T-11330

NAVMC 10016.24A (Rev. 8-81)
S/N 0107-LF-052-2320

DEPARTMENT OF THE NAVY

Memorandum

DATE: 12 May 1986

FROM: Supervisory Chemist, WQCL, Environmental Branch, NREAD, MCB, Camp Lejeune

TO: Supervisory Ecologist, Environmental Branch, NREAD, MCB, Camp Lejeune

SUBJ: Fred Hill's 10 and 11 April 1986 Visit

1. Most of what was discussed in Mr. Hill's report dealt with operational matters. Mr. Hill stated that "records of operations (including total water treated, filter and softener operations, chemical feed and dosage rates, etc.) should be reported monthly for each facilitiy" to Raleigh. Apparently Utilities is not doing this.

2. In Mr. Hill's memo
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is an "A" operator. A
before, but the State
of the number of plants and the

Reg. Para 1 "Should be" or "Must be" ??

Elizabeth A. Betz

☆U.S. GOVERNMENT PRINTING OFFICE: 1985 — 505-012/18049

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2. In Mr. Hill's memorandum to Mr. Rundgren he classified Hadnot Point as an "A" plant ans recommendes that Camp Lejeune be managed by an "A" operator. Mac Frazelle is an "A" operator. As I had understood it, none of our plants were "A" plants before, but the State had strongly recommended an "A" operator as a foreman because of the number of plants and the diversified treatment processes.

Elizabeth A. Betz

☆U.S. GOVERNMENT PRINTING OFFICE: 1985 — 505-012/18049

NREAD Copy - file at WQCL 008

North Carolina Department of Human Resources
Eastern Regional Office • 404 Saint Andrews Drive • Greenville, N. C. 27834

James G. Martin, Governor

Phillip J. Kirk, Jr., Secretary

April 16, 1986

Commanding General
US Marine Corps Base
Camp Lejeune, NC 28542

ATTN: Utilities Director
G. S. Johnson, Jr.

Review & Comment - Sdayne

Dear Sir:

I visited the potable wat
10 and 11 April 1986. I
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for improvements in the p
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The routine plant operati
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completed or now in progr

We discussed several spec
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oil lubricated well pumps. (2) The maintenance level at the Tarawa Terrace and Camp Johnson facilities has dropped below the others. This is understandable, however, considering these are to be abandoned when the Holcomb Boulevard project is completed (estimated late 1986). (3) The water flow pattern at the Onslow Beach system is different from other facilities utilizing similar treatment. Normally, water is pumped from the wells through filters then through the ion exchange softeners, not divided. Additionally, filter backwash water is usually from the treated water system, not untreated well water.

We also discussed several items which may be applicable to more than one facility. These include: (1) The filters and softeners should be inspected annually for media loss and condition as well as any structural or operational abnormalities. (2) Covers for the brine (NaCl) day tanks will reduce some of the problems with surface corrosion. Installation and operation of dehumidifiers will also help this problem. (3) The existing treatment process consisting of aeration, lime addition, sedimentation, filtration (sand media), ion exchange (softening), chlorination, and phosphate (at three plants) may be altered to reduce chemical costs while maintaining acceptable quality. An in-plant or laboratory trial of the process may prove effective, depending on more detailed water quality analysis

NREAD Copy - file at WQCL DOS

North Carolina Department of Human Resources
Eastern Regional Office • 404 Saint Andrews Drive • Greenville, N. C. 27834

James G. Martin, Governor

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April 16, 1986

Commanding General
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JULIAN:

HERE IS A COPY FOR YOUR RECORDS OF DHS VISIT & FRED HILL REPORT.

Dan

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oil lubricated well pumps. (2) The maintenance level at the Tarawa Terrace and Camp Johnson facilities has dropped below the others. This is understandable, however, considering these are to be abandoned when the Holcomb Boulevard project is completed (estimated late 1986). (3) The water flow pattern at the Onslow Beach system is different from other facilities utilizing similar treatment. Normally, water is pumped from the wells through filters then through the ion exchange softeners, not divided. Additionally, filter backwash water is usually from the treated water system, not untreated well water.

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NREAD Copy - file at WQCL
008

North Carolina Department of Human Resources
Eastern Regional Office • 404 Saint Andrews Drive • Greenville, N. C. 27834

James G. Martin, Governor

Phillip J. Kirk, Jr., Secretary

April 16, 1986

Commanding General
US Marine Corps Base
Camp Lejeune, NC 28542

ATTN: Utilities Director
G. S. Johnson, Jr.

Dear Sir:

I visited the potable water treatment facilities aboard USMCB Camp Lejeune on 10 and 11 April 1986. I was accompanied during this visit by Mr. B. M. Frazelle, Jr. (Water Treatment Operator Foreman). The purpose of this visit was to update our files and records concerning the facility operations, treatment capacities, and construction work in progress as well as offer any suggestions for improvements in the process or daily operation and maintenance at the treatment facilities.

The routine plant operation and equipment maintenance are well organized and carried out. I was very pleased with the expansion and upgrading work recently completed or now in progress at several facilities.

We discussed several specific plant situations including: (1) A light film on the water surface at the filters in the Holcomb Boulevard facility may be from oil lubricated well pumps. (2) The maintenance level at the Tarawa Terrace and Camp Johnson facilities has dropped below the others. This is understandable, however, considering these are to be abandoned when the Holcomb Boulevard project is completed (estimated late 1986). (3) The water flow pattern at the Onslow Beach system is different from other facilities utilizing similar treatment. Normally, water is pumped from the wells through filters then through the ion exchange softeners, not divided. Additionally, filter backwash water is usually from the treated water system, not untreated well water.

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and study. (4) I noticed several open electrical service panels. A standing policy should be established to close or secure these at the end of the work or shift change, especially in the water plant areas. (5) Many water systems utilizing dry feeders for fluoride prefer sodium silicofluoride (due to its cost) instead of sodium fluoride (dissolves only to 4% solution). (6) Records of operations (including total water treated, filter and softener operations, chemical feed and dosage rates, etc.) should be reported monthly for each facility to our office in Raleigh.

I understand that planning is in progress for the development of private operations contracts for the water treatment facilities. Our office, in cooperation with the NC Attorney General's office, would like to review the final contract proposal to determine the operation's responsibilities as well as the system's liabilities.

As always, I appreciate the cooperation and attitude of the Base towards the State's Water Supply Branch and regulations.

If you have any questions or wish to discuss these comments further, please contact me.

Sincerely,

J. Fred Hill
Water Plant Consultant
Water Supply Branch
Environmental Health Section

bgb

Enclosures

cc: C. E. Rundgren
M. P. Bell

North Carolina Department of Human Resources
Eastern Regional Office • 404 Saint Andrews Drive • Greenville, N. C. 27834

James G. Martin, Governor

Phillip J. Kirk, Jr., Secretary

April 16, 1986

MEMORANDUM

TO: Charles E. Rundgren, Chairman
N.C. Water Treatment Facility Operators Board of Certification

FROM: J. Fred Hill
Water Plant Consultant

SUBJECT: Water Treatment Plant Ratings
USMC Base Camp Lejeune

Attached are the classification rating forms with the modification for lime softening with spiractors that we discussed.

The eight systems surveyed are directed, managed, and operated through a common administration and responsible operator in charge (Byron M. Frazelle, "A" certification).

I recommend the system be classified to an "A" rating based on the management organization and the diversified treatment techniques involved.

If you have any questions, please let me know.

bgb

Attachments

USMC BASE

CAMP LEJEUNE

MANAGEMENT

Operations

LtCol. W. M. Rice
Base Maintenance Officer

Fred Cone
Asst. BMO

G. S. Johnson, Jr.
Utilities Director

David Southerland
Util. General Foreman

Willard Price
General Foreman

B. M. Frazelle (Mac)
WTP Operator Foreman

Monitoring & Surveillance

Natural Resources and Environmental Affairs Division
Julian Wooten, Director
Danny Sharpe, Supervisory Ecologist
Elizabeth Metz, Supv. Chemist

US MARINE CORPS BASE

Camp Lejeune, NC

WTP Operators

Name	Title	Certification
Adkins, James M.	Water Treatment Plant Operator	C-Well
Barber, Elbert F.	Water Treatment Plant Operator	C
Brown, Leland R.	Industrial Equipment Repairer	C-Well
Campbell, Emery G.	Water Treatment Plant Operator	C
Cannon, Fred J.	Water Treatment Plant Operator	C
Huneycutt, Gaines B.	Water Plant Operator	C
Collins, Philip R.	Water Treatment Plant Operator	C
Duncan, Freddy	Water Treatment Plant Operator	B
Dunlap, James	Water Plant Operator	O
Ellis, Donald R.	Water Treatment Plant Operator Leader	C
Frazelle, Byron M.	Water Treatment Plant Operator Foreman	A
Hardison, Rufus C.	Water Treatment Plant Operator	C
Hartsoe, Joel R.	Water Treatment Plant Operator Leader	B-Well
Herring, L.	Water Plant Operator	O
Hill, Daniel E., Jr.	Water Treatment Plant Operator Leader	B-Well
Holland, Larry W.	Water Treatment Plant Operator Leader	B-Well
Phillips, Major	Water Treatment Plant Operator Helper	O
James, Nathaniel L.	Water Plant Operator	O
Kelly, Calvin D., Jr.	Water Treatment Plant Operator	C
Kolde, Sally	Clerk Typist	O
Lee, Jerry J.	Water Treatment Plant Operator	C
Marhelko, Michael J.	Water Treatment Plant Operator	C
Miller, Stanley L.	Water Treatment Plant Operator Leader	B
Milton, George D.	Water Treatment Plant Operator	C
Morton, Billie L.	Water Treatment Plant Operator	B
Mundt, Berton L.	Water Treatment Plant Operator	C
Odum, Cobrett G.	Water Treatment Plant Operator	C
Parker, Leon S.	Water Treatment Plant Operator	C-Well
Pehowic, Stanley A.	Water Treatment Plant Operator Leader	B
Petersen, Larry G.	Water Treatment Plant Operator	C-Well
Christensen, Nancy	Water Treatment Plant Operator Helper	O
Price, W. R.	Utilities Systems Plant General Foreman	B
Reiff, Howard F.	Water Treatment Plant Operator	C
Rich, Melvin P.	Industrial Equipment Mechanic	C
Riggs, Alvin T.	Water Treatment Plant Operator	C
Riggs, Joseph E.	Water Treatment Plant Operator	C
Smallwood, Scottie	Water Treatment Plant Operator	C
Stone, Tally	Water Treatment Plant Operator	C
Sumner, David W.	Industrial Equipment Repairer	C-Well
Sypnier, Richard A.	Water Treatment Plant Operator	C
Thomas, Tommie T.	Industrial Equipment Mechanic	C-Well
Vick, Ronnie C.	Instrument Mechanic	B-Well
Ward, William	Water Plant Operator	O
Wooten, Robert	Water Treatment Plant Operator	C-Well

NORTH CAROLINA DEPARTMENT OF HUMAN RESOURCES
WATER TREATMENT FACILITY OPERATORS BOARD OF CERTIFICATION
RATING VALUES FOR CLASSIFICATION OF WATER SUPPLY WORKS

NAME OF WATER TREATMENT FACILITY USMC Camp Lejeune - Holcomb Blvd.

CLASSIFICATION ASSIGNED FACILITY AND LEVEL OF CERTIFICATE REQUIRED B-W

GRADE CERTIFICATE HELD BY OPERATOR IN RESPONSIBLE CHARGE 4 (Grade)

NAME B. M. Frazelle (Operator)

OTHER OPERATORS

NAME	GRADE CERTIFICATE HELD IF ANY
See List	

UNIT	RATING VALUE	ASSIGNED VALUE
Ground	3	3
Surface	5	
Surface with Reservoir	6	
Coliform Bacteria less than 1.0 per 100 ml	2	2
Coliform Bacteria 1.0 - 100 per 100 ml	4	
Coliform Bacteria 100 - 1000 per 100 ml	6	
Coliform Bacteria 1000 - 5000 per 100 ml	8	
Coliform Bacteria 5000 - 20000 per 100 ml	12	
Aeration	2	
Coagulation - Spiractor - Lime	10	10
Sedimentation	5	
Filtration	10	10
Disinfection	10	10
Ion Exchange	5	
Adsorption	2	
Chemical Oxidation	2	
Softening	2	
Stabilization	2	2
Fluoridation	10	
Raw Water Pumping	5	10
Receiving Basin	1	5
Finished Water Pumping	5	
Storage at Plant	1	5
Storage - System	2	1
Pumpage - from attached chart (1.204 mg)	1-50	2
		12
TOTAL POINTS		72

DATE 4-10-86

Form 2

NORTH CAROLINA DEPARTMENT OF HUMAN RESOURCES
WATER TREATMENT FACILITY OPERATORS BOARD OF CERTIFICATION
RATING VALUES FOR CLASSIFICATION OF WATER SUPPLY WORKS

NAME OF WATER TREATMENT FACILITY USMC-Lejeune Hadnot Point

CLASSIFICATION ASSIGNED FACILITY AND LEVEL OF CERTIFICATE REQUIRED A

GRADE CERTIFICATE HELD BY OPERATOR IN RESPONSIBLE CHARGE A (Grade)

NAME B. M. Frazelle (Operator)

OTHER OPERATORS

NAME	GRADE CERTIFICATE HELD IF ANY

UNIT	RATING VALUE	ASSIGNED VALUE
Ground	3	3
Surface	5	
Surface with Reservoir	6	
Coliform Bacteria less than 1.0 per 100 ml	2	2
Coliform Bacteria 1.0 - 100 per 100 ml	4	
Coliform Bacteria 100 - 1000 per 100 ml	6	
Coliform Bacteria 1000 - 5000 per 100 ml	8	
Coliform Bacteria 5000 - 20000 per 100 ml	12	
Aeration	2	
Coagulation - Spiractor - Gmc	10	10
Sedimentation	5	
Filtration	10	10
Disinfection	10	10
Ion Exchange	5	
Adsorption	2	
Chemical Oxidation	2	
Softening	2	2
Stabilization	2	
Fluoridation	10	10
Raw Water Pumping	5	5
Receiving Basin	1	1
Finished Water Pumping	5	5
Storage at Plant	1	1
Storage - System	2	2
Pumpage - from attached chart	1-50	24
TOTAL POINTS (3.241 mgd)		85

DATE 4-10-86

Form 2

NORTH CAROLINA DEPARTMENT OF HUMAN RESOURCES
WATER TREATMENT FACILITY OPERATORS BOARD OF CERTIFICATION
RATING VALUES FOR CLASSIFICATION OF WATER SUPPLY WORKS

NAME OF WATER TREATMENT FACILITY USMC Camp Lejeune - Onslow Beach

CLASSIFICATION ASSIGNED FACILITY AND LEVEL OF CERTIFICATE REQUIRED B-W

GRADE CERTIFICATE HELD BY OPERATOR IN RESPONSIBLE CHARGE - A -
Grade

NAME B. M. Frazelle
(Operator)

OTHER OPERATORS

NAME	GRADE CERTIFICATE HELD IF ANY
SEE LIST	

UNIT	RATING VALUE	ASSIGNED VALUE
Ground	3	3
Surface	5	
Surface with Reservoir	6	
Coliform Bacteria less than 1.0 per 100 ml	2	2
Coliform Bacteria 1.0 - 100 per 100 ml	4	
Coliform Bacteria 100 - 1000 per 100 ml	6	
Coliform Bacteria 1000 - 5000 per 100 ml	8	
Coliform Bacteria 5000 - 20000 per 100 ml	12	
Aeration	2	2
Coagulation	10	
Sedimentation	5	
Filtration	10	10
Disinfection	10	10
Ion Exchange	5	5
Adsorption	2	
Chemical Oxidation	2	
Softening	2	2
Stabilization	2	
Fluoridation	10	
Raw Water Pumping	5	5
Receiving Basin	1	
Finished Water Pumping	5	5
Storage at Plant	1	1
Storage - System	2	2
Pumpage - from attached chart	1-50	2
TOTAL POINTS (.137 MG)		49

DATE 4-10-86

Form 2

NORTH CAROLINA DEPARTMENT OF HUMAN RESOURCES
WATER TREATMENT FACILITY OPERATORS BOARD OF CERTIFICATION
RATING VALUES FOR CLASSIFICATION OF WATER SUPPLY WORKS

NAME OF WATER TREATMENT FACILITY USMC - Camp Lejeune - Courthouse Bay

CLASSIFICATION ASSIGNED FACILITY AND LEVEL OF CERTIFICATE REQUIRED B-W

GRADE CERTIFICATE HELD BY OPERATOR IN RESPONSIBLE CHARGE A (Grade)

NAME B. M. Frazelle (Operator)

OTHER OPERATORS

NAME	GRADE CERTIFICATE HELD IF ANY
See list.	

UNIT	RATING VALUE	ASSIGNED VALUE
Ground	3	3
Surface	5	
Surface with Reservoir	6	
Coliform Bacteria less than 1.0 per 100 ml	2	2
Coliform Bacteria 1.0 - 100 per 100 ml	4	
Coliform Bacteria 100 - 1000 per 100 ml	6	
Coliform Bacteria 1000 - 5000 per 100 ml	8	
Coliform Bacteria 5000 - 20000 per 100 ml	12	
Aeration	2	2
Coagulation	10	
Sedimentation	5	
Filtration	10	10
Disinfection	10	10
Ion Exchange	5	5
Adsorption	2	
Chemical Oxidation	2	
Softening	2	
Stabilization	2	2
Fluoridation	10	
Raw Water Pumping	5	5
Receiving Basin	1	
Finished Water Pumping	5	5
Storage at Plant	1	1
Storage - System	2	2
Pumpage - from attached chart (.452 mg)	1-50	5
TOTAL POINTS		52

DATE 4-10-86

Form 2

NORTH CAROLINA DEPARTMENT OF HUMAN RESOURCES
WATER TREATMENT FACILITY OPERATORS BOARD OF CERTIFICATION
RATING VALUES FOR CLASSIFICATION OF WATER SUPPLY WORKS

NAME OF WATER TREATMENT FACILITY USMC - Camp Lejeune - Rifle Range

CLASSIFICATION ASSIGNED FACILITY AND LEVEL OF CERTIFICATE REQUIRED B-W

GRADE CERTIFICATE HELD BY OPERATOR IN RESPONSIBLE CHARGE A (Grade)

NAME B. M. FRAZELLE (Operator)

OTHER OPERATORS

NAME	GRADE CERTIFICATE HELD IF ANY
see list	

UNIT	RATING VALUE	ASSIGNED VALUE
Ground	3	3
Surface	5	
Surface with Reservoir	6	
Coliform Bacteria less than 1.0 per 100 ml	2	2
Coliform Bacteria 1.0 - 100 per 100 ml	4	
Coliform Bacteria 100 - 1000 per 100 ml	6	
Coliform Bacteria 1000 - 5000 per 100 ml	8	
Coliform Bacteria 5000 - 20000 per 100 ml	12	
Aeration	2	2
Coagulation	10	
Sedimentation	5	
Filtration	10	10
Disinfection	10	10
Ion Exchange	5	5
Adsorption	2	
Chemical Oxidation	2	
Softening	2	
Stabilization	2	
Fluoridation	10	2
Raw Water Pumping	5	
Receiving Basin	1	5
Finished Water Pumping	5	
Storage at Plant	1	5
Storage - System	2	1
Pumpage - from attached chart (.262 MG)	1-50	2 3
TOTAL POINTS		50

DATE 4-10-86

Form 2

NORTH CAROLINA DEPARTMENT OF HUMAN RESOURCES
WATER TREATMENT FACILITY OPERATORS BOARD OF CERTIFICATION
RATING VALUES FOR CLASSIFICATION OF WATER SUPPLY WORKS

NAME OF WATER TREATMENT FACILITY USMC - Camp Lejeune THRASH TERRACE

CLASSIFICATION ASSIGNED FACILITY AND LEVEL OF CERTIFICATE REQUIRED B-W

GRADE CERTIFICATE HELD BY OPERATOR IN RESPONSIBLE CHARGE A
Grade

NAME B. M. FRAZELLE
(Operator)

OTHER OPERATORS

NAME	GRADE CERTIFICATE HELD IF ANY

UNIT	RATING VALUE	ASSIGNED VALUE
Ground	3	3
Surface	5	
Surface with Reservoir	6	
Coliform Bacteria less than 1.0 per 100 ml	2	2
Coliform Bacteria 1.0 - 100 per 100 ml	4	
Coliform Bacteria 100 - 1000 per 100 ml	6	
Coliform Bacteria 1000 - 5000 per 100 ml	8	
Coliform Bacteria 5000 - 20000 per 100 ml	12	
Aeration	2	
Coagulation - Lime - Spiractor	10	10
Sedimentation	5	
Filtration	10	10
Disinfection	10	10
Ion Exchange	5	
Adsorption	2	
Chemical Oxidation	2	
Softening	2	2
Stabilization	2	
Fluoridation	10	10
Raw Water Pumping	5	5
Receiving Basin	1	
Finished Water Pumping	5	5
Storage at Plant	1	1
Storage - System	2	2
Pumpage - from attached chart (1812 MSL)	1-50	8
TOTAL POINTS		68

DATE 4-10-86

Form 2

NORTH CAROLINA DEPARTMENT OF HUMAN RESOURCES
WATER TREATMENT FACILITY OPERATORS BOARD OF CERTIFICATION
RATING VALUES FOR CLASSIFICATION OF WATER SUPPLY WORKS

NAME OF WATER TREATMENT FACILITY USMC - Camp Lejeune Camp Johnson

CLASSIFICATION ASSIGNED FACILITY AND LEVEL OF CERTIFICATE REQUIRED B-W

GRADE CERTIFICATE HELD BY OPERATOR IN RESPONSIBLE CHARGE 4 (Grade)

NAME B. M. Frazier (Operator)

OTHER OPERATORS

NAME	GRADE CERTIFICATE HELD IF ANY

UNIT	RATING VALUE	ASSIGNED VALUE
Ground	3	2
Surface	5	
Surface with Reservoir	6	
Coliform Bacteria less than 1.0 per 100 ml	2	
Coliform Bacteria 1.0 - 100 per 100 ml	4	2
Coliform Bacteria 100 - 1000 per 100 ml	6	
Coliform Bacteria 1000 - 5000 per 100 ml	8	
Coliform Bacteria 5000 - 20000 per 100 ml	12	
Aeration	2	
Coagulation	10	
Sedimentation	5	
Filtration	10	
Disinfection	10	
Ion Exchange	5	10
Adsorption	2	5
Chemical Oxidation	2	
Softening	2	
Stabilization	2	2
Fluoridation	10	2
Raw Water Pumping	5	
Receiving Basin	1	5
Finished Water Pumping	5	
Storage at Plant	1	5
Storage - System	2	1
Pumpage - from attached chart	1-50 (.340 mg)	2
TOTAL POINTS		4
		41

DATE 4-10-86

Form 2

NORTH CAROLINA DEPARTMENT OF HUMAN RESOURCES
WATER TREATMENT FACILITY OPERATORS BOARD OF CERTIFICATION
RATING VALUES FOR CLASSIFICATION OF WATER SUPPLY WORKS

NAME OF WATER TREATMENT FACILITY USMC Camp Lejeune - New River Air Station

CLASSIFICATION ASSIGNED FACILITY AND LEVEL OF CERTIFICATE REQUIRED 3, W

GRADE CERTIFICATE HELD BY OPERATOR IN RESPONSIBLE CHARGE A (Grade)

NAME B. M. Frazelle (Operator)

OTHER OPERATORS

NAME	GRADE CERTIFICATE HELD IF ANY
SEE LIST	

UNIT	RATING VALUE	ASSIGNED VALUE
Ground	3	
Surface	5	5
Surface with Reservoir	6	
Coliform Bacteria less than 1.0 per 100 ml	2	
Coliform Bacteria 1.0 - 100 per 100 ml	4	4
Coliform Bacteria 100 - 1000 per 100 ml	6	
Coliform Bacteria 1000 - 5000 per 100 ml	8	
Coliform Bacteria 5000 - 20000 per 100 ml	12	
Aeration	2	
Coagulation - Spiractor - Lime	10	10
Sedimentation	5	
Filtration	10	10
Disinfection	10	10
Ion Exchange	5	
Adsorption	2	
Chemical Oxidation	2	
Softening	2	
Stabilization - Recarbonation	2	(2)
Fluoridation	10	2
Raw Water Pumping	5	
Receiving Basin	1	5
Finished Water Pumping	5	
Storage at Plant	1	5
Storage - System	2	1
Pumpage - from attached chart (.896 MGD)	1-50	2
		9
TOTAL POINTS		59 (61)

DATE 4-10-86

Form 2

DEPARTMENT OF HUMAN RESOURCES
DIVISION OF HEALTH SERVICES
WELL INFORMATION

WELL NO. _____ ID NO. _____

1) WELL SITE: Owned or controlled (100' radius)? OK - ALL WELLS

Sources of pollution/distance CONTROLLED by USMC

Adequate slope? _____ Flooding? _____

2) WELL HOUSE: Free of stored materials? yes

Properly drained? _____ Freeze protection? _____

Condition of house OK Locked? yes

3) WELL: Diameter VARIED Type const. _____ Yield (GPM) VARIES Storage at well _____

Properly sealed? _____ Properly vented? _____

26 wells

Casing depth _____ Well depth _____ Meter Available? @ WTP

Concrete slab adequate? _____ Size Aux Eng @ 7 wells

Size of blow-off _____ Sample tap available yes

4) PUMP: Max Capacity 400 Min gpm 50 Avg HP 164 Type pump VERT TURB (High Service 2@1000gpm
1@500 gpm

Height above floor (pump/casing) _____ Is pump leaking? BOOSTERS 2@125 gpm
2@750gpm
3@700 gpm

5) TREATMENT: Is this a central treatment facility? yes (one of eight)

Chlorinator: Type W&T GAS (T-CONT) Capacity 18/200 ppd In Service? yes

Spare parts or unit? SPARE w/200 ppd Proper ventilation? yes Gas Mask? AIR PACK; Repair KIT; ALARMS.

RECARBONATION

~~Aeration~~: Type NATURAL GAS (SUBMERGED BURNER) Condition OK

Filter(s): Type GRAVITY (NO RATE CONTROLS) 3 ea Media SAND & ANTHRACITE

Size 17'x23' Rate (gpm/ft^2) _____ Head loss B/W @ 2.5-3.0 OR 48 hrs

Type controls B/W controls only Condition OK W/SURFACE WASH

Comments filter rate changes based on C.O.H. filter overflow thru RECARB. unit

Softeners: Type SPIRACTORS No. 2 Media SAND - CATALYST

Size — Rate (gpm/ft^2) 1200 gpm ea Head loss —

Type controls USES HYDRATED lime. Condition OK (BULK STORAGE)

Comments Lime slaker - spare unit

Other treatment (Describe): _____

Process Wastewater treatment (Describe): To SAN. SWR

6) REMARKS AND RECOMMENDATIONS Aux generator @ WTP

DEPARTMENT OF HUMAN RESOURCES
DIVISION OF HEALTH SERVICES
WELL INFORMATION

WELL NO. _____ ID NO. _____

1) WELL SITE: Owned or controlled (100' radius)? OK - ALL Wells

Sources of pollution/distance CONTROLLED by USMC

Adequate slope? _____ Flooding? _____

2) WELL HOUSE: Free of stored materials? yes

Properly drained? _____ Freeze protection? _____

Condition of house OK Locked? yes.

3) WELL: Diameter VARIED Type const. GRAVEL Yield (GPM) VARIED Storage at well NO

Properly sealed? _____ Properly vented? _____

8 Wells

Casing depth _____ Well depth _____ Meter Available? @ WTP

Concrete slab adequate? _____ Size Aux @ 5 wells

Size of blow-off _____ Sample tap available yes

4) PUMP: Capacity MIN 40 gpm MAX 200 AVG 115 Type pump VERT TURB. (2 service pumps - 1250 gpm (w/aux) 1000 gpm 500 gpm

Height above floor (pump/casing) _____ Is pump leaking? _____

5) TREATMENT: Is this a central treatment facility? yes (one of eight)

Chlorinator: Type WT gas (150#) Capacity 10/30 ppd In Service? yes

Spare parts or unit? spare unit (50 ppd) Proper ventilation? yes Gas Mask? AIR pack; Repair Kit; Cl2 alert.

Aerator: Type NONE Condition _____

Filter(s): Type NONE No. _____ Media _____

Size _____ Rate (gpm/ft^2) _____ Head loss _____

Type controls _____ Condition _____

Comments _____

Softeners: Type ION EXCHANGE No. 2 Media Na Zeolite

Size 72" Ø Rate (gpm/ft^2) 180 ea Head loss ± 10

Type controls — Condition fair (some leaks)

Comments Regen. @ .04B HG — Brine salt tank w/ day tank inside WTP

Other treatment (Describe): Phosphate - BIF feed pump (2 gal/20 gal H$_2$O) (ortho PO$_4$ 1.0 mg/l)

Process wastewater treatment (Describe): discharg to SAN. SWR.

6) REMARKS AND RECOMMENDATIONS ① Valves leaking at softener ② To be phased out FY 86

DEPARTMENT OF HUMAN RESOURCES
DIVISION OF HEALTH SERVICES
WELL INFORMATION

WELL NO. _____ ID NO. _____

1) WELL SITE: Owned or controlled (100' radius)? OK - ALL wells

Sources of pollution/distance sites controlled by USMC

Adequate slope? _____ Flooding? _____

2) WELL HOUSE: Free of stored materials? yes

Properly drained? _____ Freeze protection? _____

Condition of house OK Locked? yes

3) WELL: Diameter typies Type const. gravel Yield (GPM) 111 → 236 Storage at well two -
Total 9 Properly sealed? yes Properly vented? _____
6 wells Casing depth _____ Well depth _____ Meter Available? _____
3 wells Emer. only) Concrete slab adequate? _____ Size _____
Size of blow-off _____ Sample tap available Aux eng @ 2 wells

4) PUMP: Capacity Min 111 Max gpm 236 Avg 141 Type pump VERT TURB.
Height above floor (pump/casing) — ~~Is pump leaking?~~ High Service Pumps 1200 gpm (w/aux pwr) 750 gpm; 850 gpm; 500 gpm

5) TREATMENT: Is this a central treatment facility? yes (1 of 8) operating, ~18

Chlorinator: Type W&T gas Capacity 50 ppd In Service? yes
Spare parts or unit? spare unit Proper ventilation? yes Gas Mask? AIRpack, Repair Kit & Alert.
Aerator: Type NONE Condition _____
Filter(s): Type PRESSURE No. 6 Media SAND
Size 84" Ø Rate (~~gpm/ft²~~) 127 gpm ea Head loss ±5-10 lbs
Type controls _____ Condition _____
Comments BACKWASHED daily - Access openings in filter sides
Softeners: Type SPIRACTOR No. 1 Media SAND-catalyst
Size 1.0 MGD Rate (gpm/ft²) — Head loss —
Type ~~controls~~ Hydrated lime - BAGS Condition MIXER MOTOR NOISY
Comments _____
Other treatment (Describe): NaF - in line solution before SATURATOR - METER ON fill line W&T 747 pump
Process Wastewater treatment (Describe): discharge to SAN. SWR

6) REMARKS AND RECOMMENDATIONS Plant to be [illegible]

DEPARTMENT OF HUMAN RESOURCES
DIVISION OF HEALTH SERVICES
WELL INFORMATION

WELL NO. _____ ID NO. _____

1) WELL SITE: Owned or controlled (100' radius)? OK - All Wells

Sources of pollution/distance None - controlled by USMC

Adequate slope? _____ Flooding? _____

2) WELL HOUSE: Free of stored materials? yes

Properly drained? _____ Freeze protection? yes

Condition of house OK Locked? yes

3) WELL: Diameter varies Type const. gravel Yield (GPM) varies Storage at well _____

Properly sealed? _____ ~~Properly~~ vented? TOTAL 756 gpm

4 wells Casing depth _____ Well depth _____ Meter Available? yes

Concrete slab adequate? _____ Ray drive @ 2 wells

Size of blow-off _____ Sample tap available yes

4) PUMP: Capacity MIN 104 MAX gpm 300 AVG HP 189 Type pump VERT TURB (high service in WTP)

Height above floor (pump/casing) _____ Is pump leaking? _____

5) TREATMENT: Is this a central treatment facility? yes (one of eight)

Chlorinator: Type WT gas (150# cyl) Capacity 18/100 ppd In Service? yes (manifold system)

Spare parts or unit? spare @ 30 ppd Proper ventilation? yes Gas Mask? AIRPACK; alert; repair kit

Aerator: Type Permutit - forced draft Condition fan OK - detention tank @ unit

Filter(s): Type Pressure (Permutit No. 3 Media SAND

Size 96" Ø Rate (gpm/ft²) 134 gpm ea Head loss 5#

Type controls Multiports Condition OK - all controls NOT AUTOMATIC

Comments B/w ea 3rd day

Softeners: Type Permutit No. 2 Media Na Zeolite

Size 60" Ø Rate (gpm/ft²) 128 gpm ea Head loss 5-8#

Type controls multiport Condition OK

Comments Regenerate @ 1100 MG - brine day tank inside WTP

Other treatment (Describe): Lime feed for pH control & Fe reduction

Process Wastewater treatment (Describe): discharg to San. Swr

6) REMARKS AND RECOMMENDATIONS _____

DEPARTMENT OF HUMAN RESOURCES
DIVISION OF HEALTH SERVICES
WELL INFORMATION

WELL NO. _____ ID NO. _____

1) WELL SITE: Owned or controlled (100' radius)? OK - ALL WELLS

Sources of pollution/distance CONTROLLED by USMC

Adequate slope? _____ Flooding? _____

2) WELL HOUSE: Free of stored materials? yes

Properly drained? _____ Freeze protection? yes

Condition of house _____ Locked? yes

3) WELL: Diameter VARIES Type const. _____ Yield (GPM) VARIES Storage at well _____

Properly sealed? _____ ~~Properly sealed?~~ TOTAL 777 gpm

5 wells Casing depth _____ Well depth _____ Meter Available? @ WTP

Concrete slab adequate? _____ Size _____

Size of blow-off _____ Sample tap available yes

4) PUMP: MIN Capacity 104 MAX gpm 240 AVG 155 Type pump VERT TURB

Height above floor (pump/casing) _____ ~~Is pump leaking?~~ hi service pumps 2@500 gpm 1@750 w/aux. drive

5) TREATMENT: Is this a central treatment facility? yes (one of eight)

Chlorinator: Type W&T Capacity 15/100 ppd In Service? yes

Spare parts or unit? SPARE 100 ppd Proper ventilation? yes Gas Mask? AIR PACK; AKRT; REPAIR KIT

Aerator: Type PERMUTIT FORCED DRAFT Condition fan OK - detention tank

Filter(s): Type PERMUTIT - PRESSURE No. 6 Media _____

Size 96" ⌀ Rate (gpm/ft²) 94 gpm ea Head loss ±5#

Type controls MULTIPORT Condition OK

Comments BACKWASHED daily

Softeners: Type PERMUTIT No. 4 Media Na Zeolite

Size 72" ⌀ Rate (gpm/ft²) 102 gpm ea Head loss 5#

Type controls MULTIPORT Condition OK

Comments REGENERATED @ 100 MG

Other treatment (Describe): Lime (Hydrated to slurry & pump - pH control for Fe Reduction)

Process Wastewater treatment (Describe): Phosphate NOT in service
→ settling pond - discharge to ditch

6) REMARKS AND RECOMMENDATIONS

(1) Brine day tank inside Bldg, should have cover
(2) Lime & POK NOT necessary together (Should perform in plant trials to determine if lime may be discontinued)
(3) Inspect filters & softeners annually for media & interior condition

DEPARTMENT OF HUMAN RESOURCES
DIVISION OF HEALTH SERVICES
WELL INFORMATION

WELL NO. _____ ID NO. _____

1) WELL SITE: Owned or controlled (100' radius)? OK - ALL wells

Sources of pollution/distance CONTROLLED by USMC

Adequate slope? _____ Flooding? _____

2) WELL HOUSE: Free of stored materials? yes

Properly drained? _____ Freeze protection? _____

Condition of house OK Locked? yes

3) WELL: Diameter VARIES Type const. GRAVEL Yield (GPM) VARIES Storage at well _____

Properly sealed? _____ ~~Properly vented?~~ TOTAL 369 gpm

2 wells Casing depth _____ Well depth _____ Meter Available? yes

Concrete slab adequate? _____ ~~Size~~ Aux @ 1 well

Size of blow-off _____ Sample tap available yes

4) PUMP: Capacity MAX 210 MIN gpm 154 AVG HP 185 Type pump VERT TURB

Height above floor (pump/casing) _____ ~~Is pump leaking?~~ service pumps 1 @ 1000 gpm (w/aux drive) 1 @ 750 1 @ 300

5) TREATMENT: Is this a central treatment facility? yes (one of eight)

Chlorinator: Type W&T gas (150#) Capacity 10/30 ppd In Service? yes

Spare parts or unit? spare 1 @ 50 ppd Proper ventilation? yes Gas Mask? AIR PACK; AKET; Repair KIT

Aerator: Type Pressurized - in line unit Condition OK - uses AIR COMPRESSOR

Filter(s): Type Calgon (Pressure units) No. 2 Media Sand

Size 48" ø Rate (gpm/ft²) 37 gpm ea Head loss ± 5#

Type controls Manual cycle Condition OK

Comments Backwashed at .030 MG - Uses raw water for B/W

Softeners: Type Calgon No. 2 Media Na Zeolite

Size 42" ø Rate (gpm/ft²) 75 gpm ea Head loss ± 5#

Type controls Manual cycle Condition OK - New Resin in 1977

Comments Regenerated @ .080 MG

Other treatment (Describe): _____

Process Wastewater treatment (Describe): Settling pond - pumped to ditch

6) REMARKS AND RECOMMENDATIONS ① Should use TRTD. WATER FOR B/W ② Flow pattern S/B changed - NOW split thru filters & softners - Should All be thru filters then softner (& EXTEND resin life & Reduce IRON in dist. system)

DEPARTMENT OF HUMAN RESOURCES
DIVISION OF HEALTH SERVICES
WELL INFORMATION

WELL NO. _____ ID NO. _____

1) WELL SITE: Owned or controlled (100' radius)? OK - all wells

Sources of pollution/distance CONTROLLED by USMC

Adequate slope? _____ Flooding? _____

2) WELL HOUSE: Free of stored materials? yes

Properly drained? _____ Freeze protection? _____

Condition of house OK Locked? yes

3) WELL: Diameter VARIES Type const. GRAVEL Yield (GPM) VARIES Storage at well NO

Properly sealed? _____ ~~Properly vented?~~ TOTAL - 7224 gpm

35 wells

Casing depth _____ Well depth _____ Meter Available? @ WTP

Concrete slab adequate? _____ ~~Size~~ AUX @ 18 wells

Size of blow-off _____ Sample tap available _____

4) PUMP: Capacity MAX 450 MIN ~~gpm~~ 105 AVG ~~hp~~ 350 Type pump VERT TURB (service pumps 1@3000 gpm 3@1500 gpm (2 w/aux pwr)

Height above floor (pump/casing) _____ Is pump leaking? _____

5) TREATMENT: Is this a central treatment facility? yes (one of eight)

Chlorinator: Type WET GAS Capacity 50/200 ppd In Service? yes

Spare parts or unit? SPARE UNIT (200 ppd) Proper ventilation? yes Gas Mask? AIRPK, Repair Kit, Cl2 Alert

~~Aerator~~ RECARBONATION Type PROPANE GAS - BURNER SUBMERGED Condition NEW - 85

Filter(s): Type GRAVITY No. 5 Media SAND - ANTHRACITE

Size 350 ft² ea Rate (gpm/ft²) 2.0 Head loss B/W @ 5 ft.

Type controls NEW Condition GOOD

Comments SURFACE WASH ea. filter

Softeners: Type SPIRACTORS No. 5 Media SAND - catalyst

Size ~~Hydrated~~ Lime 60T Rate (~~gpm/ft²~~) 1.0 MGD ea ~~Head loss~~

6 feed pumps

Type controls 1000 # Lime / MG H2O Condition _____

Comments _____

Other treatment (Describe): WET NaF - GRAVIMETRIC (NEW '85)

Process Wastewater treatment (Describe): NEW - B/W to holding BASIN ① - sludge to SAN SEWER ② Supnat. to RAW WATER

6) REMARKS AND RECOMMENDATIONS

Maintains pH @ 8.8 for STABILITY

DEPARTMENT OF HUMAN RESOURCES
DIVISION OF HEALTH SERVICES
WELL INFORMATION

WELL NO. _____ ID NO. _____

1) WELL SITE: Owned or controlled (100' radius)? OK - All wells

Sources of pollution/distance None - controlled by USMC

Adequate slope? _____ Flooding? _____

2) WELL HOUSE: Free of stored materials? yes

Properly drained? yes Freeze protection? yes

Condition of house OK Locked? yes

3) WELL: Diameter Varies Type const. gravel Yield (GPM) Varies Storage at well NO

Properly sealed? _____ Properly vented? 2 Total 1800 gpm

8 wells

Casing depth _____ Well depth _____ Meter Available? @ WTP

Concrete slab adequate? _____ Size Aux enj @ 4 wells

Size of blow-off _____ Sample tap available _____

4) PUMP: Capacity Min 133 Max gpm 350 Avg HP 225 Type pump Vert Turbine (usual)

Height above floor (pump/casing) _____ ~~Is pump leaking?~~ High serv. pumps 2@700 gpm 2@1500 gpm (Aux avail. one each)

5) TREATMENT: Is this a central treatment facility? yes (one of Eight)

Chlorinator: Type W&T gas Capacity 1@50 2@100 operated @ 35ppd In Service? yes

Spare parts or unit? 3 units Proper ventilation? yes Gas Mask? yes; Repair kit & alert system

Aerator: Type None Condition _____

Filter(s): Type gravity No. 2 Media Rapid Sand

Size 18 X 20' Rate (gpm/ft^2) 2.0 usual Head loss —

Type controls Roberts - Condition good

Comments all controls & meters OK; surface sweeps in each

Softeners: Type Spiractor No. 2 Media catalyst (sand)

Size 700 gpm (ea) Rate (gpm/ft^2) — Head loss —

Type ~~controls~~ Hydrated lime - Bulk Condition good

Comments _____

Other treatment (Describe): NaF with gravimetric feeder - calibrated ea shift

Process Wastewater treatment (Describe): Settling pond - disch to San. Swr.

6) REMARKS AND RECOMMENDATIONS ① Oil film on filters may be from oil lubricated pumps - S/B careful. ② Be careful with NaF (most use Na_2SiF_6)

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DEPARTMENT OF THE NAVY

Memorandum

11330
NREAD(L)

DATE: 9 June 1986

FROM: Supervisory Chemist, Water Quality Control Laboratory, Environmental Branch, NREAD

TO: The Record

SUBJ: PHONCON with Cmdr Rocha, Naval Dental Clinic

REF: (a) OPNAVINST 11330.3 Of 1 Aug 1973

1. On 6 June 1986, I called Cmdr Rocha, officer in charge of the Naval Dental Clinic, to discuss what laboratory analysis he required for compliance wi with the reference.

2. Cmdr Rocha stated that the reference was old but current and required the following fluoride analysis: [1] Daily tests in the raw and treated water at the plant. [2] A monthly distribution sample. [3] A semi-annual distribution sample at the furtherest point.

3. I asked Cmdr Rocha if he had any problem accepting the daily fluoride readings from Utilities, since they use the same procedure as the laboratory. Cmdr Rocha stated that as long as the results were in writing he didn't much care where they were from. He also added that the daily results could be compiled and forwarded weekly.

4. The reference has no requirement for semi-annual well fluorides.

Elizabeth A. Betz

☆U.S. GOVERNMENT PRINTING OFFICE: 1985 — 505-012/18049

6 JUN 1986

CMDR ROCHA.

1. OPNAVINST 11330.1 OF 1 AUG 1973 IS CURRENT, OLD BUT CURRENT.

2. REGS REQUIRE: A. DAILY TESTS ~~OF~~ FOR FLUORIDE WHERE IT IS FEED.
   i. RAW ii TREATED

   B. MONTHLY DISTRIBUTION SAMPLE
   C. SEMIANNUAL FAR-POINT DISTRIBUTION SAMPLE

3. HE RECOMMENDED THAT FOR THE MONTHS OF JULY AND AUGUST THE ~~LIMIT BE~~ MAXIMUM LIMIT BE 0.8

4. THE DAILY DATA CAN BE FORWARDED WEEKLY. ~~AND FROM~~

5. HE DIDN'T CARE WHETHER THE RESULTS WERE PROVIDED BY UTILITIES OR NREA AS LONG AS THEY WERE IN WRITTING