

01.08-04/25/90-00094



UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542-5001

IN REPLY REFER TO:

6286

BEMD

Apr 25, 1990

Mr. John S. Nohnstedt
Remedial Project Manager
United States Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Re: ABC One Hour Cleaners CERCLA Site

Dear Steve,

I received your fax on April 19, 1990 concerning production wells located in Tarawa Terrace (TT). The following information is in response to the questions posed on your April 18th memorandum to me.

Question One

TT 23 was shut down in late January 1985 due to contamination.

TT 25 was never shown to be contaminated, but was shut down when the system was expanded at Hadnot Point.

TT 26 was never operated due to contamination found after the well was installed.

Question Two

TT 25 was taken out of service when the Hadnot Point system was expanded.

Question Three

X-24, T-9, TT-31, TT-52, TT-53, TT-54 and TT-69 are no longer in operation. These wells were taken out of service when the Hadnot Point system was expanded.

Question Four

The abandoning of wells TT-26 and TT-23 caused hardship to Camp Lejeune. Tarawa Terrace had severe water shortage for 3 months during the early to mid summer timeframe.

Question Five

Attached is a summary of the analytical data I was able to obtain. If additional data is obtained it will be forwarded.

I look forward to working with you on this Remedial Investigation/Feasibility Study. If there is anything that Camp Lejeune can do to be of assistance, please call me at (919) 451-5065 or 5068.

Sincerely,

A handwritten signature in black ink, appearing to read "Stephany Del Re". The signature is fluid and cursive, with a large, sweeping flourish at the end.

STEPHANY DEL RE'
Installation Restoration Manager,
Environmental Management Department

North Carolina Department of Human Resources
 Division of Health Services
 Occupational Health Laboratory

ANALYSIS REPORT

Company: U.S. MARINE CORPS, CAMP LEJEUNE, NC

Address: _____

Service Requested: TCE, DCE

Sample Taken On: 3/11/85, 3/12/85 By: EP. BETZ, G.B. HUNEYCUTT

Submitted To Laboratory On: 3/14/85 By: FED. EXPRESS

Date of Analysis: 3/15/85 Date Reported: 3/18/85

Analyzed By: John Neal

COPY SENT RECD. 3/14/85 U.P.

LABORATORY NUMBER	SAMPLE NUMBER	DESCRIPTION	REMARKS	RESULTS IN
510975	#1	PLANT BEFORE RESERVOIR	(PRIOR TO NEW WELL)	
510976	#2	TT NEW WELL		
510977	#3	TT NEW WELL		
510978	#4	PLANT BEFORE RESERVOIR	(24 hrs. AFTER NEW WELL)	
510979	#5	PLANT AFTER RESERVOIR		
(See Attached Sheet.)				

REMARKS:

REPORTED BY: John A. Neal
 Chief, Occupational Health Lab

DEPARTMENT OF HUMAN RESOURCES - DIVISION OF HEALTH SERVICES
 LABORATORY SECTION
 OCCUPATIONAL HEALTH

G C REPORT SHEET

COMPANY: Camp Lejeune, N.C.

DATE OF ANALYSIS: 3/14/85

PPB
 TOTAL HALOGENATED

SAMPLE #	Chloroform	Dichloro-bromomethane	Dibromo-chloromethane	Trichloro-ethene	Tetrachloro-ethene	Dichloro-ethene				
500975	*	*	*	*	*	*				
500976	*	*	*	*	14.9	*				
500977	*	*	*	*	40.6	*				
500978	*	*	*	*	21.3	*				
500979	*	*	*	*	6.6	*				
			*=Less than reporting value (2.0 PPB), or none detected.							

SAMPLE POINT	LABELLED	# OF SAMPLES		DATE	TIME	COMMENTS
		STATE	JTC			
PLANT BEFORE RESERVOIR (PRIOR TO NEW WELL)	1	2 STATE VIALS	2 JTC	3/11/85	10:25	WELLS ON: 25, 31, 52 54, 67
TT NEW WELL	2	2 JTC	2 JTC	3/11/85	12:41	TURNEO ON: 10:32 CUT OFF: 25, 54
TT NEW WELL	3	2 JTC	2 JTC	3/12/85	1037	TURNEO OFF: 1040
PLANT BEFORE RESERVOIR (24 HR AFTER NEW WELL)	4	2 STATE VIALS	2 JTC	3/12/85	1022	WELLS ON: 31, 52, 54, 67, NEW WELL
PLANT AFTER RESERVOIR	5	2 JTC	2 JTC	3/12/85	1028	WELLS ON DURING LAST 24 HRS: 25, 31, 52, 54, 67, NEW WELL.

COLLECTED BY : 3/11/85 : Elizabeth P. Betz

Regina B. Hunsicker

3/12/85 : Jaira B. Hunsicker

FREIGHT DATA

MCBCL 4812

DATE 13 MAR 85 KR

TCN 131000 5072 0091 XXX	ISSUE PRIORITY —	TRANSPORTATION PRIORITY 1
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DOCUMENT NUMBER	QUANTITY SHIPPED NOMENCLATURE	PIECE NUMBER	WEIGHT	CUBIC FEET	PACK
RALEIGH, NC M31000 5072 0091	WATER SAMPLES 000010 VIALS 00002	1	11	3	CT

North Carolina Department of Human Resources
 Division of Health Services
 Occupational Health Laboratory

*Draw my Thesis
 Come to me
 DJR*

ANALYSIS REPORT

Company: Traffic Mgmt. Office, Bldg. 1011

Address: Marine Corps Base, Camp Lejeune

Service Requested: VOA

Sample Taken On: 10/17/85 By: _____

Submitted To Laboratory On: 10/18/85 By: Aed. Express

Date of Analysis: 10/19/85 Date Reported: 7/3/85

Analyzed By: V. Painter

LABORATORY NUMBER	SAMPLE NUMBER	DESCRIPTION	REMARKS	RESULTS IN PPM
2319	TT Treated	(duplicates submitted)	Dichlorobromomethane Dibromochloromethane	.002 ppm .006 ppm
502320	TT New	" "		No chlorinated compounds detected

COMMENTS: cc. Mike Bell, ERO

REPORTED BY John H. Neal
 Chief, Occupational Health Lab

North Carolina Department of Human Resources
 Division of Health Services
 Occupational Health Laboratory

ANALYSIS REPORT

Company: CAMP LEJEUNE MARINE CORP BASE
 Address: _____
 Service Requested: 7/0A
 Sample Taken On: 6/24/85 By: B. BETTS
 Submitted To Laboratory On: 6/26/85 By: EXPRESS MAIL
 Date of Analysis: 7/2/85 Date Reported: 7/3/85
 Analyzed By: V. Painter

LABORATORY NUMBER	SAMPLE NUMBER	DESCRIPTION	REMARKS	RESULTS IN
		#502402	Dichlorobromomethane	0.002 ppm
502402	TT381327			
			Dibromochloromethane	0.005 ppm
502403	TT261340			
			(TRANS)-1,2 Dichloroethene	5 ppb
		#502403		
			Trichloroethene	24 ppb
			Tetrachloromethane	1,160 ppb

COMMENTS:

REPORTED BY John R. Neal
 Chief, Occupational Health Lab

NORTH CAROLINA DEPARTMENT OF HUMAN RESOURCES
DIVISION OF HEALTH SERVICES
OCCUPATIONAL HEALTH LABORATORY

COMPANY: Camp Lejeune Water System
ADDRESS: Camp Lejeune, Onslow County, N.C.
SERVICE REQUESTED: Volatile Organic Analysis
SAMPLE TAKEN ON: 02/19/85
SAMPLE TAKEN BY: Gaines Huneycutt/Q.C. Lab
SUBMITTED TO LABORATORY ON: 02/21/85
SUBMITTED BY: via Federal Express

DATE OF ANALYSIS: 02/21-22/85
ANALYZED BY: Vicki Painter

DATE REPORTED: 02/22/85

RESULTS IN PPB (ug/liter)

LOCATION	trans 1,2-DCE	TCE	TetraCE	CHCl3	DiCBM	DiCBM
TT New Well	trace	53.53	26.17	<2.0	<2.0	<2.0
TT-26 Well	trace	3.91	55.17	<2.0	<2.0	<2.0
TT Water Plt. Trt.	<2.0	<2.0	<2.0	0.9	2.1	3.2

COMMENTS: trans 1,2-DCE is trans 1,2-dichloroethene, TCE is trichloroethene, TetraCE is tetrachloroethene, CHCl3 is chloroform, DiCBM is dichlorobromo-methane, DiBCM is dibromochloromethane. Samples were collected from the Tarawa Terrace System. Samples were analysed by purge and trap method utilizing a Hall detector in the halogen mode. Identifications were confirmed by GC/MS.

REPORTED BY: 

cc. Charles Rundgren Water Supply Branch
Mike Bell, ERO
Fred Hill, ERO
Environmental Epidemiology

NREAD - Revised 2-28-85

STATE LABORATORY OF PUBLIC HEALTH
DIVISION OF HEALTH SERVICES
N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 - 306 N. WILMINGTON ST., RALEIGH 27611

ORGANIC CHEMICAL ANALYSES - ~~PUBLIC WATER SYSTEM~~

Residence

Complete All Items Above Heavy Line
(See Instructions on Reverse Side)

Name of System: TARAWA TERRACE

Address: 411 WILSON ROAD
CAMP LEJEUNE NC ZIP 28542

County: ONSCON

Report To: DIRECTOR NREAD

Address: COMMANDING GENERAL, MARINE
CAMP LEJEUNE NC ZIP 28542

Telephone Number: (919) 451-5977

Collected By: GAINES HONEYCUTT / QC LAB

Date Collected: 19 FEB 1985 Time: 3:15 AM PM

Location of Sampling Point: DTT New Well (2) TT 26 Well
(Address where sample was collected) ③ TT WATER RAIN TREATED

Remarks:

Source of Water:
 Ground () Both
 Surface () Purchased

Source of Sample:
 Distribution Tap () House Tap
 Well Tap

Type of Sample:
 Raw () Treated

Type of Treatment:
 None () Lime
 Chlorinated () Soda Ash
 Fluoridated () Polyphosphate
 Filtered () Water Softener
 Alum () Other

Type of Sample:
 Regular () Private
 Check () Special

WATER SYSTEM I.D. NUMBER (COPY FROM MAILING LABEL)

04-67-044

State Drinking Water Parameters (Required)

Optional Parameters (List as needed)

	Results	Results
(CHLORINATED HYDROCARBONS:)		
Endrin	mg/l 5	
Lindane	mg/l 4	
Methoxychlor	mg/l 3	<u>see attached sheet</u>
Toxaphene	mg/l 4	
(CHLOROPHENOXY:)		
2,4-D	mg/l 3	
2,4,5-TP	mg/l 4	

Date Received 2/21/85 nw Date Reported 2/22/85 Reported By J. L. Neal

Collected By _____ Date Analyzed 2/21-22/85 Laboratory Number 5 0633
5 0634

Comments: #500633
500634, 500635



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

IN REPLY REFER TO:
5200
NREAD
13 Mar 1985

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

Subj: TRANSPORTATION OF LABORATORY SAMPLES; REQUEST FOR

1. Request shipment of 10 water samples and two vials to State
Laboratory of Public Health, PO Box 28047, 306 North Wilmington
Street, Raleigh, North Carolina 27611, Attn: Mr. John Neal, phone
919-733-7308.


J. I. WOOTEN

TCN: M31000 5072 0091 XXX

FREIGHT DATA

MCBCL 4612

DATE 13 MAR 85 KR

TCN M31000 5072 0091 XXX	ISSUE PRIORITY —	TRANSPORTATION PRIORITY 1
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DOCUMENT NUMBER	QUANTITY SHIPPED NOMENCLATURE	PIECE NUMBER	WEIGHT	CUBIC FEET	PACK
RALEIGH, NC M31000 5072 0091	WATER SAMPLES 000010 VIALS 00002	1	11	3	CT

SAMPLE POINT	LABELLED	# OF SAMPLES		DATE	TIME	COMMENTS
		STATE	JTC			
PLANT BEFORE RESERVOIR (PRIOR TO NEW WELL)	1	2 STATE VIALS	2 JTC	3/11/85	10:25	WELLS ON: 25, 31, 52, 54, 67
TT NEW WELL	2	2 JTC	2 JTC	3/11/85	12:41	TURNEO ON: 10:32 CUT OFF: 25, 54
TT NEW WELL	3	2 JTC	2 JTC	3/12/85	1037	TURNEO OFF: 1040
PLANT BEFORE RESERVOIR (24 HR AFTER NEW WELL)	4	2 STATE VIALS	2 JTC	3/12/85	1022	WELLS ON: 31, 52, 54, 67, NEW WELL
PLANT AFTER RESERVOIR	5	2 JTC	2 JTC	3/12/85	1028	WELLS ON DURING LAST 24 HRS: 25, 31, 52, 67, NEW WELL.

COLLECTED BY : 3/11/85 : Elizabeth P. Betz
 3/12/85 : Janice B. Hensley

DEPARTMENT OF HUMAN RESOURCES - DIVISION OF HEALTH SERVICES
 LABORATORY SECTION
 OCCUPATIONAL HEALTH

G C REPORT SHEET

COMPANY: Camp Lejeune, N.C.

DATE OF ANALYSIS: 3/14/85

PPB
 TOTAL MILLIGRAMS

SAMPLE #	Chloroform	Dichloro-bromomethane	Dibromo-chloromethane	Trichloro-ethene	Tetrachloro-ethene	Dichloro-ethene			
500975	*	*	*	*	*	*	Plant Before Reservoir before turning well on		
500976	*	*	*	*	14.9	*	TT Newwell after turned on 2 hrs		
77	*	*	*	*	40.6	*	TT Newwell after 24 hrs.		
500978	*	*	*	*	21.3	*	Plant before Reservoir after 24 hrs		
500979	*	*	*	*	6.6	*	Plant after Reservoir after 24 hrs.		
			*=Less than reporting value (2.0 PPB), or none detected.						

DDS

North Carolina Department of Human Resources
Division of Health Services
Occupational Health Laboratory

ANALYSIS REPORT

Company: U.S. MARINE CORPS, CAMP LEJEUNE, NC

Address: _____

Service Requested: TCE, DCE

Sample Taken On: 3/11/85, 3/12/85 By: E.P. BETZ, G.B. HUNEYCUT

Submitted To Laboratory On: 3/14/85 By: FED. EXPRESS

Date of Analysis: 3/15/85 Date Reported: 3/18/85

Analyzed By: John Neal

✓ REC'D. 3/14/85 U.P.

LABORATORY NUMBER	SAMPLE NUMBER	DESCRIPTION	REMARKS	RESULTS IN
5 10975	#1	PLANT BEFORE RESERVOIR	(PRIOR TO NEW WELL START.)	
5 10976	#2	TT NEW WELL	at START (+2 hrs)	
5 10977	#3	TT NEW WELL	(+24 hrs)	
5 10978	#4	PLANT BEFORE RESERVOIR	(24 hrs. AFTER NEW WELL)	
5 10979	#5	PLANT AFTER RESERVOIR	+ 24 hrs	
			(See Attached Sheet)	

COMMENTS:

REPORTED BY: John G. Neal
Chief, Occupational Health Lab

DEPARTMENT OF HUMAN RESOURCES - DIVISION OF HEALTH SERVICES
LABORATORY SECTION
OCCUPATIONAL HEALTH

G C REPORT SHEET

COMPANY: ERO

DATE OF ANALYSIS: 2/22/85

PPB

~~TOTAL HALOGENS~~

PLE #	Chloroform	Dichlorobromo- methane	Dibromochloro- methane	Trichloro- ethene	Dichloro- ethylene
Bm5400 0720	14.6	11.0	4.9	*	*
MCO 2204 0721	15.7	11.2	4.4	*	*
HD Treated 0722	16.9	8.7	1.8	*	*
HB Treated 0723	10.9	8.1	3.0	*	*
BID 68 0724	16.6	8.5	2.4	1.0	*
* = Less than detectable concentration by purge and trap utilizing Hall detector in halogen mode.					

COUNTY WILMINGTON
QUAD NO. 4 SERIAL NO. 110

REPORT TO: (circle one)

ARO, WSR0, MRO, FRO, WARO,
WIRO, ARO, Ahooskie PO,
OTHER

PURPOSE: (circle one) baseline, pollution monitor, other

DATE COLLECTED 4-10-85 Time 11:00 By DEM Location or site ASOULT

Description of sampling point YORKTOWN ROAD Sampled interval 10-15; 1-11

Remarks (pumping time, air temp, etc.)

Field Analysis By: DEM Lat. 4411 N Long. 77701 W

pH 7.4 Spec. Cond. 450 Temp. 17 °C For ASOULT Appearance clear Taste neutral

Lab Analysis

✓ Alkalinity to pH 4.5	P00410	180 mg/l
Alkalinity, Hydroxide	P71830	1 mg/l
✓ Carbonate	P00445	< 1 mg/l
✓ Bicarbonate	P00440	22 mg/l
✓ pH value (when analyzed)	P00400	7.4 units
✓ Arsenic (D)	P01000	< 10 ug/l
Carbon dioxide	P00405	mg/l
✓ Chloride (D)	P00940	15 mg/l
✓ Color (True)	P00080	31 units
Cyanide	P00720	mg/l
✓ Dissolved solids (D)	P70301	250 mg/l
✓ Fluoride (D)	P00951	0.3 mg/l
✓ Hardness (as CaCO ₃) (D)	P00900	190 mg/l
✓ Hardness (non-carbonate) (D)	P00902	10 mg/l
MBAS (D)	P18260	mg/l
✓ Phenol (D)	P34466	< 5 ug/l
✓ Silica (D)	P00955	7 mg/l
✓ Sulfate (D)	P00946	11 mg/l
✓ Specific Cond.	P00094	450 μhos/cm

✓ Ag-Silver (D)	P01075	< 50 ug/l
✓ Al-Aluminum (D)	P01106	< 100 ug/l
✓ Ba-Barium (D)	P01005	< 1000 ug/l
✓ Ca-Calcium (D)	P00915	77 mg/l
✓ Cd-Cadmium (D)	P01025	< 20 ug/l
✓ Cr-Chromium (D)	P01030	< 50 ug/l
✓ Cu-Copper (D)	P01040	< 20 ug/l
✓ Fe-Iron (D)	P01046	1000 ug/l
✓ Hg-Mercury	P71900	< 0.2 ug/l
✓ Li-Lithium (D)	P01130	< 50 ug/l
✓ Mg-Magnesium (D)	P00925	2.6 mg/l
✓ Mn-Manganese (D)	P01056	< 50 ug/l
✓ Na-Sodium (D)	P00929	12 mg/l
✓ Pb-Lead (D)	P01049	< 100 ug/l
✓ Zn-Zinc (D)	P01090	350 ug/l
✓ K-Potassium (D)	P00935	4.3 mg/l
✓ Selenium (D)		< 50 ug/l

BOD	P00310	mg/l
COD	P00341	mg/l
Coliform (Fecal MP)	P31616	/100ml
Coliform (total MP)	P31505	/100ml
✓ TOC	P00680	< 5 mg/l
Turbidity	P82079	NTU
✓ Ammonia (as Nitrogen) (D)	P00612	.04 mg/l
✓ Kjeldahl (as Nitrogen) (D)	P00623	.01 mg/l
✓ Nitrate + Nitrite (as Nitrogen) (D)	P00631	.01 mg/l
✓ Phosphorus, total as P (D)	P00666	.22 mg/l
Dissolved Solids - cond. meter	P70304	mg/l

Other Analyses:
✓ AMMONIA < 0.1 mg/l
✓ PHOSPHORUS < 0.1 mg/l
✓ CHLORIDE < 100 mg/l
✓ COLORED < 100 mg/l
✓ VOA
✓ LOA

See attached Deposition Analysis Worksheet

D = Dissolved Analysis - submit filtered sample
White copy - Headquarters Pink copy - Region Yellow copy - Lab

Reported by MLU

ate 5.29.85

Checked by PKD

ORGANIC ANALYSIS

Supervisor REK

Entered by _____

Checked by _____

Lab No.	1 WATER	Analytical Results
G-182	THE FOLLOWING COMPOUNDS WERE IDENTIFIED BY MATCHING TO LIBRARY MASS SPECTRA. THEY WERE NOT MATCHED TO STANDARDS. CONCENTRATIONS () WERE ESTIMATED AS A RATIO TO A KNOWN INTERNAL STANDARD.	
	BY GC/MS/PT:	
	DICHLORO ETHERE (1.4 $\mu\text{g/l}$)	
	TRICHLORO ETHERE (18 $\mu\text{g/l}$)	
	TETRACHLORO ETHERE (630 $\mu\text{g/l}$)	
	ONE UNIDENTIFIED PEAK DETECTED BY GC/MS/PT-	

✓ GC/MS/DS used

RECEIVED

UIC PROGRAM

COUNTY ONSLOW

N. C. DEPARTMENT OF NATURAL RESOURCES
JUN 8 1985 DEVELOPMENT

REC'D

QUAD NO. X-211 SERIAL NO. 040-1170

REPORT TO: (circle one)

DEM
WILMINGTON REGIONAL OFFICE/ LAB FORM

MAY 31 1985

LAB NUMBER G-181

DATE REC'D 4-10-85

REC'D BY SD

DATA ENTRY BY mark

DATA REPORTED 5-29-85

ARG, WSRO, MRO, FRO, WARO,
VRO, RRO, Ahooskie FO,
OTHER

DEM

GROUND WATER SECTION
RALEIGH, N. C.

PURPOSE: (circle one) baseline, pollution monitor, other

DATE COLLECTED 04-07-85 Time 1200 By MARK Location or site TT-25

Description of sampling point WGS WELL AT WINDMILL PUMP Sampled interval 70-75' 85' 95' 100'

Remarks WELL HAS BEEN DREDGED CONTINUOUSLY SINCE 08-85 @ 100'
(pumping time, air temp, etc.)

Field Analysis By: MARK Lat. 344419N Long. 772143W

pH 8.4 Spec. Cond. 390 Temp. 17 °C 63 Nor 11.5 Appearance clear Taste 0

Lab Analysis

✓ Alkalinity to pH 4.5	P00410	170 mg/l
Alkalinity, Hydroxide	P71890	<1 mg/l
✓ Carbonate	P00445	<1 mg/l
✓ Bicarbonate	P00440	200 mg/l
✓ pH value (when analyzed)	P00400	7.5 units
✓ Arsenic (D)	P01000	<10 ug/l
Carbon dioxide	P00405	mg/l
✓ Chloride (D)	P00940	9 mg/l
✓ Color (True)	P00080	23 units
Cyanide	P00720	mg/l
✓ Dissolved solids (D)	P70301	220 mg/l
✓ Fluoride (D)	P00951	0.2 mg/l
✓ Hardness (as CaCO ₃) (D)	P00900	180 mg/l
✓ Hardness (non-carbonate) (D)	P00902	10 mg/l
MBAS (D)	P38260	mg/l
✓ Phenol (D)	P34466	<5 ug/l
✓ Silica (D)	P00955	7 mg/l
✓ Sulfate (D)	P00946	7 mg/l
✓ Specific Cond.	P00094	390 UMHOS/cm

✓ Ag-Silver (D)	P01075	<50 ug/l
✓ Al-Aluminum (D)	P01106	10.0 ug/l
✓ Ba-Barium (D)	P01005	<1000 ug/l
✓ Ca-Calcium (D)	P00915	73 mg/l
✓ Cd-Cadmium (D)	P01025	<20 ug/l
✓ Cr-Chromium (D)	P01030	<50 ug/l
✓ Cu-Copper (D)	P01040	<20 ug/l
✓ Fe-Iron (D)	P01046	700 ug/l
✓ Hg-Mercury	P71900	<0.2 ug/l
✓ Li-Lithium (D)	P01130	<50 ug/l
✓ Mg-Magnesium (D)	P00925	1.9 mg/l
✓ Mn-Manganese (D)	P01056	<50 ug/l
✓ Na-Sodium (D)	P00929	6.1 mg/l
✓ Pb-Lead (D)	P01049	<100 ug/l
✓ Zn-Zinc (D)	P01090	<20 ug/l
✓ K-Potassium (D)	P00935	1.8 mg/l
✓ Selenium		<50 ug/l

BOD	P00310	mg/l
COD	P00341	mg/l
Coliform (Fecal MF)	P31616	/100ml
Coliform (total MF)	P31505	/100ml
✓ TOC	P00680	5 mg/l
Turbidity	P82079	NTU
✓ Ammonia (as Nitrogen) (D)	P00612	0.01 mg/l
✓ Kjeldahl (as Nitrogen) (D)	P00623	<0.1 mg/l
✓ Nitrate + Nitrite (as Nitrogen) (D)	P00631	1.01 mg/l
✓ Phosphorus, total as P (D)	P00666	0.26 mg/l
Dissolved Solids - cond. meter	P70304	mg/l
Other Analyses:		
✓ Nitrate		<0.01 mg/l
✓ Unknown		YON
✓ Unknown		YON

One unidentified peak detected by GC/MS/PT

D - Dissolved Analysis - submit filtered sample
White copy - Headquarters Pink copy - Region Yellow copy - Lab

No base nutrient or acid extractables analysis (GC/MS)

RECEIVED

01016 PRO 12A7

COUNTY WILM.

DEPARTMENT OF NATURAL RESOURCES
& COMMUNITY DEVELOPMENT
DEM

LAB NUMBER 9122

QUAD NO. X 116 SERIAL NO. JUN 6 1985

RECEIVED

DATE REC'D 9/10/85

REPORT TO: (circle one)

WILMINGTON REGIONAL OFFICE GROUNDWATER FIELD/LAB FORM
DEM

REC'D BY SD

JUN 4 1985

DATA ENTRY BY Am CK

ARO, WSRO, MRO, FRO, WaRO,
WRO, RRO, Ahoakie FO,
OTHER

DATA REPORTED 6-5-85

PURPOSE: (circle one) baseline, pollution monitor, other

GROUND WATER SECTION

DATE COLLECTED 01/07/85 Time 10:15 By SD Location or site RALEIGH, N.C.

Description of sampling point ... Sampled interval ...

Remarks ...
(pumping time, air temp, etc.)

Field Analysis By: SD Lat. 341423N Long. 771520W

pH ... Spec. Cond. ... Temp. ... °C ... or ... Appearance ... Taste ...

Lab Analysis

Alkalinity to pH 4.5	P00410	186 mg/l
Alkalinity, Hydroxide	P71830	21 mg/l
Carbonate	P00445	21 mg/l
Bicarbonate	P00440	220 mg/l
pH value (when analyzed)	P00400	8.2 units
Arsenic (D)	P01000	110 ug/l
Carbon dioxide	P00405	mg/l
Chloride (D)	P00940	7 mg/l
Color (True)	P00080	24 units
Cyanide	P00720	mg/l
Dissolved solids (D)	P70301	230 mg/l
Fluoride (D)	P00951	0.2 mg/l
Hardness (as CaCO ₃) (D)	P00900	120 mg/l
Hardness (non-carbonate) (D)	P00902	10 mg/l
MBAS (D)	P38260	mg/l
Phenol (D)	P34466	25 ug/l
Silica (D)	P00955	6 mg/l
Sulfate (D)	P00946	5 mg/l
Specific Cond.	P00094	420 UMHOS/cm

Ag-Silver (D)	P01075	< 50 ug/l
Al-Aluminum (D)	P01106	100 ug/l
Ba-Barium (D)	P01005	< 1000 ug/l
Ca-Calcium (D)	P00915	80 mg/l
Cd-Cadmium (D)	P01025	< 20 ug/l
Cr-Chromium (D)	P01030	< 50 ug/l
Cu-Copper (D)	P01040	< 20 ug/l
Fe-Iron (D)	P01046	1200 ug/l
Hg-Mercury	P71900	< 0.2 ug/l
Li-Lithium (D)	P01130	< 50 ug/l
Mg-Magnesium (D)	P00925	2.0 mg/l
Mn-Manganese (D)	P01056	< 50 ug/l
Na-Sodium (D)	P00929	5.4 mg/l
Pb-Lead (D)	P01049	< 100 ug/l
Zn-Zinc (D)	P01090	< 20 ug/l
K-Potassium (D)	P00935	1.6 mg/l
Se-Selenium		< 5.0 ug/l

BOD	P00310	mg/l
COD	P00341	mg/l
Coliform (Fecal MF)	P31616	/100ml
Coliform (total MF)	P31505	/100ml
TOC	P00680	mg/l
Turbidity	P82079	NTU
Ammonia (as Nitrogen) (D)	P00612	mg/l
Kjeldahl (as Nitrogen) (D)	P00623	< 0.1 mg/l
Nitrate + Nitrite (as Nitrogen) (D)	P00631	2.0 mg/l
Phosphorus, total as P (D)	P00666	mg/l
Dissolved Solids - cond. meter	P70304	mg/l

Other Analyses:
...
...
...

D = Dissolved Analysis - submit filtered sample
White copy - Headquarters Pink copy - Region Yellow copy - Lab

Analysis No. 1000

ABC
Danny

Betsy:
Please Review
+ Advise Julian or
myself of significance
by 8 July 85.
Danny



State of North Carolina
Department of Natural Resources and Community Development
Wilmington Regional Office

James G. Martin, Governor

S. Thomas Rhodes, Secretary

DIVISION OF ENVIRONMENTAL MANAGEMENT

June 21, 1985

Colonel R.A. Tiebout
Assistant Chief of Staff, Facilities
United States Marine Corps
Marine Corps Base
Camp Lejeune, NC 28542-5001

SUBJECT: Transmittal of Analytical Results
Three Community Water Supply Wells
Tarawa Terrace I
Camp Lejeune MCB
Onslow County

Dear Colonel Tiebout:

Attached please find copies of the analytical results completed on samples that I collected on 9 April 1985 from wells TT-25, TT-26, and new TT.

Your staff's cooperation in helping me collect these samples was greatly appreciated.

Sincerely,

Dick Shiver

Rick Shiver
Regional Hydrologist

RS/sbm

cc: Julien Wooten
Mike Bell
Perry Nelson

Attachments

RECEIVED

N. C. DEPARTMENT OF NATURAL RESOURCES
JUN 8 1985 COMMUNITY DEVELOPMENT

REC'D

UIC PROGRAM

COUNTY ONSLAW

QUAD NO. X-211 SERIAL NO. 047-1170

REPORT TO: (circle one)

ARG, WSRO, MRO, FRO, WaRO,
(WRO) ERO, Ahoskie PO,
OTHER

DEM
WILMINGTON REGIONAL FIELD LAB FORM

MAY 31 1985

DEM

GROUND WATER SECTION
DALEIGH, N. C.

LAB NUMBER G 181

DATE REC'D 4-10-85

REC'D BY SPD

DATA ENTRY BY [Signature]

DATA REPORTED 5-29-85

PURPOSE: (circle one) baseline, pollution monitor, other

DATE COLLECTED 01/07/85 Time 1200 By [Signature] Location or site PT-25

Description of sampling point WGS - 1100 - 1107 PUMP Sampled interval 70-75' 85 75' 100-110'

Remarks WGS - 1100 - 1107 PUMP CONTINUOUSLY SINCE 01-08-85 @ 1.0007
(pumping time, air temp, etc.)

Field Analysis By: [Signature] Lat. 344419N Long. 772143W

pH 5.4 Spec. Cond. 390 Temp. 17 °C (Dor 11.5 Appearance clear Taste 1

Lab Analysis

✓ Alkalinity to pH 4.5	P00410	170	mg/l
Alkalinity, Hydroxide	P71830	<1	mg/l
✓ Carbonate	P00445	<1	mg/l
✓ Bicarbonate	P00440	200	mg/l
✓ pH value (when analyzed)	P00400	7.5	units
✓ Arsenic (D)	P01000	<10	ug/l
Carbon dioxide	P00405		mg/l
✓ Chloride (D)	P00940	9	mg/l
✓ Color (True)	P00080	23	units
Cyanide	P00720		mg/l
✓ Dissolved solids (D)	P70301	220	mg/l
✓ Fluoride (D)	P00951	0.2	mg/l
✓ Hardness (as CaCO ₃) (D)	P00900	180	mg/l
✓ Hardness (non-carbonate) (D)	P00902	10	mg/l
MBAS (D)	P38260		mg/l
✓ Phenol (D)	P34466	<5	ug/l
✓ Silica (D)	P00955	7	mg/l
✓ Sulfate (D)	P00946	7	mg/l
✓ Specific Cond.	P00094	390	UMHOS/cm

✓ Ag-Silver (D)	P01075	<50	ug/l
✓ Al-Aluminum (D)	P01106	1.0	ug/l
✓ Ba-Barium (D)	P01005	<1000	ug/l
✓ Ca-Calcium (D)	P00915	73	mg/l
✓ Cd-Cadmium (D)	P01025	<20	ug/l
✓ Cr-Chromium (D)	P01030	<50	ug/l
✓ Cu-Copper (D)	P01040	<20	ug/l
✓ Fe-Iron (D)	P01046	700	ug/l
✓ Hg-Mercury	P71900	<0.2	ug/l
✓ Li-Lithium (D)	P01130	<50	ug/l
✓ Mg-Magnesium (D)	P00925	1.9	mg/l
✓ Mn-Manganese (D)	P01056	<50	ug/l
✓ Na-Sodium (D)	P00929	6.1	mg/l
✓ Pb-Lead (D)	P01049	<100	ug/l
✓ Zn-Zinc (D)	P01090	<20	ug/l
✓ K-Potassium (D)	P00935	1.8	mg/l
✓ Selenium		<5.0	ug/l

BOD	P00310		mg/l
COD	P00341		mg/l
Coliform (Fecal MP)	P31616		/100ml
Coliform (total MP)	P31505		/100ml
✓ TOC	P00680	5	mg/l
Turbidity	P82079		NTU
✓ Ammonia (as Nitrogen) (D)	P00612	0.1	mg/l
✓ Kjeldahl (as Nitrogen) (D)	P00623	<0.1	mg/l
✓ Nitrate + Nitrite (as Nitrogen) (D)	P00631	0.1	mg/l
✓ Phosphorus, total as P (D)	P00666	0.26	mg/l
Dissolved Solids - cond. meter	P70304		mg/l

Other Analyses:
✓ Nitrite <0.01 mg/l
✓ Unknown organic
YOA
YOA

One unidentified peak detected by GC/MS/PT

D = Dissolved Analysis - submit filtered sample
White copy - Headquarters Pink copy - Region Yellow copy - Lab

No base available and extractable available by GC/MS

COUNTY WILMINGTON

QUAD NO. 1 SERIAL NO. 110

REPORT TO: (circle one)
ARO, WSRO, MRO, FRO, WaRO,
WIRO, RRO, Ahooskie PO,
OTHER _____

N. **RECEIVED** COMMUNITY DEVELOPMENT DEPARTMENT
DEM
GROUNDWATER FIELD/LAB FORM
JUN 3 1985

RECEIVED
MAY 31 1985

LAB NUMBER 6-174
DATE REC'D 4-10-85
REC'D BY [Signature]
DATA ENTRY BY [Signature]
DATA REPORTED 5-29-85

WILMINGTON REGIONAL OFFICE
DEM

GROUND WATER SECTION
SALEIGH, N. C.

PURPOSE: (circle one) baseline, pollution monitor, other _____

DATE COLLECTED _____ Time _____ By _____ Location or site _____

Description of sampling point _____ Sampled interval _____

Remarks _____
(pumping time, air temp, etc.)

Field Analysis By: _____ Lat. 344410 Long. 771701 W

pH _____ Spec. Cond. _____ Temp. 17 °C _____ Appearance _____ Taste _____

Lab Analysis

✓ Alkalinity to pH 4.5	P00410	180 mg/l
Alkalinity, Hydroxide	P71830	1 mg/l
✓ Carbonate	P00445	< 1 mg/l
✓ Bicarbonate	P00440	22 mg/l
✓ pH value (when analyzed)	P00400	7.4 units
✓ Arsenic (D)	P01000	< 10 ug/l
Carbon dioxide	P00405	mg/l
✓ Chloride (D)	P00940	15 mg/l
✓ Color (True)	P00080	31 units
Cyanide	P00720	mg/l
✓ Dissolved solids (D)	P70301	250 mg/l
✓ Fluoride (D)	P00951	0.3 mg/l
✓ Hardness (as CaCO ₃) (D)	P00900	190 mg/l
✓ Hardness (non-carbonate) (D)	P00902	10 mg/l
MBAS (D)	P38260	mg/l
✓ Phenol (D)	P34466	< 5 ug/l
✓ Silica (D)	P00955	7 mg/l
✓ Sulfate (D)	P00946	11 mg/l
✓ Specific Cond.	P00094	450 µMOS/cm

✓ Ag-Silver (D)	P01075	< 50 ug/l
✓ Al-Aluminum (D)	P01106	400 ug/l
✓ Ba-Barium (D)	P01005	< 1000 ug/l
✓ Ca-Calcium (D)	P00915	77 mg/l
✓ Cd-Cadmium (D)	P01025	< 20 ug/l
✓ Cr-Chromium (D)	P01030	< 50 ug/l
✓ Cu-Copper (D)	P01040	< 20 ug/l
✓ Fe-Iron (D)	P01046	1000 ug/l
✓ Hg-Mercury	P71900	< 0.2 ug/l
✓ Li-Lithium (D)	P01130	< 50 ug/l
✓ Mg-Magnesium (D)	P00925	2.6 mg/l
✓ Mn-Manganese (D)	P01056	< 50 ug/l
✓ Na-Sodium (D)	P00929	12 mg/l
✓ Pb-Lead (D)	P01049	< 100 ug/l
✓ Zn-Zinc (D)	P01090	350 ug/l
✓ K-Potassium (D)	P00935	4.3 mg/l
✓ S-Sulfur		< 50 ug/l

BOD	P00310	mg/l
COD	P00341	mg/l
Coliform (Fecal MF)	P31616	/100ml
Coliform (total MF)	P31505	/100ml
✓ TOC	P00680	< 5 mg/l
Turbidity	P82079	NTU
✓ Ammonia (as Nitrogen) (D)	P00612	.04 mg/l
✓ Kjeldahl (as Nitrogen) (D)	P00623	0.1 mg/l
✓ Nitrate + Nitrite (as Nitrogen) (D)	P00631	.01 mg/l
✓ Phosphorus, total as P (D)	P00666	.22 mg/l
Dissolved Solids - cond. meter	P70304	mg/l

Other Analyses:
 ✓ Nitrate < .01 mg/l
 ✓ Volatile Organic Compounds
 VOA
 VOA

See attached Organics analysis Worksheet
Yellow copy - Lab

D = Dissolved Analysis - submit filtered sample
White copy - Headquarters Pink copy - Region

TT NEW WELL

RAY KILLING

Reported by JKU

Date 5.29.85

Conducted by PKD

ORGANIC ANALYSIS

Supervisor REK

Entered by _____

Checked by _____

Lab No.	1 WATER	Analytical Results
G-182	THE FOLLOWING COMPOUNDS WERE IDENTIFIED BY MATCHING TO LIBRARY MASS SPECTRA. THEY WERE NOT MATCHED TO STANDARDS. CONCENTRATIONS () WERE ESTIMATED AS A RATIO TO A KNOWN INTERNAL STANDARD.	
	BY GC/MS/PT:	
	DICHLORO ETHENE (1.4 $\mu\text{g/l}$)	
	TRICHLORO ETHENE (18 $\mu\text{g/l}$)	
	TETRACHLORO ETHENE (6.38 $\mu\text{g/l}$)	
	ONE UNIDENTIFIED PEAK DETECTED BY GC/MS/PT-	

GC/MS/DS used

RECEIVED

REC'D JUN 4 1985

COUNTY DELRIVER

DEPARTMENT OF NATURAL RESOURCES
& COMMUNITY DEVELOPMENT
DEM

LAB NUMBER 9712

QUAD NO. X 216 SERIAL NO. JUN 6 1985

DATE REC'D 4 10 1985

REPORT TO: (circle one)

ARO, WSRO, MRO, PRO, WARO,
MIRO, RRO, Ahoakia FO,
OTHER _____

WILMINGTON REGIONAL OFFICE
GROUNDWATER FIELD/LAB FORM
DEM

RECEIVED

JUN 4 1985

REC'D BY SD

DATA ENTRY BY Arc CK

DATA REPORTED 6-7-85

PURPOSE: (circle one) baseline, pollution monitor, other _____

GROUND WATER SECTION

DATE COLLECTED 01 07 85 Time 10:15 By SLIVER Location or site RALEIGH/12K

Description of sampling point _____ Sampled interval _____

Remarks _____
(pumping time, air temp, etc.)

Field Analysis By: SLIVER Lat. 344423N Long. 772152W

pH _____ Spec. Cond. _____ Temp. 15 °C No Organic Appearance _____ Taste _____

Lab Analysis

✓ Alkalinity to pH 4.5	P00410	<u>180</u> mg/l
Alkalinity, Hydroxide	P71930	<u>21</u> mg/l
✓ Carbonate	P00445	<u><1</u> mg/l
✓ Bicarbonate	P00440	<u>220</u> mg/l
✓ pH value (when analyzed)	P00400	<u>8.2</u> units
✓ Arsenic (D)	P01000	<u><10</u> ug/l
Carbon dioxide	P00405	mg/l
✓ Chloride (D)	P00940	<u>7</u> mg/l
✓ Color (True)	P00080	<u>24</u> units
Cyanide	P00720	mg/l
✓ Dissolved solids (D)	P70301	<u>230</u> mg/l
✓ Fluoride (D)	P00951	<u>0.2</u> mg/l
✓ Hardness (as CaCO ₃) (D)	P00900	<u>190</u> mg/l
✓ Hardness (non-carbonate) (D)	P00902	<u>10</u> mg/l
MBAS (D)	P38260	mg/l
✓ Phenol (D)	P34466	<u>.15</u> ug/l
✓ Silica (D)	P00955	<u>6</u> mg/l
✓ Sulfate (D)	P00946	<u>5</u> mg/l
Specific Cond.	P00094	<u>420</u> UMHOS/cm

✓ Ag-Silver (D)	P01075	<u><50</u> ug/l
✓ Al-Aluminum (D)	P01106	<u>100</u> ug/l
✓ Ba-Barium (D)	P01005	<u><1000</u> ug/l
✓ Ca-Calcium (D)	P00915	<u>80</u> mg/l
✓ Cd-Cadmium (D)	P01025	<u><20</u> ug/l
✓ Cr-Chromium (D)	P01030	<u><50</u> ug/l
✓ Cu-Copper (D)	P01040	<u><20</u> ug/l
✓ Fe-Iron (D)	P01046	<u>1200</u> ug/l
✓ Hg-Mercury	P71900	<u><0.2</u> ug/l
Li-Lithium (D)	P01130	<u><50</u> ug/l
✓ Mg-Magnesium (D)	P00925	<u>2.0</u> mg/l
✓ Mn-Manganese (D)	P01056	<u><50</u> ug/l
✓ Na-Sodium (D)	P00929	<u>5.4</u> mg/l
✓ Pb-Lead (D)	P01049	<u><100</u> ug/l
✓ Zn-Zinc (D)	P01090	<u><20</u> ug/l
✓ K-Potassium (D)	P00935	<u>1.6</u> mg/l
✓ Se-Selenium	<u><5.0</u> ug/l	

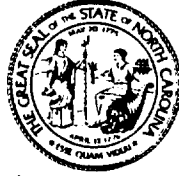
BOD	P00310	mg/l
COD	P00341	mg/l
Coliform (Fecal MF)	P31616	/100ml
Coliform (total MF)	P31505	/100ml
✓ TOC	P00680	<u><5</u> mg/l
Turbidity	P82079	NTU
✓ Ammonia (as Nitrogen) (D)	P00612	<u>.02</u> mg/l
✓ Kjeldahl (as Nitrogen) (D)	P00623	<u><0.1</u> mg/l
✓ Nitrate + Nitrite (as Nitrogen) (D)	P00631	<u><2.0</u> mg/l
✓ Phosphorus, total as P (D)	P00666	<u>.27</u> mg/l
Dissolved Solids - cond. meter	P70304	mg/l

Other Analyses:

- ✓ nitrate 3.01 mg/l
- ✓ ammonia 0.02 mg/l
- ✓ total phosphorus .27 mg/l
- ✓ total dissolved solids 230 mg/l

D - Dissolved Analysis - submit filtered sample
White copy - Headquarters Pink copy - Region Yellow copy - Lab

Yellow copy - Lab



State of North Carolina
Department of Natural Resources and Community Development
Wilmington Regional Office

James G. Martin, Governor

S. Thomas Rhodes, Secretary

DIVISION OF ENVIRONMENTAL MANAGEMENT

June 21, 1985

Colonel R.A. Tiebout
Assistant Chief of Staff, Facilities
United States Marine Corps
Marine Corps Base
Camp Lejeune, NC 28542-5001

SUBJECT: Transmittal of Analytical Results
Three Community Water Supply Wells
Tarawa Terrace I
Camp Lejeune MCB
Onslow County

Dear Colonel Tiebout:

Attached please find copies of the analytical results completed on samples that I collected on 9 April 1985 from wells TT-25, TT-26, and new TT.

Your staff's cooperation in helping me collect these samples was greatly appreciated.

Sincerely,

RICK SHIVER

Rick Shiver
Regional Hydrologist

RS/sbm

cc: Julien Wooten
Mike Bell
Perry Nelson

Attachments

DEP Machine broke 3 weeks