

NREAD/DDS/jc
11330/1
9 Apr 1984

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

Dear Mr. McFadyen:

Enclosed are the completed Department of Health Forms (DHS 1942
2/74) for all water treatment plants aboard Marine Corps Base,
Camp Lejeune, for the period 1-31 March 1984. Also enclosed are
the weekly Chemical Analysis Forms (MCBCL 11330/3 Rev 3-82) for
the same period, as requested in the 25 October 1982 letter from
Mr. Charles Rundgren of your office.

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

Sincerely,

J. I. MOOTEN
Director

ENC 1
(1) Dept of Health Forms
(2) Chemical Analysis Forms

Copy to:
LANTDIV. (Code 114)

Blind copy to:
QCL

CLW

0000004100

Year 1984

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

CONTAMINANT CODE: 3000

SERIAL #: 04-67-041

DATE	RAW WATER COLIFORMS (MFP)						NO. OF COLIFORMS PER 100 ml.	TOTAL PLATE COUNT	MFP COLIFORMS per 100 ml.	TOTAL PLATE COUNT	MFP COLIFORMS per 100 ml.	TOTAL PLATE COUNT	DISTRIBUTION SYSTEM COLIFORMS (MFP)					REPEAT SAMPLES			INCUBATOR TEMP.	
	A		B		C								1	2	3	4	5	COLIFORMS per 100 ml.	COLIFORMS per 100 ml.	COLIFORMS per 100 ml.		
	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES																
1																						
2																						
3																						
4																						
5																						
6	56											0	8	0	0	0	0	0	0	0	0	35
7																						
8																						
9																						
10																						
11																						
12																						
13	513											0	9	0	0	0	0	0	0	0	0	35
14																						
15																						
16																						
17																						
18																						
19																						
20	526											0	9	0	0	0	0	0	0	0	0	35
21																						
22																						
23																						
24																						
25																						
26																						
27	527											0	9	0	0	0	0	0	0	0	0	35
28																						
29																						
30																						
31																						
HF MEDIA		BBL m-ENDO		BACTERIAL DENSITY		ARITH. MEAN		GEO. MEAN		TOTAL NO. SAMPLES		SAMPLES EXCEEDING 3/50. (4/100) 7/200. 13/500ml										35
TPC MEDIA										0		10										0

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0000004101

Laboratory Cert. #100

Signed Elizabeth A. Buty

Cert. Grade B-Well No. 4087-W
ENCLOSURE (1)

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

SERIAL #: 04-67-042

DATE	RAW WATER COLIFORMS (HFP)						NO. OF COLIFORMS PER 100 ml.	FILTERED TOTAL PLATE COUNT	FINISHED TOTAL PLATE COUNT	HFP COLIFORMS per 100 ml.	TOTAL PLATE COUNT	DISTRIBUTION SYSTEM COLIFORMS (HFP)					REPEAT SAMPLES			INCUBATOR TEMP.		
	A		B		C							1	2	3	4	5	COLIFORMS per 100 ml.	COLIFORMS per 100 ml.	COLIFORMS per 100 ml.		COLIFORMS per 100 ml.	COLIFORMS per 100 ml.
	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES																
1																						
2																						
3																						
4																						
5																						
6	57										0.14	7	0	0	0	0	0	1		35.0		
7	6																					
8																						
9																						
10																						
11																						
12																						
13	515										0	7	0	0	0	0	0	0	0	35.0		
14																						
15																						
16																						
17																						
18																						
19																						
20	320										0.14	7	0	0	0	0	0	1		35.0		
21																						
22																						
23																						
24																						
25																						
26																						
27	321										0	7	0	0	0	0	0	1		35.0		
28																						
29																						
30																						
31																						
											TOTAL NO. SAMPLES					28						
											SAMPLES EXCEEDING 3/50. (4/100) 7/200. 13/500ml					0						
HFP MEDIA											BBL M-ENDO		DACTERIAL DENSITY		ARITH. MEAN						0.07	
TPC MEDIA																					1.03	

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0000004102

Year 1984

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

CONTAMINANT CODE: 3005

SERIAL #: 04-67-043

DATE	RAW WATER COLIFORMS (MFP)						NO. OF COLIFORMS PER. 100 ml.	FILTERED		FINISHED		DISTRIBUTION SYSTEM					INCUATOR TEMP.			
	A		B		C			TOTAL PLATE COUNT	MFP COLIFORMS per 100 ml.	TOTAL PLATE COUNT	MFP COLIFORMS per 100 ml.	COLIFORMS (MFP)						REPEAT SAMPLES		
	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES						1	2	3	4	5		COLIFORMS per 100 ml.	COLIFORMS per 100 ml.	COLIFORMS per 100 ml.
1																				
2																				
3																				
4																				
5																				
6	36										0	4		0	0	0			35	
7																				
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11																				
12																				
13	W 13										0	7	0	0	0		0	0	0	35
14																				
15																				
16																				
17																				
18																				
19																				
20	320										0	7	0	0	0					35
21																				
22																				
23																				
24																				
25																				
26																				
27	327										0	7	0	0	0		0	0		35
28																				
29																				
30																				
31																				
MF MEDIA	BBL m-Endo		BACTERIAL DENSITY		ARITH. MEAN						0	DIST. SYSTEM	TOTAL NO. SAMPLES					25		
TPC MEDIA					GEO. MEAN				CLW		1.0		SAMPLES EXCEEDING 3/50, (4/100) 7/200, 13/500ml					0		

Laboratory Cert. # 100

Signed Elizabeth Betty Cert. Grade B-WELL No. 4087-W

Year 1984

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

CONTAMINANT CODE: 3000

SERIAL #: 04-67-044

DATE	RAW WATER COLIFORMS (HFP)						NO. OF COLIFORMS PER 100 ml.	FILTERED TOTAL PLATE COUNT	FINISHED TOTAL PLATE COUNT	DISTRIBUTION SYSTEM COLIFORMS (HFP)					REPEAT SAMPLES			INCUBATOR TEMP.			
	A		B		C					1	2	3	4	5	6	7	8				
	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES													COLIFORMS per 100 ml.	COLIFORMS per 100 ml.	COLIFORMS per 100 ml.
1																					
2																					
3																					
4																					
5																					
6											0	W	0	0	0						350
7																					
8																					
9																					
10																					
11																					
12																					
13											0	W	0	0		0					350
14																					
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19																					
20											0	W	0	0		0					350
21																					
22																					
23																					
24																					
25																					
26																					
27											0	W	0	0		0					350
28																					
29																					
30																					
31																					
HF MEDIA	<u>BBL M-ENDO</u>		DACTERIAL DENSITY	ARITH. MEAN							0	DIST. SYSTEM	TOTAL NO. SAMPLES				12				
TPC MEDIA				GEO. MEAN							10		SAMPLES EXCEEDING 3/50. (4/100) 7/200. 13/500ml				0				

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Laboratory Cert. # 100

Signat Elizabeth C. Bely Cert. Grado B-WELL No. 4087-W

Year 1984

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

CONTAMINANT CODE: 3000

SERIAL #: 04-67-045

DATE	RAW WATER COLIFORMS (MFP)									FILTERED		FINISHED		DISTRIBUTION SYSTEM										INCUBATOR TEMP.			
	A			B			C			TOTAL PLATE COUNT	MFP COLIFORMS per 100 ml.	TOTAL PLATE COUNT	MFP COLIFORMS per 100 ml.	COLIFORMS (MFP)					REPEAT SAMPLES								
	VOLUME FILTERED ml.	TOTAL COLONIES	COLIFORM COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES	COLIFORM COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES	COLIFORM COLONIES					NO. OF COLIFORMS PER 100 ml.	NO. OF SAMPLES EXAMINED	1	2	3	4	5	COLIFORMS per 100 ml.	COLIFORMS per 100 ml.	COLIFORMS per 100 ml.				
1																											
2																											
3																											
4																											
5																											
6																0	3	0	0	0	0						35.0
7																											
8																											
9																											
10																											
11																											
12																											
13																0	3	0		0	0						35.0
14																											
15																											
16																											
17																											
18																											
19																											
20																0	3	0			0	0					35.0
21																											
22																											
23																											
24																											
25																											
26																											
27																0	3	0				0	0				35.0
28																											
29																											
30																											
31																											
HF MEDIA	BBL M-ENDO			DACTERIAL DENSITY	ARTH. MEAN GEO. MEAN										0	DIST. SYSTEM	TOTAL NO. SAMPLES					12					
TPC MEDIA															10		SAMPLES EXCEEDING 3/50. (4/100) 7/200. 13/500ml					0					

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000004105

Laboratory Cert. # 100

Signed Elizabeth A. Betty Cert. Grade B-WELL No. 4057-W

SERIAL #: 04-67-0416

DATE	RAW WATER COLIFORMS (HFP)						NO. OF COLIFORMS PER 100 ml.	FILTERED	FINISHED	DISTRIBUTION SYSTEM										INCUBATOR TEMP					
	A		B		C					TOTAL PLATE COUNT	HFP COLIFORMS per 100 ml.	TOTAL PLATE COUNT	HFP COLIFORMS per 100 ml.	TOTAL PLATE COUNT	COLIFORMS (HFP)						REPEAT SAMPLES				
	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES									1	2	3	4	5		1	2	3	4	5
1																									
2																									
3																									
4																									
5																									
6												0	3	0	0	0	0					35			
7																									
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13												0	3	0	0		0					35			
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18																									
19																									
20												0	3	0	0		0					35			
21																									
22																									
23																									
24																									
25																									
26																									
27												0	3	0	0		0					35			
28																									
29																									
30																									
31																									
HF MEDIA		BBL M-ENDO		BACTERIAL DENSITY		ARITH. MEAN		GEO. MEAN		TOTAL NO. SAMPLES		SAMPLES EXCEEDING 3/50. (9/100)		7/200. 13/500ml		12						0			

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000004106

YEAR 1984

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

CONTAMINANT CODE: 3000

SERIAL #: 04-67-047

DATE	RAW WATER COLIFORMS (MFP)						NO. OF COLIFORMS PER 100 ml.	FILTERED		FINISHED		TOTAL PLATE COUNT	DISTRIBUTION SYSTEM					INCUBATOR TEMP.			
	A		B		C			TOTAL PLATE COUNT	MFP COLIFORMS per 100 ml.	TOTAL PLATE COUNT	MFP COLIFORMS per 100 ml.		COLIFORMS (MFP)						REPEAT SAMPLES		
	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES							1	2	3	4	5		COLIFORMS per 100 ml.	COLIFORMS per 100 ml.	COLIFORMS per 100 ml.
1																					
2																					
3																					
4																					
5																					
6													0	4	0	0	0	0		35	
7																					
8																					
9																					
10																					
11																					
12																					
13													0	4	0	0	0		0	35	
14																					
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16																					
17																					
18																					
19																					
20													0	4	0	0	0		0	35	
21																					
22																					
23																					
24																					
25																					
26																					
27													0	4	0	0	0		0	35	
28																					
29													0	0	0	0	0		0		
30																					
31																					
MF MEDIA	BBL m-ENDO		BACTERIAL DENSITY	ARITH. MEAN		GEO. MEAN		CLW				0	DIST. SYSTEM	TOTAL NO. SAMPLES					10		
TPC MEDIA								0000004107				10		SAMPLES EXCEEDING 3/50, (1/100) 7/200, 13/500ml					0		

Laboratory Cert. #100

7. Signed Elizabeth A. Bell Cert. Grade B-WELL No. 4087-W

Year 1984

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

CONTAMINANT CODE: 3000

SERIAL #: 04-67-048

DATE	RAW WATER COLIFORMS (MFP)						NO. OF COLIFORMS PER 100 ml.	FILTERED TOTAL PLATE COUNT	FINISHED TOTAL PLATE COUNT	MFP COLIFORMS per 100 ml.	MFP COLIFORMS per 100 ml.	DISTRIBUTION SYSTEM COLIFORMS (MFP)					REPEAT SAMPLES			INCUBATOR TEMP.	
	A		B		C							1	2	3	4	5	COLIFORMS per 100 ml.	COLIFORMS per 100 ml.	COLIFORMS per 100 ml.		
	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES	VOLUME FILTERED ml.	TOTAL COLONIES															
1																					
2																					
3																					
4																					
5																					
6											0	N	0	0						350	
7																					
8																					
9																					
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11																					
12																					
13											0	0	0	0						350	
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19																					
20											0	N	0	0						350	
21																					
22																					
23																					
24																					
25																					
26											0	2	0	0							
27																				350	
28																					
29																					
30																					
31																					
IF MEDIA		BBL m-ENDO		DACTERIAL DENSITY		ARTH. MEAN															
TPC MEDIA																					
											0	DIST. SYSTEM	TOTAL NO. SAMPLES					8			
											10		SAMPLES EXCEEDING 3/50, (4/100) 7/200, 13/500ml					0			

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0000004108

Laboratory Cert. #100

Signed Elizabeth D. Betz Cert. Grade B-WELL No. 4087-W

CHEMICAL ANALYSIS — WATER TREATMENT PLANTS

MCBCL 11330/3 (REV. 3-82)

DATE COLLECTED

6 MARCH 1984

PARAMETER	HADNOT POINT	MONTFORD POINT	TARAWA TERRACE	ONSLow BEACH	COURTHOUSE BAY	RIFLE RANGE	HOLCOMB BLYD	NEW RIVER
SERIAL # 0461	041	045	044	018	017	016	043	016
PH (IN LAB NOT PLANT)	8.8	7.5	7.7	7.5	8.4	8.3	8.9	8.7
PENOLTHALEIN ALKALINITY	4	0	0	0	4	2	6	12
METHYL ORANGE ALKALINITY	44	184	140	144	160	164	160	180
CARBONATES AS CaCO ₃	8	0	0	0	8	4	12	24
BICARBONATES AS CaCO ₃	36	184	140	144	152	160	48	156
CHLORIDES AS Cl	10	30	14	14	20	20	10	86
HARDNESS AS CaCO ₃	62	74	160	52	56	52	64	50
IRON AS Fe	<0.04	0.55	0.08	0.20	<0.04	0.08	<0.04	0.10
FLUORIDE	AM	0.13	0.63				0.20	
	PM	0.12	0.16	0.66	0.19	0.09	0.18	0.82
CHLORINE RESIDUAL	1.0	1.3	1.0	1.0	1.0	1.0	0.9	1.3
TURBIDITY	AM	INSTRUMENT		DOWN				
	PM							
TOTAL PHOSPHATE		2.40			1.10			
ORTHO PHOSPHATE		1.09			0.19			
META PHOSPHATE		1.31			0.91			
STABILITY	+0.3	-0.6	-0.2	-0.5	+0.1	0.0	+0.5	0.0

REMARKS

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0000004109

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

LABORATORY ANALYSIS BY

BURNS, LACHAPPELLE

ERB

DATE OF ANALYSIS

6 MARCH 1984

ENCLOSURE (2)

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

DATE COLLECTED
13 MARCH 1984

PARAMETER SERIAL #04-61	HADNOT POINT -041	MONTFORD POINT -045	TARAWA TERRACE -044	ONSLow BEACH -048	COURTHOUSE BAY -047	RIFLE RANGE -046	HOLCOMB BLVD -043	NEW RIVER -042
PH (IN LAB NOT PLANT)	8.8	7.4	8.2	7.7	8.6	8.1	8.9	8.6
PENOLTHALEIN ALKALINITY	6	0	0	0	6	0	8	16
METHYL ORANGE ALKALINITY	60	190	74	140	148	160	60	190
CARBONATES AS CaCO ₃	12	0	0	0	12	0	16	32
BICARBONATES AS CaCO ₃	48	190	74	140	134	160	44	158
CHLORIDES AS Cl	10	30	8	20	10	20	8	90
HARDNESS AS CaCO ₃	64	76	100	60	60	56	64	44
IRON AS Fe	40.04	2.00	0.06	0.21	40.04	40.04	40.04	0.06
FLUORIDE	AM 0.45	0.16	0.37	0.18	0.11	0.10	0.36	0.76
	PM 0.46		0.42				0.36	
CHLORINE RESIDUAL	1.1	1.2	1.0	1.4	1.4	1.2	0.9	1.3
TURBIDITY	AM PM	INSTRUMENT			DOWN			
TOTAL PHOSPHATE		5.45			1.46			
ORTHO PHOSPHATE		2.26			0.28			
META PHOSPHATE		3.19			1.18			
STABILITY	+0.2	-0.6	0.0	-0.6	+0.2	-0.2	+0.3	+0.1

REMARKS

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

LABORATORY ANALYSIS BY

BURNS EDS

DATE OF ANALYSIS

13 MARCH 1984

CHEMICAL ANALYSIS — WATER TREATMENT PLANTS

MCBCL 11330/3 (REV. 3-82)

DATE COLLECTED
20 MARCH 1984

PARAMETER SERIAL #0461	HADNOT POINT -041	MONTFORD POINT -045	TARAWA TERRACE -044	ONSLOW BEACH -048	COURTHOUSE BAY -047	RIFLE RANGE -046	HOLCOMB BLVD -043	NEW RIVER -046
PH (IN LAB NOT PLANT)	8.7	7.4	8.8	7.5	8.1	8.3	8.9	8.5
PENOLTHALEIN ALKALINITY	2	0	4	0	0	0	6	6
METHYL ORANGE ALKALINITY	48	184	54	130	166	136	60	170
CARBONATES AS CaCO ₃	4	0	8	0	0	0	12	12
BICARBONATES AS CaCO ₃	44	184	46	130	166	136	48	158
CHLORIDES AS Cl	6	30	10	16	20	20	10	100
HARDNESS AS CaCO ₃	60	82	68	62	72	42	76	70
IRON AS Fe	<0.04	0.51	0.06	0.27	<0.04	0.07	<0.04	0.13
FLUORIDE	AM	0.70	1.06				1.29	
	PM	0.74	0.16	1.02	0.18	0.09	1.18	0.58
CHLORINE RESIDUAL	1.1	1.4	1.2	1.2	1.0	1.0	0.9	1.3
TURBIDITY	AM PM	INSTRUMENT DOWN						
TOTAL PHOSPHATE		4.80			1.26			
ORTHO PHOSPHATE		1.46			0.16			
META PHOSPHATE		3.34			1.10			
STABILITY		+0.2	-0.4	+0.3	-0.5	0.0	+0.4	+0.1

REMARKS

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NOTE: All results reported in parts per million unless otherwise noted except for pH, temperature, and specific conductance. One liter of potable water is assumed to weigh one kilogram.	LABORATORY ANALYSIS BY LACHAPPELLE & BURNS	DATE OF ANALYSIS 20 MARCH 1984
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CHEMICAL ANALYSIS — WATER TREATMENT PLANTS

MCBCL 11330/3 (REV. 3-82)

DATE COLLECTED

27 MARCH 1984

PARAMETER SERIAL #04-67	HADNOT POINT -041	MONTFORD POINT -045	TARAWA TERRACE -044	ONSLow BEACH -048	COURTHOUSE BAY -047	RIFLE RANGE -046	HOLCOMB BLVD -043	NEW RIVER -042
PH (IN LAB NOT PLANT)	8.7	7.3	8.8	7.4	8.0	8.1	8.7	8.6
PENOLTHALEIN ALKALINITY	4	0	6	0	4	6	6	12
METHYL ORANGE ALKALINITY	120	188	54	160	178	172	66	162
CARBONATES AS CaCO ₃	8	0	12	0	8	12	12	24
BICARBONATES AS CaCO ₃	52	188	42	160	170	160	54	138
CHLORIDES AS Cl	10	34	12	14	20	20	12	110
HARDNESS AS CaCO ₃	66	76	64	60	66	48	66	58
IRON AS Fe	<0.04	0.58	<0.04	0.25	<0.04	0.06	<0.04	0.15
FLUORIDE	AM 0.98 PM 0.96	0.16	1.07 1.03	0.18	0.11	0.10	0.77 0.74	0.63
CHLORINE RESIDUAL	1.0	1.2	1.2	1.3	1.2	0.9	1.1	1.3
TURBIDITY	AM PM	INSTRUMENT DOWN						
TOTAL PHOSPHATE		4.60			3.45			
ORTHO PHOSPHATE		1.68			0.48			
META PHOSPHATE		2.92			2.97			
STABILITY	+0.2	-0.6	+0.3	-0.6	-0.2	-0.2	+0.3	+0.2

REMARKS

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

LABORATORY ANALYSIS BY
LACHAPPELLE HONEYCUTT EOB

DATE OF ANALYSIS
27 MARCH 1984