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STATEMENT OF
HENRY ESCHWEGE, DIRECTOR
RESOURCES AND ECONOMIC DEVELOPMENT DIVISION
GENERAL ACCOUNTING OFFICE
BEFORE THE
SUBCOMMITTEE ON THE ENVIRONMENT
SENATE COMMITTEE ON COMMERCE
ON

EPA
1-24

S. 2304

REVIEW OF FEDERAL AND STATE PROGRAMS
FOR ASSURING THE PURITY AND SAFETY OF DRINKING WATER

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE:

WE ARE PLEASED TO APPEAR BEFORE YOU TODAY TO DISCUSS THE
RESULTS OF OUR REVIEW OF FEDERAL AND STATE PROGRAMS FOR ASSURING
THE PURITY AND SAFETY OF DRINKING WATER.

A REPORT ON THE RESULTS OF OUR REVIEW IS BEING DRAFTED AND
WILL BE SUBMITTED TO THE CONGRESS IN THE NEAR FUTURE. WE HOPE
THAT OUR TESTIMONY TODAY AND OUR REPORT, WHEN COMPLETED, WILL BE
USEFUL TO THIS SUBCOMMITTEE AND THE CONGRESS IN THEIR CONSIDERATION
OF S. 433, THE PROPOSED SAFE DRINKING WATER ACT OF 1973 AND OTHER
BILLS ON THE SAME SUBJECT.

OUR REVIEW WAS CONDUCTED IN THE STATES OF MARYLAND, MASSACHUSETTS,
OREGON, VERMONT, WASHINGTON, AND WEST VIRGINIA; AND INCLUDED COMMUNITY

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WATER SUPPLIES, THE FEDERAL INTERSTATE CARRIER WATER SUPPLY PROGRAM, DRINKING WATER AT FEDERAL RECREATION SITES, AND BOTTLED WATER.

LOCAL GOVERNMENTS AND UTILITIES HAVE THE RESPONSIBILITY FOR CONSTRUCTING, OPERATING, AND MAINTAINING WATER SUPPLY SYSTEMS AND TAKING SAMPLES OF THE WATER FOR SUBMISSION TO THE STATES. THE STATES HAVE ESTABLISHED WATER QUALITY STANDARDS AND SAMPLING REQUIREMENTS AND HAVE RESPONSIBILITY FOR MONITORING WATER QUALITY OF PUBLIC WATER SUPPLY SYSTEMS. FEDERAL AUTHORITY TO REGULATE DRINKING WATER IS RESTRICTED TO THE DRINKING WATER USED ON INTERSTATE CARRIERS AND TO BOTTLED DRINKING WATER SOLD INTERSTATE.

STATE DRINKING WATER PROGRAMS:

STATE AND LOCAL GOVERNMENTS HAVE THE PRIMARY RESPONSIBILITY FOR ENSURING THAT DRINKING WATER DELIVERED TO THE PUBLIC BY ABOUT 40,000 PUBLIC WATER SUPPLY SYSTEMS IN THE NATION IS PURE, SAFE, AND WHOLESOME. OVER THE YEARS, THE NUMBER OF WATERBORNE DISEASE OUTBREAKS HAS DECREASED SUBSTANTIALLY.

ALTHOUGH THE MAJORITY OF THE PEOPLE IN THE U.S. CAN BE ASSURED THAT THE WATER THEY DRINK IS SAFE, RECENT ENVIRONMENTAL PROTECTION AGENCY (EPA) STUDIES, AND OUR REVIEW OF THE WATER SUPPLY PROGRAMS IN SIX STATES, SHOWED THAT POTENTIALLY HAZARDOUS WATER IS BEING DELIVERED TO SOME CONSUMERS, PARTICULARLY BY SMALL WATER SUPPLY SYSTEMS SERVING POPULATIONS OF 5,000 OR LESS.

OUR REVIEW OF THE BACTERIOLOGICAL TEST RECORDS FOR 446
WATER SUPPLY SYSTEMS IN THE 6 STATES SHOWED THAT

--81 SYSTEMS WERE DELIVERING WATER WHOSE BACTERIA
CONTENT EXCEEDED THE LIMITS OF THE FEDERAL DRINKING
WATER STANDARDS FOR 2 OR MORE MONTHS DURING THE YEAR
ENDED MARCH 31, 1972. UNDER EPA'S PROGRAM FOR EVALUATING
AND CLASSIFYING INTERSTATE CARRIER WATER SUPPLY SYSTEMS,
THESE 81 SYSTEMS COULD BE CLASSIFIED AS PROHIBITED FOR
USE BY INTERSTATE CARRIERS.

---AN ADDITIONAL 44 SYSTEMS WERE DELIVERING WATER WHOSE
BACTERIA CONTENT EXCEEDED THE LIMITS OF THE FEDERAL
STANDARDS FOR 1 MONTH DURING THE YEAR AND COULD BE
CLASSIFIED AS PROVISIONALLY APPROVED FOR USE BY
INTERSTATE CARRIERS.

MANY OF THE 446 SYSTEMS WERE BEING TESTED BY THE STATES
AND LOCALITIES LESS FREQUENTLY THAN RECOMMENDED IN THE FEDERAL
STANDARDS AND THE QUALITY OF THE WATER WAS NOT FULLY KNOWN. OF
THE 446 SYSTEMS, 207 COULD HAVE BEEN CLASSIFIED BY EPA AS PRO-
HIBITED FOR USE BY INTERSTATE CARRIERS AND 112 SYSTEMS COULD
HAVE BEEN CLASSIFIED BY EPA AS PROVISIONALLY APPROVED BECAUSE
INSUFFICIENT SAMPLES WERE TAKEN.

OF THE 446 SYSTEMS, ONLY 60 WERE IN COMPLIANCE WITH BOTH
FEDERAL BACTERIOLOGICAL AND SAMPLING REQUIREMENTS AND COULD BE
CLASSIFIED AS APPROVED.

MR. CHAIRMAN, ON THE BASIS OF OUR REVIEW WE BELIEVE
THAT

- THE LOCAL GOVERNMENTS AND UTILITIES NEED TO
EXPAND, REPLACE, OR IMPROVE WATER TREATMENT
FACILITIES,
- THE STATES NEED TO IMPROVE THEIR WATER QUALITY
MONITORING PROGRAMS,
- THE STATES NEED TO ENSURE THAT WATER TREATMENT
PLANT OPERATORS ARE QUALIFIED AND ADEQUATELY
TRAINED, AND
- THE STATES, LOCAL GOVERNMENTS AND UTILITIES
NEED TO ESTABLISH MORE EFFECTIVE PROGRAMS FOR
ELIMINATING CROSS-CONNECTIONS (WHICH ARE PHYSICAL
CONNECTIONS BETWEEN DRINKING WATER DISTRIBUTION
SYSTEMS AND SYSTEMS CONTAINING SUBSTANCES WHICH COULD
CONTAMINATE THE DRINKING WATER).

MONITORING

THE FEDERAL DRINKING WATER STANDARDS RECOMMEND A MONITORING PROGRAM FOR WATER SUPPLY SYSTEMS THAT CALLS FOR FREQUENT ANALYSES OF THE WATER FOR BACTERIOLOGICAL CONTENT, PERIODIC ANALYSES OF THE WATER FOR CHEMICAL CONTENT, AND FREQUENT SANITARY SURVEYS OF THE WATER TREATMENT FACILITIES TO IDENTIFY POTENTIAL HEALTH HAZARDS.

THE SIX STATES IN OUR REVIEW HAD WATER QUALITY BACTERIOLOGICAL STANDARDS THAT WERE IDENTICAL TO THE FEDERAL DRINKING WATER STANDARDS. WITH THE EXCEPTION OF OREGON AND MASSACHUSETTS, WHICH REQUIRED THAT FEWER SAMPLES BE ANALYZED, THE STATES' BACTERIOLOGICAL SAMPLING REQUIREMENTS ALSO WERE IDENTICAL TO THE FEDERAL STANDARDS.

OREGON OFFICIALS TOLD US THAT THE STATE REQUIRED FEWER SAMPLES PRIMARILY BECAUSE IT DID NOT HAVE THE LABORATORY CAPACITY TO ANALYZE THE NUMBER OF SAMPLES RECOMMENDED IN THE FEDERAL STANDARDS. MASSACHUSETTS OFFICIALS TOLD US THAT, IN THEIR OPINION, THE STATE'S SAMPLING REQUIREMENTS, WHICH WERE 50 PERCENT LESS THAN THE FEDERAL STANDARDS, WERE SUFFICIENT TO PROVIDE A REPRESENTATIVE ANALYSIS OF THE QUALITY OF THE WATER.

AS PREVIOUSLY POINTED OUT, SEVERAL WATER SYSTEMS DID NOT COMPLY WITH FEDERAL BACTERIOLOGICAL QUALITY OR SAMPLING REQUIREMENTS. WHEN WATER SYSTEMS FAILED TO MEET BACTERIOLOGICAL STANDARDS OR SAMPLING REQUIREMENTS, THE STATES WROTE LETTERS TO, AND SOMETIMES VISITED, THE SYSTEMS TO STIMULATE CORRECTIVE ACTION. WE FOUND GENERALLY, HOWEVER, THAT THE LETTERS AND VISITS WERE NOT EFFECTIVE IN OBTAINING CORRECTIVE ACTION.

STATE OFFICIALS IN WEST VIRGINIA, WASHINGTON, OREGON AND MASSACHUSETTS TOLD US THAT IN SOME CASES THE STATES DID NOT

ENCOURAGE SYSTEMS TO SUBMIT THE REQUIRED NUMBER OF SAMPLES BECAUSE THE STATES LACKED SUFFICIENT LABORATORY CAPACITY AND ADEQUATE NUMBERS OF TECHNICIANS TO CONDUCT THE BACTERIOLOGICAL ANALYSES.

VERMONT AND MARYLAND OFFICIALS TOLD US THAT THEY HAD SUFFICIENT PERSONNEL AND LABORATORY CAPACITY TO ANALYZE THE SAMPLES. A REVIEW OF RECORDS SHOWED, HOWEVER, THAT MANY SYSTEMS WERE NOT SUBMITTING THE REQUIRED NUMBER OF SAMPLES.

THE STATES' CHEMICAL MONITORING PROGRAMS WERE NOT ADEQUATE. THE SIX STATES HAD ADOPTED THE FEDERAL CHEMICAL QUALITY STANDARDS AND REQUIRED THAT WATER SUPPLIES BE ANALYZED FOR CHEMICAL CONTENT. THEY DID NOT, HOWEVER, HAVE ANY RECORDS OF CHEMICAL ANALYSES FOR 79 OF THE 446 SYSTEMS WHOSE RECORDS WE REVIEWED. OF THE REMAINING 367 SYSTEMS ONLY 2 HAD CHEMICAL CONCENTRATIONS THAT EXCEEDED THE FEDERAL STANDARDS FOR PROTECTION OF HEALTH, BUT 135 SYSTEMS HAD CHEMICAL CONCENTRATIONS THAT EXCEEDED ONE OR MORE OF THE FEDERALLY RECOMMENDED STANDARDS FOR CLARITY, ODOR, AND THE CONSTITUENTS WHICH AFFECT TASTE--THE SO CALLED AESTHETIC CHARACTERISTICS OF DRINKING WATER. THE CHEMICAL QUALITY OF THE WATER FOR MOST OF THE 367 SYSTEMS WAS NOT FULLY KNOWN BECAUSE THE STATES GENERALLY DID NOT MAKE ANALYSES FOR MANY TOXIC AND HAZARDOUS ELEMENTS SUCH AS ARSENIC, CADMIUM, OR CYANIDE. FOR EXAMPLE, MASSACHUSETTS DID NOT MAKE ANALYSES FOR ANY OF THE 9 CHEMICALS INCLUDED IN THE FEDERAL HEALTH STANDARDS.

WITH THE EXCEPTION OF OREGON, THE STATES REQUIRED THAT CHEMICAL ANALYSES OF PUBLIC WATER SUPPLIES BE MADE ON AN ANNUAL BASIS. OREGON HAD REQUIRED CHEMICAL ANALYSIS ONLY WHEN A WATER SUPPLY WAS FIRST USED. AS OF MARCH 1972, THE MOST RECENT CHEMICAL ANALYSES FOR THE WATER SUPPLIES WHOSE RECORDS WE REVIEWED IN OREGON WERE AN AVERAGE OF 7 YEARS OLD.

IN PRACTICE, ONLY MASSACHUSETTS WAS CONSISTENTLY PERFORMING CHEMICAL ANALYSES ON AN ANNUAL BASIS. IN WASHINGTON, AS OF AUGUST 1972, THE MOST RECENT CHEMICAL ANALYSES WERE MORE THAN ONE YEAR OLD FOR 65 PERCENT OF THE SYSTEMS WHOSE RECORDS WE REVIEWED; IN VERMONT FOR 49 PERCENT, IN WEST VIRGINIA FOR 45 PERCENT, AND IN MARYLAND FOR 27 PERCENT.

STATE OFFICIALS TOLD US THAT ANNUAL CHEMICAL ANALYSES GENERALLY WERE NOT MADE FOR ALL CHEMICALS BECAUSE OF THE HIGH COST INVOLVED, INSUFFICIENT MANPOWER, AND/OR THE LOW PROBABILITY OF THE PRESENCE OF CERTAIN CHEMICALS IN THE WATER.

IN ADDITION TO BACTERIOLOGICAL AND CHEMICAL SAMPLING, THE FEDERAL DRINKING WATER STANDARDS RECOMMEND THAT FREQUENT SANITARY SURVEYS OF WATER SUPPLIES BE CONDUCTED TO LOCATE AND IDENTIFY HEALTH HAZARDS WHICH MIGHT LEAD TO CONTAMINATION OF THE SUPPLIES. FIVE OF THE STATES REVIEWED CONDUCTED SANITARY SURVEYS. THE SIXTH STATE, WASHINGTON, DID NOT MAKE SANITARY SURVEYS BUT REQUIRED ITS LARGER SUPPLY SYSTEMS TO SUBMIT ANNUAL

REPORTS WHICH CONTAINED MUCH OF THE INFORMATION WHICH WOULD BE OBTAINED DURING SANITARY SURVEYS.

OUR REVIEW OF STATE INSPECTION RECORDS SHOWED THAT THE EXTENT TO WHICH THE STATES CONDUCTED SANITARY SURVEYS VARIED SUBSTANTIALLY. FOR EXAMPLE, IN FISCAL YEAR 1972, WEST VIRGINIA MADE SURVEYS OF 122 OF THE STATE'S 615 SUPPLY SYSTEMS. OREGON, AS OF JULY 1972, HAD CONDUCTED SANITARY SURVEYS DURING THE PREVIOUS FIVE YEARS OF ONLY 197 OF THE STATE'S 510 WATER SUPPLY SYSTEMS. MARYLAND OFFICIALS TOLD US THAT EIGHT INSPECTORS MADE ABOUT 700 SURVEYS IN 1972 AND THAT THEIR GOAL WAS TO MAKE QUARTERLY SURVEYS AT ALL SYSTEMS.

WITH THE EXCEPTION OF MARYLAND, STATE OFFICIALS TOLD US THAT SANITARY SURVEYS WERE NOT BEING MADE AS OFTEN AS NECESSARY, OR IN SUFFICIENT DEPTH TO DETECT UNSANITARY CONDITIONS PRIMARILY BECAUSE OF A LACK OF MANPOWER.

FACILITIES

MANY OF THE WATER SUPPLY SYSTEMS WHOSE RECORDS WE REVIEWED WERE CONSTRUCTED MANY YEARS AGO AND HAD DEFICIENCIES WHICH COULD INHIBIT THE SYSTEMS' ABILITY TO DELIVER WATER OF AN ACCEPTABLE QUALITY. THE DEFICIENCIES WERE NOTED IN MANY SYSTEMS--BOTH LARGE AND SMALL.

FOR EXAMPLE, WEST VIRGINIA OFFICIALS TOLD US THAT MANY OF THE STATE'S WATER SUPPLY FACILITIES WERE FROM THIRTY TO FIFTY YEARS OLD. OF THE 615 SYSTEMS IN THE STATE, 415 NEEDED TO BE RENOVATED OR REPLACED--INCLUDING 46 WHICH NEEDED TO PROVIDE CHLORINATION. OF THE 415 SYSTEMS, 356 SERVED POPULATIONS OF LESS THAN 1,000.

THE DEFICIENCIES INCLUDED LACK OF CHLORINATION, INADEQUATE PROTECTION OF THE SOURCE OF THE WATER SUPPLY, INADEQUATE STORAGE CAPACITY, AND INADEQUATE DISTRIBUTION SYSTEM PRESSURE AND CAPACITY.

OUR REVIEW SHOWED THAT:

- THE COST TO CORRECT ALL THE DEFICIENCIES IN THE SYSTEMS IS QUITE HIGH.
- ALTHOUGH IT WOULD BE EXPENSIVE TO CORRECT ALL SYSTEM DEFICIENCIES, CORRECTION OF THOSE DEFICIENCIES CAUSING POTENTIAL HEALTH HAZARDS COULD BE MUCH LESS COSTLY.
- SMALL COMMUNITIES GENERALLY DID NOT HAVE THE FUNDS NEEDED TO CORRECT THE DEFICIENCIES.
- SOME COMMUNITIES WERE RELUCTANT TO PROVIDE CHLORINATION TO KILL BACTERIA IN THEIR DRINKING WATER BECAUSE THEY OBJECTED TO THE TASTE AND ODOR OF CHLORINE.

OPERATORS

WATER SUPPLY FACILITIES NEED TO BE PROPERLY OPERATED AND MAINTAINED BY QUALIFIED OPERATORS TO ENSURE THAT THEY DELIVER GOOD QUALITY WATER.

ALL THE STATES REVIEWED HAD OPERATOR CERTIFICATION AND TRAINING PROGRAMS, BUT THEY WERE NOT AS EFFECTIVE AS THEY SHOULD BE. TO OBTAIN CERTIFICATION, THE STATES GENERALLY REQUIRED THE OPERATOR TO MEET CERTAIN TRAINING AND EXPERIENCE REQUIREMENTS AND TO PASS AN EXAMINATION. OREGON AND WASHINGTON HAD VOLUNTARY CERTIFICATION PROGRAMS. THE OTHER FOUR STATES HAD MANDATORY CERTIFICATION PROGRAMS--TWO OF WHICH HAD BEEN ESTABLISHED WITHIN THE LAST 3 YEARS. WE FOUND, HOWEVER, THAT MANY OPERATORS HAD NOT BEEN CERTIFIED, EVEN IN THE STATES WHERE CERTIFICATION WAS MANDATORY. AS OF MAY 1973, FOR EXAMPLE, MASSACHUSETTS HAD NOT IMPLEMENTED ITS CERTIFICATION PROGRAM, ALTHOUGH IT WENT INTO EFFECT IN JULY 1972. GENERALLY, THOSE OPERATORS WHO HAD COMPLETED THE CERTIFICATION REQUIREMENTS WERE OPERATING AND MAINTAINING THE LARGE WATER TREATMENT SYSTEMS. FOR EXAMPLE, ALTHOUGH ONLY 4 PERCENT OF THE SYSTEMS IN WASHINGTON HAD CERTIFIED OPERATORS, THOSE SYSTEMS PROVIDED DRINKING WATER TO 77 PERCENT OF THE STATE'S POPULATION SERVED BY PUBLIC WATER SUPPLY SYSTEMS.

STATE OFFICIALS TOLD US THAT MANY OPERATORS OF SMALL SYSTEMS WERE NOT CERTIFIED AND WERE EMPLOYED ON A PART-TIME BASIS BECAUSE THE SYSTEMS DID NOT NEED, OR HAVE SUFFICIENT FUNDS FOR FULL-TIME OPERATORS. THEY SAID THAT THESE OPERATORS WERE FREQUENTLY NOT INTERESTED IN OBTAINING THE TRAINING REQUIRED FOR OPERATOR CERTIFICATION, AND THOSE WHO OBTAINED THE NEEDED TRAINING AND CERTIFICATION, GENERALLY SOUGHT BETTER PAYING FULL-TIME POSITIONS WITH THE LARGER SYSTEMS.

THE SIX STATES HAD TRAINING PROGRAMS TO QUALIFY OPERATORS FOR CERTIFICATION AND TO KEEP WATER SUPPLY PERSONNEL ABREAST OF THE LATEST DEVELOPMENTS IN OPERATING AND MAINTAINING SUPPLY SYSTEMS. MANY OPERATORS WERE NOT PARTICIPATING IN THESE PROGRAMS, HOWEVER. STATE OFFICIALS TOLD US THAT OPERATORS HAD NOT PARTICIPATED IN THE TRAINING PROGRAMS BECAUSE OF THE:

- LACK OF TRAVEL FUNDS FOR AN OPERATOR TO ATTEND TRAINING COURSES;
- LACK OF ANOTHER PERSON CAPABLE OF OPERATING THE SYSTEM IN THE OPERATOR'S ABSENCE;
- INABILITY OF A PART-TIME OPERATOR TO ATTEND BECAUSE HE HAD ANOTHER JOB; AND
- LACK OF INTEREST BY THE CITY ADMINISTRATION OR THE OPERATOR HIMSELF.

CROSS-CONNECTIONS

ONE OF THE MOST FREQUENT SOURCES OF CONTAMINATION OF DRINKING WATER IN THE DISTRIBUTION SYSTEM HAS BEEN A PHYSICAL CONNECTION, CALLED A CROSS-CONNECTION, BETWEEN THE DISTRIBUTION SYSTEM AND A SYSTEM CONTAINING SUBSTANCES WHICH COULD CONTAMINATE THE DRINKING WATER. WHENEVER SUCH A PHYSICAL CONNECTION EXISTS, THE UNWANTED SUBSTANCES CAN ENTER THE WATER DISTRIBUTION SYSTEM DUE TO EITHER A REDUCTION IN PRESSURE WITHIN THE WATER SYSTEM OR HIGHER PRESSURE IN THE SECOND SYSTEM.

THE MOST PUBLICIZED RECENT WATERBORNE DISEASE OUTBREAK WHICH OCCURRED AS A RESULT OF CROSS-CONNECTION HAPPENED AT HOLY CROSS COLLEGE IN WORCESTER, MASSACHUSETTS, IN 1969. NINETY INDIVIDUALS CONTACTED INFECTIOUS HEPATITIS AFTER DRINKING WATER FROM A FAUCET LOCATED IN AN ATHLETIC EQUIPMENT BUILDING. THE WATER LINE TO THE FAUCET RAN THROUGH A SERIES OF SUNKEN SPRINKLER BOXES USED FOR IRRIGATION. INVESTIGATORS FOUND THAT THE USE OF WATER TO FIGHT A NEARBY FIRE CAUSED A REDUCTION IN PRESSURE IN THE WATER MAIN AND IN SIPHONAGE OF CONTAMINATED WATER FROM THE SPRINKLER BOXES TO THE DRINKING FAUCET.

OTHER CROSS-CONNECTIONS HAVE RESULTED IN THE INFILTRATION OF TOXIC CHROMATE CHEMICALS, GASOLINE, HOT WATER, AND STEAM INTO DRINKING WATER SYSTEMS.

OUR REVIEW SHOWED THAT:

---VERMONT DID NOT HAVE A CROSS-CONNECTION CONTROL PROGRAM.

--THE CROSS-CONNECTION CONTROL PROGRAMS IN MASSACHUSETTS HAD BEEN LIMITED BECAUSE OF INSUFFICIENT PERSONNEL AND IN WEST VIRGINIA BECAUSE OF THE LACK OF LEGISLATIVE AUTHORITY.

--MARYLAND RECENTLY ESTABLISHED A PROGRAM TO ELIMINATE HEALTH HAZARDS ASSOCIATED WITH EXISTING CROSS-CONNECTIONS. IT PREVIOUSLY HAD A PROGRAM TO PREVENT CROSS-CONNECTIONS IN NEW CONSTRUCTION.

IN WASHINGTON AND OREGON, THE INDIVIDUAL WATER SUPPLY SYSTEMS HAD PRIMARY RESPONSIBILITY FOR CROSS-CONNECTION CONTROL. IN OREGON ONLY 8 OF THE 510 LARGER WATER SUPPLY SYSTEMS HAD ACTIVE CROSS-CONNECTION CONTROL PROGRAMS. WASHINGTON OFFICIALS TOLD US THAT, AS OF OCTOBER 1972, ONLY 2 OR 3 OF THE 400 LARGER SYSTEMS IN WASHINGTON HAD EFFECTIVE CROSS-CONNECTION CONTROL PROGRAMS.

INTERSTATE CARRIER WATER SUPPLY PROGRAM

ALTHOUGH SEVERAL FEDERAL PROGRAMS IMPACT ON DRINKING WATER, THERE ARE NO FEDERAL LAWS WHICH SPECIFICALLY REGULATE THE QUALITY OF MUNICIPAL WATER SUPPLIES.

THE FEDERAL GOVERNMENT HAS AUTHORITY TO REGULATE DRINKING WATER USED ON INTERSTATE CARRIERS--PLANES, TRAINS, BUSES, AND VESSELS. THE INTERSTATE CARRIER WATER SUPPLY PROGRAM WAS

ESTABLISHED UNDER BROAD LEGISLATIVE AUTHORITY CONTAINED IN THE PUBLIC HEALTH SERVICE ACT OF 1893, WHICH AUTHORIZED FEDERAL REGULATIONS FOR PREVENTING THE SPREAD OF COMMUNICABLE DISEASES BETWEEN THE STATES. UNDER THE ACT, THE PUBLIC HEALTH SERVICE ESTABLISHED DRINKING WATER STANDARDS, LAST REVISED IN 1962, FOR USE IN EVALUATING THE ADEQUACY OF INTERSTATE CARRIER WATER SUPPLIES.

SINCE 1970, EPA HAS BEEN RESPONSIBLE FOR REVISING THE DRINKING WATER STANDARDS AND FOR EVALUATING THE ADEQUACY OF THE WATER SUPPLIES USED BY INTERSTATE CARRIERS; AND THE FOOD AND DRUG ADMINISTRATION (FDA) HAS BEEN RESPONSIBLE FOR ENFORCING EPA'S DECISIONS TO PROHIBIT INTERSTATE CARRIERS FROM USING CONTAMINATED WATER SUPPLIES.

EPA ANNUALLY CLASSIFIES WATER SUPPLY SYSTEMS SERVING INTERSTATE CARRIERS AS APPROVED, PROVISIONALLY APPROVED, OR PROHIBITED ON THE BASIS OF INFORMATION AND RECOMMENDATIONS PROVIDED BY THE STATES AND SUPPLEMENTED BY FEDERAL OR JOINT FEDERAL-STATE SURVEYS OF THE SYSTEMS.

THE SIX STATES IN OUR REVIEW HAD A TOTAL OF 67 INTERSTATE CARRIER WATER SUPPLY SYSTEMS. OUR REVIEW OF THE RECORDS FOR THE 67 SYSTEMS SHOWED THAT

--17 HAD NOT USED CERTIFIED LABORATORIES FOR BACTERIOLOGICAL ANALYSES OF WATER SAMPLES AS REQUIRED BY EPA REGULATIONS,

--44 HAD NOT BEEN INSPECTED BY THE STATES DURING
1972 ALTHOUGH EPA RECOMMENDS ANNUAL INSPECTIONS
TO EVALUATE A SYSTEM'S RELIABILITY,
--38 DID NOT HAVE CERTIFIED OPERATORS, AND
--40 DID NOT HAVE CROSS-CONNECTION CONTROL PROGRAMS.

IN ADDITION, WE NOTED THAT EPA DID NOT ALWAYS TAKE
PROMPT ACTION TO RECLASSIFY WATER SUPPLIES FROM APPROVED TO
PROVISIONALLY APPROVED WHEN DEFICIENCIES WERE NOTED DURING
INSPECTIONS.

I WOULD LIKE NOW TO DISCUSS CERTAIN LIMITATIONS ON FEDERAL
AUTHORITY TO REGULATE THE QUALITY OF WATER SUPPLIES. IF EPA
DETERMINES THAT WATER SUPPLIES USED BY INTERSTATE CARRIERS ARE
NOT BACTERIOLOGICALLY SAFE, FEDERAL ENFORCEMENT ACTION IS
LIMITED TO PROHIBITING INTERSTATE CARRIERS FROM USING THE
SYSTEMS AS A SOURCE OF POTABLE WATER. PRESENT LEGISLATION
DOES NOT AUTHORIZE THE FEDERAL GOVERNMENT (1) TO TAKE ACTION
TO CORRECT THE BACTERIOLOGICAL PROBLEMS, OR (2) TO RESTRICT
THE USE OF THE WATER BY THE COMMUNITIES SERVED BY THE SYSTEMS.

THERE IS ALSO SOME QUESTION AS TO WHETHER EPA CAN ENFORCE
CHEMICAL STANDARDS BECAUSE CHEMICALS DO NOT CAUSE COMMUNICABLE
DISEASES.

ALTHOUGH THE RECORDS DID NOT INDICATE THAT CHEMICAL
STANDARDS HAD BEEN EXCEEDED AT THE 67 SYSTEMS, WE NOTED, THAT
AS OF DECEMBER 1972, ONLY SEVEN OF THE 67 SYSTEMS HAD BEEN
ANALYZED FOR CHEMICAL CONTENT DURING 1972.

I WOULD LIKE TO MENTION ONE ADDITIONAL MATTER RELATED TO DRINKING WATER AVAILABLE TO INTERSTATE TRAVELERS. THE FEDERAL GOVERNMENT HAS RELIED PRIMARILY ON THE STATES TO ASSURE THAT DRINKING WATER SUPPLIED TO TRAVELLERS AT INTER-STATE HIGHWAY REST AREAS IS OF GOOD QUALITY.

OUR REVIEW OF THE ADEQUACY OF STATE WATER QUALITY MONITORING PROGRAMS FOR 25 INTERSTATE HIGHWAY REST AREAS IN OREGON AND 21 INTERSTATE HIGHWAY REST AREAS IN WASHINGTON SHOWED THAT THE STATES' DRINKING WATER MONITORING PROGRAMS DID NOT PROVIDE SUCH ASSURANCE. WE FOUND THAT, IN GENERAL, OREGON'S BACTERIOLOGICAL SAMPLING OF REST AREA WATER SUPPLIES WAS ADEQUATE, BUT WASHINGTON'S WAS INADEQUATE. WASHINGTON HAD NOT MADE ANALYSES OF THE WATER SUPPLIED AT SOME REST AREAS SINCE THEY WERE FIRST OPENED IN 1971 AND 1972, AND HAD MADE ANALYSES ONLY ANNUALLY, OR LESS FREQUENTLY, OF THE WATER SUPPLIED AT OTHER AREAS. NEITHER STATE TOOK PERIODIC CHEMICAL SAMPLES OR MADE SANITARY SURVEYS OF REST AREA WATER SUPPLIES.

WATER SUPPLY SYSTEMS SERVING
FEDERAL RECREATION SITES

WE EVALUATED THE ADEQUACY OF FEDERAL WATER QUALITY MONITORING PROGRAMS AT 71 WATER SUPPLY SYSTEMS SERVING 35 CORPS OF ENGINEERS, NATIONAL PARK SERVICE, AND FOREST SERVICE RECREATION SITES IN OREGON AND WASHINGTON. WE FOUND THAT THE MONITORING PROGRAMS

DIFFERED WIDELY AMONG THESE AGENCIES AND THAT THE AGENCIES DID NOT HAVE REASONABLE ASSURANCE THAT THE QUALITY OF WATER SUPPLIED TO THE PUBLIC WAS OF ACCEPTABLE QUALITY.

THE CORPS OF ENGINEERS AND THE NATIONAL PARK SERVICE DID NOT HAVE GUIDELINES PRESCRIBING THE FREQUENCY FOR BACTERIOLOGICAL AND CHEMICAL SAMPLING OR SANITARY SURVEYS. THE FOREST SERVICE REQUIRED THAT WATER SAMPLES BE ANALYZED AT A FREQUENCY THAT VARIED BETWEEN TWICE A MONTH AND ONCE A SEASON DEPENDING ON THE SIZE OF THE SITE AND THE HISTORY OF PREVIOUS TEST RESULTS.

THE FEDERAL DRINKING WATER STANDARDS RECOMMEND THAT A MINIMUM OF TWO SAMPLES A MONTH FROM EACH WATER SUPPLY BE ANALYZED FOR BACTERIOLOGICAL CONTENT. WE FOUND THAT MOST WATER SUPPLIES WERE NOT SAMPLED TWICE A MONTH, AND MANY WERE SAMPLED INFREQUENTLY. FOR EXAMPLE, AS OF AUGUST 1972, SIX OF 17 CORPS OF ENGINEERS WATER SUPPLY SYSTEMS HAD BEEN SAMPLED ABOUT ONCE A YEAR, AND TWO HAD NOT BEEN SAMPLED DURING THE PERIOD JANUARY 1971 TO AUGUST 1972. OF THE 28 FOREST SERVICE SYSTEMS REVIEWED, NINE HAD NOT BEEN SAMPLED BETWEEN JANUARY 1972 AND AUGUST 1972.

WE FOUND ALSO THAT CHEMICAL ANALYSES OF THE WATER SYSTEMS WERE MADE INFREQUENTLY AND DID NOT INCLUDE TESTS FOR SUCH TOXIC AND HAZARDOUS ELEMENTS AS ARSENIC, CADMIUM, AND CYANIDE.

SANITARY SURVEYS WERE BEING MADE PERIODICALLY AT THE NATIONAL PARK SERVICE SITES BUT NOT AT THE CORPS OF ENGINEERS OR FOREST SERVICE SITES.

IN LETTERS TO THE CORPS OF ENGINEERS, FOREST SERVICE, AND THE NATIONAL PARK SERVICE SENT BETWEEN OCTOBER AND DECEMBER 1972, WE RECOMMENDED THAT THE THREE AGENCIES ENSURE THAT PERIODIC BACTERIOLOGICAL AND CHEMICAL SAMPLES ARE TAKEN OF THEIR WATER SUPPLY SYSTEMS AT RECREATION SITES. WE RECOMMENDED ALSO THAT THE CORPS AND FOREST SERVICE ENSURE THAT PERIODIC SANITARY SURVEYS ARE MADE OF THEIR WATER SUPPLY SYSTEMS.

ALL THREE AGENCIES GENERALLY AGREED WITH OUR RECOMMENDATIONS AND HAVE TAKEN OR PROPOSE TO TAKE ACTION TO IMPROVE THEIR MONITORING PROGRAMS.

OUR REVIEW DID NOT INCLUDE ALL FEDERAL AGENCIES HAVING PUBLIC RECREATION SITES. SIMILAR CONDITIONS MAY ALSO EXIST AT THE RECREATION SITES OF OTHER FEDERAL AGENCIES.

BOTTLED DRINKING WATER

OUR REVIEW ALSO COVERED FEDERAL-STATE REGULATION OF BOTTLED DRINKING WATER. INCREASED INTEREST IN THE ENVIRONMENT AND FEARS OF MUNICIPAL WATER SUPPLY POLLUTION IN RECENT YEARS HAS RESULTED IN A SIGNIFICANT INCREASE IN BOTTLED WATER SALES TO THE PUBLIC. HOWEVER, NEITHER THE FEDERAL NOR THE STATE AGENCIES INCLUDED IN OUR REVIEW HAD EFFECTIVE PROGRAMS FOR ASSURING THAT BOTTLED WATER WAS PURE, SAFE, AND FREE OF POTENTIAL HEALTH EFFECTS.

THE FEDERAL FOOD, DRUG, AND COSMETIC ACT AUTHORIZED FDA TO REGULATE IMPORTED AND DOMESTIC BOTTLED WATER SOLD INTERSTATE. AS OF MAY 1973, HOWEVER, FDA HAD NOT ESTABLISHED STANDARDS FOR BOTTLED WATER, OR A PROGRAM SPECIFICALLY FOR MONITORING THE QUALITY OF BOTTLED WATER. FEDERAL ACTIVITY HAD BEEN LIMITED TO TWO STUDIES OF THE QUALITY OF BOTTLED WATER AND SANITATION OF BOTTLING FACILITIES MADE BY EPA AND FDA DURING 1971 AND 1972.

BOTH STUDIES SHOWED THAT SOME BOTTLED WATER CONTAINED A LARGE NUMBER OF MICROORGANISMS—IN ONE CASE 28 MILLION MICROORGANISMS PER MILLILITER—INDICATING THAT THE WATER WAS BOTTLED UNDER UNSANITARY CONDITIONS. ALTHOUGH THERE ARE NO OFFICIAL STANDARDS FOR THE NUMBER OF MICROORGANISMS THAT MAY BE PRESENT IN DRINKING WATER, ACCEPTABLE POTABLE WATER USUALLY CONTAINS LESS THAN 1,000 MICROORGANISMS PER MILLILITER AND FREQUENTLY CONTAINS ONLY 2 OR 3 MICROORGANISMS.

MARYLAND, MASSACHUSETTS, OREGON, WASHINGTON, AND WEST VIRGINIA HAD PROGRAMS FOR THE REGULATION OF BOTTLERS AND BOTTLED WATER WHICH INCLUDED LICENSING OF BOTTLERS, INSPECTIONS OF BOTTLING FACILITIES, AND WATER QUALITY SAMPLING. WE DID NOT REVIEW VERMONT'S BOTTLED WATER PROGRAM. OUR REVIEW OF THE STATES' PROGRAMS SHOWED THAT:

--WASHINGTON AND OREGON DID NOT REGULATE BOTTLED WATER IMPORTED FROM OTHER COUNTRIES OR OTHER STATES. THE OTHER THREE STATES DID REGULATE SUCH WATER.

BEST DOCUMENT AVAILABLE

- WASHINGTON'S LICENSING PROGRAM WAS VOLUNTARY AND ONLY ONE OF FIVE BOTTLERS IN THE STATE WAS LICENSED. THE OTHER STATES HAD MANDATORY LICENSING PROGRAMS.
- THE STATES RARELY REVOKED LICENSES OF BOTTLERS WHO CONTINUALLY FAILED TO COMPLY WITH STATE REGULATIONS.
- THE STATES DID NOT TEST BOTTLED WATER FOR ALL THE CHEMICAL CONSTITUENTS INCLUDED IN THE DRINKING WATER STANDARDS.

TO DETERMINE THE QUALITY OF BOTTLED WATER AVAILABLE TO THE PUBLIC, WE PURCHASED OFF-THE-SHELF BOTTLED WATER AND HAD IT ANALYZED BY EPA OR STATE LABORATORIES. IN THE ABSENCE OF FEDERAL STANDARDS FOR BOTTLED WATER WE COMPARED THE TEST RESULTS TO THE DRINKING WATER STANDARDS. SOME OF THE SAMPLES HAD HIGH BACTERIA COUNTS--IN ONE CASE 1.9 MILLION MICROORGANISMS PER MILLILITER.

THE TESTS SHOWED THAT SOME BRANDS OF IMPORTED FOREIGN BOTTLED MINERAL WATER HAD CHEMICAL CONCENTRATIONS IN EXCESS OF THE DRINKING WATER STANDARDS' MANDATORY CHEMICAL LIMITS (LIMITS FOR PROTECTION OF HEALTH) FOR ARSENIC AND FLUORIDE, AND THE RECOMMENDED CHEMICAL STANDARDS FOR TOTAL DISSOLVED SOLIDS, MANGANESE, SULFATES, AND CHLORIDE.

ON AUGUST 7, 1972, WE PROVIDED FDA WITH THE TEST DATA WE HAD OBTAINED ON ONE BRAND OF BOTTLED MINERAL WATER WHICH HAD CHEMICAL CONCENTRATIONS IN EXCESS OF THE MANDATORY STANDARDS

FOR ARSENIC AND FLUORIDE. IN A LETTER TO US DATED SEPTEMBER 19, 1972, FDA STATED THAT ITS ANALYSIS OF BOTTLED WATER AND BOTTLED MINERAL WATER HAD NOT DISCLOSED HARMFUL AMOUNTS OF MINERALS. FDA'S ANALYSES OF SEVERAL SAMPLES OF ONE BRAND OF A FOREIGN IMPORTED MINERAL WATER, HOWEVER, SHOWED THAT THE ARSENIC AND FLUORIDE CONTENTS WERE SUBSTANTIALLY HIGHER THAN THOSE RECOMMENDED IN THE DRINKING WATER STANDARDS.

ON JANUARY 8, 1973, FDA PUBLISHED IN THE FEDERAL REGISTER PROPOSED BOTTLED WATER QUALITY STANDARDS WHICH ARE CONSISTENT WITH THE DRINKING WATER STANDARDS. WITH THE EXCEPTION OF MINERAL WATER, THE STANDARDS WOULD APPLY TO WATER THAT IS SEALED IN BOTTLES OR OTHER CONTAINERS AND INTENDED FOR HUMAN CONSUMPTION.

THE PROPOSED REGULATIONS REQUIRE THAT, IF THE BOTTLED WATER DOES NOT MEET THE PRESCRIBED STANDARDS, THE LABEL MUST SO STATE. WATER THAT CONTAINS HARMFUL AMOUNTS OF CHEMICALS AND BACTERIA CAN BE REMOVED FROM THE MARKET. HOWEVER, WATER WHICH IS BOTTLED AND SOLD AS MINERAL WATER IS EXEMPTED FROM THE LABELING REQUIREMENT EVEN THOUGH IT MAY CONTAIN BACTERIA OR CHEMICALS IN EXCESS OF THE AMOUNT ALLOWED UNDER FEDERAL QUALITY STANDARDS. AS OF MAY 1973, THE REGULATIONS HAD NOT BEEN FINALIZED.

S. 433 WOULD REQUIRE THAT BOTTLED DRINKING WATER COMPLY WITH NATIONAL PRIMARY DRINKING WATER STANDARDS ESTABLISHED BY EPA. S. 433 WOULD DEFINE "BOTTLED DRINKING WATER" AS WATER FOR HUMAN CONSUMPTION SOLD IN A CLOSED CONTAINER, AND WOULD, THEREFORE, INCLUDE MINERAL WATER.

BEST DOCUMENT AVAILABLE

WE BELIEVE THAT STANDARDS SHOULD BE SET FOR BOTTLED WATER, AND THAT SUCH STANDARDS SHOULD BE ENFORCED IF THE PUBLIC IS TO HAVE REASONABLE ASSURANCE THAT BOTTLED WATER IS OF ACCEPTABLE QUALITY.

IN CONCLUSION, MR. CHAIRMAN, WE BELIEVE THAT LEGISLATION BEFORE THIS SUBCOMMITTEE IS DESIGNED TO PROVIDE REASONABLE SOLUTIONS TO THE PROBLEMS WE IDENTIFIED. THE LEGISLATION WOULD REQUIRE EPA TO ESTABLISH NATIONAL PRIMARY DRINKING WATER STANDARDS, DESIGNED TO REASONABLY PROTECT THE PUBLIC HEALTH; AND NATIONAL SECONDARY STANDARDS, DESIGNED TO REASONABLY ASSURE AESTHETICALLY ADEQUATE DRINKING WATER.

THE LEGISLATION PROVIDES ALSO THAT STATES HAVE PRIMARY RESPONSIBILITY FOR ENFORCING THE STANDARDS, BUT IT AUTHORIZES EPA TO ENFORCE THE PRIMARY STANDARDS IF THE STATES FAIL TO TAKE CORRECTIVE ACTION AFTER RECEIVING NOTICE FROM EPA THAT A PUBLIC DRINKING WATER SYSTEM DOES NOT COMPLY WITH A PRIMARY STANDARD.

AND FINALLY THE LEGISLATION PROVIDES FOR MORE EFFECTIVE REGULATION OF (1) WATER AVAILABLE TO ALL INTERSTATE TRAVELLERS, (2) WATER AT FEDERAL RECREATION SITES, AND (3) BOTTLED WATER.

MR. CHAIRMAN, THIS CONCLUDES MY PREPARED STATEMENT. WE SHALL BE HAPPY TO ANSWER ANY QUESTIONS YOU MAY HAVE.