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

TELEPHONE NO.
444-7313
AUTOVON 690-7313

IN REPLY REFER TO:
114:DPG
6280

2 APR 1979

From: Commander, Atlantic Division, Naval Facilities Engineering Command
To: Commanding Officer, Naval Construction Battalion Center (NESO Code 251)

Subj: NESO/FACSO Discharge Monitoring Report (DMRs) Formatting; unacceptability of

Ref: (a) LANTNAVFACENGCOM ltr 114:DPG 6280 of 28 Mar 1979
(b) LANTNAVFACENGCOM ltr 114:DPG 6280 of 7 Mar 1979
(c) LANTNAVFACENGCOM ltr 114:DPG 6280 of 13 Dec 1978

Encl: (1) LANTNAVFACENGCOM ltr 114:DPG 6240 of 6 Jan 1977

1. As recommended in enclosure (1) and various LANTNAVFACENGCOM/NESO phone calls over the last two years, the EPA region/states and now LANTNAVFACENGCOM and the activities are finding the NESO/FACSO DMR formatting increasingly unacceptable.

2. As indicated in references (a) and (b), the progressive degradation of the NESO/FACSO DMR formatting of the MARCORB CAMP LEJEUNE December 1978/January 1979/February 1979 DMRs, which are forwarded to EPA/North Carolina together as a quarterly report, has necessitated this letter.

3. The formatting modifications requested in enclosure (1) would print the DMR for a typical treatment plant on one (1) page (8 lines) in an easy to read, logical, flexible format which approximates the EPA regions'/ states' formats.

4. The standard NESO/FACSO format (used for the December 1978 MARCORB CAMP LEJEUNE DMR) prints the required information for a typical treatment plant on three (3) pages (23 lines) in a format that is not easy to read, is not particularly logical or flexible, and which does not approximate the EPA regions'/states' formats.

5. It is understood that NESO/FACSO estimates that the enclosure (1) modification could be implemented with approximately one-man week of programmer time. However, the requested modifications have been given low priority for the past two years. The various LANTNAVFACENGCOM/NESO phone conversations and the follow-up written request (reference (c)) have met with similar inaction, resulting in LANTNAVFACENGCOM modifications to the DMRs, to the degree possible, being made by hand (consuming far more than one-man week of time in the past two years.

114:DPG
6280

Subj: NESO/FACSO Discharge Monitoring Report (DMRs) Formatting; unacceptability of

6. This matter was complicated when, in the January 1979 MARCORB CAMP LEJEUNE DMR, the pounds/concentration data was printed on separate lines, thereby printing the required information for a typical treatment plant on five (5) pages (35 lines). LANTNAVFACENGCOM was informed by NESO that FACSO was giving low priority to correcting this problem, which FACSO created by modifying the main computer program rather than setting up a test computer program and performing adequate test runs.

7. The situation worsened for the February 1979 MARCORB CAMP LEJEUNE DMR when again because of FACSO modifications to the main computer program each line of data printed out twice: on the first line the computer did not print the data and indicated that the monitoring was not performed; on the second line the computer printed the required information. This last formatting degradation caused the required information for a typical treatment plant to be printed on nine (9) pages (70 lines) in a format that is nearly impossible to read and to ascertain whether the MARCORB CAMP LEJEUNE is in compliance with the wastewater discharge standards/monitoring. In addition, all the data (including the number of fecal coliform (bacteria) colonies)) printed out to four decimals (giving a false impression of accuracy).

8. The probability that the EPA regions/states will require the utilization of their individual DMR formats becomes a near certainty if the above problems are not corrected. Accordingly, it is requested that the recommendations contained in enclosure (1) be implemented as soon as possible.

J. G. Leech
By direction

Copy to:
COMNAVFACENGCOM
MARCORB CAMP LEJEUNE (Base Maintenance, Environmental Affairs Division)

444-7313
AUTOVON 690-7313

DPG:114
6240

06 JAN 1977

From: Commander, Atlantic Division, Naval Facilities Engineering Command
To: Commanding Officer, Naval Construction Battalion Center (Code 25), Port Hueneme, California 93043

Subj: Discharge Monitoring Report (DMR) Program; request changes to

1. This command serves as a focal point for coordination of the National Pollution Discharge Elimination System (NPDES) with the Environmental Protection Agency (EPA). NPDES requires the periodic submission of Discharge Monitoring Reports (DMRs) to EPA. These reports are printed at LANTDIV through the use of subject computer program.

2. Formatting limitations of subject program have impaired this command's ability to successfully coordinate Navy NPDES compliance. DMRs differ from the requested EPA reporting format to an extent that tha differences have become a point of annoyance to EPA personnel. Primary differences and recommended corrective actions are as follows:

a. The highest weekly average (concentration and loading) should print out on the same line as the monthly average, rather than printing out on a separate line for each week. The total number of the exceptions for the weekly averages and the monthly average would also need to be summed and printed out on the same line. This programming flexibility would allow the Navy DMR format to more closely approximate the EPA format for all other wastewater discharges and would reduce a typical sewage treatment plant DMR from 3 pages down to 1 easy-to-comprehend page:

(1) Present format (8 lines/page): flow (1 line), BOD (7 lines); pH (1 line), TSS (7 lines), F.Coli (6 lines), chlorine (1 line).

(2) Requested format (8 lines/page): flow (1 line), BOD (2 lines), pH (1 line), TSS (2 lines), F.Coli (1 line), chlorine (1 line)

b. Rather than have the parameters print out by data element number and then by entry number, the parameters can be more logically formatted if only the (3 character) entry numbers were utilized:

(1) Present format (8 lines/page): temperature, flow, D.O., BOD (CONC.), BOD (percent removal), COD, pH, TSS (CONC.); TSS (percent removal), settable solids, TOC, F.Coli, chlorine.

GOODWIN
SLAUGHTER
12/29/76

#4207

Enclosure (1) of LANTDIV Ltr

DPG:114
6240

(2) Requested format (8 lines/page): flow, BOD (CONC.), TOC, COD, TSS, F.Coli, chlorine, D.O., settable solids, pH, temperature, BOD (percent removal), TSS (percent removal).

3. This Command recognizes that the DMR computer programming cannot accomodate all formatting requests received from various Environmental Protection Agency offices. However, the aforementioned modifications will reduce paper volume, and satisfy reasonable EPA reporting requirements. It is therefore requested that the DMR program be modified to incorporate the requirements delineated herein.

JOHN P. COLLINS
By direction

Copy to:
114
114S
09BS

APR 2- 1979

	ACTION	INFO	INITIAL
BMO			
ABMO		✓	BWR
MAINT NCO			
SAFETY CHMN			
PROP			
M&R			
OPNS			
ADMIN			
TELE			
UTIL			
ENVIRON AFF		✓	
SECRETARY			
F&A BRANCH			
UMACS			
MME			

Julian,
Is this what you wanted!
BWR

2-R-6

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

TELEPHONE NO.
444-7313
AUTOVON 690-7313

IN REPLY REFER TO:
114:DPG
6280

28 MAR 1979

From: Commander, Atlantic Division, Naval Facilities Engineering Command
To: Commanding General, Marine Corps Base, Camp Lejeune (Base Maintenance, Environmental Affairs Division)

Subj: Discharge Monitoring Reports (DMRs)

Ref: (a) LANTNAVFACENGCOM ltr 114:DPG 6280 of 15 Feb 1979
(b) LANTNAVFACENGCOM ltr 114:DPG 6280 of 19 Mar 1979

Encl: (1) MARCORB CAMP LEJEUNE ltr MAIN/JIW 6240 of 14 Feb 1979 (received 15 Mar 1979)

1. In accordance with enclosure (1), to accommodate MARCORB CAMP LEJEUNE retention of DMR signatory authority, LANTNAVFACENGCOM has arranged for MARCORB CAMP LEJEUNE data/DMRs to be given top DMR priority over the other thirteen DMR activities during the last month of each DMR quarter (eliminates approximately one week of processing time). Additionally, the two computer paper sized copies of the DMRs will be immediately forwarded to MARCORB CAMP LEJEUNE during the last month of each of the DMR quarters rather than forwarded with the two reduced sized copies (eliminates approximately another week).

2. The above modification resulted in the following accomplishments for the January/February 1979 DMRs:

MONTH	DATA RECEIVED	DMR MAILED
Jan 79*	9 Feb 79	15 Feb 79 (via ref (a))
Feb 79	12 Mar 79	19 Mar 79 (via ref (b))

* Trial run (i.e., not the last month of a DMR quarter).

3. The formatting problems encountered with the January/February 1979 DMRs will be addressed via separate correspondence to the Naval Environmental Support Office with a copy to MARCORB CAMP LEJEUNE.

J. G. Leech
By direction

Copy to:
CBC PORT HUENEME (NESO (Code 251))

RECD 15MAR79

UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

IN REPLY REFER TO
MAIN/JIW/th
6240
14 Feb 1979

From: Commanding General
To: Commander, Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia 23511

Subj: NPDES Permit; noncompliance with

Ref: (a) EPA NPDES Permit No. NC0003239 Modified 5 Dec 77
(b) FoneCon btwn Mr. Dave Goodwin, LantDiv, and Mr. Julian Wooten, BMaintD, on 13 Feb 79
(c) Cmdr LantDiv ltr 114:DPG 6280 dtd 8 Jan 79

1. This letter is to call attention to a continuing noncompliance situation involving reference (a) as discussed during reference (b). The permit requires the base to submit a quarterly discharge monitoring report (DMR) to EPA, Region IV, Atlanta, Georgia, postmarked no later than the 28th day of the month following the completed reporting period. The latest quarterly report (September, October and November 1978) was to be postmarked by 28 December 1978; however, the November 1978 DMR submitted with reference (c) was not received by this activity until 12 January 1979.

2. It is requested that DMR handling procedures be reviewed in an effort to eliminate subject situation. It should be noted that Marine Corps Base desires to retain signature authority for the quarterly DMR.

3. For further information, please contact Mr. Julian Wooten or Mr. Wallace Eakes, Base Maintenance Department, Marine Corps Base, Camp Lejeune, North Carolina, autovon 484-2083/5977.

T. R. Baisley
T. R. BAISLEY
By direction

MAIN/JIW/th
6240
19 March 1979

Mr. James Holdaway
Environmental Protection Agency
Region IV, Water Enforcement Branch
345 Courtland Street
Atlanta, Georgia 30309

Dear Sir:

This letter is to confirm a conversation between you and Mr. Julian Wooten, Base Maintenance Department, Marine Corps Base, Camp Lejeune, North Carolina on 12 March 1979, whereby a tentative mid-April meeting at Camp Lejeune to discuss renewal of the Base National Pollutant Discharge Elimination System (NPDES) permit NC0003239 was agreed upon. Mr. Dave Goodwin, Atlantic Division, Naval Facilities Engineering Command, indicated during a telephone conversation with Mr. Wooten on 13 March 1979 that he would attend the meeting.

Since the NPDES permit must be renewed by November 1979, it is desirable to meet at your convenience to discuss renewal procedures. Your point of contact in this matter is Mr. Wooten, telephone (919) 451-5003/2083.

Sincerely,

T. R. BAISLEY
Lt Colonel, U. S. Marine Corps
Base Maintenance Officer
By direction of the Commanding General

MAIN/JIW/th
6240
14 Feb 1979

From: Commanding General
To: Commander, Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia 23511

Subj: NPDES Permit; noncompliance with

Ref: (a) EPA NPDES Permit No. NC0003239 Modified 5 Dec 77
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T. R. BAISLEY
By direction

dtiw

MAIN/JIW/th
6240
14 Feb 1979

From: Commanding General
To: Commanding Officer, Naval Construction Battalion Center
Port Hueneme, California 93043

Subj: NPDES Monitoring Program; NEPSS certification of

Ref: (a) CO, Naval Const Bn Ctr, ltr 2522:NSS:el Serial 6489
dtd 15 Dec 78

Encl: (1) Maintenance Order 11330/1
(2) Maintenance Order 11330/2

1. As requested in reference (a), enclosure (1) is a SOP (Standing Operating Procedure) for wastewater sampling, wastewater plant listing and quality control. Enclosure (2) is a SOP which outlines a program for internal laboratory quality.

2. Procurement action has been initiated to obtain the necessary equipment to correct the other deficiencies identified in reference (a).

3. For further information, please contact Mr. Wallace Eakes, Chemist, Base Maintenance Department, Marine Corps Base, Camp Lejeune, North Carolina, autovon 484-5977.

T. R. BAISLEY
By direction

MAIN/JIW/th
6240
14 Feb 1979

From: Commanding General
To: Commanding Officer, Naval Construction Battalion Center
Port Hueneme, California 93043

Subj: NPDES Monitoring Program; NEPSS certification of

Ref: (a) CO, Naval Const Bn Ctr, ltr 2522:NSS:el Serial 6489
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3. For further information, please contact Mr. Wallace Eakes, Chemist, Base Maintenance Department, Marine Corps Base, Camp Lejeune, North Carolina, autovon 484-5977.

T. R. BAISLEY
By direction

NAVAL CONSTRUCTION BATTALION CENTER
PORT HUENEME, CALIFORNIA 93043

IN REPLY REFER TO
2522:NSS:el

SERIAL 6439

15 DEC 78

From: Commanding Officer, Naval Construction Battalion Center, Port Hueneme, CA 93043
To: Commanding General, Marine Corps Base, Camp Lejeune, NC 25442

Subj: NPDES Monitoring Program; NEPSS certification of

Ref: (a) OPNAVINST 6240.3E
(b) MARCORPS Order P11000.8A
(c) FY-79 Execution Plan for NEPSS, NESO 20.1-021, Sep 78

Encl: (1) NEPSS Quality Control Review of NPDES Data Acquisition Procedures at Marine Corps Base, Camp Lejeune, NC, QC-116, Nov 78

1. References (a) and (b) require Navy and Marine Corps activities to comply with Federal and State environmental protection regulations including National Pollutant Discharge Elimination System (NPDES) requirements. The Naval Environmental Protection Support Service (NEPSS), directed by reference (a), conducts quality control reviews to ensure that NPDES data submitted by the Navy are reliable. As authorized by reference (c), the NEPSS also certifies activities as competent to conduct NPDES monitoring based on these quality control reviews and specified required actions. Certification means that the activity has been certified by the Navy as being in compliance with NPDES monitoring techniques; this certification remains in force until a significant change occurs in personnel, equipment or NPDES permit conditions.

2. On 23-25 October 1978, Marine Corps Base (MCB), Camp Lejeune, was visited by a NEPSS quality control review team. During this review, it was determined that MCB Camp Lejeune has the potential to become certified if the following conditions are met:

a. The deficiencies noted under individual recommendations in enclosure (1) are corrected within 2 months of the date of this letter.

b. The activity successfully analyzes unknown samples representing the parameters on NPDES Permit No. NC0003239; results must be reported to the Navy Environmental Support Office (NESO) within 1 month of receipt of samples.

2522:NSS:el

SERIAL 6439

15 DEC 73

c. A set of instructions for an internal quality control program is prepared and implemented by the activity and approved by the NEPSS; this program must be received by the NESO within 2 months of the date of this letter. On satisfactory completion of the above, MCB Camp Lejeune will be declared certified and the major claimant so notified.

3. Questions regarding the certification program or quality control report should be directed to the NESO at AUTOVON 360-5071, FTS 799-5071, or Commercial 805-982-5071.

Philip R. Winters

PHILIP R. WINTERS
By direction

Copy to:
LANTNAVFACENGCOM (114)
NAVFACENGCOM (112)
CG MCB Camp Lejeune, NC (Wallace Eakes)

Navy Environmental Support Office

Naval Construction Battalion Center, Port Hueneme, California 93043

NEPSS QUALITY CONTROL REVIEW

of

NPDES DATA ACQUISITION PROCEDURES

at

Marine Corps Base
Camp Lejeune, NC
(UIC 67001)

on

23-25 October 1978

for

NPDES Permit: NC0003239

NEPSS QC-116
November 1978

Naval
Environmental
Protection
Support
Service

Quality
Control

This report is not cleared for public release. To clear the report for public release, requires (1) concurrence of the commanding officers of the included shore activities and (2) compliance with NAVMATINST 5720.7 (current edition).

by: Jeffery Heath
Nancy Stehle

NOT FOR PUBLIC RELEASE

I. INTRODUCTION

A. Purpose and Scope of Review

Navy and Marine Corps activities have a legal obligation to comply with all Federal environmental protection regulations, unless specifically exempted. This obligation, set forth in OPNAVINST 6240.3E and MARCORPS Order P11000.8A, includes the accurate monitoring and timely reporting of pollutant discharges to open waters in conformance with requirements of the National Pollutant Discharge Elimination System (NPDES) administered by the Environmental Protection Agency (EPA). To ensure that NPDES data acquisition procedures conform to guidelines established by the EPA the Naval Environmental Protection Support Service (NEPSS) regularly conducts quality control reviews as directed by OPNAVINST 6240.3E.

NEPSS conducted a quality control visit to the Marine Corps Base (MCB), Camp Lejeune, NC, on 23 to 25 October 1978 to observe and discuss with activity representatives sample collection, field measurement, and laboratory analysis procedures used to produce monitoring data for NPDES permit NC0003239. Although the review did not cover every step in producing NPDES data, it does represent a testing of the most important procedures. Pertinent observations are made in this report. Actions requiring attention by the activity are followed by recommendations. In the absence of a specific recommendation, it is the judgement of the quality control team that the procedures observed are acceptable.

NEPSS personnel conducting the review were Jeffery Heath and Nancy Stehle of the Navy Environmental Support Office (NESO) and John Parrish of the Regional Environmental Support Office, Atlantic Division, Naval Facilities Engineering Command (LANTNAVFACENGCOM). Principal contacts at MCB Camp Lejeune were Billy Elston, deputy base maintenance officer; Julien Wooten, base ecologist; Ken Harrison, acting head, National Resources and Environmental Affairs Division; Percy Huffman, general foreman, sewage treatment plants; Wallace Eakes, chemist, environmental quality laboratory; and Hoy Burns and Andy Luke, physical science technicians, environmental quality laboratory.

A previous quality control review, QC-007, was conducted in April 1976 to review permits NC0003239, NC0020869, NC0020877, NC0020885, NC0020892, NC0020907, NC0020915, and NC0020923; the permit discharge requirements from these have been consolidated into one permit, NC0003289.

Additional information concerning this report may be obtained by telephoning NESO at AUTOVON 360-4471, FTS 799-4471, or Commercial (805) 982-4471.

B. Description of Activity Discharges

MCB Camp Lejuene monitors discharges from 7 sewage treatment plants and 71 stormwater drains under NPDES permit number NC0003239. This permit also requires monitoring of New River, Northeast Creek, and Intracoastal Waterway at nine locations.

The seven sewage treatment plants are almost identical in design but are of various flow capacities. A listing of the plant names, EPA and NEPSS discharge numbers, and current and design flow capacities follows:

Name	Discharge Number		Current Flow in MGD*	Design Flow in MGD*
	EPA	NEPSS		
Camp Geiger	001	ss 01	0.70	1.60
Tarawa Terrace	002	ss 02	1.00	1.25
Montfort Point	003	ss 03	0.30	1.00
Hadnot Point	004	ss 04	5.00	8.00
Rifle Range	005	ss 05	0.20	0.53
Courthouse Bay	006	ss 06	0.40	0.53
Onslow Beach	007	ss 07	Not Available	0.20

* MGD = Million gallons per day

These secondary sewage treatment plants include the following unit operations: screening or comminution (except for Courthouse Bay and Rifle Range plants), grit removal, primary clarification or Imhoff tanks, trickling filtration, secondary clarification, chlorination, chlorine contact, and flow measurement. In addition, the Camp Geiger plant provides tertiary treatment consisting of flow equalization, chemical addition, flocculation, sedimentation, and sand filtration.

The Onslow Beach plant was not visited because the bridge to the island is under repair and the review team was not able to catch the ferry to the island. The descriptions and recommendations included in this report should apply to this plant also.

Under NPDES permit NC0003239, all discharges from the seven sewage treatment plants require monitoring and reporting of flow, 5-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), fecal coliform, residual chlorine (Cl_2), and hydrogen ion concentration (pH). Sampling for flow may be of either the effluent or influent; sampling for BOD_5 and TSS must be of both influent and effluent to allow determination of percent removal. A summary of the permit requirements and procedures used to meet the requirements is shown in appendix A.

The permit also requires monitoring of the receiving waters above and below each STP outfall, totaling nine stations. These are monitored for BOD_5, temperature, dissolved oxygen (DO), pH, oil and grease (O/G), and fecal coliform once a month.

In compliance with Part III of the NPDES permit, the activity also monitors 71 storm drain discharges quarterly for flow, pH, O/G, and TSS; NEPSS numbers are used consecutively from SD-20 to SD-90 and EPA numbers 020 to 090.

II. FINDINGS AND RECOMMENDATIONS

A. Sample Collection and Preservation

1. Sewage Treatment Plants

a. At each STP, the influent sampling point, designated point I (for the BOD_5 and TSS sample), is located at the headworks, generally after the comminutor and bar screen if such are present. An unchlorinated effluent sample (for BOD_5 analysis) is taken from the manhole at the junction box where the flow from the secondary clarifiers joins just prior to chlorination (point II). The post-chlorination effluent sample (for TSS, fecal coliform, pH, and Cl_2 analysis) is taken at the end of the chlorine contact chamber just before the effluent enters the discharge line (point III).

b. Composite samples for BOD_5 and TSS consist of grab samples taken either hourly or every 2 hours over a period of 8, 12, or 24 hours depending on staffing of the plant. The grab samples are taken in metal cans or plastic or glass containers and composited, using the same volume each sample time, in a large, labeled, plastic container kept in a refrigerator at each plant. Composite samples are taken every Monday at all plants. At the Camp Geiger, Tarawa Terrace, and Montfort Point plants, a second composite sample is taken on Wednesday, and daily samples are taken Monday through Friday at the Hadnot Point STP. Samples are picked up between midnight and 0800 the following day and delivered to the laboratory by 0800; the samples are not refrigerated in transit.

RECOMMENDATIONS:

- Provide separate samplers of inert material for each of the three sampling locations at each sewage treatment plant; these may be of glass or plastic and can be attached to a rod for ease of sampling.

- As required by section III, A, 1, (4), of the NPDES permit, collect at least 12 individual grab samples at regular intervals over a 24-hour period and composite them according to flow. If staffing does not permit scheduling of an operator to take the sample, obtain an automatic sampler that can be used to take flow proportional samples.

- Transport the samples on ice in a cooler from the STP to the laboratory to maintain them at 4°C.

c. A grab sample for coliform is taken at the end of the chlorine contact chamber directly into a sterile bottle containing sodium thiosulfate provided by the laboratory at all STPs except one. At the Rifle Range STP the sample is taken in a separate scalded container first and then poured into the sterile container. The sample is taken the same day as the BOD and TSS samples at about the time the last grab sample is taken for the composite sample. It is picked up and transported to the laboratory with the composite sample. Results of extra samples are reported to EPA.

RECOMMENDATIONS:

- Transport the samples on ice in a cooler from the STPs to the laboratory to maintain them at 4°C.

- Ensure that the coliform samples at the Rifle Range STP are taken directly in the sterile container.

d. Grab samples for pH and chlorine are taken once a shift where there is more than one shift; and twice when there is only one shift, first thing in the morning and in mid-afternoon. The samples are taken daily in cans or glass containers at the end of the chlorine contact chamber.

RECOMMENDATIONS:

- Provide separate samplers of inert material for each location at each sewage treatment plant; these may be glass or plastic and may be the same samplers used to obtain grab samples for the composite samples.

- When residual chlorine and pH are sampled and analyzed by an EPA-approved method more frequently than is required by the permit, the results should be reported to EPA, according to the NPDES permit (Part I, C, 6); do not average results.

2. Receiving Waters

a. Once a month the nine receiving water stations are sampled from a small boat. A grab sample for O/G is taken in a glass jar with a ground glass lid. Temperature is taken in situ with the probe from a YSI multifunction meter. The fecal coliform sample is taken directly in a sterile jar. A single grab sample is taken for BOD, DO, and pH for analysis in the laboratory. The samples are not cooled either on the boat or during transport to the laboratory.

RECOMMENDATION:

- Either fix the DO sample with the manganese sulfate solution and the alkali-iodideazide reagent in the field and analyze with Winkler titration in the laboratory, or use a DO meter to read DO directly in the field. Do not transport the sample back to the laboratory for analysis unless comparability tests are performed with field analysis or fixing, and the data has been submitted to and approved by EPA as an alternate method.

- Provide a cooler and ice to maintain samples at 4°C during collection and transportation.

3. Storm Drains

a. Storm drains are sampled quarterly. A single grab sample for pH and TSS analysis is taken in a plastic container. A separate glass container is used for O/G. The samples are not cooled during collection and transport to the laboratory.

RECOMMENDATION:

- Provide a cooler and ice to maintain samples at 4°C during collection and transportation.

B. Field Analyses

1. At each plant, effluent flow is measured at the end of the chlorine contact chamber with a flow recorder regulated by a rectangular weir. Additionally, influent flow is measured at the Hadnot Point plant with two flow recorders controlled by two parallel venturis on the influent pump discharges. Because of the type of influent flow recorders used, activity personnel can only check for proper electrical operation of those meters but cannot calibrate them. All flow recorders were in good working order and are serviced on an as-needed basis. No staff guages or weir curves were present with the rectangular weirs for easy spot checking of the flow recorders.

RECOMMENDATIONS:

- At the Hadnot Point plant, use the effluent flow recorder instead of the influent flow recorders to determine flow.

- At each plant provide a staff gauge at the effluent rectangular weir and proper head vs. discharge curve for the weir for easy spot checking and calibration of the flow recorder.

2. pH is analyzed immediately after sample collection at the STPs, using a pH meter. Generally the meter is calibrated daily with pH 7.0 buffer solution. Several plants also had a second buffer present, usually pH 4.0.

RECOMMENDATION:

- Check the pH meter weekly with three pH buffers over the range of the meter to ensure linear response of the probe and meter.

3. Residual chlorine is analyzed immediately after sample collection at each plant using a Fisher-Porter amperometric titrator. The samples are titrated with phenylarsine oxide (PAO) using a procedure known as the forward titration. This method is not acceptable on wastewater samples.

RECOMMENDATION:

- Use an EPA-acceptable method for analyzing for residual chlorine in wastewater. Acceptable methods include the amperometric back titration (Standard Methods, 14th ed., pp. 318-321), DPD titrametric or colorimetric procedures, or the DPD color comparator test kit.

4. Temperature of the receiving water samples is measured in situ, using a YSI multi-function meter. The meter is checked occasionally for accuracy, but not on a regular basis.

RECOMMENDATION:

- Calibrate the temperature meter regularly with an NBS thermometer. Record this calibration in a bound notebook or on the daily worksheet.

C. Laboratory Analyses

1. BOD_5 analyses are initiated the same day the samples are received from the plants or taken in the field. Generally only one dilution for each sample and a dilution water blank are run; seeding is not necessary. Samples are first mixed with an electric mixer, then sample is withdrawn and mixed in a blender. Distilled water from a Barnstead tinlined still is used for dilution water which is made up each day; it is aerated by shaking. All chemicals for the test are kept refrigerated; bottles are dated as to when the solution was made up. No chemicals are kept more than a few weeks. BOD bottles are labeled and used for the same sample each time. A DO meter is used to measure DO. An NBS thermometer is used to check incubator temperature aperiodically.

2. TSS analyses are run using Gooch crucibles and glass fiber filters. The oven is maintained at 103°C. The samples are generally always handled by tongs after initial weighing. A mettler balance is used to weigh samples. It is checked yearly by a manufacturer's representative.

RECOMMENDATION:

- Ensure samples and crucible are always handled with tongs after the initial weighing.

3. Membrane filter technique is used for fecal coliform analysis. Disposable petri dishes are used, and media are prepared fresh each day they are used. Samples are incubated in a water bath at 44.5°C. Petri dishes are sealed with tape.

4. Oil and grease analyses are conducted in a manner acceptable to the EPA. A standard of cooking oil is generally run each time as a check.

5. The same DO meter that is used for BOD is used for DO analysis in an acceptable manner.

6. For receiving water and storm drain monitoring, a Corning Model 10 meter is used to measure pH at the laboratory; an IL meter is available for use in the field. The meters are checked regularly for linearity with three buffers and with a buffer of pH 7 when used. The probe is stored in distilled water.

RECOMMENDATION:

- Do all pH measurements in the laboratory, since the sample can be held at 4°C for 6 hours according to EPA.

D. Internal Quality Control

1. Although a number of checks are made during testing by doing duplicate tests or checking temperature of the ovens or incubators, these are not kept in an organized manner. In addition, there is no regular schedule for duplicate analysis or analysis of unknown samples.

RECOMMENDATIONS:

- Establish and maintain a bound notebook containing all checks of the thermometers, balances, and meters.

- Record all regular checks of instruments and equipment, such as temperature of oven, water bath, incubator, DO meter, and pH meter, on the daily record sheets.

- Establish and maintain a bound notebook containing results or location of results for duplicate and standard sample analyses.

- Establish and conduct a program of internal control checks to qualify for NEPSS certification.

APPENDIX A

TESTING FREQUENCIES AND PROCEDURES USED AT STPS

Parameter/ EPA Sample No.	EPA FREQUENCY REQUIRED 001-003	004	005-007	Type of Sample
Flow	daily	daily	daily	N/A
BOD_5	2/week	5/week	1/week	composite
TSS	2/week	5/week	1/week	composite
Fecal Coliform	2/week	3/week	1/week	grab
Chlorine Residual	daily	daily	daily	grab
pH	2/week	3/week	1/week	grab

MAIN/JIW/th
6240
2 Feb 1979

City of Laurenburg
Post Office Box 312
Laurenburg, North Carolina 28352

Gentlemen:

Your inquiry of 30 January 1979 to the Naval Regional Medical Center relative to Safe Drinking Water Act analysis has been referred to this Department for response. The Base Quality Control Laboratory, Base Maintenance Department, has interim certification from the Environmental Protection Agency to perform certain in-house potable water analysis as required by the Safe Drinking Water Act. However, Marine Corps Base does not test water for other activities even though the base is on the Environmental Protection Agency approved list.

For details on the Safe Drinking Water Act, it is suggested that you contact Mr. Charles E. Rundgren, Head, Water Supply Branch, Sanitary Engineering Section, Department of Human Resources, Division of Health Services, Raleigh, North Carolina, telephone (919) 733-2321.

Sincerely,

T. R. BAISLEY
Lt Colonel, U. S. Marine Corps
Base Maintenance Officer
By direction of the Commanding General

OPNAV 5216/144 (REV. 6-70)
S/N 0107-LF-778-8097

DEPARTMENT OF THE NAVY

Memorandum

DATE: 31 Jan 1979

FROM: MCB, Camp Lejeune, N.C.

TO: City of Laurinburg

SUBJ: Safe Drinking Water Act analysis.

1. Camp Lejeune ~~does~~ does not test water for other federal or state activities at the present time though we are on the approved lab list.

2. Please contact Dr. Robert J. DRYE, Jr. or Mr. Charles Rundgren for assistance in Raleigh - phone 733-2321.

U. S. Government Printing Office: 1977--735-000/2167 Region No. 3-II

QUOTATION REQUEST

CITY OF LAURINBURG

P. O. BOX ~~706~~ 312
LAURINBURG, N. C. 28352

On Our Req. No.

Date January 30, 1979

INQUIRY — NOT AN ORDER

To Naval Regional Medical Center
Preventive Medicine Service
Camp LeJeune, N.C. 28542

This is a request for quotation on the items enumerated below:

SPECIAL NOTICE TO BIDDER

1. To receive consideration, the Original Copy of this inquiry with your bid filled in, must be signed and returned within 10 days.
2. All prices and conditions must be shown. Additions for packing or other items not shown on this bid will not be allowed.
3. Attach complete specifications for any substitutions offered, or when amplification is desirable or necessary.
4. The seller agrees to protect and save harmless the purchaser from all costs, expenses or damages arising out of alleged infringement of patents.

For Shipment to Laurinburg, N.C. 28352 Via Best Way

F. O. B. Delivery Terms

QUANTITY	SIZE	DESCRIPTION	PRICE	TOTAL
1		Organic Analysis		
2		Inorganic Analysis		
2		Radiation Analysis Gross alpha & beta		

THIS INQUIRY IS IN DUPLICATE
Fill Out and Sign the Original and Return to Us.
Address To: Purchasing Agent, City of Laurinburg
P. O. Box ~~706~~ 312, Laurinburg, N. C. 28352
Keep the Duplicate for Your File.

If favored with an order, we agree to furnish the items enumerated hereon at the prices and under the conditions indicated.

Signed _____ Bidder.

Date _____ 19____ By _____

Address _____

BILL EVANS CO., LBG.

City of Laurinburg

Box 312
LAURINBURG, N. C.
28352

ALL-AMERICA CITY

LAURINBURG
JAN 30 '79
N.C.
U.S. POSTAGE
15
METER
P.B. 392584

MAIN/JIW/th
6240
FEB 9 1979

Mr. James Holdaway
Environmental Protection Agency
Region IV, Water Enforcement Branch
345 Courtland Street
Atlanta, Georgia 30309

Dear Sir:

As discussed between you and Mr. Wallace Eakes, Base Maintenance Department, Marine Corps Base, Camp Lejeune, on 2 February 1979, the enclosed Quality Control Laboratory data compiled from water samples collected at Marine Corps Base, as required by NPDES permit number NC0003239, is herein submitted for your review and consideration.

It is requested that Total Organic Carbon (TOC) values be substituted for Biochemical Oxygen Demand (BOD) values as outlined in the Base NPDES permit. It is proposed that the current frequency of analysis for BOD be used for TOC.

During a telephone conversation between Mr. Julian Wooten, Base Maintenance Department, and Mr. Dave Goodwin, Naval Facilities Engineering Command, on 8 February 1979 regarding the proposed change, Mr. Goodwin advised that the enclosed data had been correlated by his office and found to be comparable. Mr. Goodwin also indicated that correspondence on the subject would be forthcoming from his office.

For further information, please contact Mr. Julian Wooten or Mr. Wallace Eakes, Base Maintenance Department, Marine Corps Base, Camp Lejeune, telephone (919) 451-5003/5977.

Sincerely,

T. R. BAISLEY
Lt Colonel, U. S. Marine Corps
Base Maintenance Officer
By direction of the Commanding General

Enclosure

Copy to: NAVFACENGCOM (Code 114)

OPNAV 5216/144 (REV. 6-70)
S/N 0107-LF-778-8097

DEPARTMENT OF THE NA

Memorandum

DATE: 17 Jan 79

FROM: Quality Control Laboratory

TO: Mr. Wooten, NREAD

SUBJ: Late Quarterly Report Letter

1. Enclosed is a sample letter you requested. I hope this may help generate timely reporting by NAV FAC.

Wallace Eakes
Quality Control Laboratory

OPNAV 5216/144 (REV. 6-70)
S/N 0107-LF-778-8099

DEPARTMENT OF THE NAVY

Memorandum

DATE: 17 Jan. 79

FROM: NREA Division

TO: Commander, Atlantic Division, Naval Facilities Engineering Command

SUBJ: Late Discharge Monitoring Reports

Ref: (a) NPDES permit number NC0003239
(b) Letter, DMR observations, 114: DPG 6280 dtd 8 Jan 1979

1. NPDES permit number NC0003239, reference (a), requires Camp Lejeune to submit a quarterly discharge monitoring report (DMR), EPA form 3320-1, "postmarked no later than the 28th day of the month following the completed reporting period". The latest quarterly report, (Sept., Oct., and Nov. 1978), is to be postmarked by 28 December 1978; however, the November 1978 DMR, reference(b), was not received until 12 January 1979, making the quarterly report tardy again.

2. It is impossible to submit the quarterly report as required if the DMR is received after the submittion date. In fact, the DMR is postmarked after the submittion date, reference (b).

3. It is requested that the monthly DMR be forwarded to Camp Lejeune in a timely manner in order to comply with permit requirements.

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

TELEPHONE NO.
444-7313
AUTOVON 690-7313
IN REPLY REFER TO:
114:DPG
6280

8 JAN 1979

From: Commander, Atlantic Division, Naval Facilities Engineering Command
To: Commanding General, Marine Corps Base, Camp Lejeune (Attn: Base Maintenance Dept., Environmental Affairs Division)

Subj: DMR observations

Encl: (1) DMR for November 1978

1. Enclosure (1) is forwarded for your information and use.

2. The following observations were noted:

ITEM	REPORTED IN DMR	PERMIT REQUIREMENT
SS01-07: Chlorine	205 of 210 (98%) values in the 2.5-10.0 range	Nontoxic effluent (recommend less than 2.0)

Special Note: During October 1978, Marine Corps Base, Camp Lejeune, treated 8.112 MGD of sanitary wastewater while maintaining a weighted average BOD of 16 mg/1.

Storm Drain Monitoring Summary

PARAMETER	1 Q FY79	1 JUL 77-30 SEP 78 AVERAGE
Flow	18 MGD	196 MGD
Oil	31 mg/1*, 600 gal, 7 exceptions	41 mg/1*, 8,000 gal, 12 exceptions
TSS	25 mg/1*, 2 tons, 13 exceptions	12 mg/1*, 10 tons, 8 exceptions
pH	8 exceptions	8 exceptions

*Weighted average.

John G. Leech

J. G. Leech
By direction