



COMMONWEALTH of VIRGINIA

Department of Health
Division of Water Supply Engineering
Enforcement

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Richmond, VA 23219
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March 15, 2001

VIA CERTIFIED MAIL

Colonel E. Douglas Earle, Garrison Commander
U. S. Army Transportation Center and Fort Eustis
Ft. Eustis, VA 23604-5000

E. B. Earle
19 MAR 01

Re: **Copy of Executed Consent Order**

Dear Colonel Earle:

Enclosed is a copy of the executed Consent Order between the State Health Commissioner, E. Anne Peterson, M.D., M.P.H. and Fort Eustis. The issuance of this order shall be considered a final case decision as defined by § 9-6.14:4 of the Code of Virginia and may be enforced in, or appealed to, circuit court.

Thank you very much for your cooperation in this matter.

Sincerely,

Robert A. K. Payne
Robert A. K. Payne, JD
Director of Compliance and Enforcement

Enclosure

- c: Christopher Cartwright, VDH DWSE District Engineer (w/enclosure)
Daniel B. Horne, VDH DWSE Field Director (w/out enclosure)
Robert B. Taylor, Chief Engineer, VDH DWSE (w/out enclosure)
Robert W. Hicks, Director, Office of Environmental Health Services (w/out enclosure)
Health Director, City of Newport News (w/enclosure)
Karen Lebo, Assistant Attorney General (w/enclosure)

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COMMONWEALTH OF VIRGINIA

State Board of Health *Order Number 2-2001-(01)*

CONSENT ORDER ISSUED TO COMMANDER U.S. ARMY TRANSPORTATION CENTER AND FORT EUSTIS, OWNER OF THE FORT EUSTIS WATERWORKS

This is an Order issued by the State Board of Health (referred to below as the "Board") of the Commonwealth of Virginia under authority granted by Title 32.1 of the *Code of Virginia*, 1950, as amended, (the "*Code*") to Commander, U.S. Army Transportation Center and Fort Eustis, owner of the Fort Eustis Waterworks in Newport News, Virginia.

A. AUTHORITY

1. Section 32.1-12 of the *Code* authorizes the Board to adopt and enforce regulations protecting public health and welfare. Section 32.1-169 of the *Code* authorizes the Board to exercise supervision and control over all water supplies and waterworks in the Commonwealth, Section 32.1-170 authorizes the Board to adopt regulations governing waterworks, and Section 32.1-174 requires a written permit for the construction and operation of a waterworks. Section 32.1-167 of the *Code* defines "waterworks" to mean a system that serves piped water for drinking or domestic use to the public, at least fifteen connections, or an average of 25 individuals for at least 60 days out of the year. Consistent with and in order to implement this authority, the Board lawfully adopted the *Virginia Waterworks Regulations (Regulations)*, §12 VAC 5-590 *et seq.*, in 1974 and lawfully amended them in 1977, 1979, 1982, 1991, 1993, and 1995.
2. Sections 32.1-12 and 32.1-27 authorize the Board to enforce regulations it adopts, and Section 32.1-26 authorizes the Board to issue orders requiring compliance with any law or regulation administered by the Board. The Board may issue an order to a waterworks owner following an informal hearing held in accordance with §12 VAC 5-590-160 1 of the *Regulations* and Section 9-6.14:11 of the *Code*. Sections 32.1-27, 32.1-174 and 32.1-176 provide that a violation of a regulation adopted, or an order issued, by the Board may result in payment of civil charges as ordered by the Board with the Owner's consent, revocation by the Commissioner of any applicable waterworks operation permit, or imposition of injunctive relief, civil penalties or criminal punishment by an appropriate state court.

3. Section 12 VAC 5-590 et seq. of the *Regulations* govern the design, maintenance, and operation of waterworks in the Commonwealth, and serve to implement the federal Safe Drinking Water Act of 1974, as amended in 1986 and 1996, 42 U.S.C. Section 300f et seq., and the National Primary Drinking Water Regulations, 40 C.F.R. Part 141. The *Regulations* are codified in Title 12 of the Virginia Administrative Code (VAC) and are available from the Virginia Department of Health (VDH) upon request.

B. BACKGROUND

4. The Fort Eustis waterworks is located adjacent to the City of Newport News, Virginia. The Fort Eustis waterworks is a "waterworks," as defined by Section 32.1-167 of the *Code* and by §12 VAC 5-590-10, and is a "community system," as defined by §12 VAC 5-590-10 of the *Regulations*. Fort Eustis waterworks is a consecutive water system in that it purchases water from the City of Newport News waterworks. Water enters the Fort Eustis system through two master meters owned by the City of Newport News. A formal purchase/sales contract does not exist between the City of Newport News and Fort Eustis. Fort Eustis water system consists of two 10-inch RPZ valves installed in parallel just prior to the master meters, a booster pump station, approximately 304,704 feet of water line varying in diameter from 1 to 14-inches, storage facilities comprised of 3 elevated water towers (potable) and 2 atmospheric ground tanks (for fire suppression only) providing a total storage capacity of 1,281,000 gallons, and two emergency wells. The waterworks serves piped water for drinking and domestic use to approximately 16,900 persons, and has 1,387 connections. Operation of the waterworks is the subject of Permit Number 3700100, originally issued to Commander, U.S. Army Transportation Center and Fort Eustis, on July 5, 1979. A copy of the permit, cover letter and Engineering Description Sheet is attached at **TAB A**.
5. On December 11, 2000, VDH sent Commander, U.S. Army Transportation Center and Fort Eustis a letter informing it that because of ongoing compliance issues, and in an effort to protect public health, VDH has scheduled an informal conference with Commander, U.S. Army Transportation Center and Fort Eustis on December 13, 2000 at 10:00 a.m. at Fort Eustis, Virginia. Attached is a copy of the letter at **TAB B**.
6. The informal conference is an informal fact finding proceeding held in accordance with §9-6.14:11 of the *Code* and §12 VAC 5-590-160(1) of the *Regulations*. The informal conference is designed to accomplish three objectives: (A) to receive evidence, (B) to make a factual finding to determine if the waterworks owner has violated the *Regulations*, and (C) if the waterworks owner is found to have violated the *Regulations*, then to determine the appropriate corrective action.
7. On December 13, 2000, VDH held an informal conference with Commander, U.S. Army Transportation Center and Fort Eustis at Fort Eustis, Virginia. Attending the conference for VDH were Christopher W. Cartwright, District Engineer and Robert A. K. Payne, Director of Compliance & Enforcement. Attending the conference for Commander, U.S. Army Transportation Center and Fort Eustis was Stephen A. McCall, Chief Environmental and Natural Resources Division, Joanna Bateman, Environmental Specialist, and Susan Bivins, Environmental Attorney for Fort Eustis.

8. VDH presented the following evidence and supporting documents at the informal conference:
- A. On September 15, 2000, Fort Eustis submitted a letter to VDH reporting on the status of projects, procedures, and maintenance/operation issues related to managing water quality concerns at the installation since its last submittal dated June 7, 2000.
 - B. On June 22, 2000, VDH approved the Bacteriological Monitoring Plan for the Fort Eustis waterworks. A copy of the VDH approval letter is attached at **TAB C**. Fort Eustis updated the plan to include the newly installed dedicated sampling stations.
 - C. On June 7, 2000, Fort Eustis submitted an Information Paper, prepared for the Installation Command, regarding the ongoing water quality issues at Fort Eustis, Virginia. The submittal, also, included the scopes of work for several projects, initiated in an attempt to improve the quality of the installation's drinking water for VDH information and files. Copies of these documents are attached at **TAB D**.
 - D. On 5 May 2000, VDH conducted a routine Consecutive System Sanitary Survey Report of the Fort Eustis waterworks. A copy of the Inspection Report is attached at **TAB E**. The report recommended that Fort Eustis address operation, maintenance, and administrative problems, including, but not limited to:
 - The waterworks has been classified as a Class IV waterworks (serves more than 400 persons). Therefore, a Class IV waterworks operator is required (responsible charge). VDH directed Ft. Eustis to have someone on its staff licensed or to contract a licensed operator to operate the system. Note: An operator operating a classified waterworks without a proper license may be in violation of the Department of Professional and Occupational Regulation regulations.
 - E. On 17 May 2000, VDH issued a Notice of Violation (NOV) to Fort Eustis waterworks to inform them that they may have violated §12 VAC 5-590-380 of the *Regulations* for non-acute PMCL exceedance in April 2000. Attached is the copy of the NOV at **TAB E**. According to VDH records, the water samples analyzed during the month of April 2000, exceeded the PMCL for total coliform bacteria. Total coliform bacteria were detected in five samples and total and fecal coliform were detected in one sample.
 - F. On May 9, 2000 VDH held a meeting with Fort Eustis waterworks at Fort Eustis to discuss water quality problems due to biological growth in the distribution system at the Fort Eustis waterworks. A May 10, 2000, VDH memorandum documenting this meeting is attached at **TAB G**.
 - G. On April 10, 2000 VDH held a meeting with Fort Eustis waterworks at Fort Eustis to discuss water quality problems due to biological growth in the distribution system at the Fort Eustis waterworks. An April 12, 2000 VDH memorandum documenting this meeting is attached at **TAB G**. Fort Eustis contracted AH Environmental consultants to develop an unidirectional system flushing program. Representatives from AH

Environmental oversaw the meeting in which background information and the science behind unidirectional flushing were presented. During the meeting ten separate action items were identified as follows:

- (1) Flushing: Scheduled to begin on Monday April 17, 2000.
- (2) Sample tanks: Water samples will be collected for HPC (R₂A method) and coliform analyses from each of the three storage tanks at Fort Eustis. If a tank shows signs of bacteriological growth, it will be taken off line and refilled with clean water after flushing.
- (3) WQ Monitoring: AH Environmental will assist Fort Eustis in developing a routine sampling schedule and procedure for monitoring the distribution system. Sherry Williams, Newport News Waterworks, may be able to share a computer program developed by Newport News that will help interpret the results of the water quality monitoring. Chlorine residual monitoring practices were also discussed. Fort Eustis needs to monitor the residual on a more frequent basis and analyze the results in the high range when greater than 2.2 mg/l. Sherry Williams, Newport News Waterworks, reported that the Lee Hall WTP was maintaining a high residual (4.0 to 4.5 mg/l) during the past few months and that in late March returned to more typical range leaving the plant of 3.0 to 3.5 mg/l. I believe this explains the lower residuals starting in the end March.
- (4) Response Plan: AH Environmental will assist Fort Eustis in developing a response plan when the WQ Monitoring indicates bacteriological growth in the system.
- (5) Sampling Taps: Fort Eustis is in the process of getting a contract for installing dedicated sampling stations and revising their bacteriological monitoring plan based on our recommendations made in September 1999. The need to speed this process up was discussed.
- (6) Storage Region: Fort Eustis needs to determine their storage needs and if they have too much (dead) storage. AH Environmental Consultants may be doing this work for Fort Eustis as well.
- (7) Modeling: A hydraulic model of the distribution system needs to be developed.
- (8) Modifications: A system needs to be put into place for making modifications to and updating the unidirectional system flushing plan, water quality monitoring plan, and hydraulic model.
- (9) Buildings: There is a concern that part of the bacteriological problems being experienced at Fort Eustis is due to the internal plumbing systems at some of the larger buildings. After addressing the bacteriological growth in the

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distribution system, Fort Eustis will need to begin addressing internal plumbing issues.

- (10) O&M: Fort Eustis needs to develop a formal Operation and Maintenance Program and practice "good housekeeping principles".
- H. On 16 December 1999, VDH issued a Notice of Violation (NOV) to Fort Eustis waterworks to inform them that they may have violated §12 VAC 5-590-380 of the *Regulations* for Non Acute PMCL Exceedance in November 1999. Attached is the copy of the NOV at **TAB F**. According to VDH records, the water samples analyzed during the month of November 1999, exceeded the PMCL for total coliform bacteria. Total coliform bacteria were detected in four samples.
- I. On 19 November 1999, VDH issued a Notice of Violation (NOV) to Fort Eustis waterworks to inform them that they may have violated §12 VAC 5-590-380 of the *Regulations* for Non Acute PMCL Exceedance in October 1999. Attached is the copy of the NOV at **TAB F**. According to VDH records, the water samples analyzed during the month of October 1999, did not meet the Primary Maximum Contaminant Level (PMCL) for total coliform bacteria. Total coliform bacteria were detected in four samples.
- J. On 29 September 1999, VDH issued a Notice of Violation (NOV) to Fort Eustis waterworks to inform them that they may have violated §12 VAC 5-590-380 of the *Regulations* for Non Acute PMCL Exceedance in August and September 1999. Attached is the copy of the NOV at **TAB F**. According to VDH records, the water samples analyzed during the month of August 1999 and September 1999 did not meet the Primary Maximum Contaminant Level (PMCL) for total coliform bacteria. Total coliform bacteria were detected in five samples during the month of August and seven samples during the month of September, resulting in a non-acute coliform exceedance for both months.
- K. On September 14, 1999, VDH conducted a special Consecutive System Sanitary Survey Report of the Fort Eustis waterworks. A copy of the Inspection Report is attached at **TAB E**. The report recommended that Fort Eustis waterworks address operation, maintenance, and administrative problems, including, but not limited to:
- (1) A number of the sampling locations visited during the survey were ones that are considered to be "poor" sample sites. A copy of a document entitled "A Guide to Bacteriological Sampling of Public Water Supplies" was enclosed. The section entitled "Where should I sample?" should help in identifying current sample sites where samples should not be collected and in the selection of new sample sites. After new sites have been selected a revised sample site plan must be submitted to this Office for review and approval. If necessary Fort Eustis can install dedicated sample stations throughout the distribution system for the sole purpose of sample collection. Information on sampling stations was also enclosed.

- (2) A review of the monthly operational and bacteriological reports submitted for the Fort Eustis water system indicate that the total chlorine residual of the water entering the Fort Eustis water distribution system from Newport News Waterworks is consistently above 2.2 mg/L. However, the total chlorine residuals on the Fort Eustis side of the meter have been extremely low, less than 0.4 mg/L. At the time of the sanitary survey, with the exception of one geographic area the total chlorine residuals were at acceptable levels (greater than 0.5 mg/L).
- (3) Fort Eustis reported that they have been flushing the distribution system. VDH recommended that a water system flush distribution mains for many specific reasons such as corrosion control, sediment removal, taste and odor control, color, high turbidity, low chlorine residuals, bacteriological growth, or customer complaints, with the main objective of the flushing being improved water quality and service. The increase in the total chlorine residuals noted above is contributed to the recent system flushing. Now that the entire system has been flushed, we recommend concentrating the flushing effort on the areas where the chlorine residual drops significantly or when heterotrophic plate counts are above 500 CFU/mL. A good target value for when to flush an area based on the total chlorine residual would be when the measured value is less than 0.5 mg/L.
- (4) The total chlorine residual measured at Elevated Tank #1618 was less than 0.02 mg/L. VDH recommend that the area around this tank be flushed. The flushing should continue until a total chlorine residual above 1.0 mg/L is measured. If a residual above 1.0 mg/L can not be achieved or if a rapid decline in the residual is noted after reaching 1.0 mg/L, then the tank will need to be disinfected.
- L. On 4 August 1999, VDH issued a Notice of Violation (NOV) to Fort Eustis waterworks to inform them that they may have violated §12 VAC 5-590-380 of the *Regulations* for non-acute PMCL exceedance in July 1999. Attached is the copy of the NOV at **TAB F**. According to VDH records, the water samples analyzed during the month of July 1999, exceeded the PMCL for total coliform bacteria. Total coliform bacteria were detected in four samples.
- M. On May 14, 1999, VDH conducted a routine Consecutive System Sanitary Survey Report of the Fort Eustis waterworks. A copy of the Inspection Report is attached at **TAB E**. The report recommended that Fort Eustis waterworks address operation, maintenance, and administrative problems, including, but not limited to:
- (1) At the time of the inspection, it was not clear when the storage facilities were last inspected and cleaned. During sanitary surveys conducted by this Office elevated storage tanks are not typically climbed and a number of items can not be inspected from ground level. Therefore, it is imperative that qualified inspectors be contracted to inspect the storage tanks periodically. In accordance with AWWA standards, all water tanks should be thoroughly inspected at intervals of not more than five years. Copies of the tank inspection reports should be sent to this Office and made available upon request at inspections.

(2) Please be advised that this waterworks has been classified as a Class IV waterworks (serves more than 400 persons). Therefore, a Class IV waterworks operator is required (responsible charge). Please make plans either to have someone on your staff licensed, or to contract a licensed operator. An operator operating a classified waterworks without a proper license may be in violation of the Department of Professional and Occupational Regulation regulations.

N. Based on the population served, §12 VAC 5-590-370 and §12 VAC 5-590-380 of the *Regulation* requires Fort Eustis Waterworks to collect 15 water samples for bacteriological analyses per month. The waterworks is in compliance if no more than one sample collected during the month is total coliform positive. The presence of coliform bacteria indicates that the drinking water may be contaminated with disease causing organisms. Symptoms of such disease may include diarrhea, nausea and other flu-like symptoms. Serious cases of waterborne disease, such as hepatitis, can have lifelong health consequences.

9. Commander, U.S. Army Transportation Center and Fort Eustis, submitted no evidence at the informal conference on 13 December 2000. Joanna Bateman, Stephen McCall and Susan Bivins did state on behalf of the command that Fort Eustis was willing to enter into a mutually agreeable Consent Order rather than have the Board impose a unilateral order of compliance. Fort Eustis understands it has been listed by the Environmental Protection Agency, Region III, as a significant non-complier for the past five Notices of Violation, and that by entering into a Consent Order with the state, the EPA would be less inclined to issue its own NOV to Fort Eustis and intercede on behalf of the state.

C. FINDINGS

10. The available factual data support the conclusion, and the Commander, U.S. Army Transportation Center and Fort Eustis agrees, that the U.S. Army Transportation and Fort Eustis has violated the *Regulations* for:

- Exceeding the non-acute Primary Maximum Contaminant Level (PMCL) for total coliform bacteria in April 2000, November 1999, October 1999, September 1999, August 1999, and July 1999 pursuant to § 12 VAC 5-590-380 of the *Waterworks Regulations*.

D. ORDER FOR COMPLIANCE

11. So that the Waterworks may return to, and be continually operated in, compliance with the *Regulations*, the Board orders the Commander of the U.S. Army Transportation Center and Fort Eustis, and the Commander of the U.S. Army Transportation Center and Fort Eustis agrees to:

- A. To maintain at least one operator on staff that possess a valid waterworks operator license issued by the Board for Waterworks and Wastewater Works Operators, Department of Professional and Occupational Regulation, as required by § 12 VAC 5-590-460 B 5 of

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the *Waterworks Regulations*. The license must be of a classification equal to or higher than that of the waterworks (Class IV). Attendance is required daily by an operating person for sufficient time to insure proper operation of the facility and protection of the public health.

- B. To submit a revised Bacteriological Monitoring Plan to the VDH Southeast Virginia Field Office for approval no later than 30 calendar days after the date the Board signs this order in accordance with § 12 VAC 5-590-370 A of the *Regulations*.
- C. To collect at least fifteen routine bacteriological sample each month in accordance with the approved Bacteriological Monitoring Plan, as required by *Subsection A 2 of 12 VAC 5-590-370 of the Regulations*. After taking these samples, Fort Eustis will send or deliver them to a certified laboratory in whatever manner results in a timely and successful determination of whether bacteria are present in the water.
- D. To collect at least three repeat samples whenever Fort Eustis is notified directly by the laboratory performing the analyses or by VDH that a routine sample has tested positive for the presence of coliform bacteria, as required by § 12 VAC 5-590-380 D of the *Regulations*. After taking these repeat samples Fort Eustis shall send or deliver them to a certified laboratory in whatever manner results in a timely and successful determination of whether bacteria are present in the water.
- E. To issue a VDH approved notice to the public whenever Fort Eustis fails to collect routine or repeat samples, whenever samples exceed the PMCL for bacteriological contamination, or whenever a treatment technique violation occurs as required by and in accordance with § 12 VAC 5-590-540 of the *Regulations*.
- F. To submit routine monthly operating reports to the VDH Southeast Virginia Field Office monthly as required by §12 VAC 5-590-530 of the *Regulations*. These reports will include the number of connections to the waterworks, estimate of population served, total number of gallons of water produced, bacteriological summary, and chlorine residuals during the reporting period. This information will be prepared on forms provided by VDH, in accordance with § 12 VAC 5-590-570 of the *Regulations*.
- G. To submit an Operation and Maintenance Manual to the VDH Southeast Virginia Field Office for approval in accordance with § 12 VAC 5-590-640 of the *Regulations* no later than 45 days after completion of construction of the approved system modifications. Within 45 days of the date of VDH's final comment letter, Fort Eustis shall submit three (3) copies of the final Operation and Maintenance Manual to VDH.
- H. To maintain a disinfectant residual throughout the distribution system as required by § 12 VAV 5-590-380 C4b of the *Regulations*.
- I. The residual disinfectant concentration must be measured, at least, at the same points in the distribution system, and at the same time as total coliforms are sampled, as specified in § 12 VAV 5-590-370 A of the *Regulations*. Heterotrophic bacteria, measured as

heterotrophic plate count (HPC) as specified in § 12 VAV 5-590-420 may be measured in lieu of residual disinfectant concentration, in accordance with § 12 VAC 5-590-370 B7b of the Regulations. In addition the total chlorine residual in the distribution must be measured once per week at locations reflecting the maximum residence time of the water in the system.

- J. To install, properly maintain or repair system equipment, buildings or appurtenances, in compliance with the general directives set forth in § 12 VAC 5-590-360, § 12 VAC 5-590-450, and § 12 VAC 5-590-470 of the Regulations. Section 12 VAC 5-590-360 requires that the Waterworks be maintained so as to promote capability, reliability, and compliance with the drinking water standards set forth in Article 1 of Part II of the Regulations (§ 12 VAC 5-590-340 through § 12 VAC 5-590-440). Section 12 VAC 5-590-450 and § 12 VAC 5-590-470 together require that the Waterworks be operated and maintained in a competent, clean, and orderly manner that promotes public health and confidence in the ability of the waterworks to provide safe drinking water. Section 12 VAC 5-590-380 identifies proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, continual maintenance of positive water pressure in all parts of the distribution system as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant level for total coliforms. Fort Eustis shall take the following actions:

- (1) Implement recommendations from the Distribution System Storage Capacity Analysis and Distribution System Hydraulic & Water Quality Model to reduce storage capacity on Fort Eustis.
 - (a) The installation will notify the VDH of its decision to close down a tank within 45 days of completion of the modeling study.
 - (b) For those tanks that remain in the system, Fort Eustis will implement necessary rehabilitations based on recommendations made in the Underwater Facilities Inspections and Assessments of Potable Water Storage Tanks at Fort Eustis. Once funding is obtained for these rehabilitations, Fort Eustis will notify the VDH of proposed corrective actions and expected completion dates. Rehabilitation will be completed no later than September 30, 2001.
- (2) Fort Eustis will commence an annual post-wide Unidirectional Flushing Program each spring. Fort Eustis will also implement spot flushing of individual loops when monitoring results indicate HPC's above 500 CFU/ml. In the event repeated flushing of individual loops does not return the loop to a below 500 CFU/ml HPC level, negotiations will be reopened with VDH in order to determine an appropriate resolution.
- (3) Fort Eustis will refurbish Booster Pump #1's foundation. This will improve

system reliability by allowing the booster pump station to return to Lead/Lag operation. This refurbishment will be completed no later than June 30, 2001.

- (4) Fort Eustis will automate the booster pump by-pass valve. This will allow Newport News city water to flow directly onto post without intervention of the booster pump station in the event of booster pump failure or a drop in water pressure which impairs booster pump operation. Automation of by-pass valve opening will decrease the likelihood of complete depressurization of the distribution system, a permit violation. Automation will be completed no later than September 30, 2001.
- (5) Fort Eustis will install three automatic flushing devices to restore disinfectant residual in low use or dead end mains. The locations will be identified considering water age and chlorine residuals based on the Distribution System Hydraulic & Water Quality Model. Fort Eustis may install prototype devices which allow dechlorination prior to discharge of the water. Installation of the three devices will be completed no later than June 30, 2001.
- (6) Fort Eustis will conduct an analysis of the age of all six (6) inch and eight (8) inch mains post-wide within one year from approval of this consent order to facilitate a determination as to the order in which the lines are to be replaced. Based on the results of this analysis, negotiations will be reopened with VDH in order to determine an appropriate resolution.
- (7) It is the expectation of the parties to this order that all obligations of Fort Eustis arising under this Order will be fully funded. Fort Eustis agrees to seek sufficient funding through its budgetary process to fulfill its obligations under this Consent Order. Any requirement for the payment or obligation of funds by Fort Eustis established by the terms of this Order shall be subject to the availability of appropriated funds, and no provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341. In cases where payment or obligation of funds would constitute a violation of the Anti-Deficiency Act, the dates established requiring the payment or obligation of such funds shall be appropriately adjusted. If appropriated funds are not available to fulfill Fort Eustis's obligations under this Order, the Board reserves the right to initiate an action against any other person, or to take any response action, which would be appropriate absent this Order.

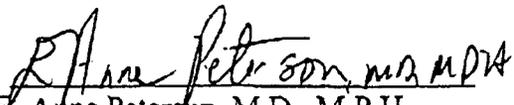
12. **Dispute Resolution:** All parties to this Order shall make reasonable efforts to informally resolve disputes at the level of the VDH District Engineer and the Fort Eustis Environmental Specialist. Within thirty (30) calendar days after any action which leads to or generates dispute, the disputing party shall submit to the other party a written statement setting forth the nature of the dispute, the work affected by the dispute, the disputing party's position with respect to the dispute and the information the disputing party is relying upon to support its position. Prior to the issuance of a written statement of dispute, the disputing party shall engage the other party in informal dispute resolution among the VDH District Engineer, the VDH Field Director, the Ft.

Eustis Environmental Specialist, the Fort Eustis Chief, ENRD. The Dispute Resolution Committee (DRC) will serve as a forum for resolution of disputes for which agreement has not been reached through informal dispute resolution. The DRC will be comprised of the Fort Eustis Director of Public Works and the VDH Chief Engineer, Division of Water Supply Engineering. The DRC shall have twenty-one (21) calendar days to unanimously resolve the dispute and issue a written decision signed by all Parties. If the DRC is unable to unanimously resolve the dispute, the written statement of dispute shall be forwarded to the VDH Director of Compliance and Enforcement, Division of Water Supply Engineering.

13. Force Majeure: A Force Majeure shall mean any event arising from causes beyond the control of a Party that causes a delay in or prevents the performance of any obligation under this Agreement, including but not limited to, acts of God; fire; war; insurrection; civil disturbance; explosion; unanticipated breakage or accident to machinery, equipment or lines of pipe despite reasonably diligent maintenance; adverse weather conditions that could not be reasonably anticipated; unusual delay in transportation; restraint by court order or order of public authority; inability to obtain, at reasonable cost and after exercise of reasonable diligence, any necessary authorizations, approvals, permits or licenses due to action or inaction of any governmental agency or authority other than Fort Eustis; delays caused by compliance with applicable statutes or regulations governing contracting, procurement or acquisition procedures, despite the exercise of reasonable diligence; and insufficient availability of appropriated funds, if Fort Eustis shall have made timely request for such funds as part of the budgetary process as set forth in paragraph 11.J (7), above. A Force Majeure shall also include any strike or other labor dispute, whether or not within the control of the Parties affected thereby. Force Majeure shall not include increased costs or expenses of Response Actions; whether or not anticipated at the time such Response Actions were initiated.
14. This Order does not suspend, minimize, or otherwise alter Fort Eustis' obligation to comply with federal, state, or local laws and regulations. The Board waives no lawful means of enforcing the laws it administers, the regulations it has adopted, or this Order.
15. This Order shall become effective upon execution by the Board or its designee. Any request for modification of this Order must be submitted to VDH in writing to be considered for approval by the Board or its designee. The Board may revoke this Order in its discretion upon thirty days written notice to Commander, U.S. Army Transportation Center and Fort Eustis.

It is SO ORDERED at Richmond, this 15 day of March, 2001.

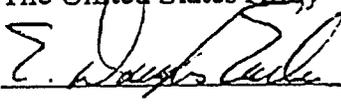
STATE BOARD OF HEALTH


E. Anne Peterson, M.D., M.P.H.
State Health Commissioner

CONSENT TO THE ORDER

The Owner voluntarily consents to the issuance of this Order:

The United States Army

By: 

Title/Rank or Office: COLONEL, GARRISON CDR

By signing above, the person so signing represents that he or she has been fully and duly authorized by the legal Owner of the subject waterworks to represent and bind the Owner in this matter, and to show the Owner's consent to the issuance of this Order.

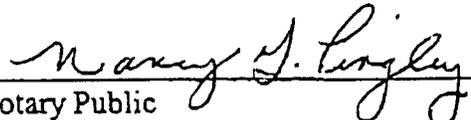
CERTIFICATION

COMMONWEALTH OF VIRGINIA

County/City of Newport News

The foregoing instrument was signed and acknowledged before me this 5th day of

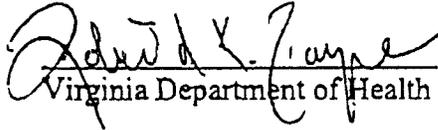
March, 2001 by E. Douglas Carle, Garrison Commander
(Name) (Title)
on behalf of Commander, U.S. Army Transportation Center and Fort Eustis,
(Legal Owner of the Waterworks)


Notary Public

My Commission expires: MY COMM. EXPIRES MAY 31, 2002

CERTIFICATE OF MAILING

I hereby certify that I mailed by certified mail a copy of the attached Order, executed by the State Health Commissioner, to Commander, Ft. Eustis Waterworks on the 15th day of March, 2001.


Virginia Department of Health

Directorate of Public Works

Mr. Chris Cartwright
Virginia Department of Health
Division of Water Programs
5700 Thurston Avenue, Suite 203
Virginia Beach, Virginia 23455

Dear Mr. Cartwright:

Per section D.11.J.(6) of the Fort Eustis Waterworks Consent Order, dated March 2001, Fort Eustis had one year to conduct an analysis of the age of all six inch and eight inch mains post-wide to facilitate a determination as to the order in which the lines are to be replaced. Based on this analysis, the replacement of all six inch and eight inch unlined cast iron pipes has been laid out in a five-phased water distribution system restoration plan.

At the end of last fiscal year, Fort Eustis received approximately \$2 million dollars for water distribution system improvement projects. Among the projects awarded were those comprising the first phase of the restoration plan, to include: development of a Potable Water System Operation & Maintenance Manual (D.11.G); revision of an Operation & Maintenance Support Information manual; review and enhancement of the current water quality sampling database; demolition of Water Tower #216 and restoration of its site; replacement/removal of deficient fire hydrants; refurbishment of valve vaults at Water Tower #1618 and Water Tower #1738 (D.11.J); recalibration of hydraulic & water quality model; pump testing & water quality testing of emergency wells (Well #1 & Well #3); permanent abandonment of Well #2; installation of a dedicated potable water line along Mulberry Island Road to service the Golf Course, James River Reserve Fleet, and the 3500 Block; and some replacement of 6" and 8" unlined cast iron pipes.

The enclosure provides information on line replacement projects which have been awarded thus far, estimated completion dates, and estimated footages of lines to be replaced during future phases. (Encl)

Should you have questions or comments regarding this subject, please contact Joanna Bateman at 878-4123 ext. 303.

Sincerely,

STEPHEN A. McCALL
Chief, Environmental and
Natural Resources Division

Enclosure

Proposed Line Replacement for Fort Eustis

Phase I

- 2100 Block (1660 LF - 8") & (30 LF - 6") Design completed. Estimated completion date for construction is June 30, 2002.
- 1100 Block (2770 LF - 6") Design completed: Work scheduled to begin MAY 02. Estimated completion date for construction is September 30, 2002.
- Mulberry Island Road (Dedicated Potable Water Line) Design package is scheduled to be ready for submittal to VDH for approval by May 15, 2002. Construction is scheduled to begin once VDH approval is received. Estimated completion date for construction is December 31, 2002.
- Felker Army Airfield (Dedicated Potable Water Line) Contract package has been submitted to the Directorate of Peninsula Contracting. Awaiting contract award.
- 600 Block (830 LF - 6") Design completed. Replacement of lines in this area is being reevaluated to address future development and fire flow requirements.
- 800 Block (1150 LF - 8") Design completed.

Phase II

Design work for Phase II is being handled by Engineering Services Division, Directorate of Public Works, Project # PWE-00085-7J. Design is 80% complete as of May 1, 2002. Scope of work involves the replacement of approximately 24,300 LF of 6" and 8" water mains in the following areas:

- 2900 Block (900 LF - 6") & (2000 LF - 8")
- 1400 Block (3600 LF - 8")
- 400 Block (200 LF - 6") & (3900 LF - 8")
- 1100 Block Farm House Area (1000 LF - 6")
- 2100 Block Billeting Area (600 LF - 6") & (1000 LF - 8")
- 3300 Block (1800 LF - 8")
- 1200 Block (400 LF - 6") & (4000 LF - 8")
- 1100 Block Pershing Avenue (400 LF - 6") & (1600 LF - 8")
- 6th Street (1000 LF - 6")
- 500 Block (900 LF - 6")
- 200 Block (1400 LF - 6")

Construction has not been awarded and is subject to the availability of funds. The order in which the sites are listed is the order in which the lines will be replaced.

Phase III

Replacement of approximately 15,200 LF of 6" & 8" mains in the following areas:

- 1900 Block (580 LF - 6") & (2000 LF - 8")
- 600 & 1000 Block (250 LF - 6") & (6400 LF - 8")
- 600 Block behind Bldg. 601 and along Tyler Avenue (580 LF - 6") & (440 LF - 8")
- 500 Block between Sternberg & Jefferson (430 LF - 6")
- 3300 Block (2200 LF - 8")
- Madison Avenue adjacent to the 2300 Block (2300 LF - 8")

Order of replacement has not been prioritized.

Phase IV

Replacement of approximately 13,200 LF of 6" & 8" mains in the following areas:

- 2700 Block (Buildings 2715 & 2716) (3400 LF - 8")
- 2700 Block (TMP, Harrison Loop, and SJA) (2200 LF - 6") & (1600 LF - 8")
- 2500 Block (1400 LF - 6") & (1700 LF - 8")
- Jefferson Avenue (2900 LF - 8")

Order of replacement has not been prioritized.

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Phase V

Replacement of approximately 18,400 LF of 6" & 8" mains in the following areas:

- Mulberry Island Road (line supplying Building 1424) (110 LF - 6") & (330 LF - 8")
- 600 Block (540 LF - 6") & (3600 LF - 8")
- 700 Block (Building 705) (2700 LF - 8")
- Madison Avenue, 25th Street, and 28th Street (2200 LF - 6") & (4100 LF - 8")
- Jackson Avenue & McLain Street (720 LF - 6") & (4100 LF - 8")

Order of replacement has not been prioritized.