contacting and encouraging your employees, we can possibly reach our quota during this second Bloodmobile this year.

8. Questions concerning eligibility to donate may be referred to the Civilian Personnel Division, extension 1579.

Adam C. Mattocks
ADAM C. MATTOCKS
Acting



83

UNITED STATES MARINE CORPS
Base Maintenance Division
Marine Corps Base
Camp Lejeune, North Carolina 28542

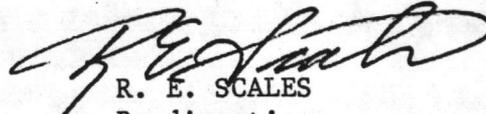
IN REPLY REFER TO
5100
MAIN
6 Jun 1984

From: Base Maintenance Officer

Subj: ASBESTOS RESPIRATORY PHYSICAL EXAMINATIONS

Encl: (1) List of Personnel

1. The enclosure contains a list of personnel requiring asbestos examinations. Since the examinations involve an appointment with a physician and there is a possibility of shift interference, supervisors will be responsible for coordinating their appointments.
2. Supervisors should contact CPO Craig at extension 2181 during the week of 11 - 15 June to arrange appointment times for employees during their scheduled day shifts.


R. E. SCALES
By direction

Distribution:

Dir, Utilities

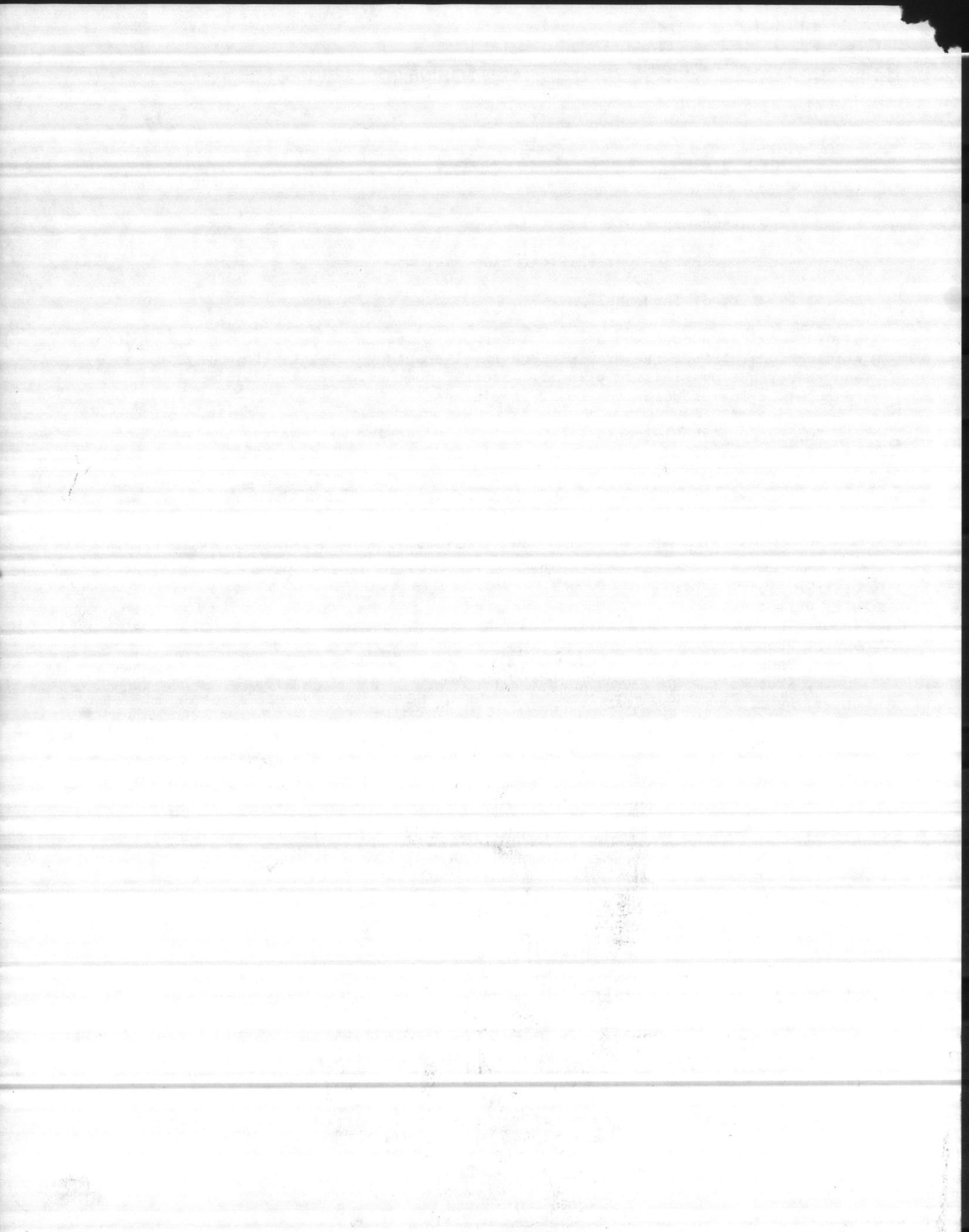
Supvr, Shop 81

→ Supvr, Shop 83

Supvr, Shop 84

Supvr, Shop 85

Chief, Asbestos Survey Team



SHIFT PERSONNEL
REQUIRING ASBESTOS EXAMINATIONS

SHOP 81

C. Gervais
E. Trott
M. Bell
L. Brown
R. Hand
D. Collins
S. Parsons
K. Shepard
B. Meadows
T. Brownley

SHOP 83

D. Sumner

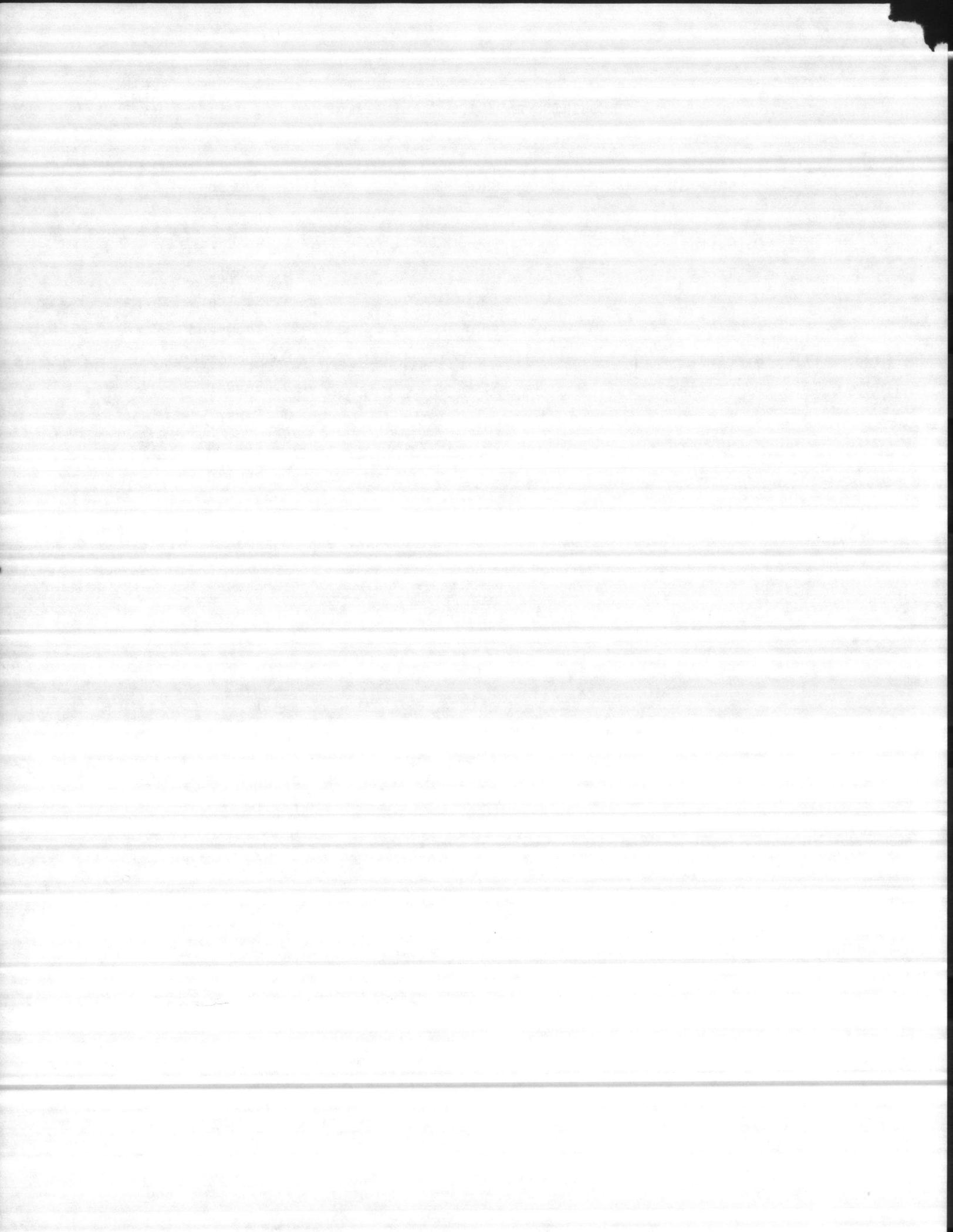
July 6

SHOP 85

J. Simmons

SHOP 84

A. Snodgrass
C. Schmitt
A. Saulter
J. Thompson
E. Wooldridge
J. Taylor
J. Perry
M. Farland
P. Snodgrass





UNITED STATES MARINE CORPS
Base Maintenance Division
Marine Corps Base
Camp Lejeune, North Carolina 28542

IN REPLY REFER TO
4402
MAIN
19 Jul 84

From: Assistant Base Maintenance Officer
To: Assistant Chief of Staff, Logistics (Attn: OIC, Shop Stores)

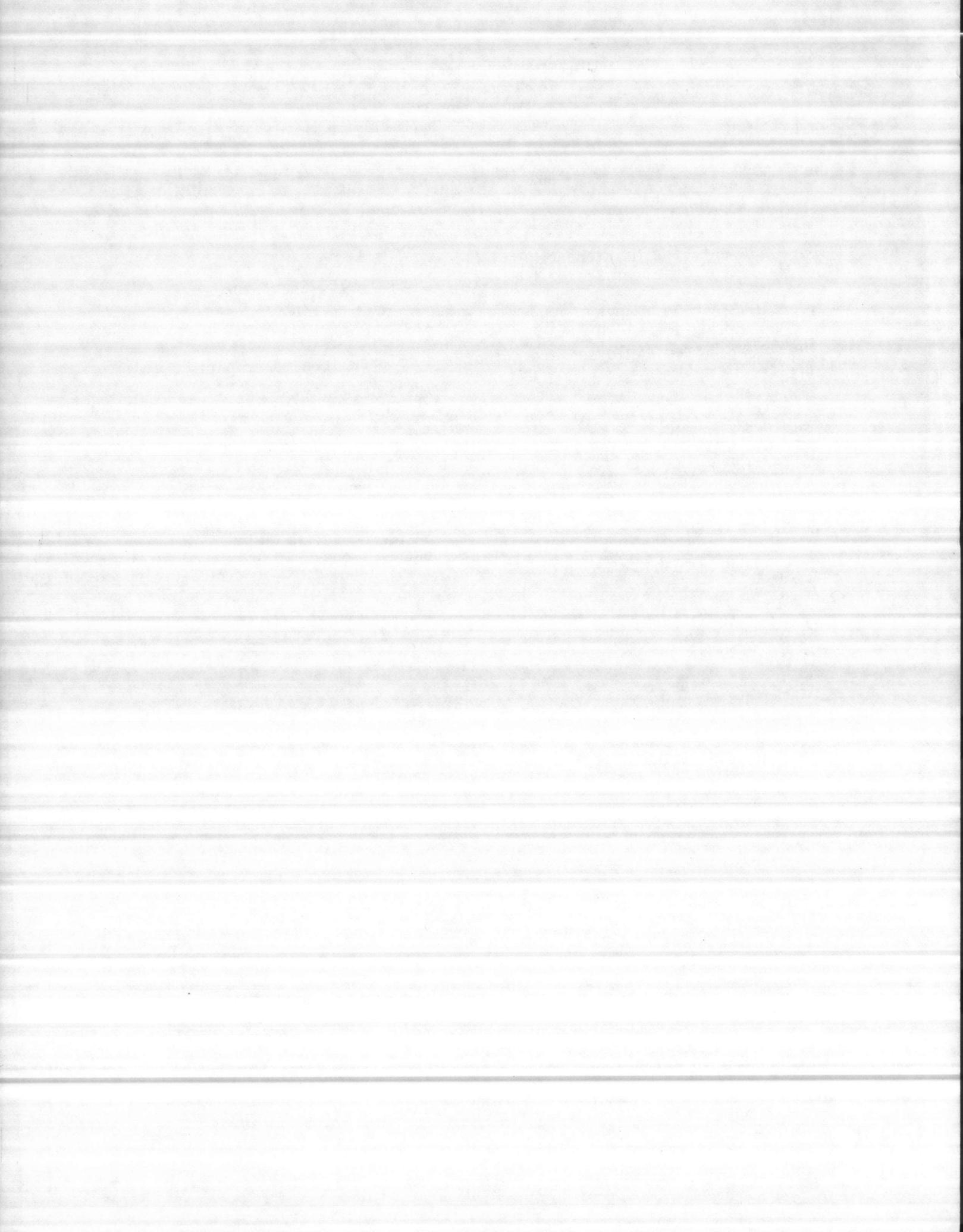
Subj: AUTHORIZATION TO DRAW LAWN MOWER PARTS

1. The below listed employees are authorized to draw lawn mower parts from Building 1301:

Melvin RICH
Tommie THOMAS
Walter THOMPSON

F. E. Cone
F. E. CONE

*Blind
Copy to:
Shop 83*



Paddock Construction Co., Inc.

P.O. BOX 11676, PADDOCK PARKWAY, ROCK HILL, S.C. 29730, PHONE (803) 324-1111

October 24, 1983

Mr. Melvin Rich
Water Plant
Camp LeJeune
Jacksonville, N.C.

Subject: Outdoor Swimming Pool

Dear Sir:

It has been our experience in the past that some swimming pool operators neglect to follow very important parts of swimming pool water balance. The areas that I am speaking of are total alkalinity and the calcium hardness of the water. These two parameters need to be monitored and corrected to insure good water quality and extend the life of the pool finish. In the event that either the total alkalinity or the calcium hardness gets too low, the water will begin to etch and breakdown the swimming pool plaster as the water attempts to pick-up the desired chemicals from the plaster. If the total alkalinity or the calcium hardness gets to high there will be a tendency for the water in the pool to be cloudy and scale will form in the pipes and on the pool finish.

Please find enclosed technical bulletin #80-70, Water Balance. This bulletin will give you the basic requirements for good water balance and the necessary steps to be taken in the event that any of the particular parameters are out of line. These bulletins were included in the operating manuals supplied by Paddock when the jobs were turned over to the owners. If these bulletins have been lost it would be advisable to place the enclosed copy in your pool operators service manual.

If you have any further questions please feel free to contact us.

Sincerely,

PADDOCK CONSTRUCTION COMPANY, INC.

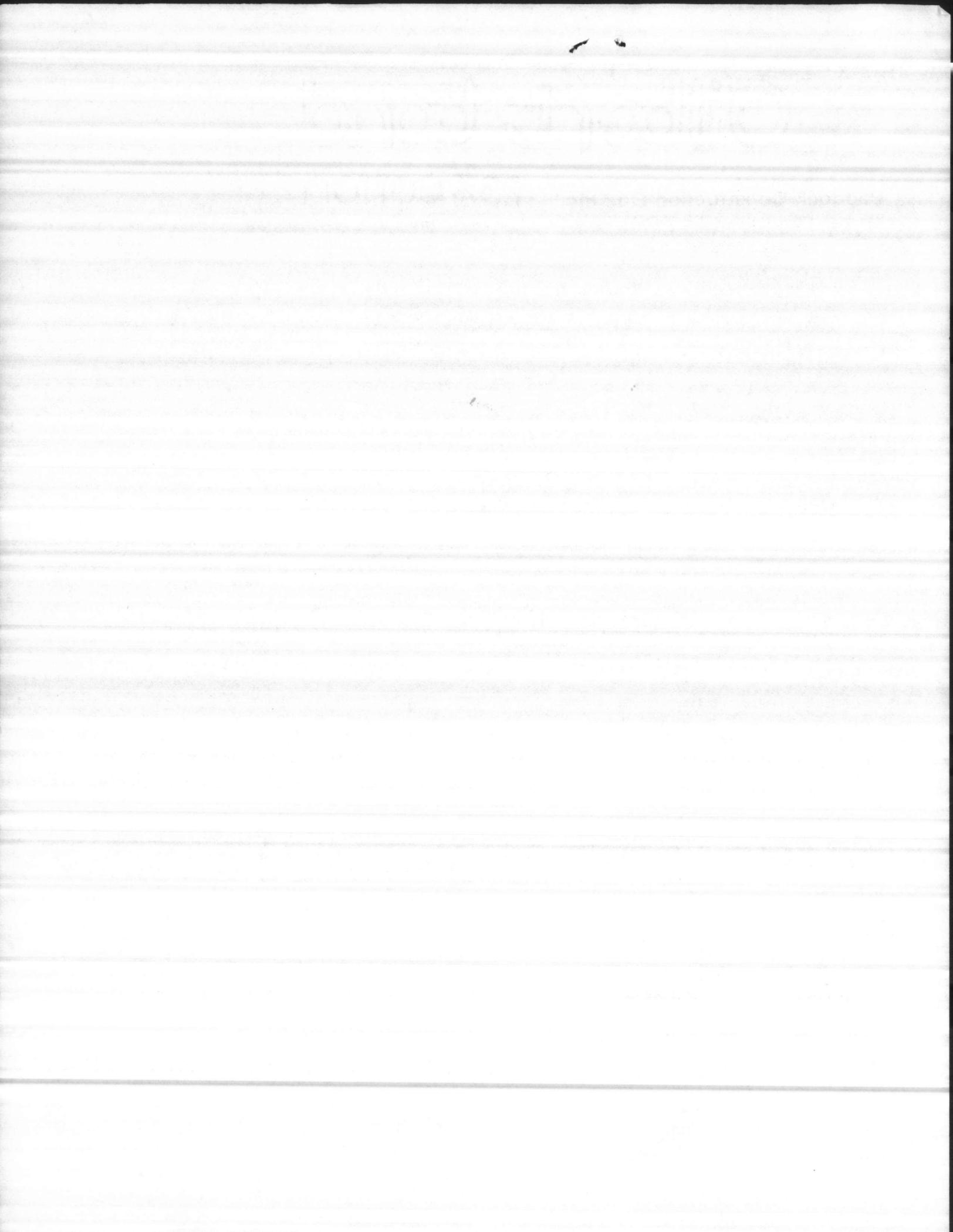
Donald C. Baker

Donald C. Baker
Operations Manager

DCB/pg

enclosure:





Technical Bulletin 80-7

WATER BALANCE

**Preparing For Equipment
Start Up**

PREPARING SWIMMING POOL WATER FOR START UP

INTRODUCTION

Once a swimming pool has been constructed it must be filled with water, and problems, due to the make up water, can arise. The pool professional must be prepared for them or they can be unpleasant, expensive and give a swimming pool company a bad reputation. This short paper discusses some of the simpler problems that arise and how to overcome them without too much time and expense. The most important of all is good water balance.

WATER BALANCE

Much has been written about this subject, hardly a month goes by without somebody writing in Swimming Pool Weekly about obtaining good water balance. Throughout most of the year seminars are held by various chemical manufacturers on pool water problems and pool water balance and yet it still seems to be a subject that most people ignore. The problems of ignoring pool water balance are many, a few of them are:

GREEN WATER

The pool can seem quite clean, pH seems to be about right, chlorine seems to be about right, the filter is working well and yet the pool is green. Correcting the pool water balance will change the water from green to sparkling blue.

CLOUDINESS

Again everything seems to be in order yet the pool does not completely clear up. Correcting the pool water balance will provide clear water.

CORROSION

This is a very common problem causing etching of the pool finish, corrosion of metal fittings and gives unpleasant swimming conditions. Tests of pH and chlorine seem to suggest that all is well yet swimmers complain that they get eye irritation and the water is unpleasant to swim in, metal fittings start to show signs of corrosion. Good attention to pool water balance will correct problems.

Short Filter Runs

If the water balance is incorrect, filter runs may shorten drastically due to deposition of calcium carbonate. Correct pool water balance will bring filter runs back to normal (in case of D.E. filters, elements may need acid washing).

GOOD BASIC PARAMETERS FOR POOL WATER

pH 7.5	Water temperature 78-80°F
Total Alkalinity 90-110 ppm	Air Temperature 81-85°F
Calcium Hardness 200-250 ppm	
Free chlorine 1-0	

POOL WATER BALANCE PROCEDURE

Pool water balance is simply having the right amount of the necessary minerals in the water, that is all there is to it. To do the simple work required for pool water balance requires a test kit for pH, total alkalinity and calcium and a thermometer, also a set of tables to arrive at the saturation index.

SATURATION INDEX

To arrive at the correct pool water balance a figure called the saturation index is used. This is a numerical figure which indicates whether a particular water will have a tendency to deposit calcium carbonate or

2. Reduce pH to 7.5 by addition of muriatic acid.
3. After pH equilibrium has been established, (this will probably take 2 to 3 hours with the pump running) recheck the total alkalinity as the addition of acid will have reduced it.

This is why a slight excess of total alkalinity (125 as opposed to 110) should be put into the water when an obvious need for acid exists to reduce the pH.

After the chemical additions the pool water was again tested and the following results obtained: pH 7.5, temperature 84°F, calcium 400, total alkalinity 100.

$$\begin{aligned}
 (\text{pH} + F_c + F_{ca} + F_{ta}) - 12.1 &= \text{Saturation Index} \\
 \text{Substituting} \\
 (7.5 + 0.7 + 2.2 + 2.0) - 12.1 &= \text{Saturation Index} \\
 12.4 &= 12.1 = +0.3 \quad \text{Q.E.D.}
 \end{aligned}$$

The index is in the acceptable range and the pool water is in good balance. If time permitted and the necessary chemicals were available it would help to reduce the calcium hardness.

SUMMARY OF THE SATURATION INDEX

Whatever else happens, of first importance in pool water balance is to establish the proper total alkalinity. This will prevent 'bouncing' of the pool water to the acid side when pH adjustments are being made. Too much or too little calcium hardness causes far less problems than proper maintenance of total alkalinity. Whatever else is done, the total alkalinity must be correct.

Experience is required when dealing with saturation index calculations and chemical additions to the water and it is always a good idea to practice on one or two pools which are not giving problems before actually doing it under pressure. Practice with the test kits so that there is no doubt about the results.

WATER QUALITY

All waters that are used for filling swimming pools contain some dissolved and suspended solids, the kind and quantity varying according to the source, geographic location and the amount of chemical treatment given at the water treatment plant supplying the area in which the pool is constructed. Dissolved solids in the water to be used for the pool are desirable from a standpoint of maintaining correct water balance. Balance in this case meaning the correct amount of various mineral constituents that go together to make clear sparkling good pool water.

The factors involved in water balance are pH, total alkalinity, calcium hardness and temperature. These factors are all interrelated and each contributes a part to overall balance. A correction for an imbalance of one factor made to produce the desired results, must have no adverse effects on the other factors in the system.

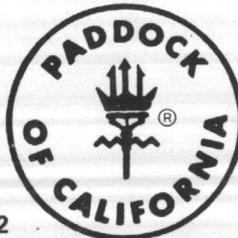
Waters not having the correct chemical composition for swimming pool will need an initial adjustment with the proper sequence of chemical addition. This will put the pool water in proper balance and should be done prior to starting the chemical maintenance program which would be part of the normal operation of the pool.

SUMMARY

Correct pool water balance will give good pool water, green water will become blue, cloudy water will become clear. The Hydro-Analyzer will work far better on a pool where the water has been balanced. The procedure is simple when understood.

Report Prepared by Frederick Wall, Ph.D.
A.R.I.C., M.R.S.H., M.I.B.M.
F.I.E.E., M.I.W.E.S.

Your Paddock Pool Representative is:



1/82

Paddock

OF CALIFORNIA INC.

555 PADDOCK PARKWAY, P. O. Box 11676
ROCK HILL, SOUTH CAROLINA 29730
(803) 324-1111

whether it will be corrosive. If water has a correct balance the saturation index will be in the correct range and the water will be neither scale forming nor corrosive.

CALCULATING THE SATURATION INDEX

The saturation index can be obtained by the use of a very simple formula:

$$(pH + Ft + Fca + Fta) - 12.1 = \text{Saturation Index}$$

In the above formula pH = pH reading from the test kit of the pool water:

Ft = Factor for water temperature

Fca = Factor for calcium hardness

Fta = Factor for total alkalinity

The pH is determined by using a reliable test kit (or if you have plenty of money a pH meter). Temperature is the highest temperature the pool is likely to reach during the year. Calcium hardness and total alkalinity are obtained by using test kits. The following chart is used to obtain the various factors for temperature and calcium and total alkalinity.

SATURATION INDEX VALUES

WATER TEMPERATURE		TOTAL ALKALINITY		CALCIUM HARDNESS	
°F.	Ft.	ppm	Fta	ppm	Fca
32	0.0	5 - 10	0.7	5 - 10	0.3
33-37	0.1	11 - 25	1.4	11 - 25	1.0
38-46	0.2	26 - 50	1.7	26 - 50	1.3
47-53	0.3	51 - 75	1.9	51 - 75	1.5
54-60	0.4	76 - 100	2.0	76 - 100	1.6
61-66	0.5	101 - 150	2.2	101 - 150	1.8
67-76	0.6	151 - 200	2.3	151 - 200	1.9
77-84	0.7	201 - 300	2.5	201 - 300	2.1
85-94	0.8	301 - 400	2.6	301 - 400	2.2
95-105	0.9	401 - 800	2.9	401 - 800	2.5
106-128	1.0	801 - 1000	3.0	801 - 1000	2.6

Note the chart is divided into three sections, water temperature on the left, showing the temperature in degrees Fahrenheit and the factor for that temperature. Similarly with total alkalinity, concentration in ppm on the left and the factor on the right and similarly with the calcium hardness.

The optimum saturation index is 0. Index readings of +.3 or above will be scale forming and readings of -.3 or below will be corrosive. The greater the deviation from an index of 0 the greater will be the tendency to form a scale or to corrode. The saturation index for a particular water is considered satisfactory if it is in the range of +.3 to -.3.

A water will have a saturation index of 0 and will be in perfect balance when the following is achieved: pH 7.5, temperature 76° Fahrenheit, calcium hardness 250 ppm, total alkalinity 100 ppm. This is what should be aimed for. Before proceeding further there are four very important factors involved with pool water balance. These are pH, total alkalinity, calcium hardness and temperature, a clear understanding of what they are is important.

pH

pH is a term used to denote the relative acidity or alkalinity of a liquid. pH is extremely important in a swimming pool in relation to water balance and has a direct relationship to the activity of the chlorine used to keep the pool in a sanitary condition.

It is important to have a basic understanding of pH and how it influences pool water. The pH scale runs from 0 (strongly acidic) to 14 (strongly basic) or alkaline. A pH of 7 is neutral, neither acidic nor basic. The following chart shows the pH range and shows the optimum range of pH for pool water, that is be-



Roberts

CABLE: WATERFILT PHILA.
TELEX: 831-439

FILTER MANUFACTURING COMPANY

P.O. BOX 167 • DARBY, PENNSYLVANIA 19023 • (215) 583-3131

March 14, 1984

Marine Corps Base
Base Maintenance Division
Utilities Branch
Building #1202
Camp Lejeune, NC 28542

Attn: Willard Price
Superintendent WTP

Subject: Twenty (20) XL-600 Air/Water Rotary Media Washers

Gentlemen:

We refer to your discussion with our Gene Barry last week concerning the subject media washers furnished by us in 1975 for Building #20 (Dwg. B-8266-3).

We offer to replace the present fiberglass arms on the XL-600 Rotary Media Washers with IPS brass and PVC plastic arm assemblies, etc. to convert to Type AW Rotosweeps per Bulletin 501.1. Also included would be a new air tube & indicator; and check out of rotary joint.

Price: \$510.00 each including one way freight from Darby to Camp Lejeune.

Turn around time three (3) weeks after receipt of media washers in Darby.

We offer a five year guarantee on converted Rotosweeps, and that parts will be available, in future if required, for 15 years.

Terms: Refer to attached M6-8/77.

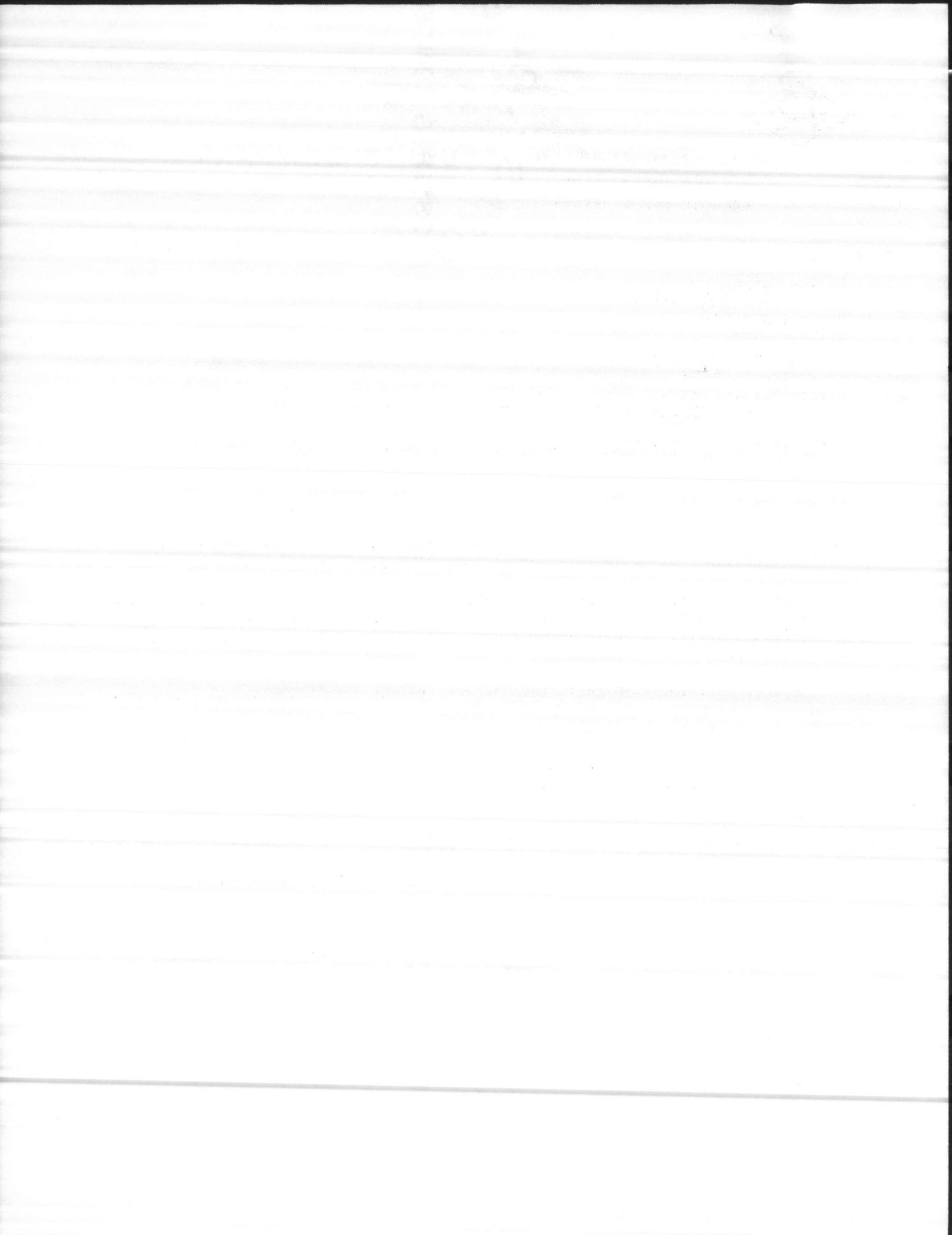
Very truly yours,


George H. Matsinger

GHM:bb

Attch.

cc: Ashworth Assoc.



STANDARD TERMS & CONDITIONS OF SALE

1. QUOTATIONS

Seller may make quotations verbally or in writing. Verbal quotations which are not confirmed in writing by Seller shall expire in 5 days unless Seller receives Buyer's purchase order within that period. Written quotations, including written confirmations of verbal quotations, shall expire automatically within 30 days after the date of quotation unless Seller receives Buyer's purchase order within that period.

2. ACCEPTANCE OF PURCHASE ORDERS

Purchase orders shall be made out to Roberts Filter Mfg. Co. (herein called the Seller), Darby, Pa., and shall be, notwithstanding any contrary language of Buyer's purchase order, subject to acceptance by an authorized employee at the seller's Darby, Pa. Plant.

3. TAXES

Unless otherwise noted, prices are exclusive of any taxes, including but not limited to local, State, Provincial, Federal Sales, Use or Manufacturer's Taxes or Customs and Duties of any sort; and such are to be borne by the Buyer.

4. CREDIT AND PAYMENT

- (a) In the United States and Canada, payment terms are net thirty (30) days from date of shipment or, if delivery is delayed by an act of Buyer, thirty (30) days from date material is ready for shipment.
- (b) If Buyer is located outside those areas in 4(a) special terms may be available.
- (c) Any amounts not paid promptly when due shall incur a service charge of 1½% per month (18% per annum) until delinquency is corrected.
- (d) All credit and terms of payment are subject to approval of the Seller's Credit Department.
- (e) Buyer will be invoiced and make payment, according to the above terms, for partial shipments.

5. SHIPMENTS

- (a) Statements as to the expected dates of shipment represent Seller's best judgment, but shipment on those dates is not guaranteed.
- (b) Seller shall not be held responsible for delays due to reasons beyond his control, including but not limited to acts of God, casualty, civil disturbance, labor disputes, transportation or supply difficulties, any interruption of our facilities or act of any Governmental authority.
- (c) Costs for demurrage, cartage, and unloading material between points of delivery by carrier and jobsite are borne by Buyer.
- (d) On shipments F.O.B. Seller's Plant or point of manufacture, it is the Buyer's responsibility to inspect and accept materials and enter and prosecute any claim for loss or damage during shipment.

6. WARRANTY

- (a) If it is established, within one year after delivery to the jobsite, that any material or workmanship was defective at time of shipment Seller will, at Seller's option, repair or furnish such parts. It is expressly understood that Seller's liability is limited to the repair or furnishing of such parts and that Seller will not be liable for any special, indirect or consequential damages, losses or expenses arising in connection with the use or inability to use Seller's equipment for any purpose.
- (b) No backcharges will be allowed without prior written approval of the Seller.

7. FIELD SERVICE

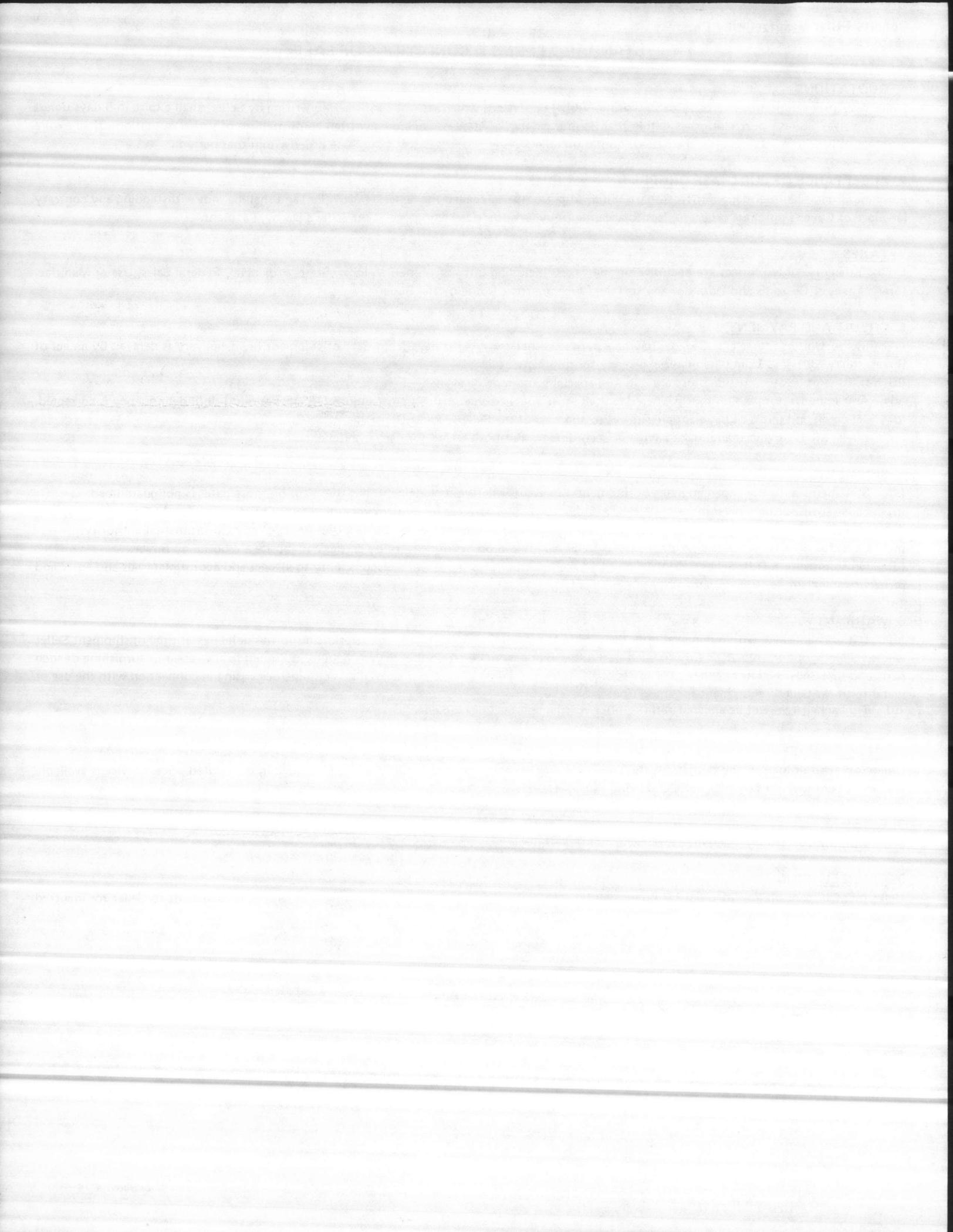
Unless otherwise noted in the quotation, the services of a serviceman or field engineer are not included in the quoted price. Service is available at current per diem rates plus all travel and living expenses.

8. PATENTS

Seller will furnish a patent indemnification agreement, if required, when requested by the Buyer.

9. CANCELLATION

Deferral or cancellation of order by Buyer will be accepted only on prior written agreement by and reimbursement to Seller for incurred expenses.



Roberts

FILTER MFG. COMPANY
DARBY, PENNSYLVANIA 19023

Marine Corps Base
Base Maintenance Division
Utilities Branch
Building #1202
Camp Lejeune, NC 28542



M7

22 November 1983

Foreman, Water Treatment

Director, Utilities Div.

Contract, procurement of

1. It is requested that a contract be procured to sand blast, prime and paint the pipe galleries; including all piping, pumps and associated equipment located therein, at the Hadnot Point, B-20, and Holcomb Blvd., B-670 Water Treatment Plants.
2. Preventative maintenance has been accomplished for years by Water Treatment Plant personnel. In order to restore the piping and associated equipment to it's original condition it is thought sand blasting, priming, and painting will be required. This is beyond the scope of water treatment plant personnel.


MACK FRAZELLE

23 November 1953

Director, Utilities Div.
Portland Water Treatment

Contract, procurement of

It is requested that a contract be procured to sand blast, prime and paint the pipe galleries including all piping, pumps and associated equipment located therein at the Harbor Point, B-10, and Holcomb Blvd. B-610 Water Treatment Plant.

Preventive maintenance has been recommended for years by Water Treatment Plant personnel. In order to restore the piping and associated equipment to its original condition it is thought sand blasting, priming and painting will be required. This is beyond the scope of Water Treatment Plant personnel.

MARK FRANKLIN

MAIN/SHK/shk
11330
4 October 1983

From: Foreman, Water Treatment Plant
To: Wallace and Tiernan, Pennwalt Corporation
25 Main Street, Belleville, New Jersey 07109

Attn: Gary Schaeffer

Subj: Flex Coupling for Lime Feeder, WT Stock Number UZ3747; examination of

Ref: (a) Your conversation with Mr. Melvin P. Rich, Equipment Mechanic,
Water and Wastewater Treatment, Marine Corps Base, Camp Lejeune,
N. C. on 22 September 1983

Encl: (1) Used Flex Connection

1. Per the reference, you requested that we ship to your office our old used flex connection for examination by your company. This examination is necessary to determine why the flex connections are continually malfunctioning, i.e., holes appearing around bend after approximately six months use.
2. The flex connection we have shipped, enclosure (1), was installed March 1, 1983, and removed 3 October 1983.
3. Any examination or other work by Wallace and Tiernan will have to be accomplished at no cost to the government. Your assistance in this matter is sincerely appreciated.

BYRON M. FRAZELLE, II

MAINTENANCE
4-1-1951

From: [illegible]
To: [illegible]
Subject: [illegible]

[illegible]
[illegible]
[illegible]

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[illegible]
[illegible]
[illegible]

[illegible]

18 November 1983

Subj: Inadequate Water Distribution System, Marine Corps Air Station (Helicopter)

the only result is overflowing TC-1070 elevated tank. If this appears confusing, think about the operator trying to operate this system.

3. The entire MCAS area has been studied by the Base Fire Department. It is considered to be a major problem. For additional information and comments, please contact E. Padgett, MCB, Fire Chief at extension 5815.

3. There may be many short term solutions to this continuing problem. It is felt, from my viewpoint, the only permanent solution is to study the entire complex, provide recommendations and award a contract based on those recommendations.

W. R. PRICE

1. The primary result of the investigation is that the system is not as reliable as it is claimed to be.

2. The system is not as reliable as it is claimed to be. The system is not as reliable as it is claimed to be.

3. The system is not as reliable as it is claimed to be. The system is not as reliable as it is claimed to be.

4. The system is not as reliable as it is claimed to be. The system is not as reliable as it is claimed to be.

W. J. L. L.

FILE FOLDER

DESCRIPTION ON TAB:

11330 WATER TREATMENT

(GENERAL)

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- Outside/inside of actual folder did contain hand written information
 - *Scanned as next image

11330 WATER TREATMENT (GENERAL) Shop 83
POTABLE WATER SOP

OPEN

CLOSED

JANUARY 1987 - DESTROY

TEMP. SECNAVINST 5212.5B, Part II,

Chap 11, par. 11300(2) 2 years ✓



WRP

UNITED STATES MARINE CORPS
Natural Resources and Environmental Affairs Division
Marine Corps Base
Camp Lejeune, North Carolina 28542

IN REPLY REFER TO:
11330/1
NREAD
18 Oct 84

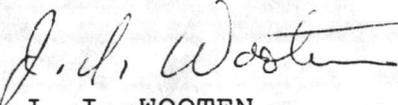
From: Director, Natural Resources and Environmental Affairs
Division, Marine Corps Base, Camp Lejeune
To: Base Maintenance Division, Marine Corps Base, Camp
Lejeune

Subj: DRINKING WATER ANALYSIS; CERTIFICATION FOR

Ref: (a) Drinking Water Act; state implementing regulations

Encl: (1) State Laboratory Public Health Division of Health
Services ltr of 10 Oct 1984

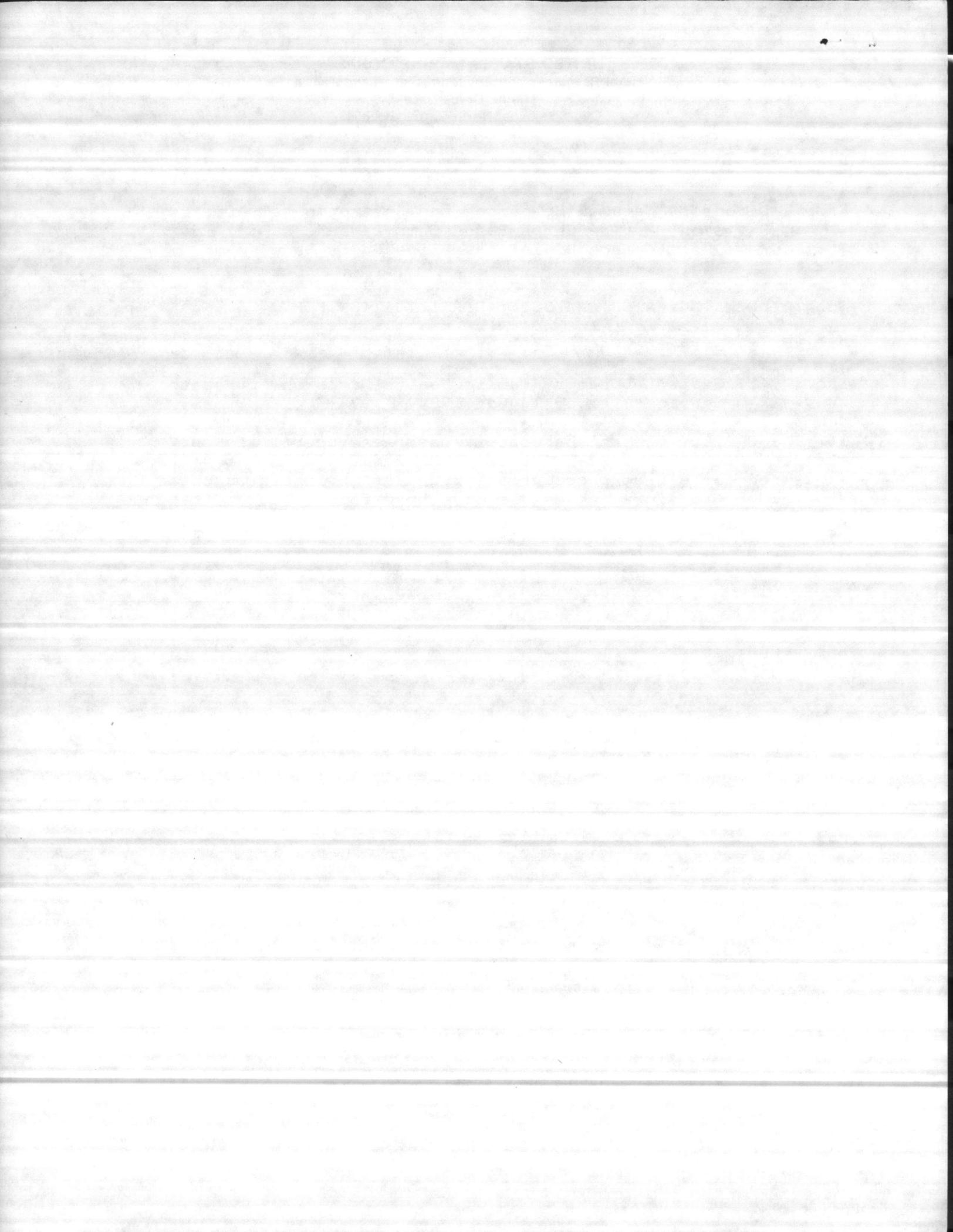
1. The Quality Control Laboratory has been recertified per the reference. The enclosure is forwarded for your information. It is requested that procedures for use of an insulated chest and coolant to store samples be developed for Utilities Branch, Base Maintenance Division, as requested by the enclosure.


J. I. WOOTEN

Copy to:
Supvy Chemist

RUTH, SEND COPY TO

WILLARD





Ronald H. Levine, M.D., M.P.H.
STATE HEALTH DIRECTOR

DIVISION OF HEALTH SERVICES
STATE LABORATORY OF PUBLIC HEALTH
306 N. Wilmington St.
P.O. Box 28047
Raleigh, N.C. 27611-8047

October 10, 1984

Commanding General
Marine Corps Base
Camp LeJeune, NC 28542

ATTN: Facilities - NREAD
Elizabeth Betz

Dear Ms. Betz:

The findings of the on-site evaluation on Sept. 27, 1984 indicate that your laboratory has met the minimum requirements for certification as specified in North Carolina Drinking Water Regulations (10NCAC 9D .0301 - .0330). We, therefore, grant Certification to your laboratory for total coliform analysis on public water supplies.

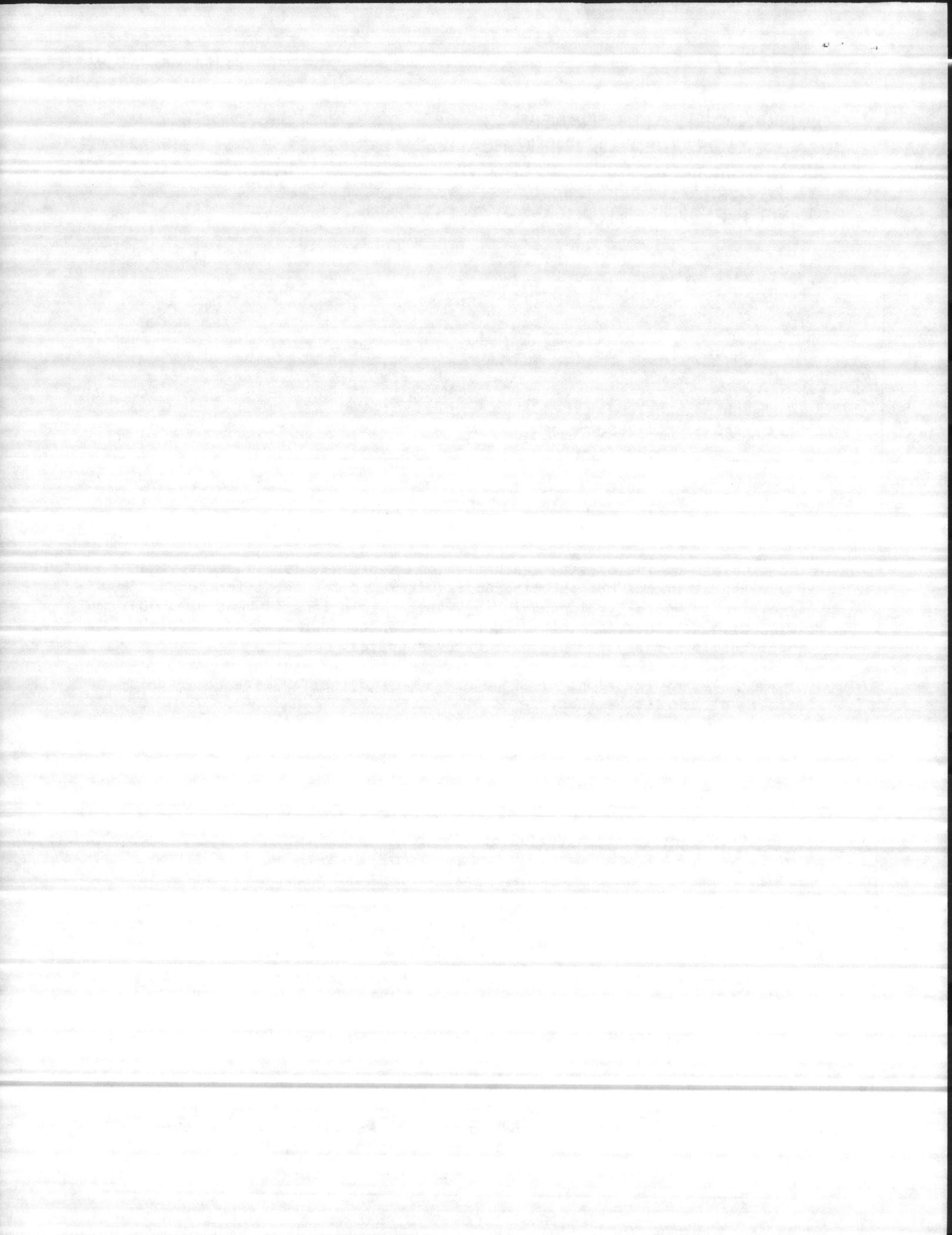
If you have any questions or if we may be of further assistance in this matter, please let us know.

Sincerely,

E. D. Beesley
Laboratory Certification Evaluator

EDB/hw
Enclosure

ENCLOSURE (1)

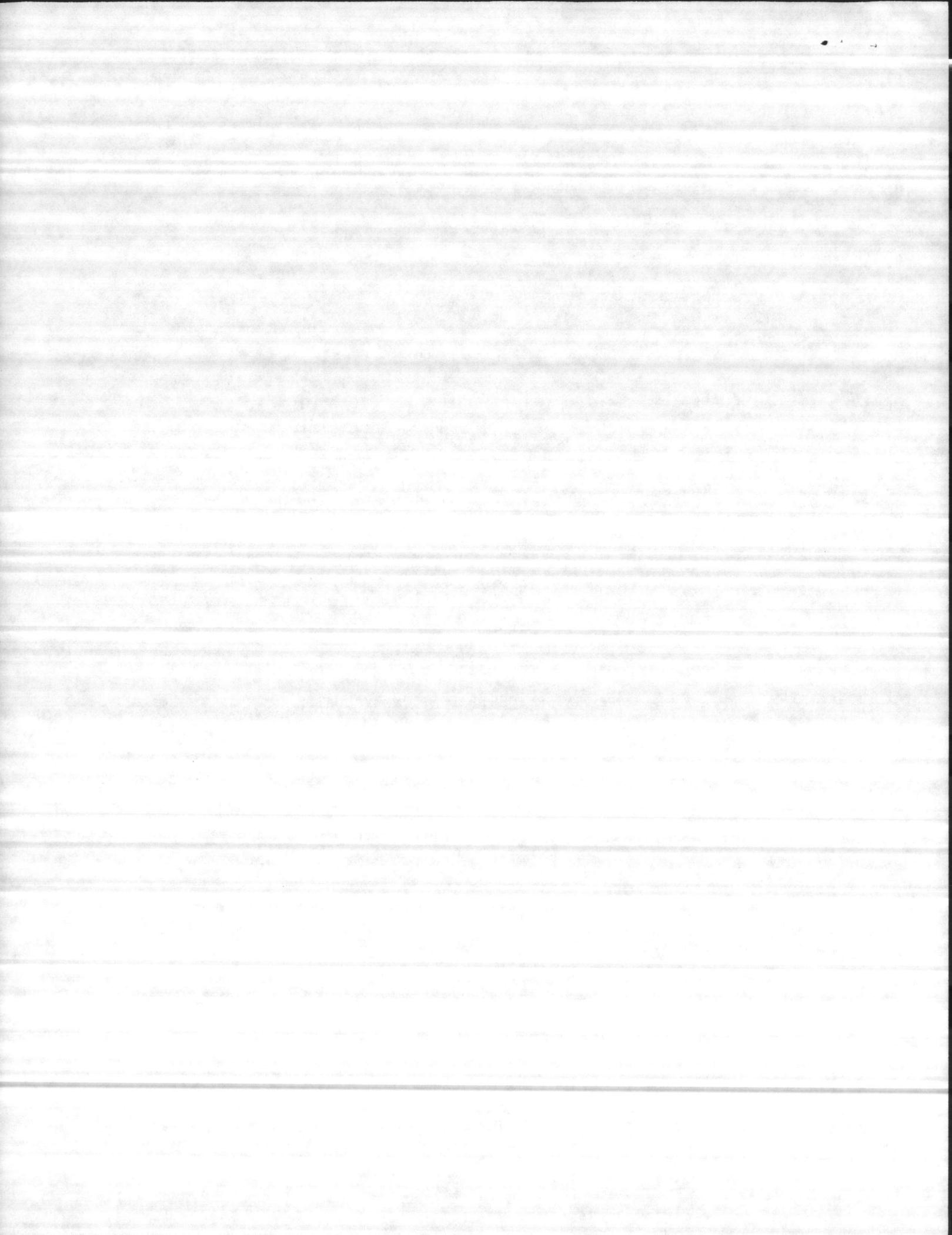


REPORT OF AN ON-SITE EVALUATION
QUALITY CONTROL LABORATORY
ENVIRONMENTAL BRANCH
NREAD, FACILITIES, MCB
CAMP LEJEUNE, NC

SEPTEMBER 27, 1984

BY:
E. D. BEESLEY
LABORATORY CERTIFICATION EVALUATOR
ENVIRONMENTAL SCIENCES BRANCH

LABORATORY SECTION
NORTH CAROLINA DIVISION OF HEALTH SERVICES
NORTH WILMINGTON STREET
RALEIGH, NORTH CAROLINA 27611



QUALITY CONTROL LABORATORY
CAMP LEJEUNE, NORTH CAROLINA
September 27, 1984

I. INTRODUCTION

The equipment and procedures employed in the bacteriological analyses of water by this laboratory conformed with the provisions of the North Carolina Safe Drinking Water Regulations, except for the items indicated.

II. DEVIATIONS AND RECOMMENDATIONS

No Deviations.

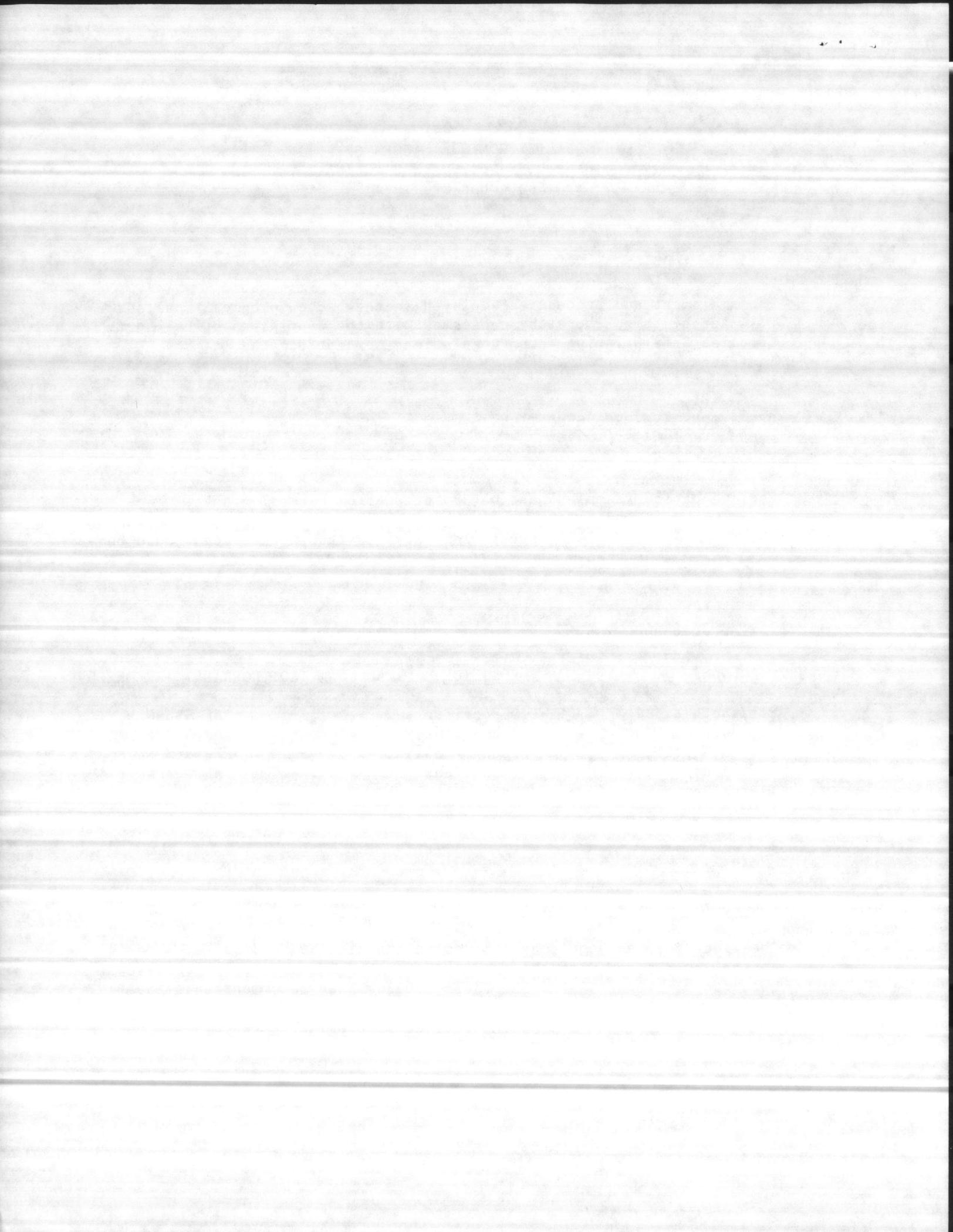
Recommendation: Samples must be protected from excessive heat, especially during hot summer months. An insulated chest containing a coolant such as frozen Blue Ice should be used.

III. LIST OF PERSONNEL

<u>NAME</u>	<u>POSITION</u>	<u>TEST NORMALLY PERFORMED</u>
Elizabeth A. Betz	Supervisor	MF & MPN
Hoy Burns <i>Corrected by 2 DS, 15 Oct 84</i>	Techn./Analyst	MF & MPN
Bob Lachapelle	Techn./Analyst	MF & MPN
Gaines Honeycutt	Techn./Analyst	MF & MPN
Thomas Barbee	Techn./Analyst	MF & MPN

V. CONCLUSION:

The procedures and equipment in use at the time of this survey were in general compliance with the provisions of the North Carolina Drinking Water Regulations (10NCAC 9D .0301 - .0330). We recommend that the analytical data be accepted for MF and MPN Coliform Analysis of Drinking Water under the North Carolina Safe Drinking Water Act.



North Carolina
Department of Human Resources
Division of Health Services



*Certification for the
analysis of drinking water
has been granted to*

CAMP LEJEUNE QUALITY CONTROL LABORATORY

for the following parameters

Coliform Bacteria - by Membrane Filter Procedure
Coliform Bacteria - by Most Probable Number Procedure

September 1986

Expiration Date

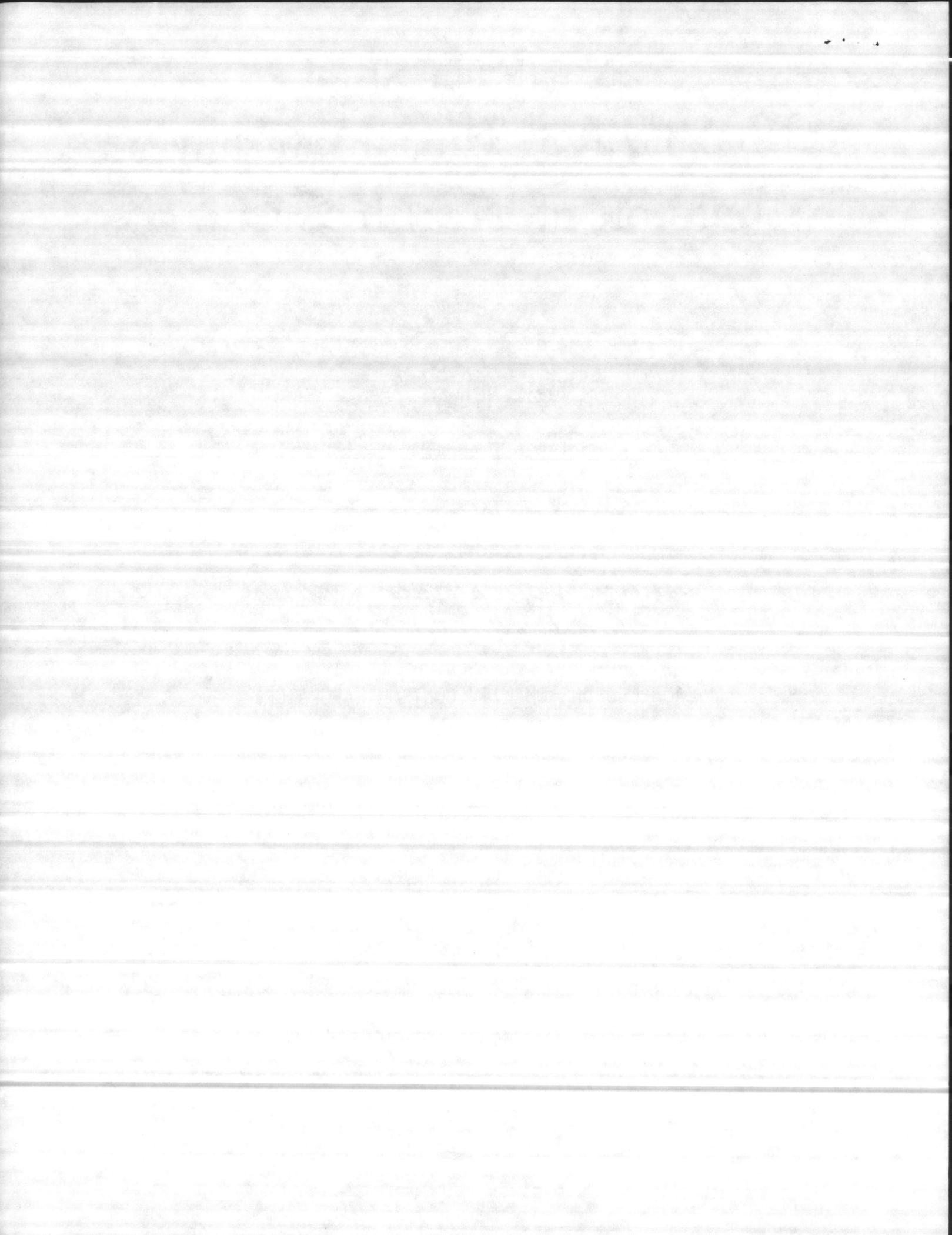
Donald McGuire
State Health Director

37807

Laboratory Number

Mildred Kerbaugh
Chief, State Laboratory
of Public Health

E. D. Beasley
Certification Officer



11330/1
NREAD
18 Oct 84

From: Director, Natural Resources and Environmental Affairs
Division, Marine Corps Base, Camp Lejeune
To: Base Maintenance Division, Marine Corps Base, Camp
Lejeune

Subj: DRINKING WATER ANALYSIS; CERTIFICATION FOR

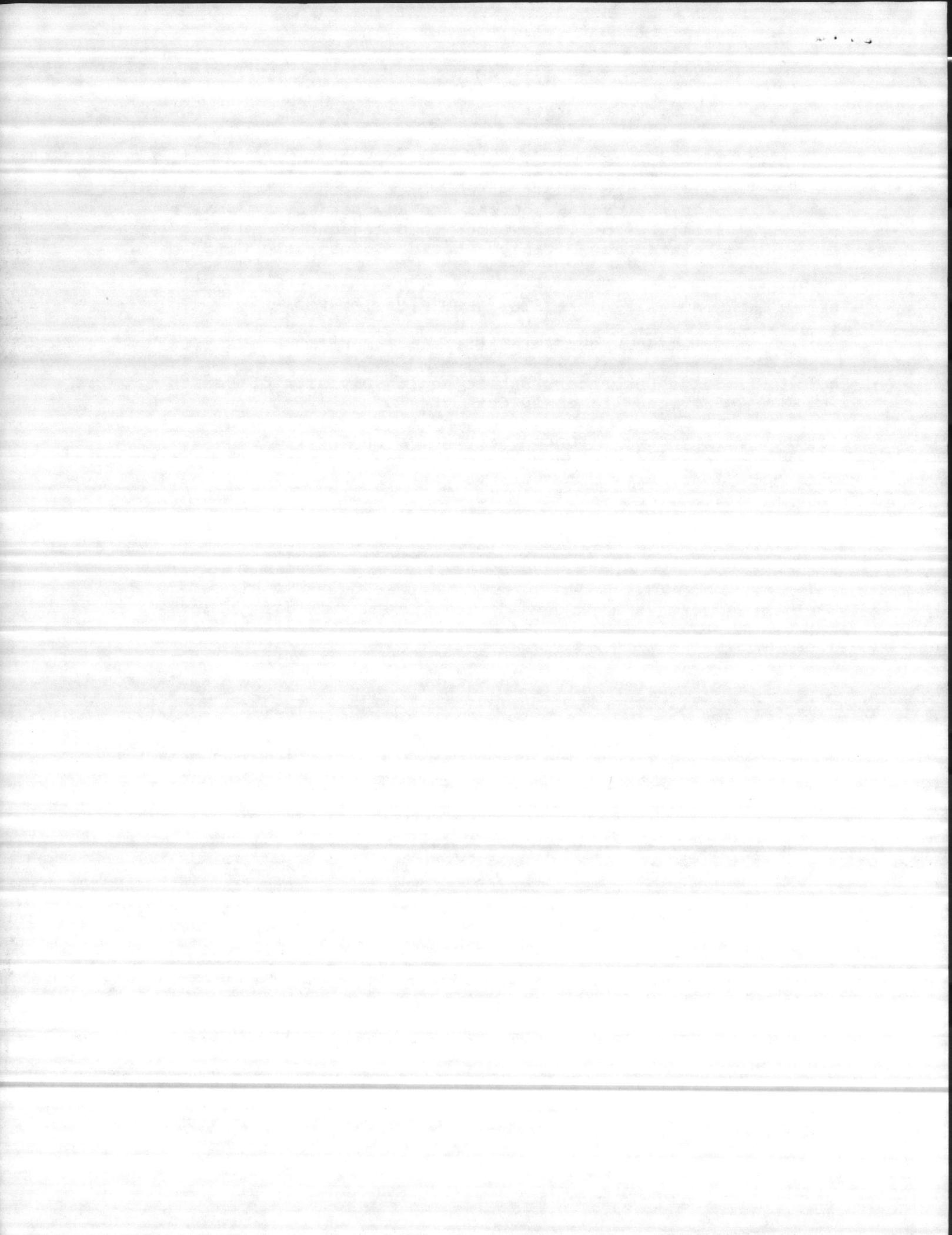
Ref: (a) Drinking Water Act; state implementing regulations

Encl: (1) State Laboratory Public Health Division of Health
Services ltr of 10 Oct 1984

1. The Quality Control Laboratory has been recertified per the reference. The enclosure is forwarded for your information. It is requested that procedures for use of an insulated chest and coolant to store samples be developed for Utilities Branch, Base Maintenance Division, as requested by the enclosure.

J. I. WOOTEN

Copy to:
Supvy Chemist



104

SWIMMING POOL ENVIRONMENTAL SANITATION INSPECTION

Swimming Pool TARAWA TERRACE POOL #20	Location TARAWA TERRACE	Time 1435	Date 22 MAY 85
Sanitary Compliance Score 94%	Score on Previous Inspection INITIAL INSPECTION FOR 1985	Itemized Repeat Discrepancies	

based on an inspection this date, defect points have been assigned and a sanitary compliance score calculated for violations of the provisions set forth in the Manual of Naval Preventive Medicine, NAVMED P-5010 and the Manual of the Medical Department, Chapter 22. Prompt action should be taken to correct all violations.

ITEM	DEFECT POINTS		SANITARY REQUIREMENTS
	Assigned	Possible	
SECTION I - PROTECTION OF SWIMMERS			
1	/	4	Appropriate swimming pool regulations posted and enforced.
2	/	6	Persons with any symptoms of any kind of illness not permitted in the pool (includes: colds, skin inflammation/sores, rashes, or bandages).
3	/	6	Personnel are required to take a cleansing shower before swimming, and before reentering the pool following the use of suntan lotions.
4	/	4	Adequate number of qualified lifeguards on duty (minimum of 2 per pool area).
5	/	4	Adequate types and amount of safety equipment available around pool (shepherds crook pole, lifebuoy rings, first aid kit, blankets).
SECTION II - WATER QUALITY			
6	/	5	Free available chlorine level between 0.4 to 0.75 ppm. 0.6 - 0.8 PPM
7	/	5	pH between 7.2 and 7.6. 7.0
8	/	4	Water temperature not above 75°F.
9	4	4	Clarity disk (6-inch black disk on white background) on bottom of the pool visible from 10 yards away.
10	/	5	Water meets bacteriological standards (0 coliforms & 5 non-coliforms/100ml)
11	/	3	Water at proper level for effective use of scum gutters.
12	/	3	Algae growth eliminated through proper chemical control techniques and routine cleaning.
13	N/A	4	Wading pool: continuous flow of water provided with the chlorine level maintained at 0.5 ppm FAC: runoff discharged to sewage.
14	/	5	Filters being backwashed and water being recirculated as required. Proper records being kept.
SECTION III - POOL MAINTENANCE			
15	/	4	Adequate supply of cleaning equipment available to accomplish routine cleaning. Properly stored and secured to avoid access to unauthorized personnel.
16	/	4	Vacuum pump (portable or built-in) used to vacuum bottom of the pool and scum gutters daily. Skimming devices used daily to remove surface debris.
17	N/A	4	Wading pool drained, cleaned and refilled twice daily.
18	/	3	Pool and patio surfaces kept in good repair, swept and cleaned daily.
19	2	2	Tables, chairs, lounges in good repair. Adequate number of umbrellas or protective shade devices provided. Trash from snack bar operations kept cleaned up. EXCESSIVE/UNMAINTAINED EQUIPMENT NOTED BY SNACK MACHINES.
20	/	3	Diving boards and ladders installed and maintained in a safe condition.
21	/	4	Rubber gloves and aprons, goggles, gas masks, and water test kits provided for and used by water treatment personnel. (Gas mask must be located outside door to treatment plant).
SECTION IV - HEADS AND SHOWERS			
22	1	4	Heads, shower rooms, dressing rooms and passageways scrubbed daily with an appropriate germicidal/fungicidal disinfectant.
23	/	3	Head fixtures and showers cleaned daily, and in good repair.
24	/	4	Showers supplied with hot and cold running water, and leaf soap dispensers.
25	/	3	Heads supplied with toilet paper, soap in soap dispensers, and paper towels.

SCS: 100 - 6 = 94 %

SECTION V - COMMENTS & RECOMMENDATIONS

DT Stroh
Signature of Inspector

Laurina M. Cron
Signature of Supervisor

Copy to:

SWIMMING POOL ENVIRONMENTAL SANITATION INSPECTION

Red

Swimming Pool TARAWA TERRACE POOL	Location TT	Time 1330	Date 3 JUN 85
Sanitary Compliance Score 87%	Score on Previous Inspection 94%	Itemized Repeat Discrepancies 89	

based on an inspection this date, defect points have been assigned and a sanitary compliance score calculated for violations of the provisions set forth in the Manual of Naval Preventive Medicine, NAVMED P-5010 and the Manual of the Medical Department, Chapter 22. Prompt action should be taken to correct all violations.

ITEM	DEFECT POINTS		SANITARY REQUIREMENTS
	Assigned	Possible	
SECTION I - PROTECTION OF SWIMMERS			
1	4		Appropriate swimming pool regulations posted and enforced.
2	6		Persons with any symptoms of any kind of illness not permitted in the pool (includes: colds, skin inflammation/sores, rashes, or bandages).
3	6		Personnel are required to take a cleansing shower before swimming, and before reentering the pool following the use of suntan lotions.
4	4		Adequate number of qualified lifeguards on duty (minimum of 2 per pool area)
5	4		Adequate types and amount of safety equipment available around pool (shepherds crook pole, lifebuoy rings, first aid kit, blankets).
SECTION II - WATER QUALITY			
6	5		Free available chlorine level between 0.4 to 0.75 ppm. <i>CL NOT CHECKED (OR LARGED 3 JUN) WAS .9; 1.0 ON 2 JUN</i>
7	5		pH between 7.2 and 7.6.
8	4		Water temperature not above 75°F.
9	4		Clarity disk (6-inch black disk on white background) on bottom of the pool visible from 10 yards away.
10	5		Water meets bacteriological standards (0 coliforms & 5 non-coliforms/100ml)
11	3		Water at proper level for effective use of scum gutters.
12	3		Algae growth eliminated through proper chemical control techniques and routine cleaning.
13	4		Wading pool: continuous flow of water provided with the chlorine level maintained at 0.5 ppm FAC; runoff discharged to sewage.
14	5		Filters being backwashed and water being recirculated as required. Proper records being kept.
SECTION III - POOL MAINTENANCE			
15	4		Adequate supply of cleaning equipment available to accomplish routine cleaning. Properly stored and secured to avoid access to unauthorized personnel.
16	4		Vacuum pump (portable or built-in) used to vacuum bottom of the pool and scum gutters daily. Skimming devices used daily to remove surface debris.
17	4		Wading pool drained, cleaned and refilled twice daily.
18	3		Pool and patio surfaces kept in good repair, swept and cleaned daily.
19	2		Tables, chairs, lounges in good repair. Adequate number of umbrellas or protective shade devices provided. Trash from snack bar operations kept cleaned up.
20	3		Diving boards and ladders installed and maintained in a safe condition.
21	4		Rubber gloves and aprons, goggles, gas masks, and water test kits provided for and used by water treatment personnel. (Gas mask must be located outside door to treatment plant).
SECTION IV - HEADS AND SHOWERS			
22	4		Heads, shower rooms, dressing rooms and passageways scrubbed daily with an appropriate germicidal/fungicidal disinfectant.
23	3		Head fixtures and showers cleaned daily, and in good repair.
24	4		Showers supplied with hot and cold running water, and leaf soap dispensers.
25	3		Heads supplied with toilet paper, soap in soap dispensers, and paper towels.

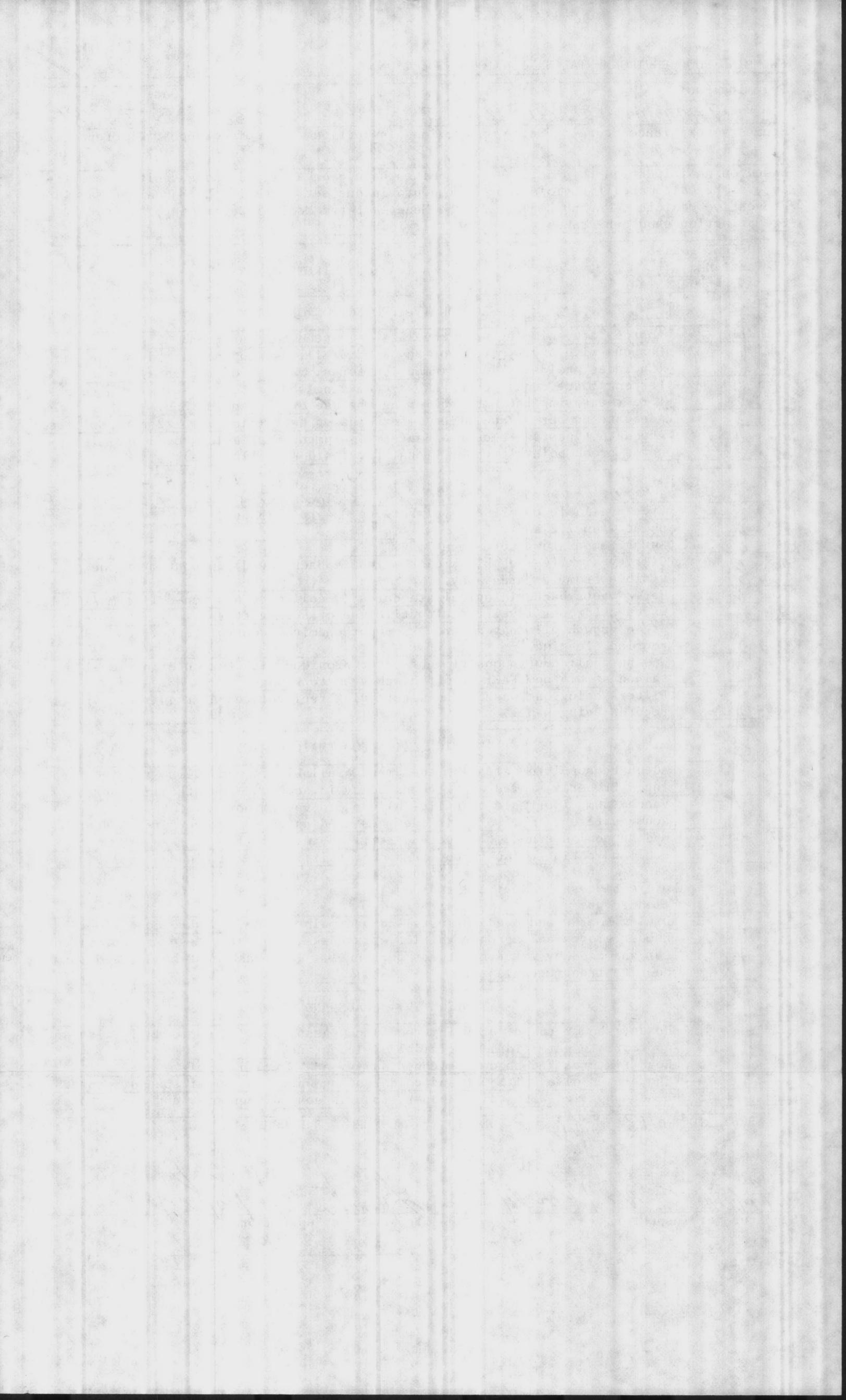
SCS: 100 - 13 = 87%

SECTION V - COMMENTS & RECOMMENDATIONS

Robert E. McHornally
Signature of Inspector

Lucette V. Parker
Signature of Supervisor

Copy to:



ENVIRONMENTAL HEALTH/SANITATION INSPECTION REPORT

NAV HOSP (CLNC) 6240/1A (8-83)

FROM: **Commanding Officer, Naval Hospital, Camp Lejeune, NC 28542**
 TO: **Base Maintenance Officer, Marine Corps Base, Camp Lejeune, NC 28542**

REF: (a) NAVMED P-5010

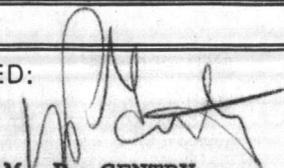
In accordance with reference (a) an environmental health/sanitation inspection of WATER TX. PLANT TT 38 was conducted on 11 JAN 85 by M.T. STASH Amz. Findings and recommended corrective action are as follows.

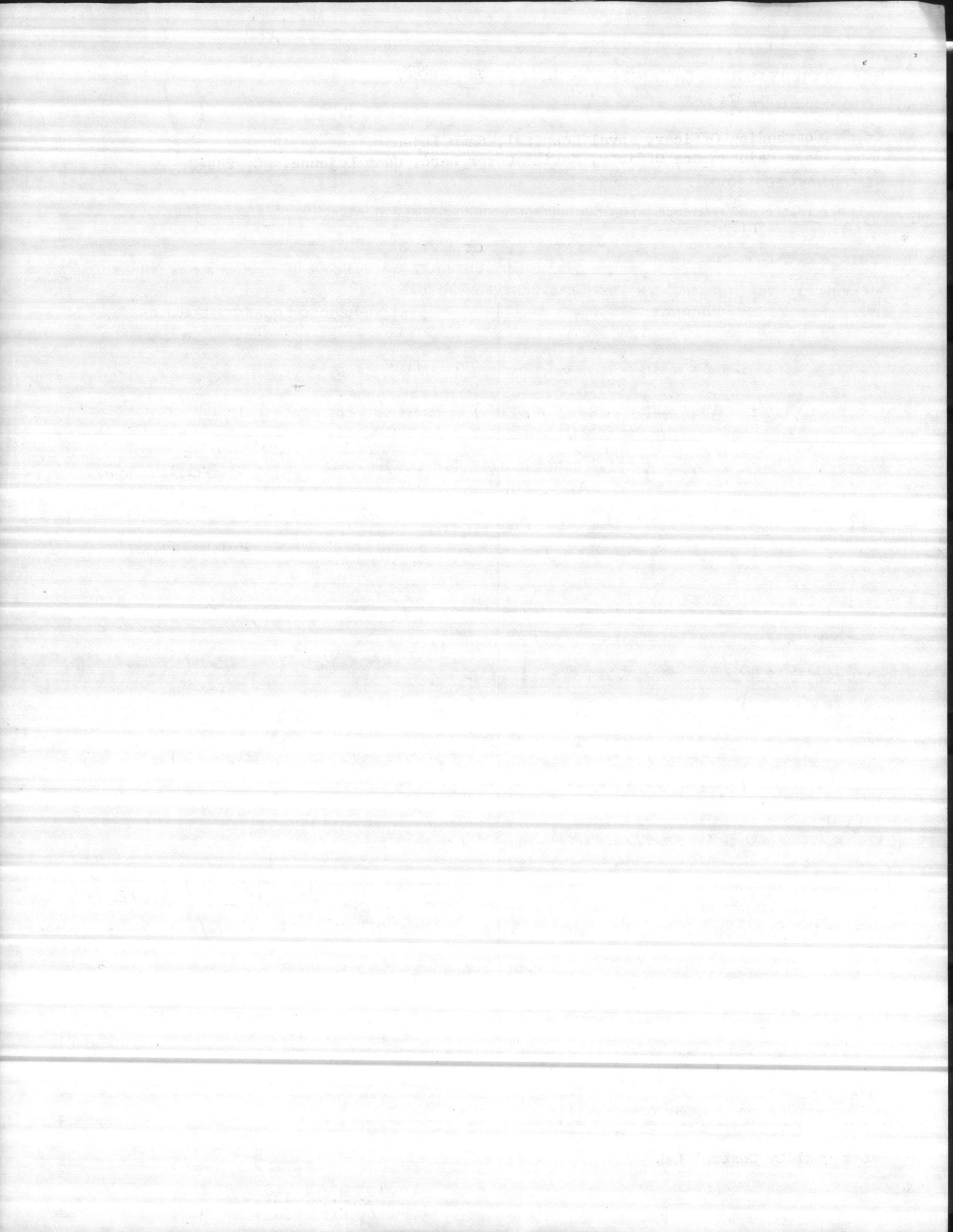
AN * INDICATES THAT THE FINDING HAS BEEN PREVIOUSLY REPORTED.

FINDINGS	RECOMMENDED CORRECTIVE ACTION
<ul style="list-style-type: none"> - STOVE AND COFFEE MESS LOCATED IN H₂O ANALYSIS LAB. - NO PROTECTIVE GEAR (GLOVES, APRON) USED IN H₂O ANALYSIS LAB. - RESPIRATOR LOCATED IN H₂O ANALYSIS LAB ACROSS FROM CL₂ ROOM WITHIN IN THE FLOW OF AIR. (IF LEAK WAS DETECTED, RESPIRATOR WOULD BE IN ACCRABLR.) NO EFFECTIVE RESPIRATOR PROTECTION TRAINING BEING DOCUMENTED OR DONE. - 50 lb Lime BAGS BEING STORED BY CL₂ INJECTION SITE AND A SMALL CHAIN IS UTILIZED TO HOLD CL₂ TANKS (THIS CAN BE A HAZARD IF A BAG OF LIME WAS TO FALL AND HIT THE CL₂ TANKS.) - OPERATOR NOT USING PROTECTIVE GEAR WHEN MANUALLY INJECTING LIME INTO H₂O SYSTEM. - NO EYE WASH FACILITY NOTED. - AMMONIA BEING STORED IN ROOM NEXT TO CL₂ TANKS (SHOULD BE STORED OUTSIDE OF ROOM FOR CL₂ DETECTION.) <p><i>check with PMU see what they expect</i></p> <p><i>M.T. Stash Amz</i></p>	

2. The overall sanitary condition was found to be: GOOD

Copy to:
Water Quality Control Lab

APPROVED: 
M. P. GENTRY
 By direction



NREAD/DDS/jc
11330/1
8 May 1984

Mr. John McFadyen
Water Supply Branch
Division of Health Services
North Carolina Department of
Human Resources
Post Office Box 2091
Raleigh, North Carolina 27602

Dear Mr. McFadyen:

Enclosed are the completed Department of Health Forms (DHS 1942 2/74) for all water treatment plants aboard Marine Corps Base, Camp Lejeune, for the period 1-30 April 1984. Also enclosed are the weekly Chemical Analysis Forms (MCBCL 11330/3 Rev 3-82) for the same period, as requested in the 25 October 1982 letter from Mr. Charles Rundgren of your office.

The analysis is run by the Quality Control Laboratory located in the Natural Resources and Environmental Affairs Division, Assistant Chief of Staff, Facilities. Ms. Elizabeth Betz, Supervisory Chemist, Quality Control Laboratory, telephone (919) 451-5977 is the point of contact in this matter.

Sincerely,

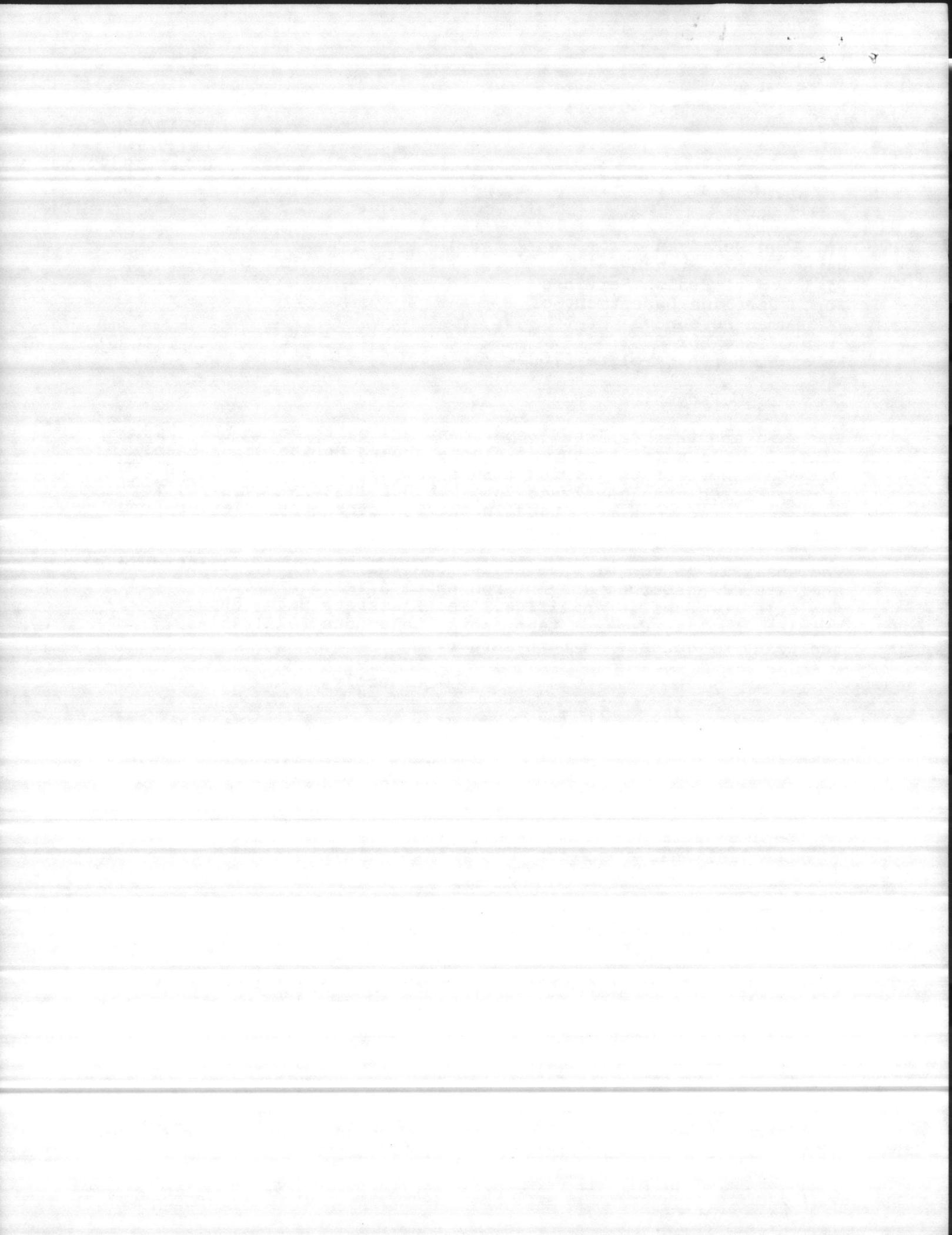
J. I. WOOTEN
Director

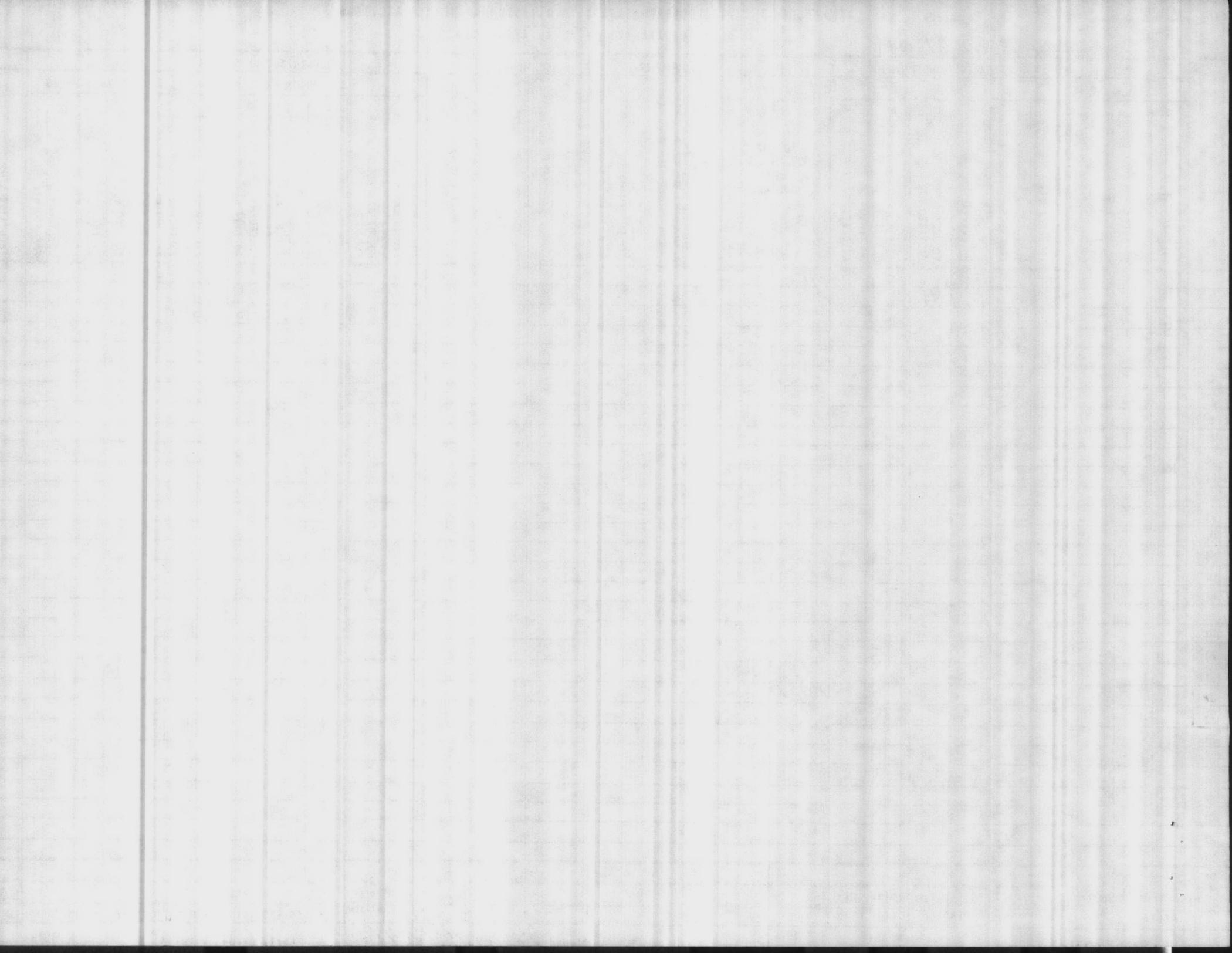
Encl:
(1) Dept of Health Forms
(2) Chemical Analysis Forms

Copy to:
LANTDIV (Code 114)

Blind copy to:

→ SupvChem



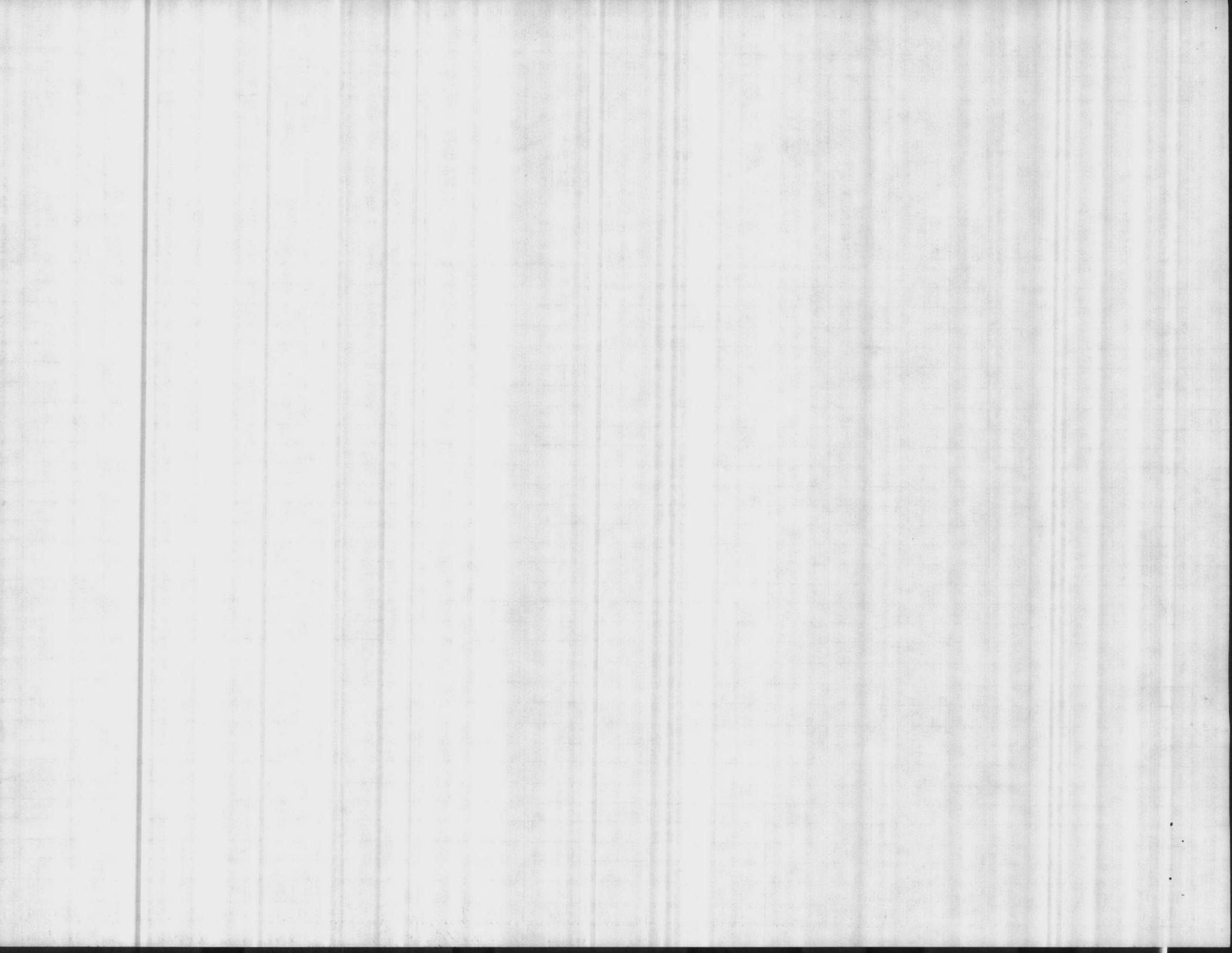


SERIAL #: 04-67-042

N. C. DEPARTMENT OF HUMAN RESOURCES

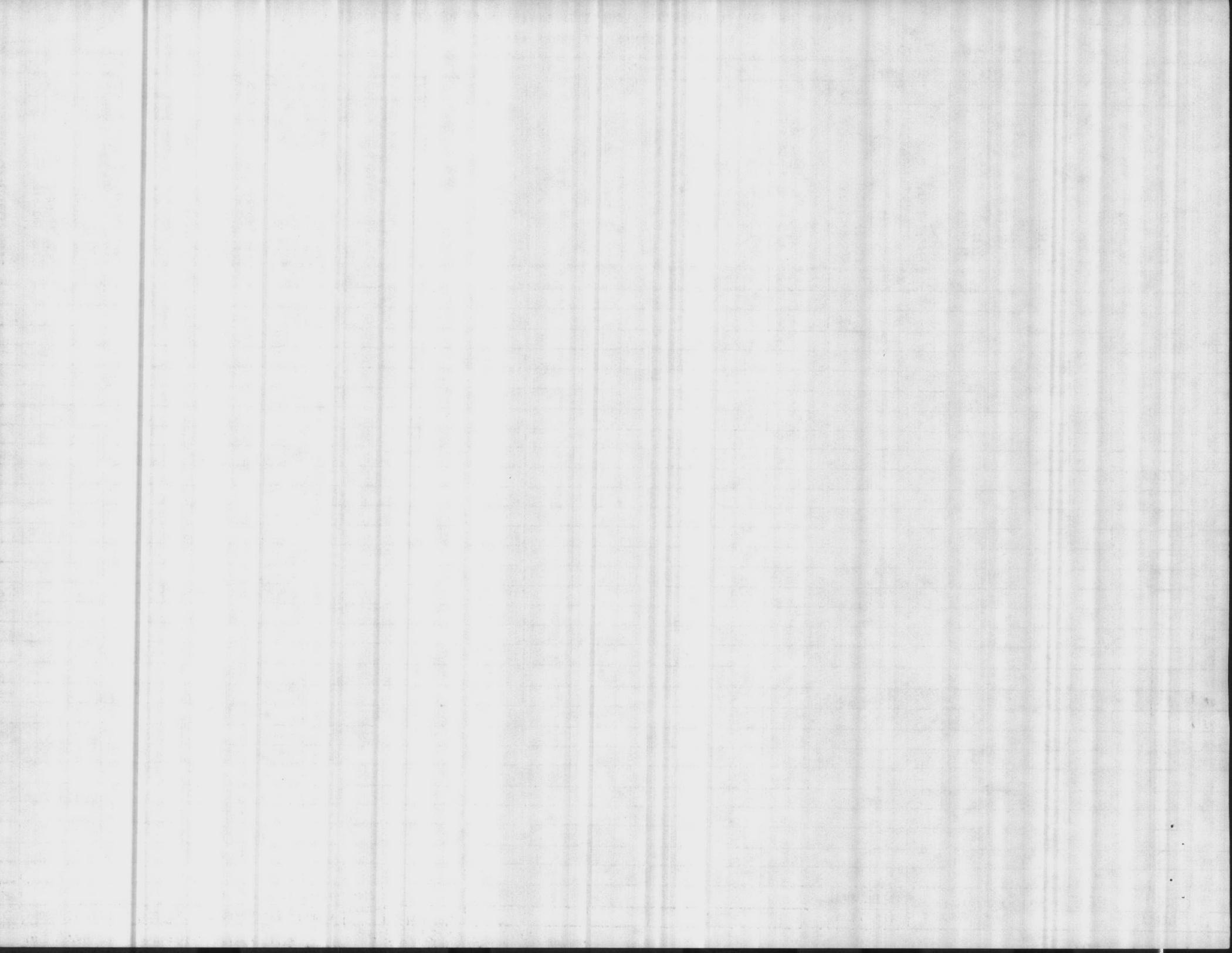
DATE	RAW WATER COLIFORMS (HFP)						NO. OF COLIFORMS PER 100 ml.	FILTERED TOTAL PLATE COUNT	FINISHED TOTAL PLATE COUNT	TOTAL PLATE COUNT	DISTRIBUTION SYSTEM COLIFORMS (HFP)					REPEAT SAMPLES			INCUBATOR TEMP.		
	A		B		C						AVE. COLIFORMS per 100 ml.	NO. OF SAMPLES EXAMINED	1	2	3	4	5	COLIFORMS per 100 ml.		COLIFORMS per 100 ml.	COLIFORMS per 100 ml.
	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES															
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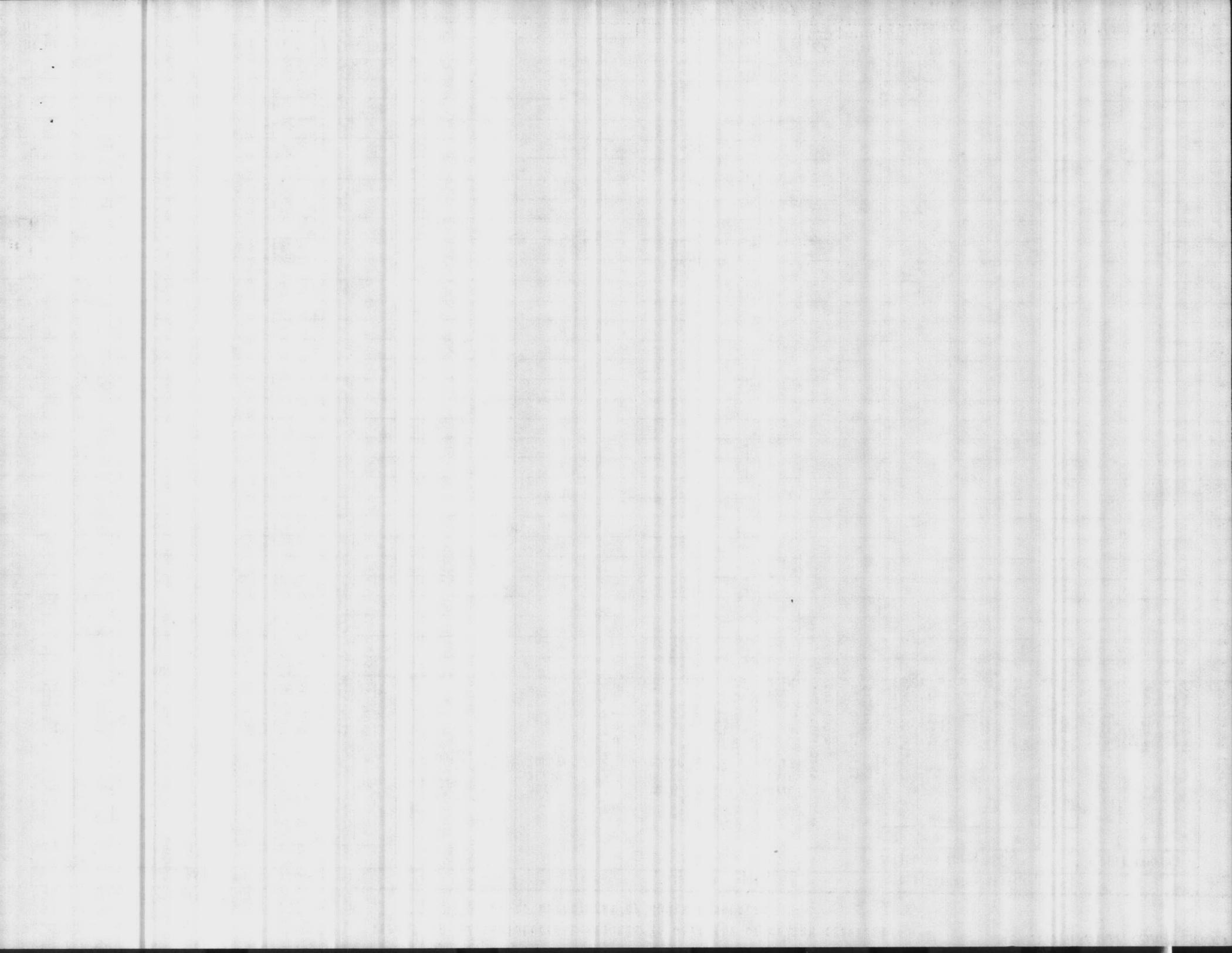
HF MEDIA BBL M-ENDO BACTERIAL DENSITY ARITH. MEAN GEO. MEAN
 TPC MEDIA #100 DIST. SYSTEM TOTAL NO. SAMPLES SAMPLES EXCEEDING 3/50. (4/100) 7/200. 13/500ml 27

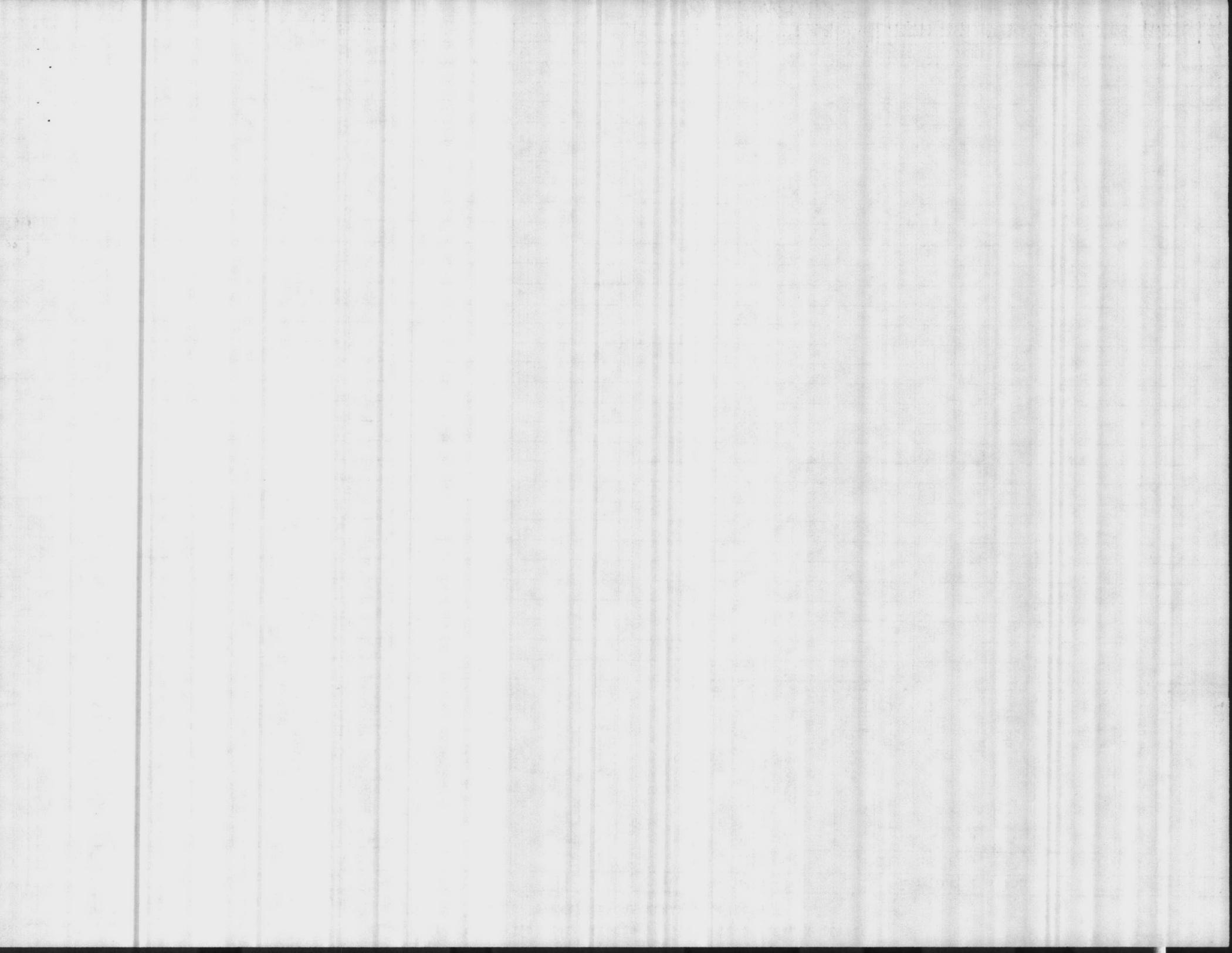


SERIAL #: 04-67-043

DATE	RAW WATER COLIFORMS (MFP)						NO. OF COLIFORMS PER 100 ml.	TOTAL PLATE COUNT	MFP COLIFORMS per 100 ml.	TOTAL PLATE COUNT	MFP COLIFORMS per 100 ml.	TOTAL PLATE COUNT	DISTRIBUTION SYSTEM					INCUBATOR TEMP.			
	A		B		C								COLIFORMS (MFP)						REPEAT SAMPLES		
	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES							1	2	3	4	5		COLIFORMS per 100 ml.	COLIFORMS per 100 ml.	COLIFORMS per 100 ml.
2																					
3	W												0	7	0	0	0	0	0	350	
4	W																				
5																					
6																					
7																					
8																					
9																					
10	W												0	7	0	0	0	0	0	350	
11	W10																				
12																					
13																					
14																					
15																					
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17	317												0	7	0	0	0	0	0	350	
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24	321												0	7	0	0	0	0	0	350	
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IF MEDIA		BBL M-ENDO		BACTERIAL DENSITY		ARITH. MEAN								0		DISTR. SYSTEM		TOTAL NO. SAMPLES			28
TPC MEDIA						GEO. MEAN								1.0				SAMPLES EXCEEDING 3/50. (4/100) 7/200. 13/500ml			0







car 1384

REPORT OF BACTERIOLOGICAL RESULTS TO DIVISION OF HEALTH SERVICES
N. C. DEPARTMENT OF HUMAN RESOURCES

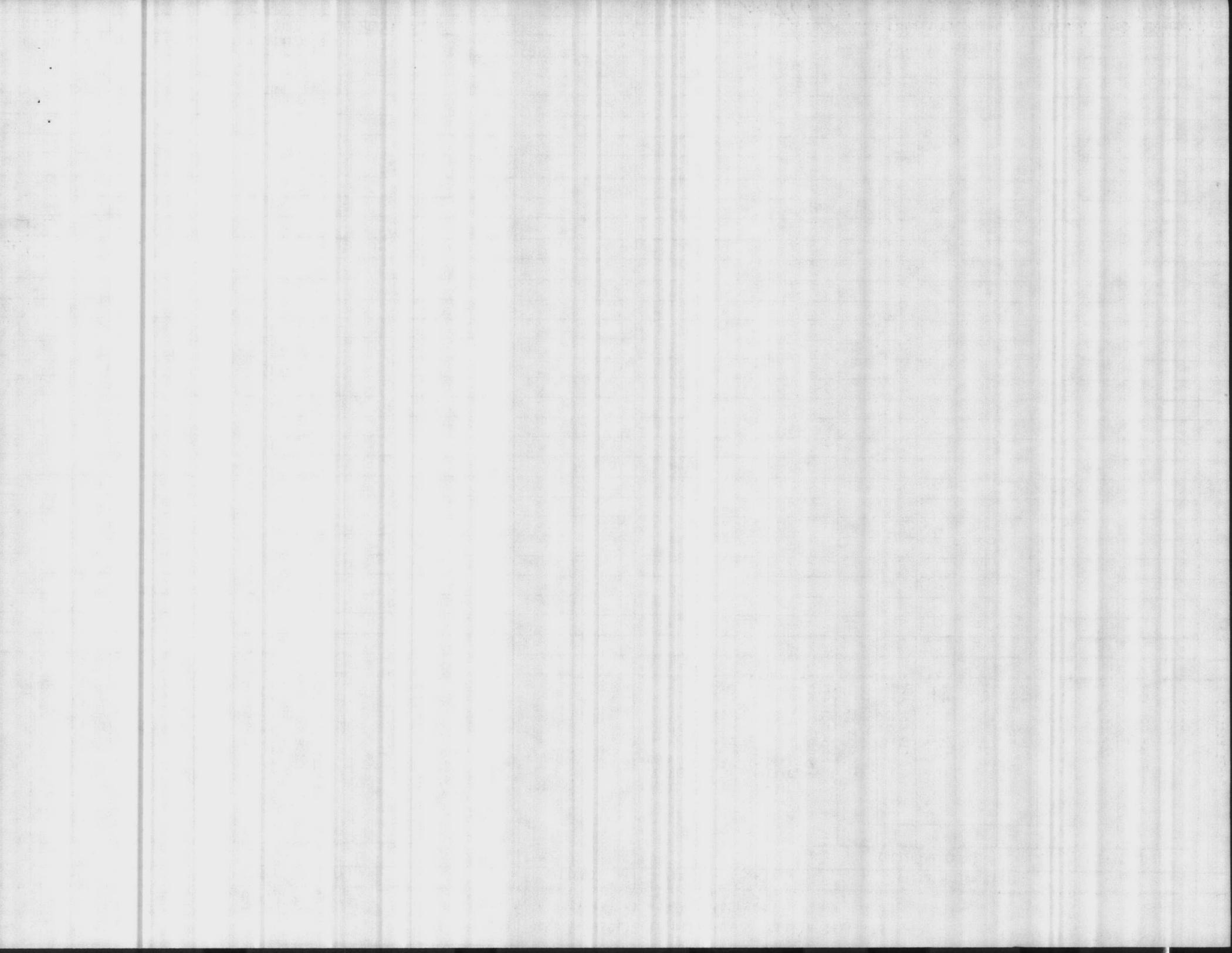
CONTAMINANT CODE: 3000

SERIAL #: 04-67-046

DATE	RAW WATER COLIFORMS (HFP)						NO. OF COLIFORMS PER 100 ml.	FILTERED TOTAL PLATE COUNT	FINISHED TOTAL PLATE COUNT	TOTAL PLATE COUNT	DISTRIBUTION SYSTEM COLIFORMS (HFP)					REPEAT SAMPLES			INCUBATOR TEMP		
	A		B		C						1	2	3	4	5	1	2	3			
	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES														COLIFORMS per 100 ml.	COLIFORMS per 100 ml.
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31																					
HF MEDIA		BBL M-ENDO		BACTERIAL DENSITY		ARITH. MEAN						0		DIST. SYSTEM		TOTAL NO. SAMPLES				12	
TPC MEDIA						GEO. MEAN						10				SAMPLES EXCEEDING 3/50, (4/100) 7/200, 13/500ml				0	

Handwritten signature/initials

Cont. Code B-WEST No. 11087-N

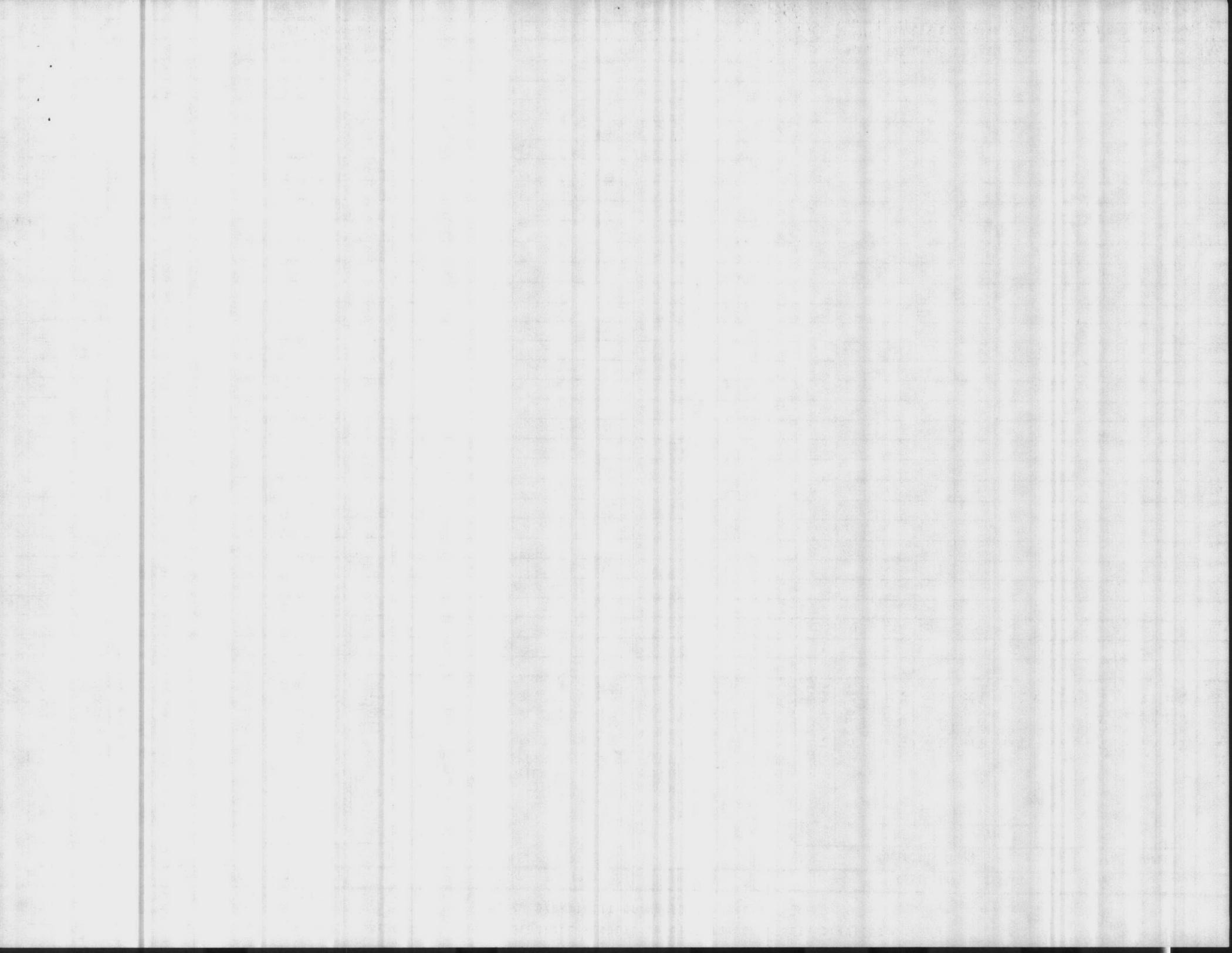


SERIAL #: 04-67-047

N. C. DEPARTMENT OF HUMAN RESOURCES

DATE	RAW WATER COLIFORMS (MFP)						NO. OF COLIFORMS PER 100 ml.	TOTAL PLATE COUNT	MFP COLIFORMS per 100 ml.	TOTAL PLATE COUNT	MFP COLIFORMS per 100 ml.	TOTAL PLATE COUNT	DISTRIBUTION SYSTEM					INCUBATOR TEMP.		
	A		B		C								COLIFORMS (MFP)						REPEAT SAMPLES	
	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES							1	2	3	4	5		COLIFORMS per 100 ml.	COLIFORMS per 100 ml.
1																				
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17										0	4	0	0	0	0			50		
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24										0	4	0	0	0	0			50		
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30																				
31																				
MFP MEDIA		BBL M-ENDO		BACTERIAL DENSITY		ARITH. MEAN						0		DIST. SYSTEM		TOTAL NO. SAMPLES		16		
TPC MEDIA						GEO. MEAN						1.0				SAMPLES EXCEEDING 3/50. (4/100) 7/200. 13/500ml		0		

Standard Elizabeth Bets Cert. Grade B-WELL No. 4087-W



car 1984

REPORT OF BACTERIOLOGICAL RESULTS TO DIVISION OF HEALTH SERVICES
N. C. DEPARTMENT OF HUMAN RESOURCES

CONTAMINANT CODE: 3000

SERIAL #: 04-67-048

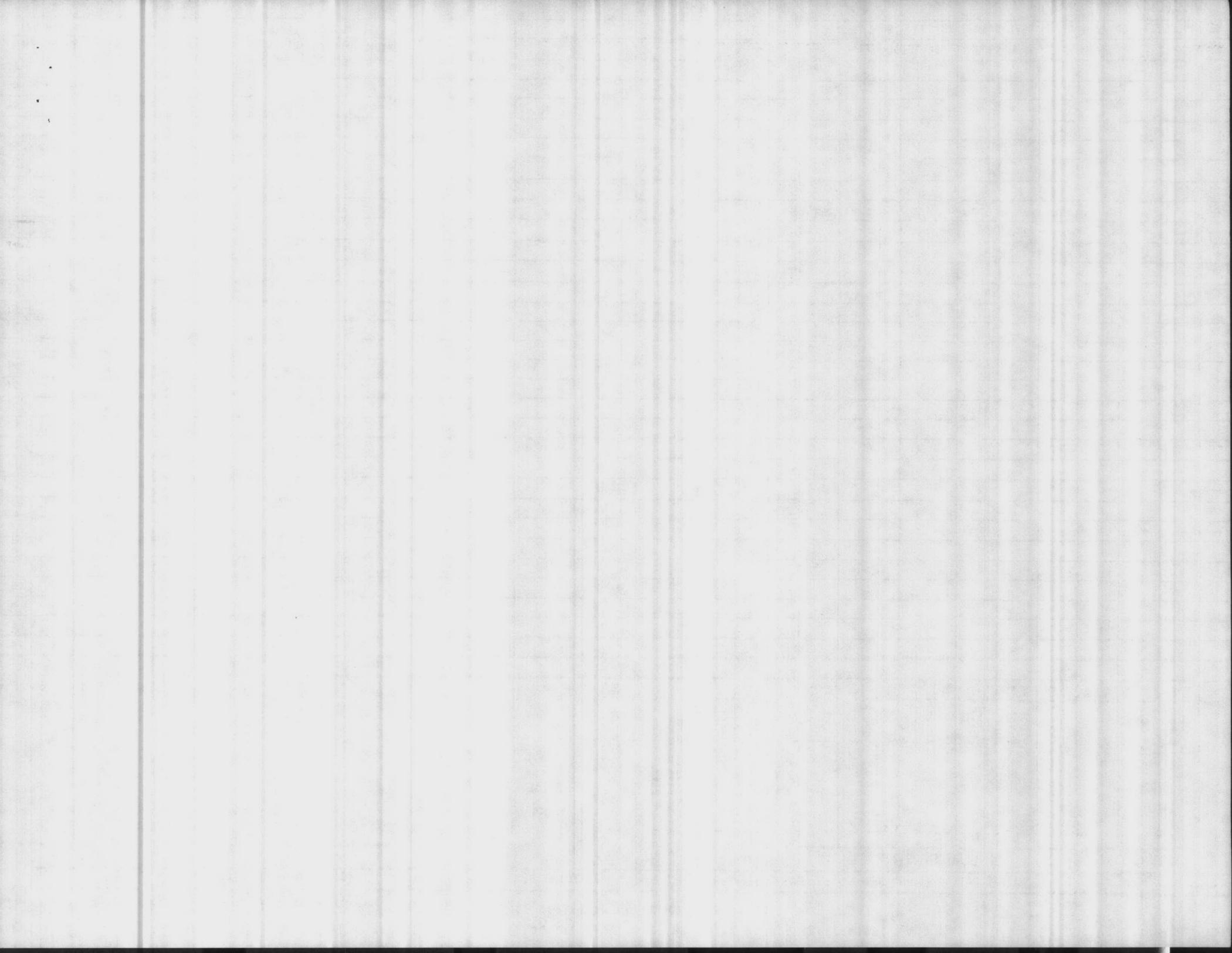
DATE	RAW WATER COLIFORMS (HFP)						NO. OF COLIFORMS PER 100 ml.	FILTERED TOTAL PLATE COUNT	FINISHED TOTAL PLATE COUNT	HFP COLIFORMS per 100 ml.	TOTAL PLATE COUNT	DISTRIBUTION SYSTEM COLIFORMS (HFP)					REPEAT SAMPLES			INCUBATOR TEMP
	A		B		C							1	2	3	4	5	COLIFORMS per 100 ml.	COLIFORMS per 100 ml.	COLIFORMS per 100 ml.	
	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES														
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4																				
5																				
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10												0	N	0	0					350
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26																				
27																				
28																				
29																				
30																				
31																				
HF MEDIA		BBL m-ENDO		BACTERIAL DENSITY		ARTH. MEAN GEO. MEAN						0	DIST. SYSTEM	TOTAL NO. SAMPLES					8	
TPC MEDIA												10		SAMPLES EXCEEDING 3/50. (4/100) 7/200. 13/500ml					0	

#100

Standard Plate Count

Cont. Grade B-Well

No. 4057-N



CHEMICAL ANALYSIS — WATER TREATMENT PLANTS

MCBCL 11330/3 (REV. 3-82)

DATE COLLECTED

3 April 1984

PARAMETER SERIAL #04-61	HADNOT POINT -041	MONTFORD POINT -045	TARAWA TERRACE -044	ONSLow BEACH -048	COURTHOUSE BAY -047	RIFLE RANGE -046	HOLCOMB BLVD -043	NEW RIVER -042
PH (IN LAB NOT PLANT)	8.8	7.4	8.7	7.7	8.3	8.3	8.8	8.5
PENOLTHALEIN ALKALINITY	4	0	8	0	8	8	18	24
METHYL ORANGE ALKALINITY	16	190	56	156	180	176	58	166
CARBONATES AS CaCO ₃	8	0	16	0	16	16	36	48
BICARBONATES AS CaCO ₃	8	190	40	156	164	160	22	118
CHLORIDES AS Cl	14	36	14	20	20	20	20	104
HARDNESS AS CaCO ₃	62	76	66	58	64	54	66	78
IRON AS Fe	0.04	0.95	0.04	0.32	0.04	0.08	0.04	0.08
FLUORIDE	AM 1.00		0.89				0.98	
	PM 0.99	0.16	0.88	0.18	0.10	0.09	0.93	0.53
CHLORINE RESIDUAL	1.1	1.3	1.0	1.1	1.3	1.0	0.9	1.3
TURBIDITY	AM		0.20				0.20	
	PM 0.30	1.20	0.70	0.30	0.20	0.50	0.20	1.40
TOTAL PHOSPHATE		3.85			1.30			
ORTHO PHOSPHATE		1.54			0.32			
META PHOSPHATE		2.31			0.98			
STABILITY	+0.3	-0.5	+0.1	-0.4	0.0	-0.1	+0.2	0.0

REMARKS

NOTE: All results reported in parts per million unless otherwise noted except for pH, temperature, and specific conductance. One liter of potable water is assumed to weigh one kilogram.

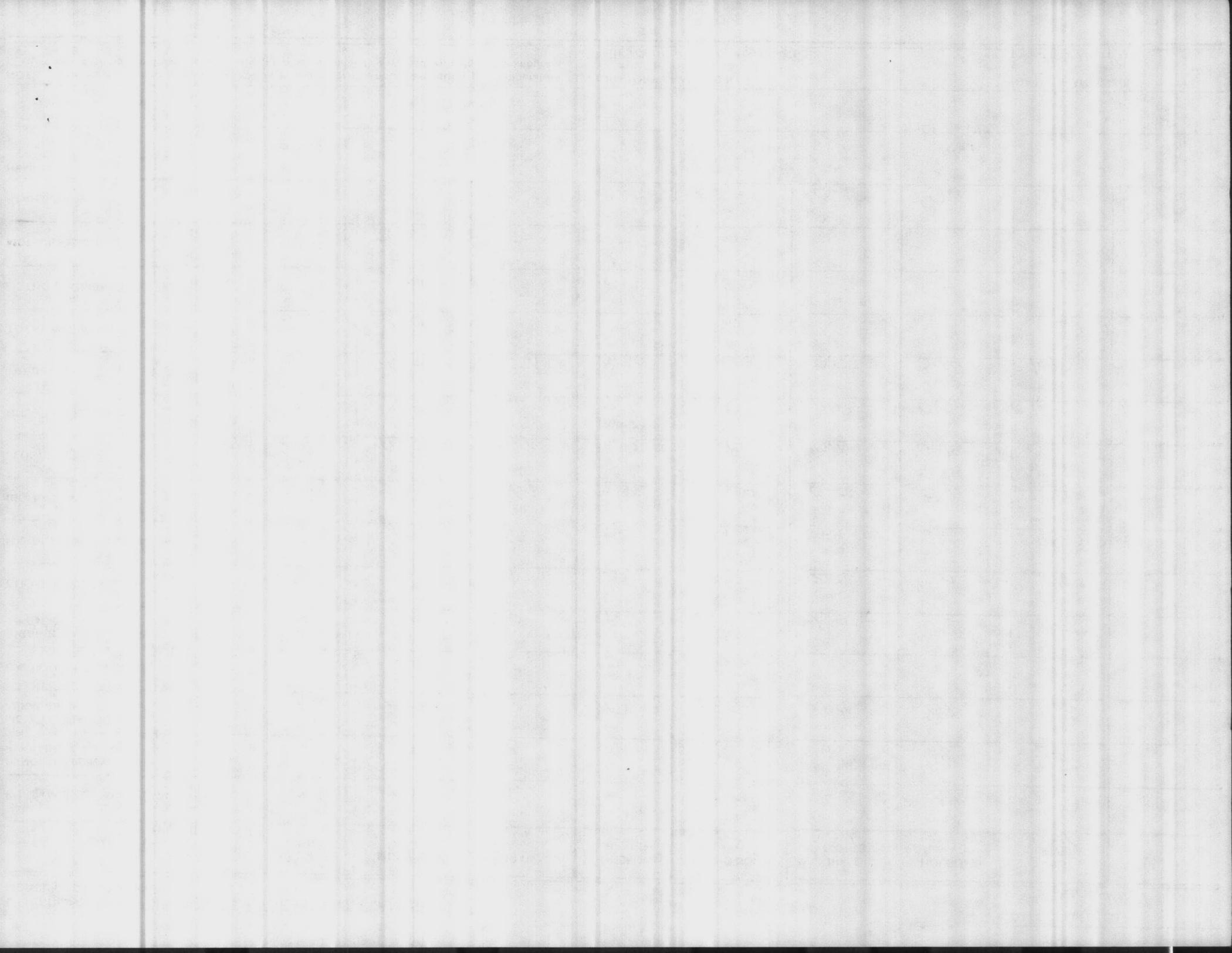
LABORATORY ANALYSIS BY

HONEYCUTT + BURNS & B

DATE OF ANALYSIS

3 April 1984

0.02 (2)



CHEMICAL ANALYSIS — WATER TREATMENT PLANTS

MCBCL 11330/3 (REV. 3-82)

DATE COLLECTED

10 APRIL 1984

PARAMETER SERIAL # 04-67	HADNOT POINT -041	MONTFORD POINT -045	TARAWA TERRACE -044	ONSLow BEACH -048	COURTHOUSE BAY -047	RIFLE RANGE -046	HOLCOMB BLVD -043	NEW RIVER -042
PH (IN LAB NOT PLANT)	9.1	7.3	8.9	7.4	8.2	8.2	8.7	9.0
PENOLTHALEIN ALKALINITY	8	0	4	0	2	4	6	16
METHYL ORANGE ALKALINITY	60	190	54	160	176	170	70	154
CARBONATES AS CaCO ₃	16	0	8	0	4	8	12	32
BICARBONATES AS CaCO ₃	44	190	46	160	172	162	58	122
CHLORIDES AS Cl	8	32	8	16	14	14	10	98
HARDNESS AS CaCO ₃	62	84	64	58	62	64	70	48
IRON AS Fe	0.04	0.58	0.04	1.27	0.04	0.06	0.04	0.14
FLUORIDE	AM	0.85	1.05				0.76	
	PM	0.99	0.14	0.98	0.17	0.10	0.76	0.64
CHLORINE RESIDUAL	1.1	1.3	1.0	1.4	1.5	1.0	1.1	1.2
TURBIDITY	AM		0.29				0.18	
	PM	1.40	0.76	0.38	1.2	0.30	0.20	1.30
TOTAL PHOSPHATE		2.60			1.40			
ORTHO PHOSPHATE		1.26			0.25			
META PHOSPHATE		1.34			1.15			
STABILITY	+0.5	-0.6	+0.3	-0.8	-0.1	-0.1	+0.3	+0.1

REMARKS

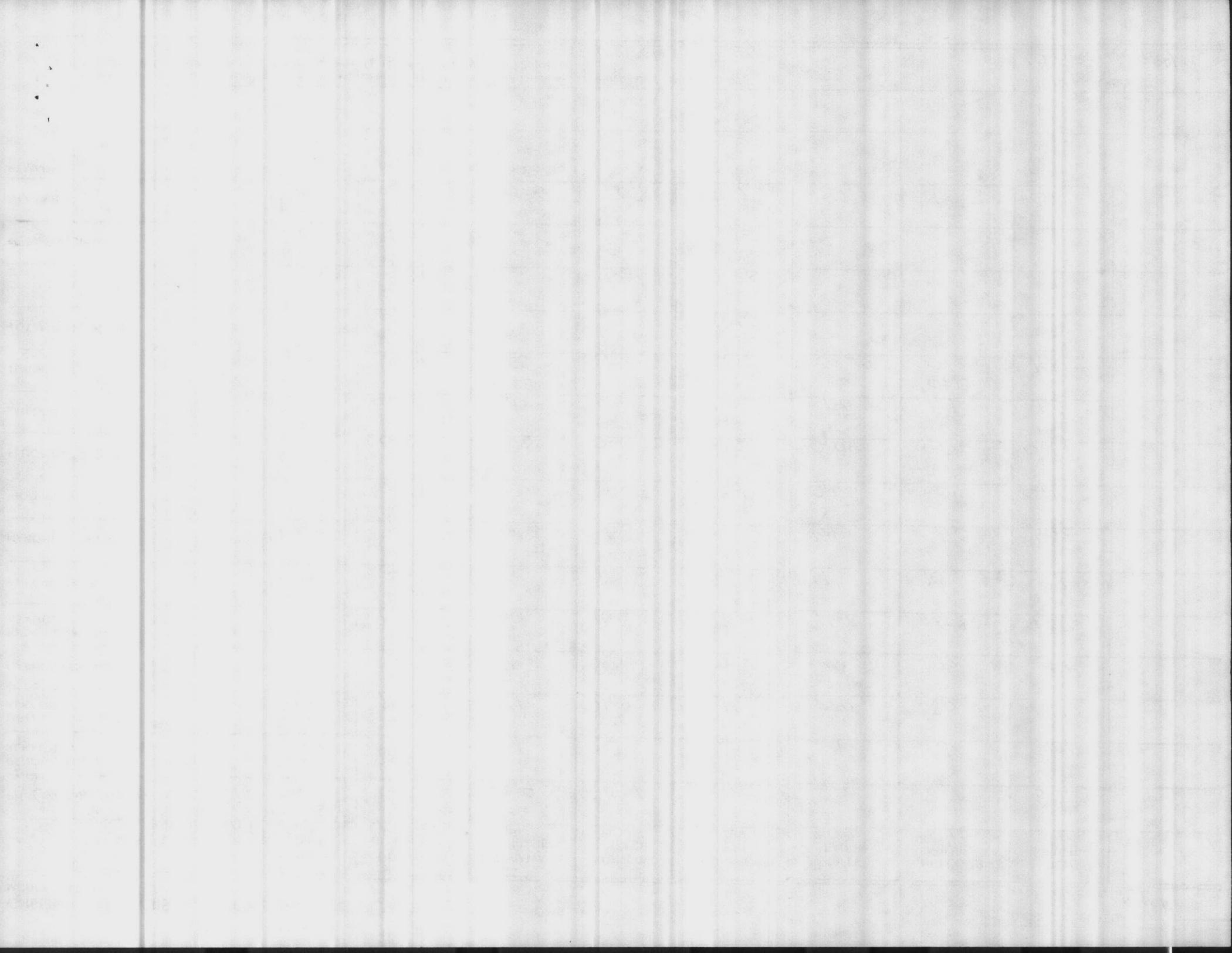
NOTE: All results reported in parts per million unless otherwise noted except for pH, temperature, and specific conductance. One liter of potable water is assumed to weigh one kilogram.

LABORATORY ANALYSIS BY

LACHAPPELLE BURNS

DATE OF ANALYSIS

10 APRIL 1984



CHEMICAL ANALYSIS — WATER TREATMENT PLANTS

MCBCL 11330/3 (REV. 3-82)

DATE COLLECTED

17 April 1984

PARAMETER SERIAL #04-61	HADNOT POINT -041	MONTFORD POINT -045	TARAWA TERRACE -044	ONSLow BEACH -048	COURTHOUSE BAY -047	RIFLE RANGE -046	HOLCOMB BLVD -043	NEW RIVER -042
PH (IN LAB NOT PLANT)	9.0	7.3	8.5	7.4	8.2	8.2	8.9	8.6
PENOLTHALEIN ALKALINITY	6	0	2	0	4	4	8	10
METHYL ORANGE ALKALINITY	54	184	64	158	170	170	60	150
CARBONATES AS CaCO ₃	12	0	4	0	8	8	16	20
BICARBONATES AS CaCO ₃	42	184	60	158	162	162	44	130
CHLORIDES AS Cl	8	36	12	18	14	20	8	64
HARDNESS AS CaCO ₃	58	78	74	68	60	56	58	50
IRON AS Fe	0.05	0.60	0.04	0.27	0.04	0.07	0.04	0.13
FLUORIDE	AM 1.15		0.98				0.98	
	PM 1.16	0.16	1.01	0.19	0.12	0.10	0.89	0.60
CHLORINE RESIDUAL	1.0	1.2	1.1	1.0	0.9	1.0	0.9	1.2
TURBIDITY	AM 0.3						0.2	
	PM 2.2	1.1	0.4	0.3	0.4	0.6	0.2	1.0
TOTAL PHOSPHATE		4.20			1.54			
ORTHO PHOSPHATE		1.54			0.25			
META PHOSPHATE		2.66			1.29			
STABILITY	+0.4	-0.5	+0.1	-0.5	+0.1	+0.1	+0.4	+0.2

REMARKS

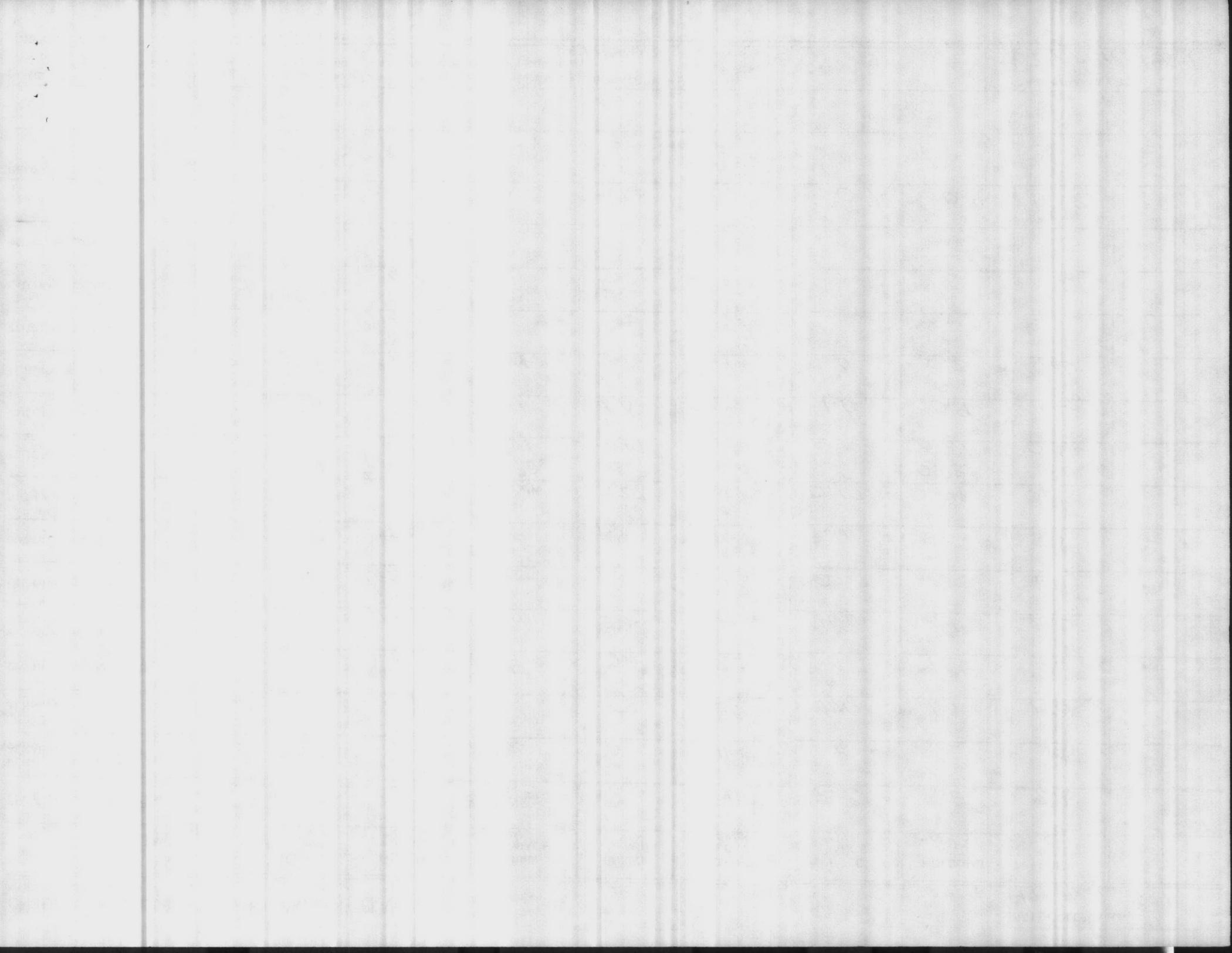
NOTE: All results reported in parts per million unless otherwise noted except for pH, temperature, and specific conductance. One liter of potable water is assumed to weigh one kilogram.

LABORATORY ANALYSIS BY

LACHAPPELL

DATE OF ANALYSIS

17 April 1984



DATE COLLECTED
24 APRIL 1984

CHEMICAL ANALYSIS — WATER TREATMENT PLANTS
MCBCL 11330/3 (REV. 3-82)

PARAMETER SERIAL # 04-67	HADNOT POINT -041	MONTFORD POINT -045	TARAWA TERRACE -044	ONSLow BEACH -048	COURTHOUSE BAY -047	RIFLE RANGE -046	HOLCOMB BLVD -043	NEW RIVER -042
PH (IN LAB NOT PLANT)	8.8	7.2	8.5	7.4	8.1	8.2	8.7	8.8
PENOLTHALEIN ALKALINITY	6	0	4	0	6	2	6	14
METHYL ORANGE ALKALINITY	54	190	56	174	176	160	60	124
CARBONATES AS CaCO ₃	12	0	8	0	12	4	12	28
BICARBONATES AS CaCO ₃	44	190	48	174	164	156	48	96
CHLORIDES AS Cl	8	36	10	14	22	20	16	134
HARDNESS AS CaCO ₃	60	76	86	92	62	42	60	58
IRON AS Fe	0.04	0.54	0.04	0.24	0.06	0.07	0.04	0.31
FLUORIDE	AM 1.30		1.3				1.13	
	PM 1.26	0.79	1.33	0.58	0.58	0.34	0.83	1.06
CHLORINE RESIDUAL	1.0	1.3	1.0	1.2	1.2	1.0	1.0	1.3
TURBIDITY	AM 1.5		0.4				0.3	
	PM 0.5	0.7	0.5	0.3	0.4	0.4	0.3	1.4
TOTAL PHOSPHATE		4.60			1.92			
ORTHO PHOSPHATE		1.54			0.32			
META PHOSPHATE		3.06			1.60			
STABILITY	+0.4	-0.5	+0.2	-0.4	0.0	-0.1	+0.2	+0.2

REMARKS

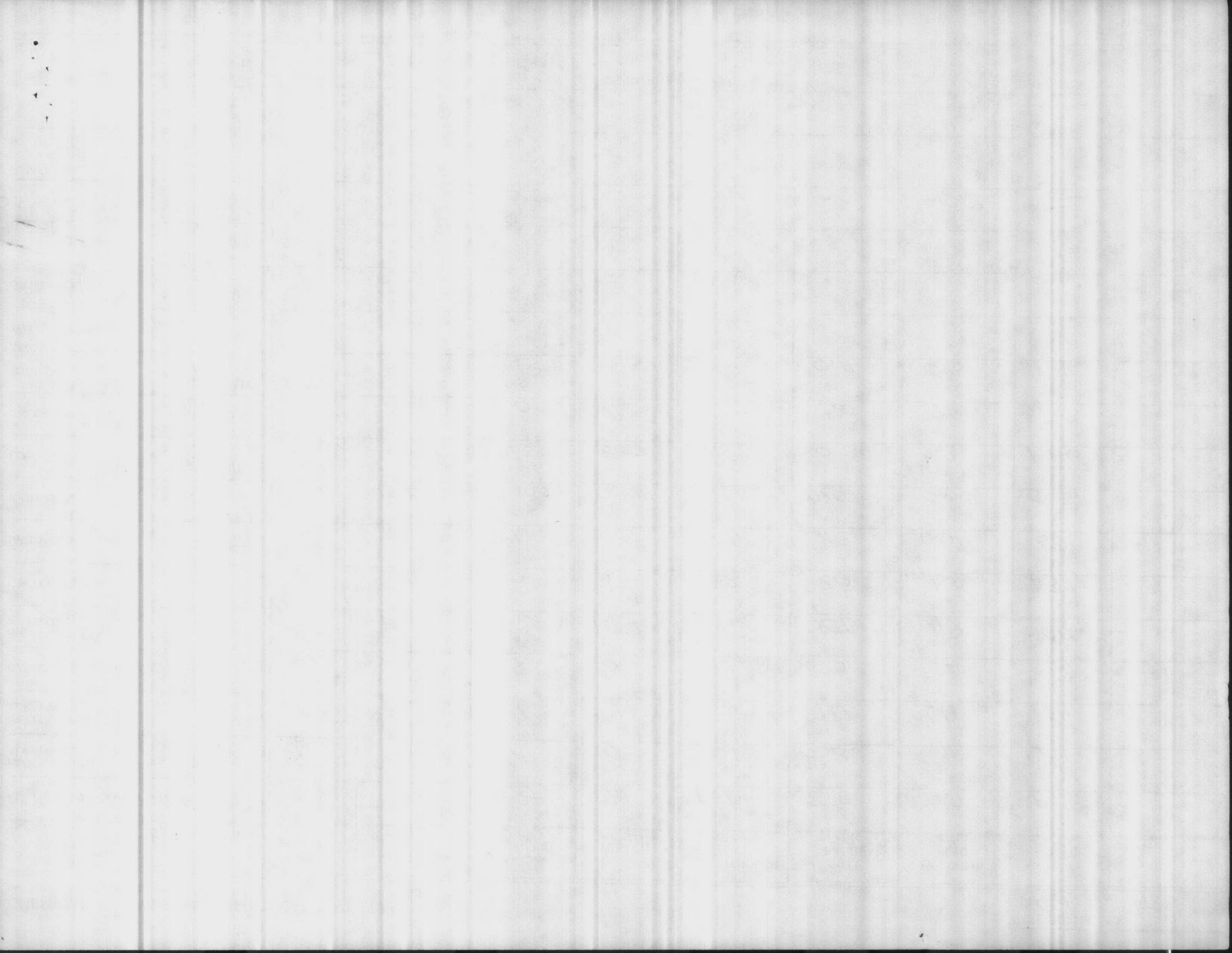
NOTE: All results reported in parts per million unless otherwise noted except for pH, temperature, and specific conductance. One liter of potable water is assumed to weigh one kilogram.

LABORATORY ANALYSIS BY

LACHAPELLE, + BURNS ^{ERS}

DATE OF ANALYSIS

24 APRIL 1984



H. V. ALLEN CO., INC.

MECHANICAL & ELECTRICAL CONTRACTORS

Mailing Address:
Post Office Box 8609
Greensboro, N.C. 27419

Office:
505 Edwardia Dr.
Greensboro, N.C. 27409
Telephone: (919) 852-6964

July 26, 1985

Mr. Willard Price
Utility Systems General Foreman
Base Maintenance Division
MCB, Cam Lejune, N.C. 28542

Reference: Contract No. N62470-83-C-5812
Replace Flow Meters and Recorders
Building RR-85, MCB
Camp Lejune, N.C.

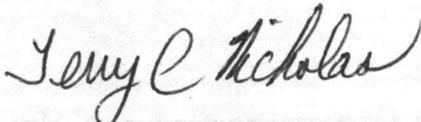
Dear Mr. Price:

Enclosed you will find the recommended spare parts for the above referenced contract. I would appreciate it if you would see that the proper people receive these.

If you have any questions please feel free to contact our office.

Sincerely yours,

H.V. ALLEN COMPANY, INC.



Terry C. Nicholas
Project Manager

TCN/gjs
Enclosure

H. V. ALLEN CO., INC.

MECHANICAL & ELECTRICAL CONTRACTORS

P. O. BOX 8609 • GREENSBORO, N. C. 27419

Mr. Willard Price





TENN LUTTRELL COMPANY

JOHN CARDOSA, JR.
EXECUTIVE VICE-PRESIDENT

July 18, 1985

Mr. Willard Price
CAMP LEJEUNE
Base Maintenance Division
Utilities Branch
Building 1202
Camp LeJeune, NC 28542

Dear Mr. Price:

It was a pleasure visiting with you and your staff. I appreciate the opportunity to observe the individual applications of our product.

At your older facility which uses bagged hydrated lime, the filter plugging problem does not have a simple explanation. I have analyzed the Shen-Vally material and the analysis sheet is enclosed. There is no apparent difference between this product and our hydrated lime.

Other observations may provide a basis for minimizing the filter plugging issues.

1. An excess quantity of lime is being used. We would recommend a constant lime slurry concentration and vary slurry dosage for changing hardness levels.
2. Measure raw water hardness at each shift to determine proper lime slurry dosage.
3. Partial make-up of sand in Spiractor unit would provide uniform treatment.

Scotch® 7664 "Post-it" Routing-Request Pad

ROUTING - REQUEST

Please

READ

HANDLE

APPROVE

and

FORWARD

RETURN

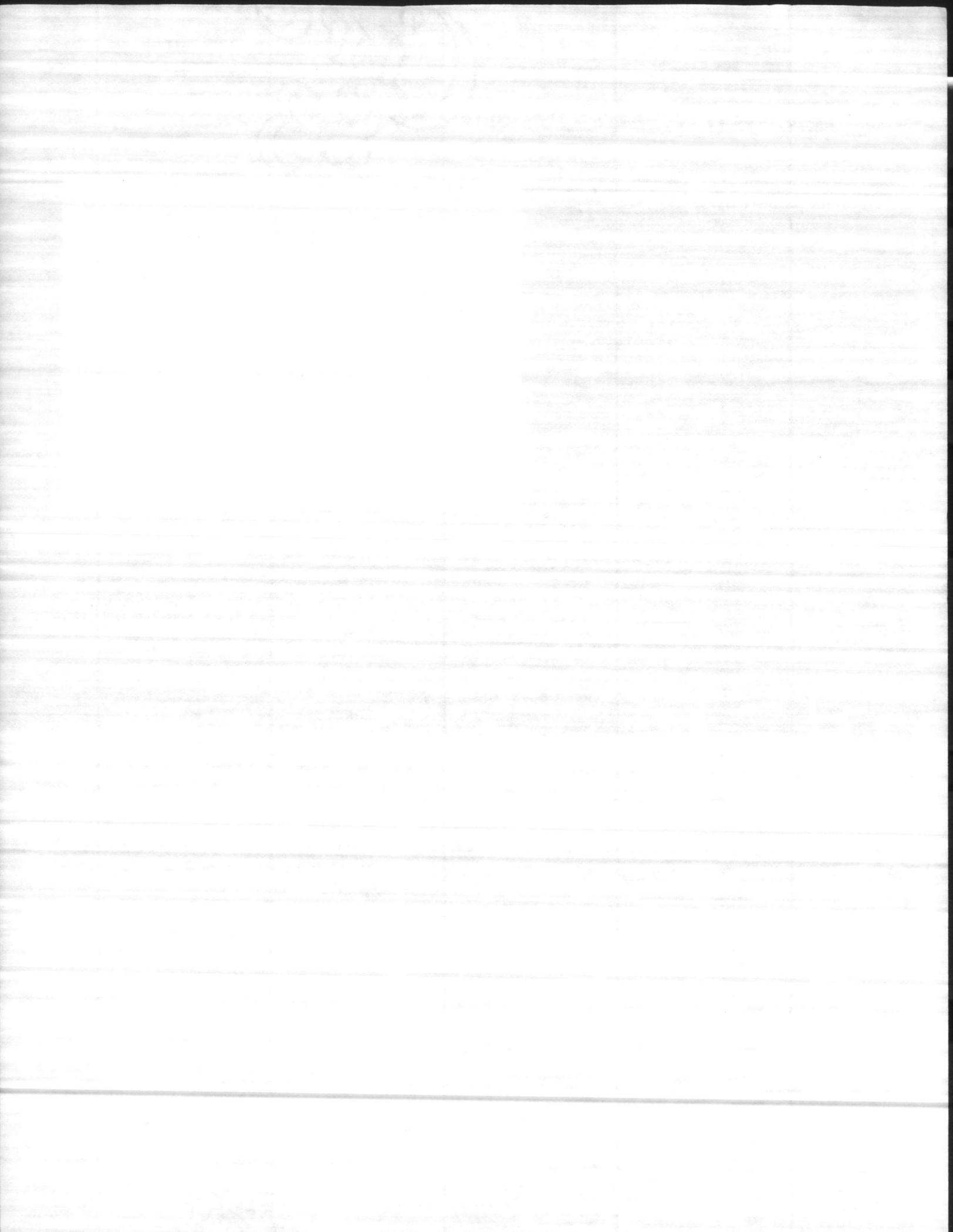
KEEP OR DISCARD

REVIEW WITH ME

To file in
Correspondence

Date _____

From _____



TC TENN LUTTRELL COMPANY

JOHN CARDOSA, JR.
EXECUTIVE VICE-PRESIDENT

July 18, 1985

Mr. Willard Price
CAMP LEJEUNE
Base Maintenance Division
Utilities Branch
Building 1202
Camp LeJeune, NC 28542

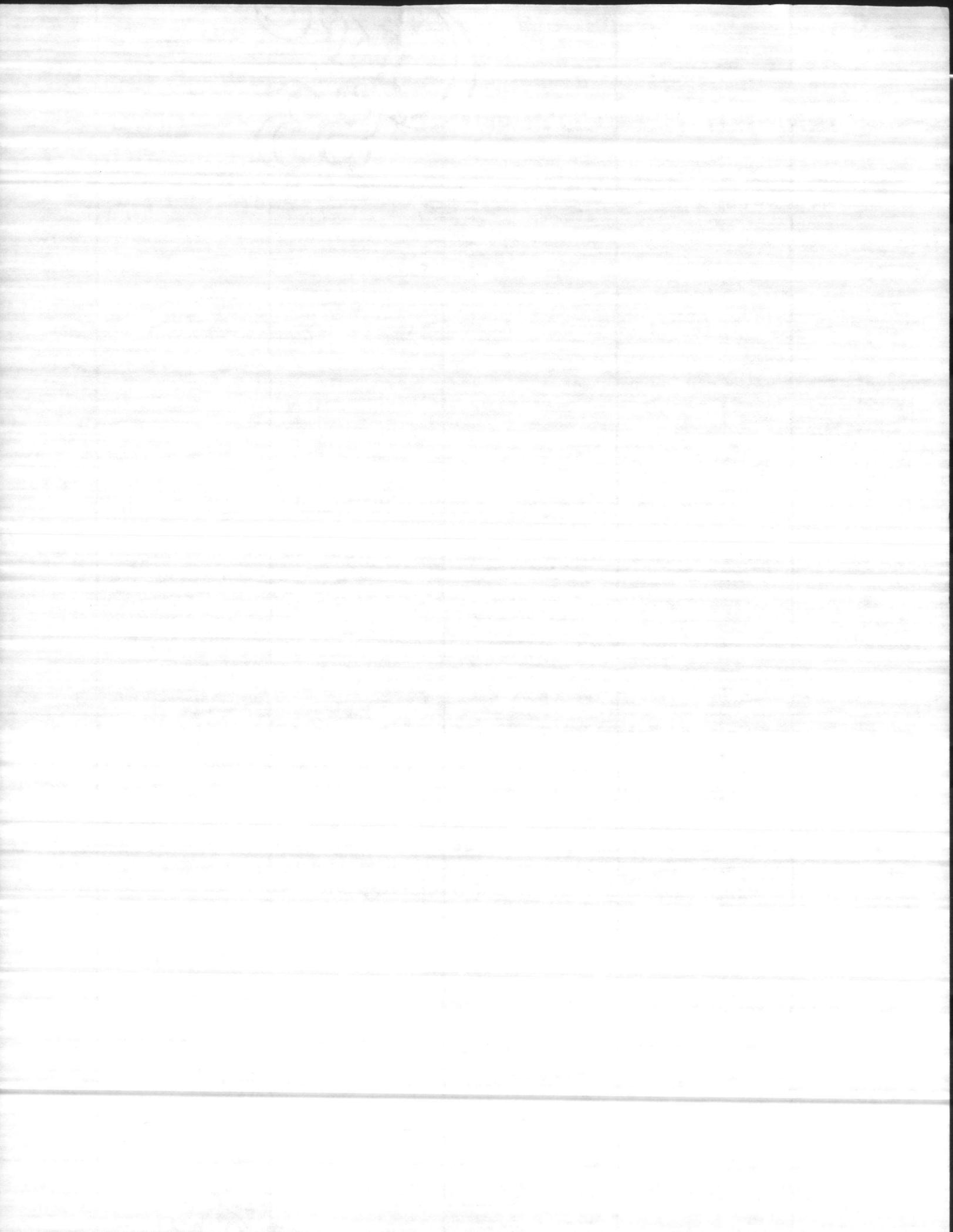
Dear Mr. Price:

It was a pleasure visiting with you and your staff. I appreciate the opportunity to observe the individual applications of our product.

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1. An excess quantity of lime is being used. We would recommend a constant lime slurry concentration and vary slurry dosage for changing hardness levels.
2. Measure raw water hardness at each shift to determine proper lime slurry dosage.
3. Partial make-up of sand in Spiractor unit would provide uniform treatment.

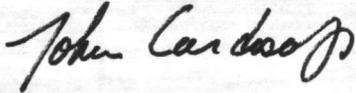


Willard Price
July 18, 1985
Page 2

I hope these observations can provide a basis for improved operations. In any event, Mr. Newman will make contact in the near future to verify your current status.

Very truly yours,

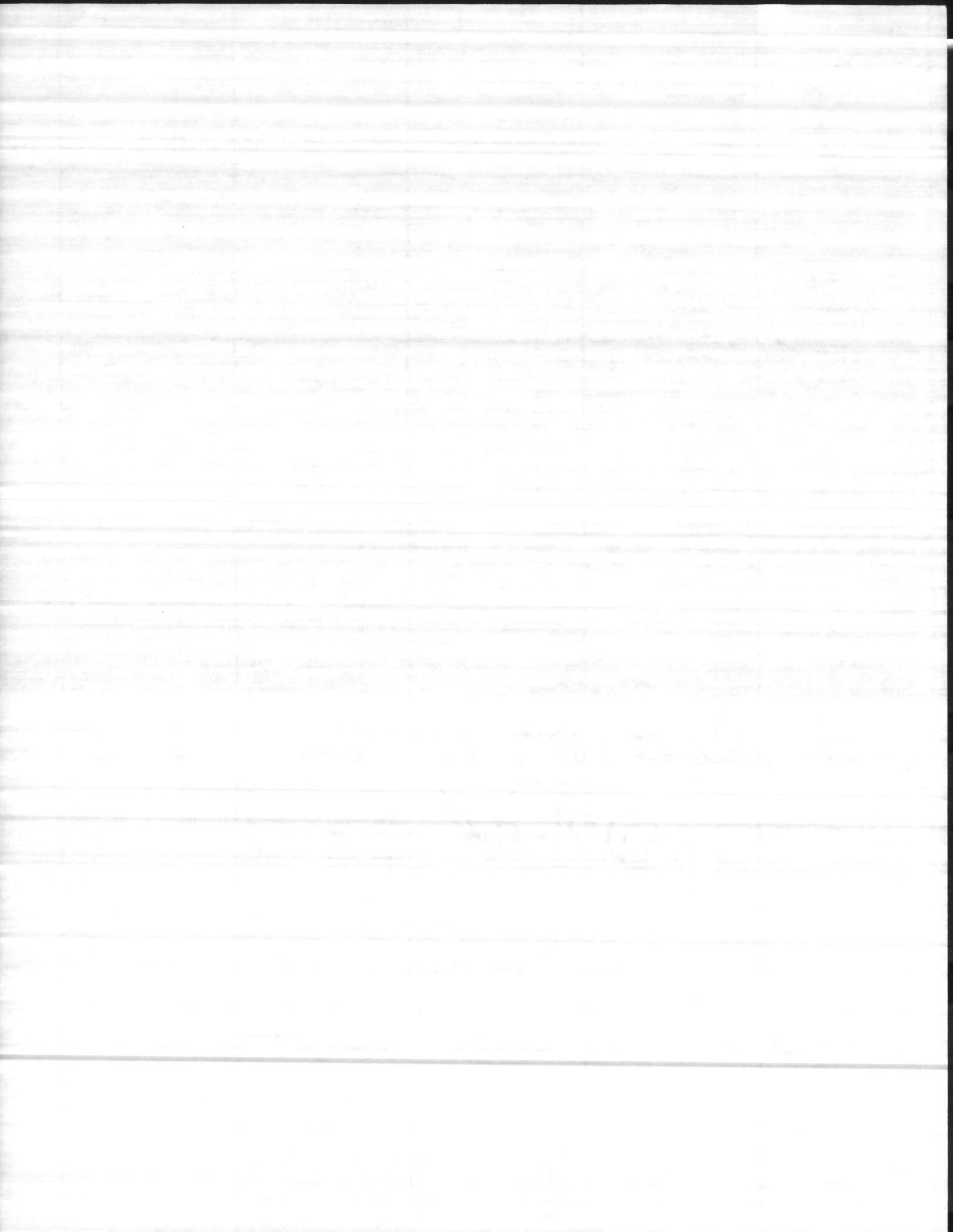
TENN LUTTRELL COMPANY



John Cardoso, Jr.
Executive Vice President

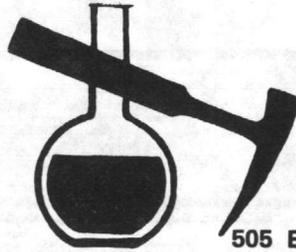
cc: Monty Newman
Harry Francis
Dave Caldwell

/jmc



KENWILL, INC.

6-28-85



MINERAL EXPLORATION • ENGINEERING
LABORATORY SERVICES (COAL/WATER/GEOLOGIC)
505 EAST BROADWAY • MARYVILLE, TENNESSEE 37801
615/546-2345 - KNOXVILLE 992-3252 - LUTTRELL

Tenn Luttrell Company
P.O. Box 69
Luttrell, TN 37779

Sample I.D.: 6-24-85-A3 Lime Hydrate
Date Received: 6-25-85 from Shen Valley Co.
Camp LaJune N. C.

CERTIFICATE OF ANALYSIS

Total CaO	72.23%
SiO ₂	0.40%
R ₂ O ₃	0.46%

E. W. Kuemmerle, Jr.

E. W. Kuemmerle, Jr., Ph.D.
Vice President, Laboratory Division

This space for use by Tenn Luttrell Company.

Avail CaO	71.6%
L. O. I.	25.9
<u>Screen</u> -325 mesh	91.4

John Doe

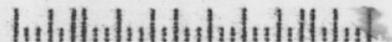
The logo consists of the letters 'TLC' in a bold, sans-serif font, enclosed within a dark, trapezoidal shape that tapers to the right.

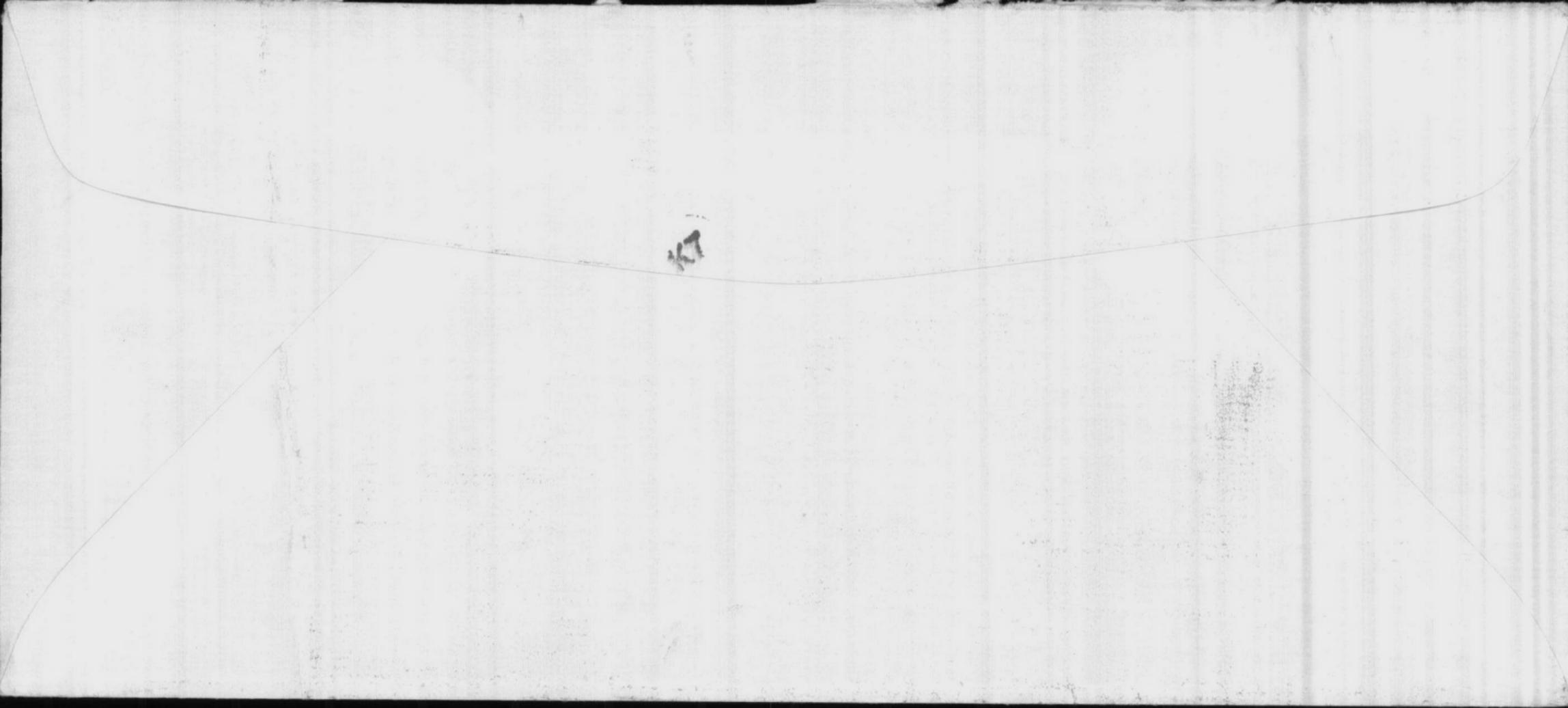
TENN LUTTRELL COMPANY

P.O. BOX 69 LUTTRELL, TENNESSEE 37779



Mr. Willard Price
CAMP LEJEUNE
Base Maintenance Division
Utilities Branch
Building 1202
Camp LeJeune, NC 28542





7322
MAIN
14 Mar 85

From: Water Plant Operator Foreman
To: Contracting Officer, Marine Corps Base

Subj: BAGGED LIME FROM TENN-LUTTRELL LIME COMPANY

1. The Water Treatment Section in conjunction with your office purchased 21 ton of Tenn-Luttrell Hydrated Lime for test purposes at the Tarawa Terrace facility. Since pumping this lime, the filters at Tarawa Terrace have begun stopping up and we have increased the backwash rate 33%. Due to a water shortage in this area, this increase in backwash flow has seriously increased the existing problem.
2. It is requested that your office discontinue purchasing bagged lime from Tenn-Luttrell and return to purchasing Millared lime from Bowman and Company.
3. It should be noted that we have experienced no problems with the Tenn-Luttrell bulk lime and have no objection to continued purchase of this material.
4. Your assistance in this matter is sincerely appreciated.

B. M. FRAZELLE, II

From: Walter J. ...
To: ...

Subject: ...

The water treatment system is designed to provide a continuous supply of water to the ...
The system consists of a pump, a filter, and a chlorinator. The pump draws water from the ...
The filter is designed to remove any suspended solids or debris from the water. The chlorinator ...
The system is designed to operate automatically and requires minimal maintenance.

It is recommended that the system be inspected regularly to ensure proper operation.

It should be noted that the system is designed to provide a continuous supply of water to the ...
The system is designed to operate automatically and requires minimal maintenance.

Your assistance in this matter is sincerely appreciated.

W. J. ...

11330
MAIN
6 Mar 85

From: Utilities Systems General Foreman
To: Ground Structures General Foreman
Via: (1) Director, Utilities Branch

Subj: AIR COMPRESSOR REQUIREMENTS

1. The Water and Wastewater Section has an extensive need for a portable trailer type air compressor with a capacity of at least 150 C.F.M., two hose reels with 200 ft of hose each, to use in maintenance of 110 raw water wells, purge digester gas lines, operate pneumatic tools and equipment, etc. for an average of 400 to 400 hours per year.
2. On numerous occasions, the non-availability of a compressor, expended man hours trying to locate one, has resulted in innumerable delays and extensive down time for the wells, etc.
3. Part of the Water Treatment Systems has a limited raw water supply which requires immediate response when maintenance is performed on wells and screens.
4. An air compressor meeting the requirements listed above should be procured and assigned to the Water/Wastewater Section to alleviate the existing problem in obtaining an air compressor when needed.

W. R. PRICE

MAIN
11330
8 Feb 85

From: Director, Utilities Branch
To: Commander, Atlantic Division, Naval Facilities Engineering Command,
Norfolk, Virginia 23511 (Attn: Jerry Hardwood, Code 114)

Subj: WELL LOCATIONS, MARINE CORPS BASE, CAMP LEJEUNE;;REQUEST FOR

Encl: (1) Locator map showing raw water wells

1. As requested in telephone conversation between Jerry Hardwood and Byron Frazelle on 8 February 1985, the locations of raw water wells throughout the Camp Lejeune Complex are forwarded for your disposition.
2. If we can be of any further assistance, please contact us at your earliest convenience.

G. S. JOHNSON, JR.

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
5800 S. UNIVERSITY AVENUE
CHICAGO, ILLINOIS 60637
TEL: 773-936-3700
FAX: 773-936-3701
WWW: WWW.CHEM.UCHICAGO.EDU

QUOTATION

BGV, inc.

12243 NATIONS FORD ROAD — P.O. BOX 7725
TELEPHONE: 704-588-3047 — CHARLOTTE, NC 28217



Symbol of Service

DATE: September 6, 1984

TO [Utilities Systems
Base Maintenance Division
Utilities Branch
Building 1202
Camp Lejuene, North Carolina 28542]

REF. YOUR INQ. # _____

OUR FILE # _____

Attention: Mr. Willard Price

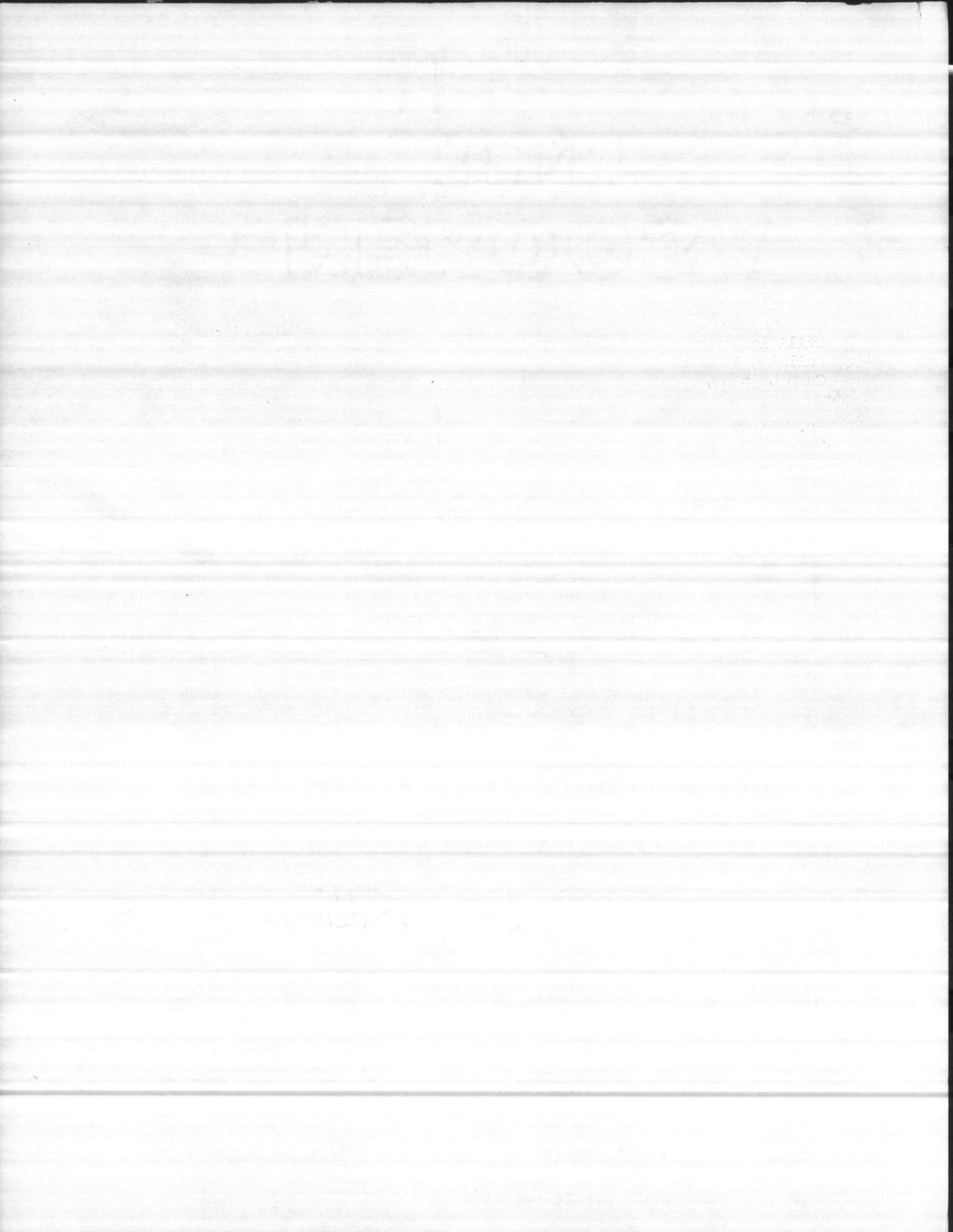
QUANTITY	DESCRIPTION	PRICE EACH
1	<p>Mr. Price:</p> <p>BGV, Inc. is pleased to provide the following quotation.</p> <p>Horiba Instruments Model L-7 Portable pH Monitor with all calibration accessories, recharger, and carry case.</p> <p>DELIVERY: Stock to 3 weeks, ARO TERMS: Net 30 days</p> <p>Thank you for your interest in our products and allowing us to make this quotation.</p> <p>If we may be of any further assistance with this or any of our equipment, please do not hesitate to contact us.</p> <p style="text-align: center;">Thank you, <i>Larry Sullivan</i> Larry Sullivan</p> <p>LS:geh Enc.</p>	\$ 250.00 Each

All prices quoted F.O.B. Charlotte, NC
unless otherwise noted.

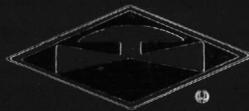
By Larry Sullivan

Prices do not include any applicable sales tax.

Page _____ of _____



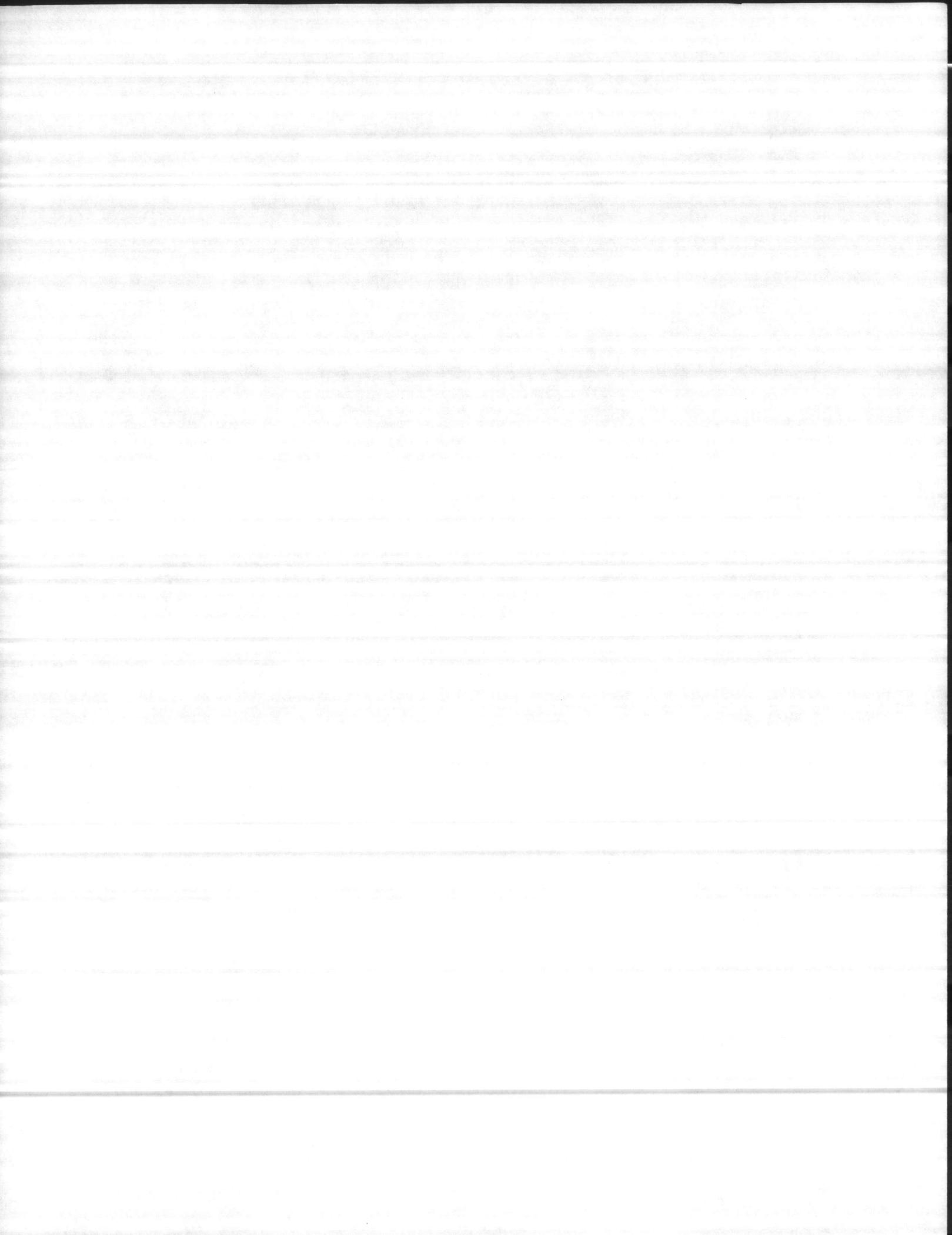
BCV, Inc.
INSTRUMENTATION
AUTOMATION
ROBOTICS



LARRY CULLEN

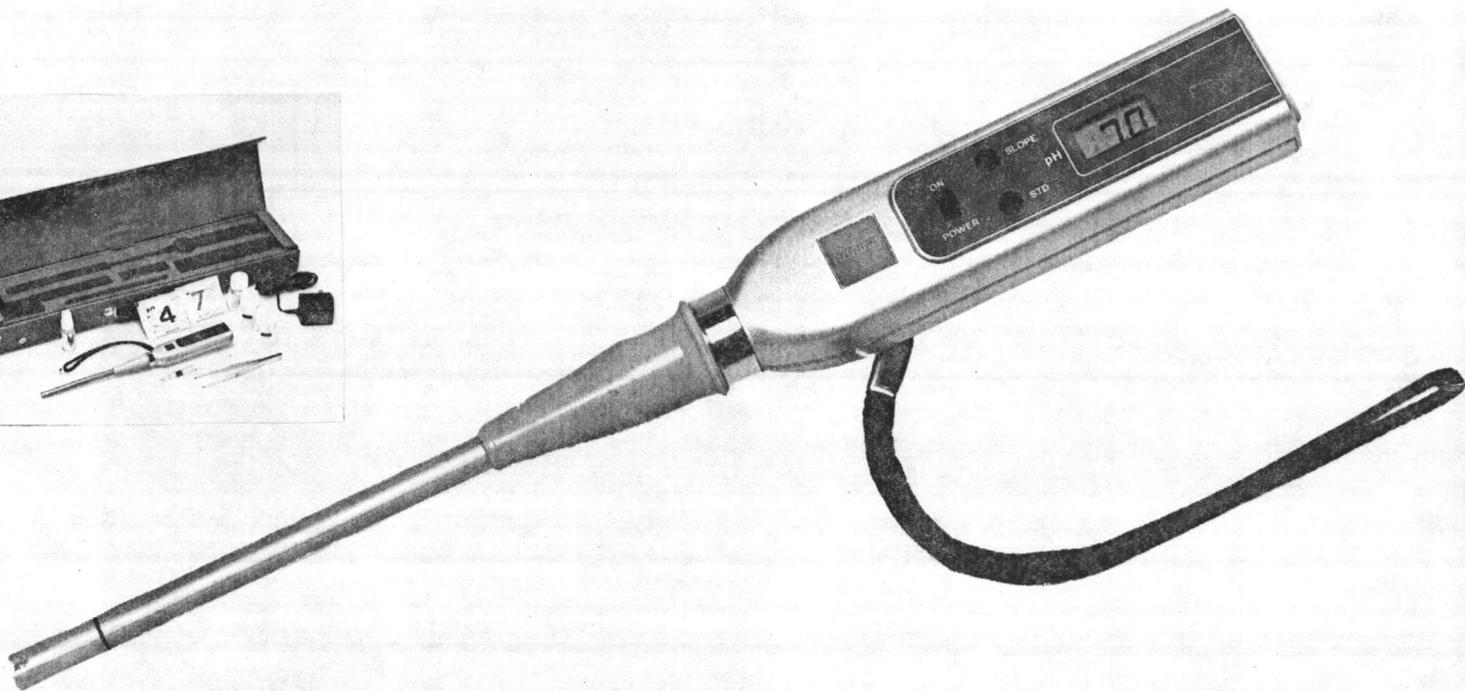
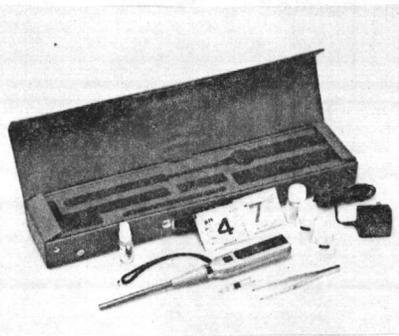
P.O. BOX 7725
12243 NATIONAL FORD RD.

CHARLOTTE, NC 28217
704-588-3047



pH

FINALLY IT'S SIMPLE

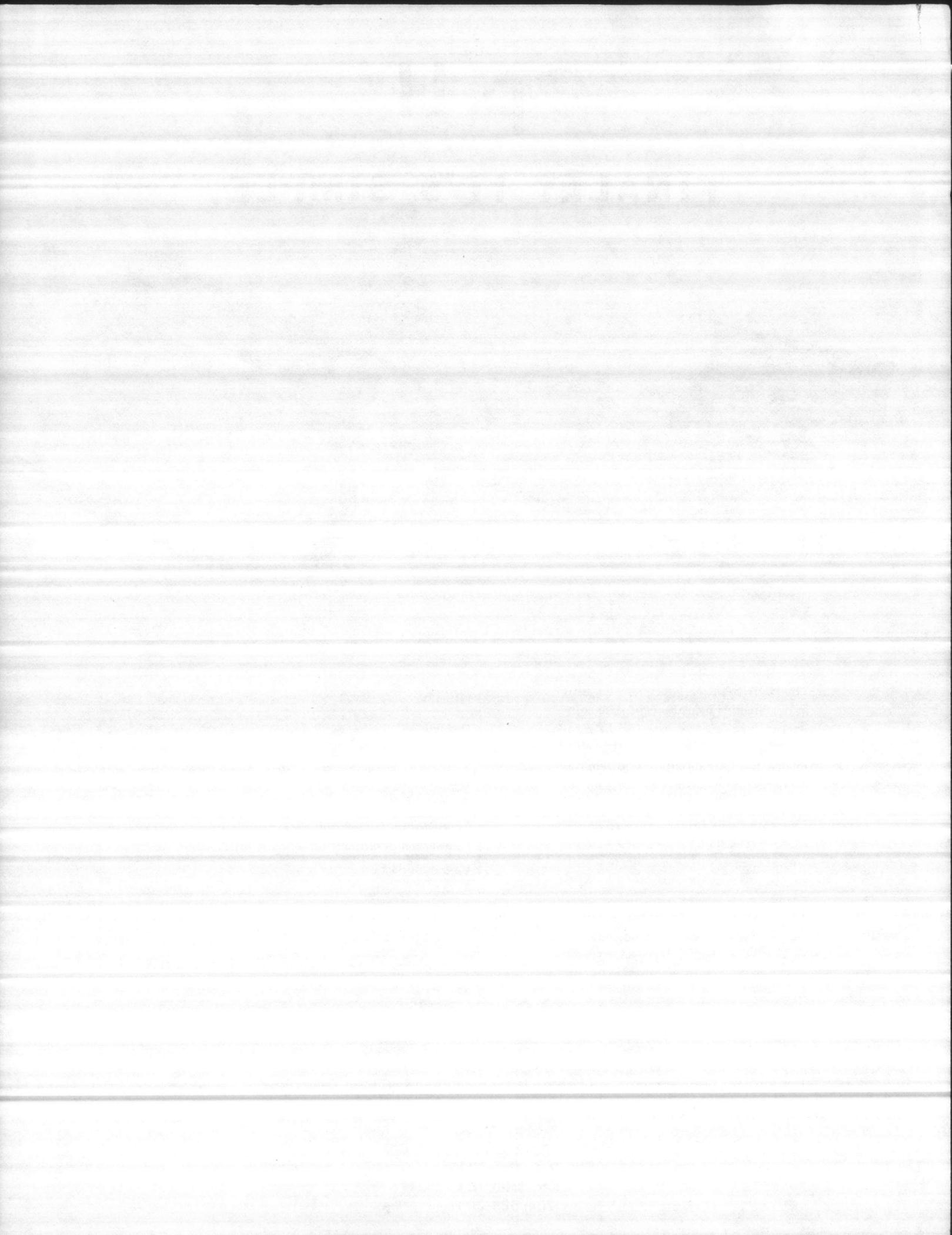


The HORIBA L-7_{LCE} is a new concept in portable pH measurement. The compact design provides one hand operation combined with improved performance and reliability; you simply immerse the electrode in the sample, switch it on and read the result. Moreover, calibration is very simple using a standard solution, and STD and SLOPE controls are adjusted with special tool provided on the wrist cord.

This unique low cost instrument is rugged, light weight and powered by Ni-Cd rechargeable battery for continuous 20 hours operation in the field.

Principle	Glass Electrode Detection
Display	LC, digital (2½ digits, manual holding)
Range	pH 0 ~ 14
Resolution	0.1 pH
Repeatability	0.1 pH ± 1 digit
Temperature compensation	Automatic
Sample temperature	0 ~ 50°C
Case materials	ABS resin
Power	Ni-Cd rechargeable battery Continuously operable for 20 hours
Color	Metallic silver
Dimensions	135(L)x30(W)x21(D)mm
Weight	Approx. 110 g

BGV, INC.
12243 Nations Ford Rd.
P. O. Box 7725
Charlotte, N. C. 28217
(704) 588-3047



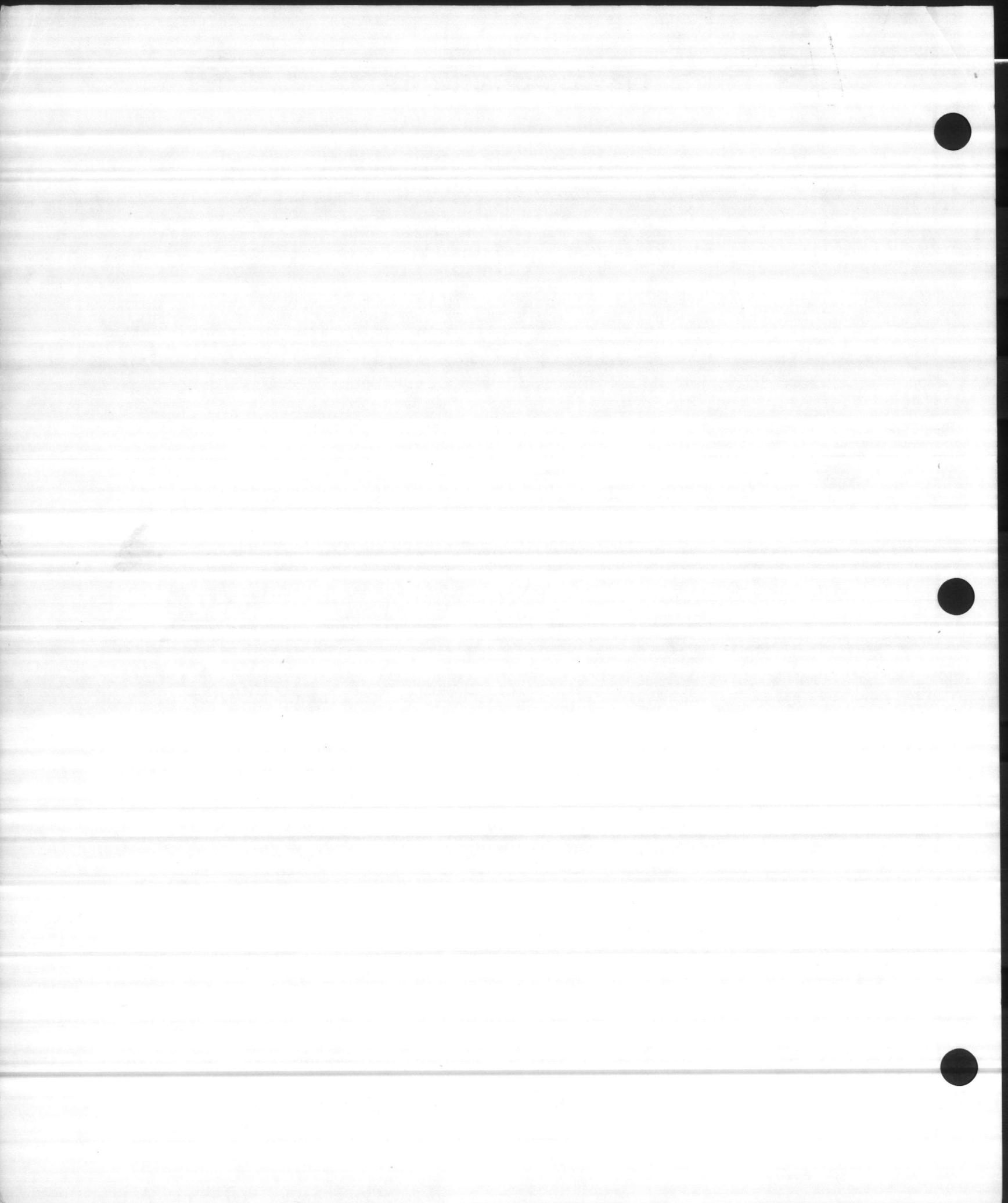


LIST OF PRODUCTS



MANUFACTURER	PRODUCTS
DOLAN-JENNER	Fiber Optic Limit Switches & Controls, Safe Scan-Light Curtain, Broken Fiber Detection, Edge/Splice Detection.
FREE FLOW FLUMES	Complete line of Parshall Flumes
FLOW TECH CORPORATION	Orifice Plates, Orifice Flange Unions, Venturi Tubes, ASME Flow Nozzles.
GARLOCK, INC.	TFE (Teflon Lined) Butterfly Valves, UHMPE Butterfly Valves.
HORIBA INSTRUMENTS, INC.	pH and DO Monitoring Systems, NDIR Process Gas Analyzers, Stack Gas Emissions Analyzers, Ambient Air Monitors: Hydrocarbon, Methane, CO, Sulfur Content Analyzer: Fuel Oil & Coal.
K-T-M INDUSTRIES	Large Flanged Ball Valves, Hi-Temperature Ball Valves, 3-Way Ball Valves, Pneumatic Actuators.
MOISTURE SYSTEMS CORPORATION (Quadra-Beam)	Continuous Infra-Red Moisture Analyzer, Microprocessor based.
MOORE INDUSTRIES	Transmitters (2-wire and 4-wire), Signal Conditioners.
ROBERTSHAW CONTROLS COMPANY (Industrial Instrumentation Div.)	Digital Controls Systems, Industrial Instrumentation, Process Controls, Level Controls, Control Valves, Temperature and Pressure Regulators (Self Acting), Water Heaters.
ROBERTSHAW CONTROLS COMPANY (Uniline Division)	Replacement Equipment for HVAC, Appliance Controls, Energy Saving Control Equipment.
SENSORTECH SYSTEMS, INC.	Continuous Radio Frequency Moisture Analyzer.
VAISALA, INC.	Humidity, Dewpoint and Temperature Transmitters.

ASK FOR OUR LISTING ON ROBOTICS





→ 83
on

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA 23511

TELEPHONE NO.
(804) 444-9558

IN REPLY REFER TO:
114:WLC:gmc
6280

27 JUN 1983

From: Commander, Atlantic Division, Naval Facilities Engineering Command
To: Distribution

Subj: Water Fluoridation Homestudy Course; information forwarded

Ref: (a) OPNAVINST 6240.3E
(b) NAVFACINST 11330.14A
(c) MCO P11000.8A

Encl: (1) Course Description
(2) Application for Training CDC 0.759A

1. Pursuant to references (a) through (c), enclosures (1) and (2) are forwarded for your convenience and use.
2. For any additional information regarding subject course, recommend coordination by activity personnel through their individual training offices. Requests should be directed to:

Mr. Jack Stanley
Chief, Homestudy Services Branch
Division of Instructional Services
Center for Professional Development and Training
Centers for Disease Control (CDC)
Atlanta, GA 30333
Telephone (404) 262-6677

3. LANINAVFACENCOM point of contact is Mr. Wallace Carter, Code 1142, telephone number (804) 444-9558 or AUTOVON 564-9558.

J. R. Bailey
J. R. BAILEY
By direction

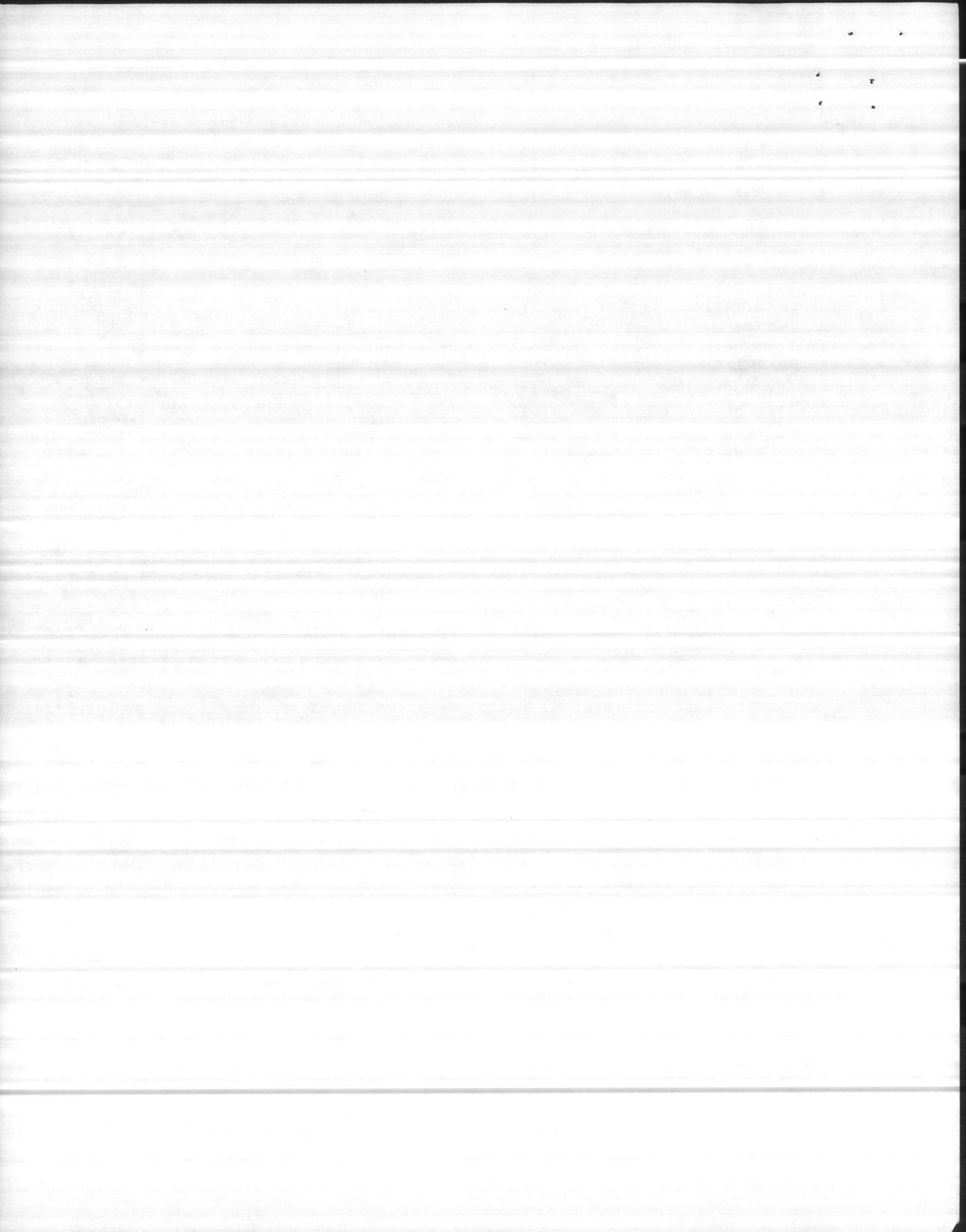
Distribution;
NAVSECGRUACT NORTHWEST
NSC NORFOLK CHEATHAM ANNEX
AFTRACTY CAMP PEARY
NAVRADSTA SUGAR GROVE
ABL CUMBERLAND
CNTT DET BAINBRIDGE
MCB CAMP LEJEUNE ←
(continued on next page)

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4

1941

114:WLC:gmc
6280

Distribution (continued)
MCAS CHERRY POINT
NAVSTA ROOSEVELT ROADS
NAVSECGRUACT SABANA SECA
NAVSTA ROTA
NAVSTA GUANTANAMO
NAVSTA KEFLAVIK
NAS BERMUDA
CINCUSNAVEUR
NAS SIGONELLA
NAVCOMMS TA NEA MAKRI



CENTER FOR PROFESSIONAL DEVELOPMENT AND TRAINING
CENTERS FOR DISEASE CONTROL (CDC)
HOMESTUDY COURSE

<u>Title</u>	<u>Course Number</u>
Water Fluoridation	3017-G

PREREQUISITES

Due to the technical content and nature of the Homestudy course, the need for high personal motivation and a minimum high school education is suggested.

Note: Because the course is self-instructional in nature, lessons may be repeated as needed.

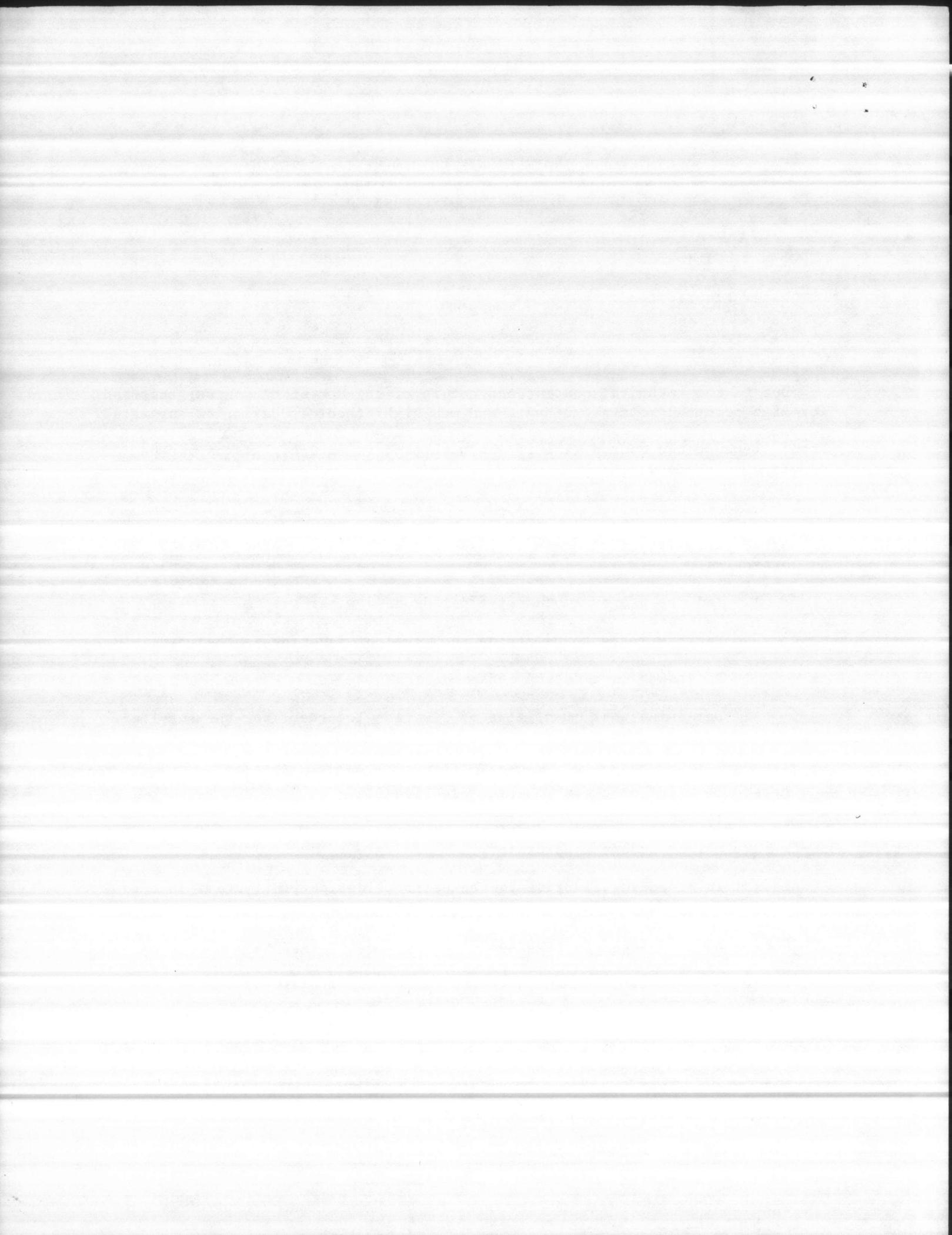
COURSE OBJECTIVES

After successful completion of this course the participant should be able to correctly:

1. Add the proper amount of fluoride to a water system.
2. Perform tests to determine the level of fluoride in the water.
3. Maintain fluoridation equipment.
4. Determine what quantities of fluoride to order from the supplier.

CONTENT

- Lesson 1 - Introduction to Water Fluoridation.
- Lesson 2A - Adding Fluoride to the Water: Fluoridation Systems That Include a Saturator.
- Lesson 2B - Adding Fluoride to the Water: Fluoridation Systems That Do Not Include a Saturator.
- Lesson 3 - Testing the Fluoride level in a Water Supply.
- Lesson 4 - Maintaining the Equipment in a Fluoridation System.
- Lesson 5 - Obtaining the Proper Amount of Fluoride for Your Fluoridation System.



COURSE LENGTH

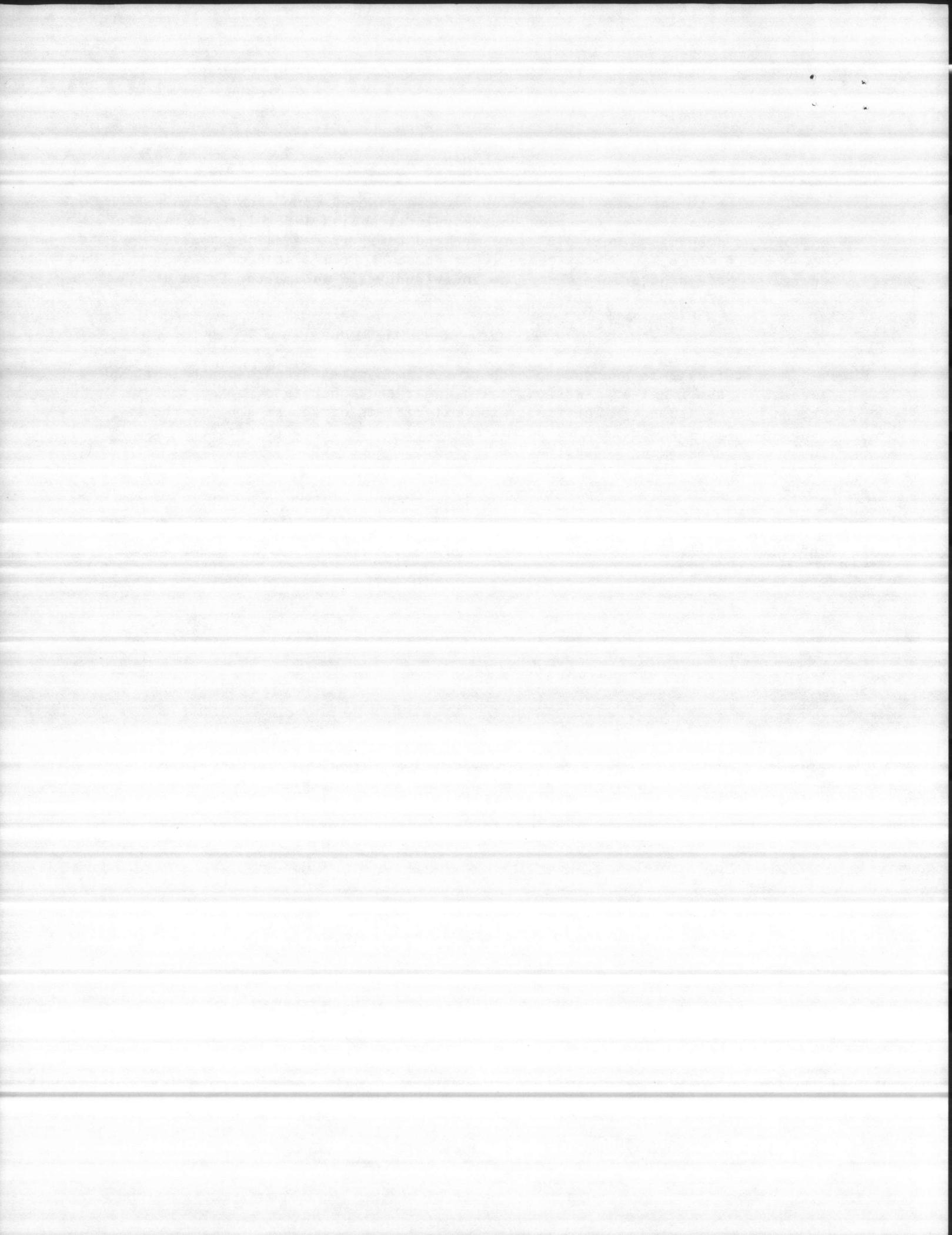
The time to complete the Homestudy course depends upon each person. Each individual sets his/her own pace, but should establish a regular schedule for one or two evenings a week plus some weekend time, if deemed necessary. However, if after six months there is no response from a student to whom course materials have been sent, the individual will automatically be dropped from the active files.

CERTIFICATE OF COMPLETION

A certificate is awarded to each student who makes a score of at least 70 percent on the final examination, taken under the supervision of a proctor chosen by the student. The final exam material is of course sent to the proctor. A re-examination is permitted for a score below 70 percent. For those students having no aspiration to acquire a certificate the final examination is optional.

COST

The tuition fee is \$23.00.



APPLICATION FOR TRAINING

1. NAME AND ADDRESS OF APPLICANT (Please Type or Print):

Dr. Mr. Mrs. (Last) (First) (Middle Initial)
 Ms. or Miss

Home (or office) Address

City/State Zip Code or County

2. COURSE DESIRED: No. Date
 Title

Location

3. PREVIOUS RELATED COURSES (List Most Recent First):

Date	Title	Institution

4. EMPLOYER: Federal State Local Government Other

Organization

Division/Unit

Local Address

City/State or County

ZIP Code Applicant's Office Phone

(Area Code & No.)

5. PROFESSIONAL STATUS:

Occupation

Position Title

Brief Description of Your Present (or Expected) Position

Length of Time in Position _____, & In Profession _____

6. EDUCATION High School

Name of College(s)	No. Yrs. Completed	Date (Yr.) Completed	Degree/Major

Other Training (Including Certification)

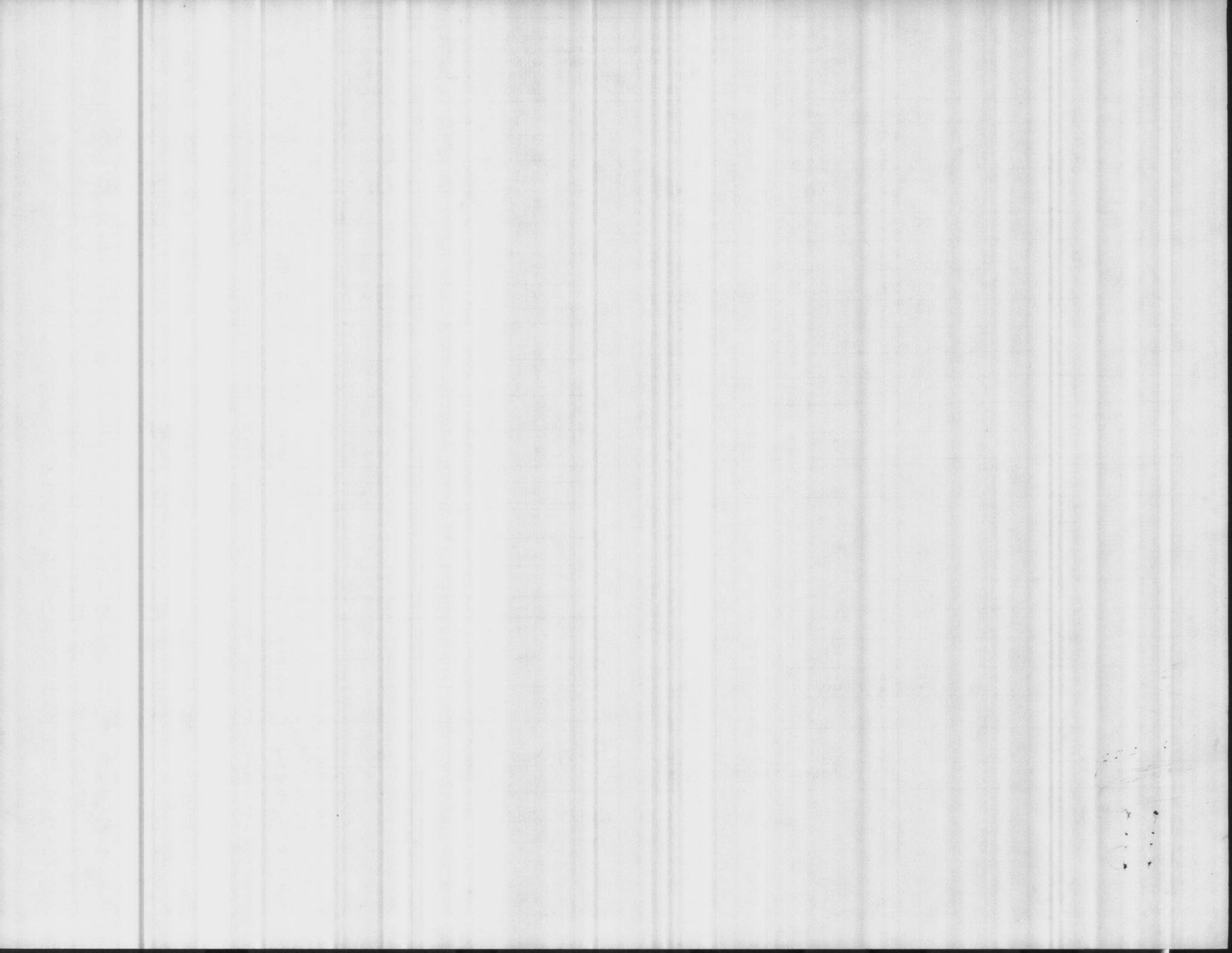
(Signature of Applicant)

(Date)

(Name & Title of Approving Supervisor)

(Date)

The information requested on this form is collected under the authority of 42 U.S.C. 243. The requested information is used only to process and evaluate your application for training, and may be disclosed (for verification purposes) to your employer, educational institution, etc., as necessary. Furnishing the information requested on this form is voluntary. No applicant may be accepted for training unless a completed application form is received.



4

BASE MAINTENANCE DEPARTMENT
Marine Corps Base
Camp Lejeune, North Carolina 28542

2
11330.3
MO 11330/12
MAIN/WSE/th

14 FEB 1979

MAINTENANCE ORDER 11330/X²

From: Base Maintenance Officer
To: Distribution List

Subj: Standing Operating Procedures - Wastewater Sampling, Plant
Testing and Quality Control

Encl: (1) Grab Sampling for Plant Testing
(2) Composite Sampling for Laboratory Analysis
(3) Grab Sampling for Bacteria
(4) Quality Control Procedures for Sewage Treatment Plants

1. Purpose. To publish a standard procedure and schedule for wastewater sampling, testing and quality control at sewage treatment plants for the Marine Corps Base in accordance with National Pollutant Discharge Elimination System (NPDES) permit, Naval and Marine Corps regulations and directives.

2. Responsibility

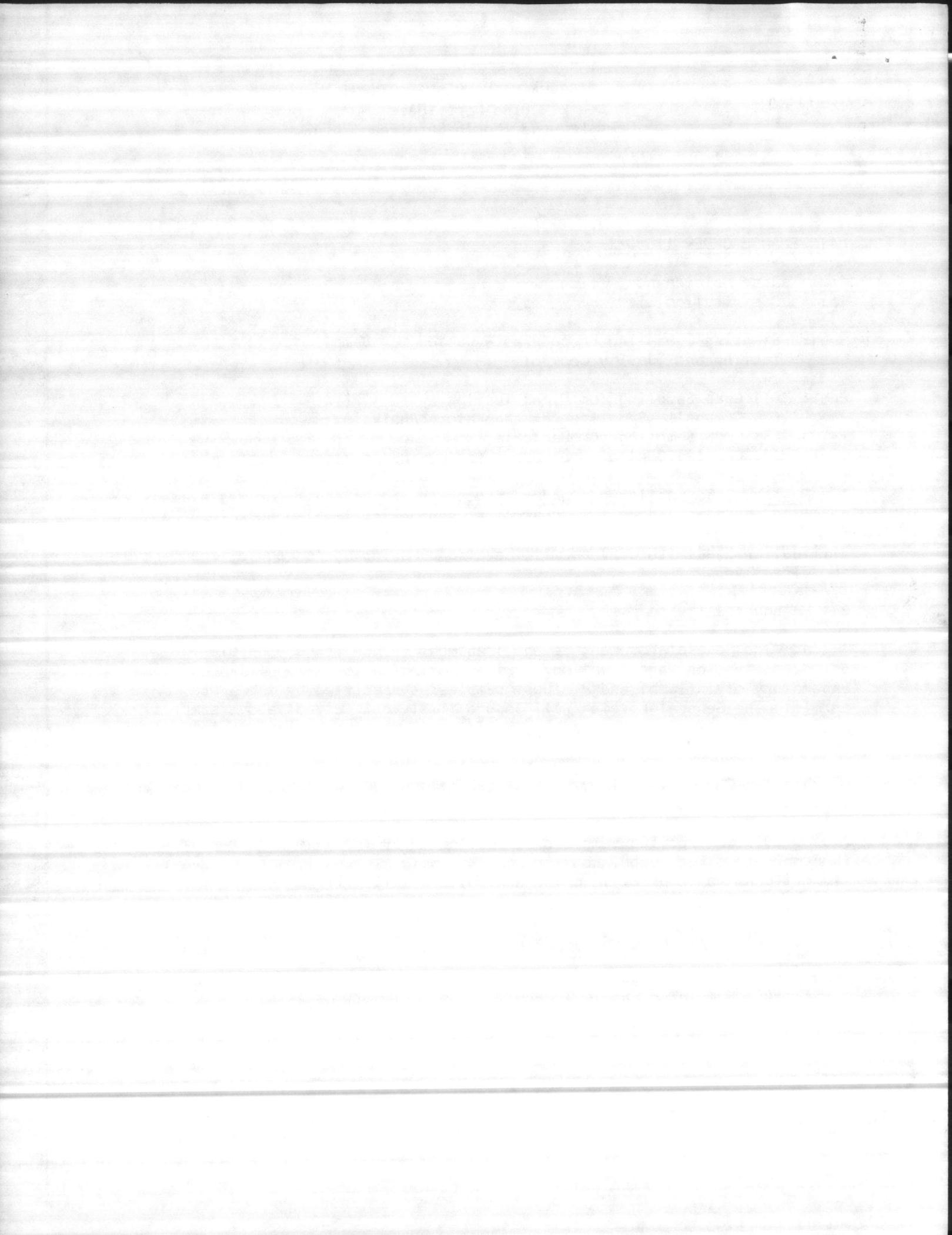
a. The General Foreman, Sewage Treatment Branch is responsible for proper collection, preservation and transportation to the Quality Control Laboratory of influent and effluent samples as specified by the NPDES permit. The General Foreman will assure timely delivery of above samples to the Quality Control Laboratory, Building 65, by the beginning of the laboratory work day, 0800.

b. The Chemist, Quality Control Laboratory, Building 65, is responsible for:

(1) Instructing samplers as designated by the General Foreman, in proper sampling techniques for samples designated as I, influent waste; II, effluent waste prior to chlorination; and III, effluent waste after chlorine contact.

(2) Providing adequate sample containers for waste samples I, II, and III.

(3) Providing chemicals and testing instructions necessary to perform daily plant testing.



(4) Providing quality control assistance to wastewater testing through monthly quality control checks.

(5) Providing on a daily basis, if necessary, laboratory test results which indicate performance of the sewage treatment plants so the General Foreman can make adjustments as needed for good plant control and to assure compliance with environmental regulations.

3. Frequency of Sampling and Testing

a. At each sewage treatment plant (STP) daily (seven days per week) grab samples from sample point II are collected by the sewage treatment operator and tested for pH, chlorine residual and dissolved oxygen. The results are recorded on the plant log sheet along with the daily flow rate. (See Enclosure (1)).

b. Composite samples are collected at each STP from hourly grab samples at points I, II and III on a schedule of five days per week for larger plants and one day per week at the smaller plants. (See Enclosure (2)).

c. Fecal coliform bacteria samples will be collected five days per week at larger STP's and one day per week at smaller STP's. Bacteria resampling will be at the direction of the Quality Control Laboratory. (See Enclosure (3)).

d. Quality control procedures will be utilized to assure accurate and precise data collection. (See Enclosure (4)).


T. R. BAISLEY

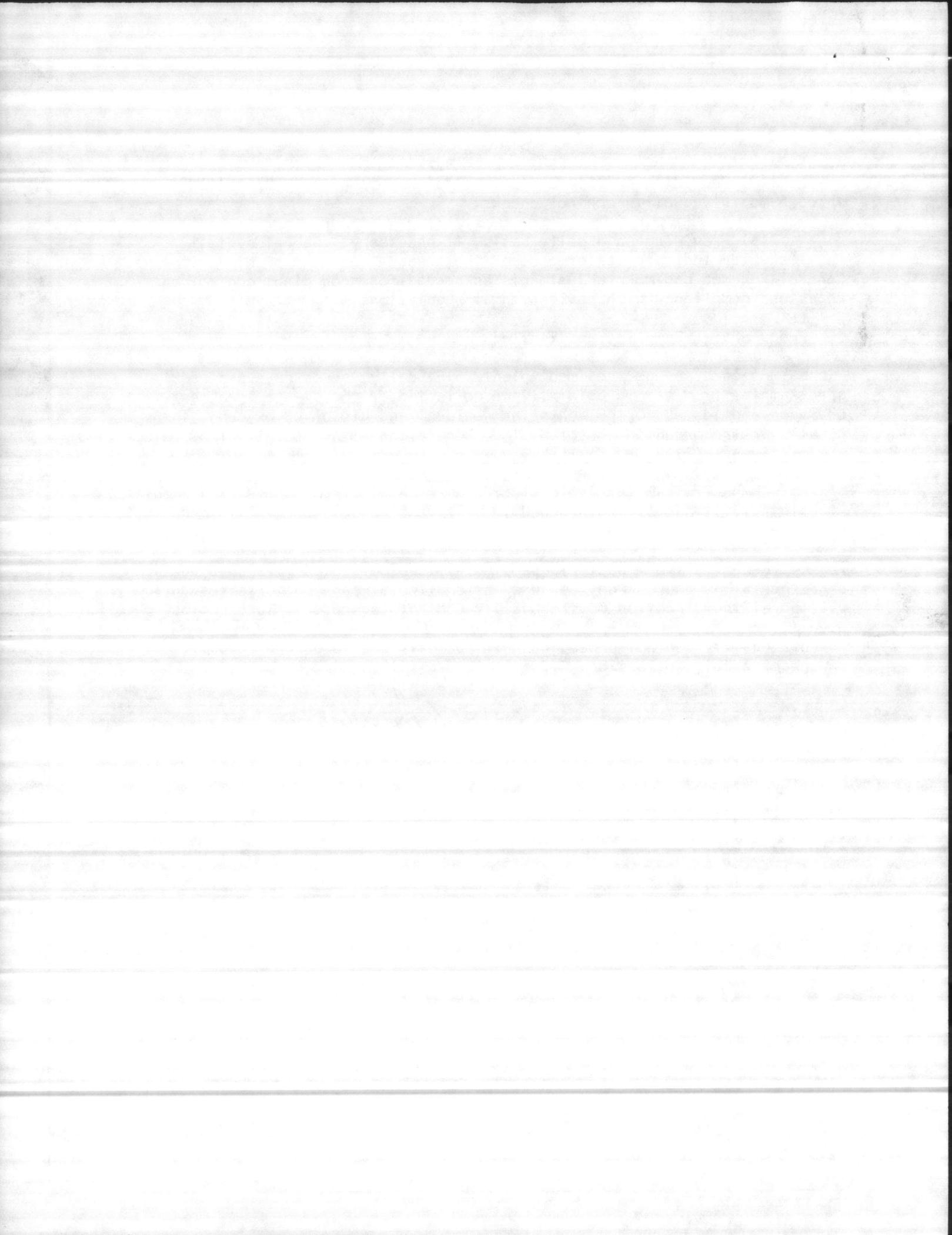
DISTRIBUTION:

Dir, NREAD

Dir, Util Div

→ Dir, Admin Div

Dir, Opns Div



BASE MAINTENANCE DIVISION
Marine Corps Base
Camp Lejeune, North Carolina 28542

MO 11330.2 Ch 2
MAIN/BB/bb
7 October 1981

MAINTENANCE ORDER 11330.2 Ch 1

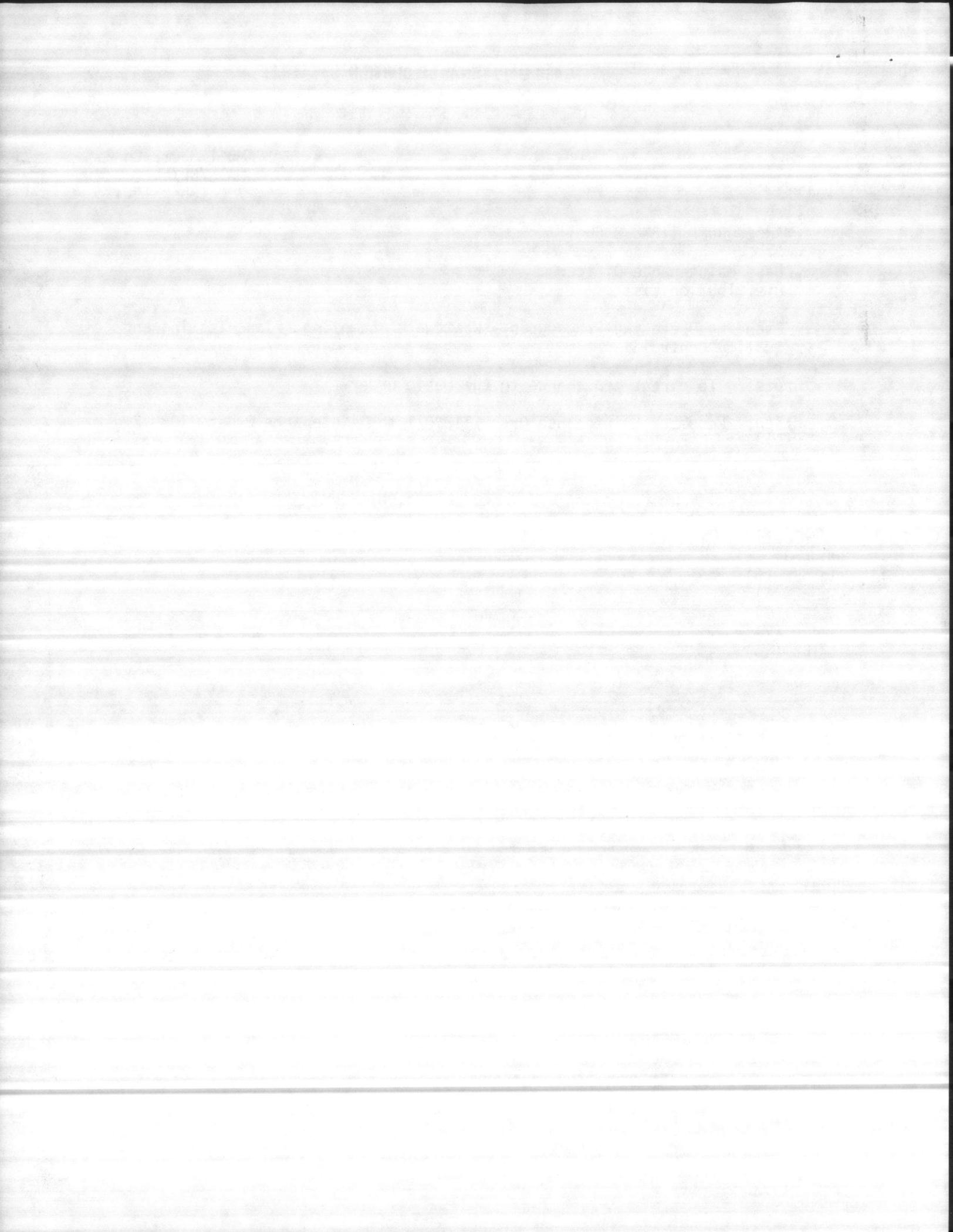
From: Base Maintenance Officer
To: Distribution List

Subj: Standing Operating Procedures - Wastewater Sampling, Plant Testing and
Quality Control

1. Purpose. To direct pen change to the basic Order.
2. Action. Renumber Maintenance Order 11330/1 to Maintenance Order 11330.2.


F. H. MOUNT

Distribution:
BMO (3)
AdminBr (5)
M&RBr (45)
NREABr (7)
OprsBr (7)
UtilBr (16)



GRAB SAMPLING FOR PLANT TESTING1. General

- a. Daily samples will be collected at sample point III for pH, dissolved oxygen and chlorine residual as required.
- b. Sample location is designated by the General Foreman, Sewage Treatment Plant.
- c. Samples will be collected and tested each morning and recorded on Sewage Treatment Plant Daily Log Sheet, form number MCBCL 11345.
- d. By the fourth of each month test results for the previous month will be reported to the Quality Control Laboratory to be included in the NPDES monthly report.

2. Apparatus

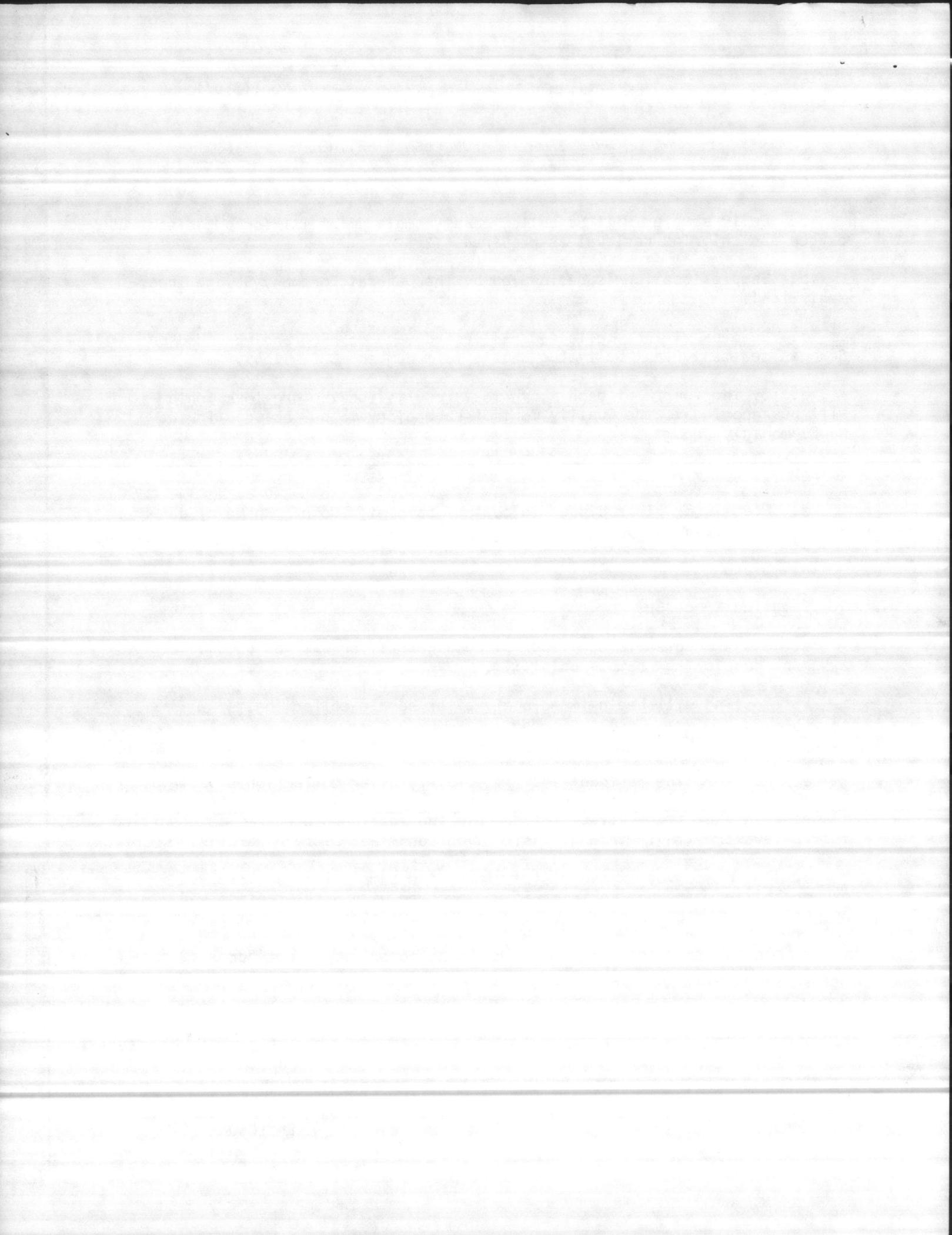
- a. Plastic or glass dipper to collect sample. (Note: No metal containers will be used.)
- b. Siphon

3. Sampling Procedure

- a. Glass or plastic container of about one liter will be used to dip a "grab" sample from sample point III.
- b. Testing will begin immediately after sample collection.

4. Testing

- a. Run chlorine residual test immediately after collection of sample. Use amperometric titrator for NPDES reported value. All others can be tested with field test kits. Follow chlorine testing procedures as specified for wastewater with instrument instructions and laboratory hand-outs.
- b. The dissolved oxygen test - siphon the sample into a dissolved oxygen bottle so as not to trap air and proceed with winkler dissolved oxygen test. Refer to dissolved oxygen test procedures hand-out for instructions.
- c. The pH test is completed with the pH meter. Use procedures as outlined in pH hand-out instructions.



COMPOSITE SAMPLING FOR LABORATORY1. General

a. Sampling of Hadnot Point, Tarawa Terrace, Camp Geiger and Montford Point (Large Plants) is five days per week. Onslow Beach, Rifle Range, Courthouse Bay (Small Plants) sampling is once per week.

b. Composite sampling begins on Sunday night 2400 for all plants. Hourly grab samples are collected for the composite sample. These hours may be changed as required.

c. Sample locations are designated by the general foreman as I, influent; II, effluent prior to chlorination; and III, effluent after chlorination.

2. Apparatus

a. Sample dippers are to be glass or plastic. (Note: No metal may be used for sample collection.)

b. One gallon laboratory sample jars (Composite Jar).

c. Sample carriers for transportation of samples (Iced).

3. Sampling

a. Grab samples are to be collected at one hour intervals and poured into composite jar.

b. Care must be taken to grab a (representative) sewage sample at each sample point. (Note: Influent samples I, should be collected at mid-stream of the flow after the comminuters. Sample II should be collected in a similar manner just prior to chlorination and sample III, as it flows over the exit weir of the chlorine contact chamber.)

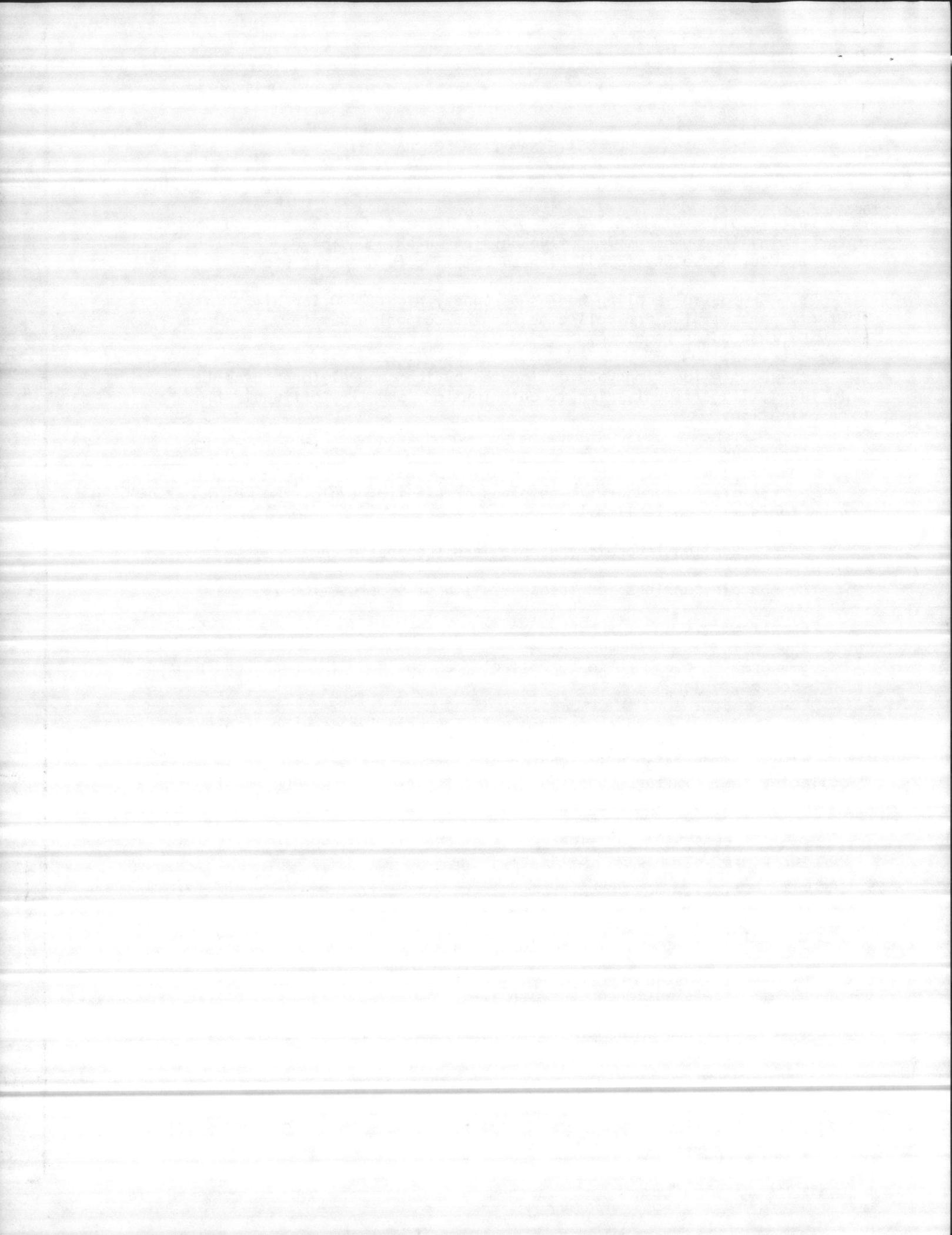
c. The composite jars labeled I, II and III are kept in the refrigerator for preservation at 4° celsius).

4. Transportation

a. Collected samples will be transported to the laboratory by 0800.

b. Samples being transported to the laboratory must be iced or maintained at 4° celsius for preservation.

c. Samples are to be placed in refrigerators in the laboratory sample collection room in Building 65.



GRAB SAMPLING FOR BACTERIA1. General

a. Fecal coliform bacteria is the organism used to check disinfection efficiency at the sewage plant effluent outfall.

b. A representative sample to demonstrate disinfection will be collected Monday through Friday at Hadnot Point, Tarawa Terrace, Camp Gelger and Montford Point sewage treatment plants.

c. A weekly representative sample will be collected at Onslow Beach, Courthouse Bay and Rifle Range and delivered to the Quality Control Laboratory, Building 65, by 0800 each Tuesday.

d. Sample collectors will collect samples directly into the sterile sample bottle provided by the laboratory. No other container may be used because contamination and false results may be obtained.

e. Samples are collected at sample point III as designated by the general foreman.

f. Resampling or additional samples may be required at the discretion of the Quality Control Laboratory chemist.

2. Apparatus. 200 ml sterile sample bottle containing sodium thiosulfate.

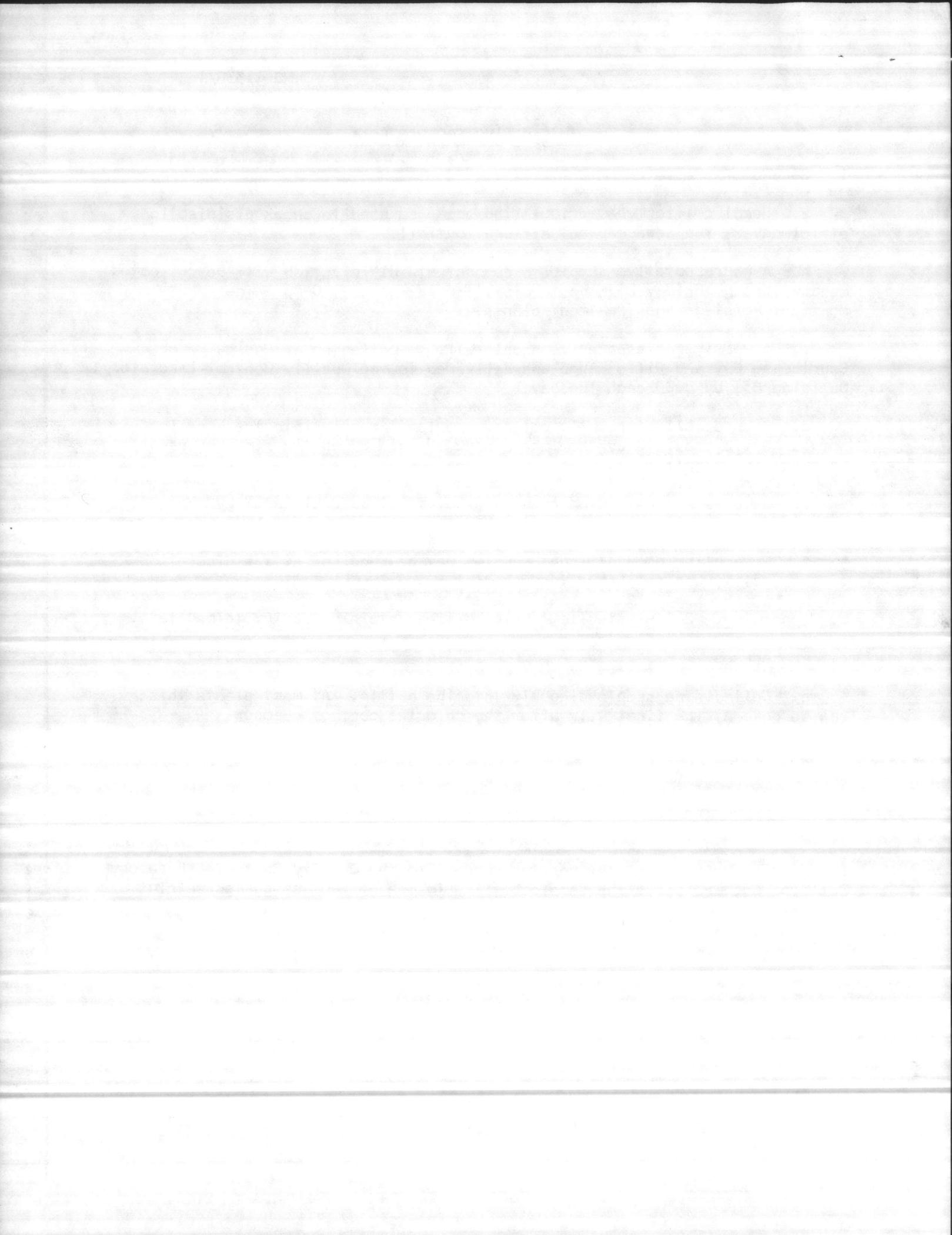
3. Procedures

a. Collect the sample directly into the bottle. At most plants this can be done at the final weir after the chlorine contact chamber.

b. Fill the bottle to the shoulder with sample. Note: An air space must be left in the bottle to assure good mixing in the laboratory.

c. Place the sample in the refrigerator or ice chest for transportation to the laboratory.

d. The driver will deliver the samples to the Quality Control Laboratory, Building 65, and place the sample bottles in one of two designated refrigerator.



QUALITY CONTROL PROCEDURES FOR SEWAGE TREATMENT PLANTS

1. General. The Chemist of the Quality Control Laboratory will assist the General Foreman of the sewage treatment plant in good testing procedures and practices. The laboratory will provide testing procedures, training and certified reagents to the plants. Laboratory technicians will assist plant operators as required to maintain testing equipment, reagents and practices.

2. Schedule of Quality Control Laboratory Assistance

a. Monthly visits to each sewage treatment plant by a laboratory technician is established to check the NPDES test procedures and test equipment. These visits and information are to be kept in a log for easy reference as required by Naval regulations.

b. The following checks and controls are to be carried out:

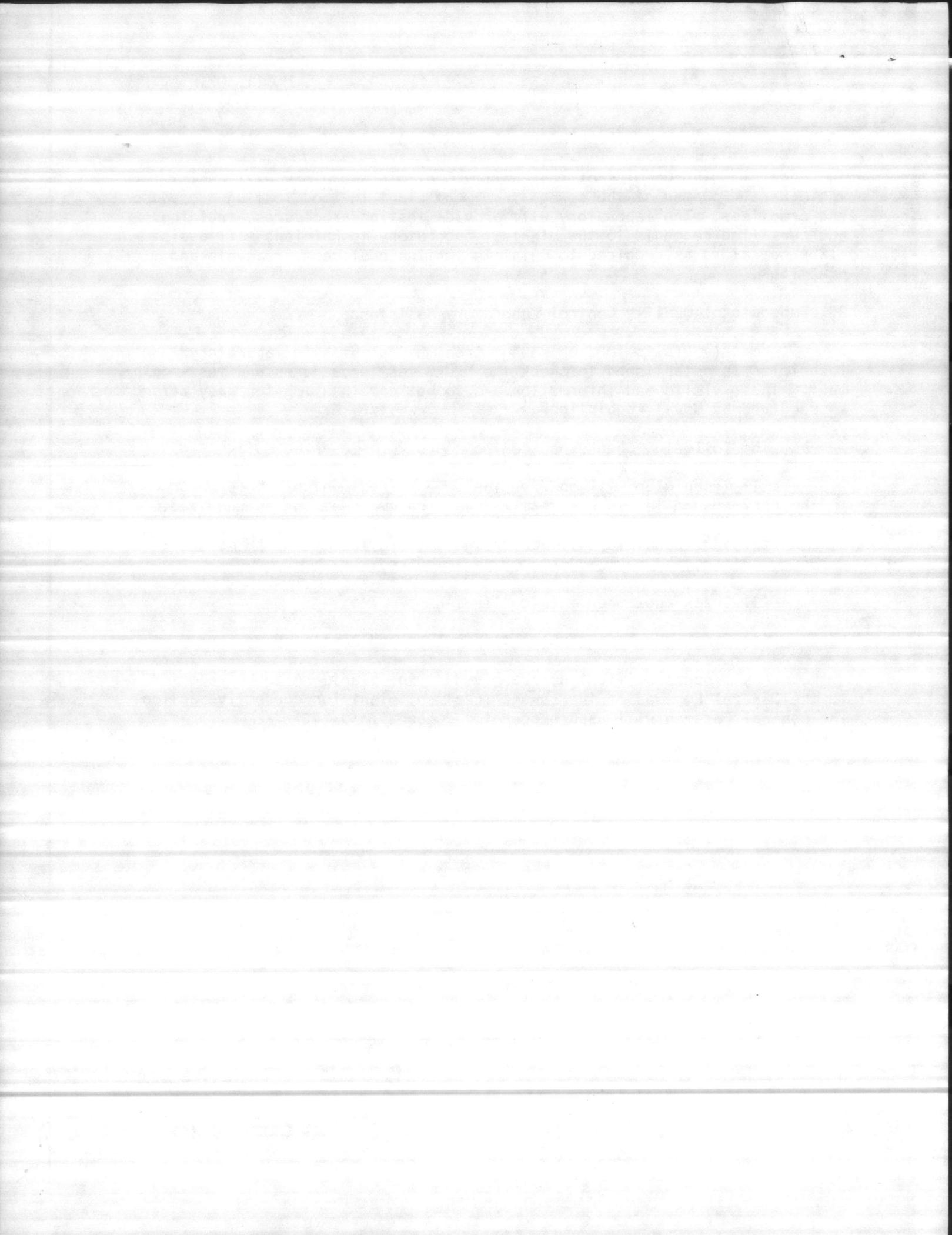
(1) Technician will observe the sewage treatment plant operator in the performance in his/her test and make recommendations as required.

(2) The technician will check the calibration of the pH meter with three pH buffers and make adjustments as required.

(3) Check the amperometric titrators.

(4) Check the refrigerator temperature and sample system.

c. Any discrepancy(ies) not resolved at the plant are to be reported to the General Foreman of the sewage treatment plant for corrective action. The General Foreman will assure operator cooperation.



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6-8-84

Camp Lejeune Public Works Division
Marine Corp Base
Jacksonville N.C. 28542

ATTN: Mr. Price

Regarding our conversation 6-7-84
in reference to your project requiring
digital control. Please look at the
enclosed literature on Bristol Babcock's
RTU 3300 Remote equipment. If I
can help you all with anything please
don't hesitate to call on me!

Sincerely
Walter Mays



UNIVERSITY OF MICHIGAN LIBRARY

1. The first part of the book is devoted to a general introduction to the subject of the history of the United States. It covers the period from the discovery of the continent to the present time. The author discusses the various theories of the origin of the name "America" and the role of Christopher Columbus in the discovery of the New World. He also touches upon the early exploration of the continent by other European nations, such as France and Spain.

2. The second part of the book is a detailed account of the early settlement of the United States. It begins with the Pilgrims and the Mayflower, and continues through the early years of the colonies. The author describes the hardships and challenges faced by the settlers, as well as their interactions with the Native Americans. He also discusses the growth of the colonies and the emergence of a distinct American identity.

3. The third part of the book is a history of the American Revolution. It covers the period from the outbreak of hostilities in 1775 to the signing of the Declaration of Independence in 1776. The author provides a comprehensive overview of the military and political events of the revolution, as well as the role of key figures such as George Washington and Thomas Jefferson.

4. The fourth part of the book is a history of the United States from 1789 to the present. It begins with the adoption of the Constitution and the establishment of the federal government. The author discusses the various presidencies and the major events of American history, including the Civil War, the Reconstruction era, and the rise of the industrial revolution. He also touches upon the social and cultural changes that have shaped the United States over time.