REPORT OF THE
DEPARTMENT OF GENERAL SERVICES,
DIVISION OF CONSOLIDATED LABORATORY SERVICES

Estimated Costs and Personnel Requirements for Administering MTBE Laboratory Tests for Public Water Supply Operators

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

HOUSE DOCUMENT NO. 12

COMMONWEALTH OF VIRGINIA
RICHMOND
2001

ESTIMATED COSTS AND PERSONNEL REQUIREMENTS FOR ADMINISTERING MTBE LABORATORY TESTS FOR PUBLIC WATER SUPPLY OPERATORS

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EXECUTIVE SUMMARY

The Department of General Services (DGS), Division of Consolidated Laboratory Services (DCLS) performs scientific analyses for the health, environmental, and consumer protection programs of state and local governments, and local water authorities. DCLS also maintains a laboratory certification program for laboratories under the Federal Safe Drinking Water Act.

§15.2-2144, part B, of the Code of Virginia (COV) requires every Public Water Supply (PWS) operator to test the public water supply for the presence of methyl tertiary-butyl ether (MTBE) at least quarterly and to maintain a record of all testing conducted pursuant to this subsection of the code (Attachment A). If the results of any test conducted pursuant to this subsection indicate the presence of MTBE in excess of fifteen parts per billion, the locality shall immediately notify the Department of Environmental Quality and the Department of Health. The Division of Consolidated Laboratory Services will maintain and make available, upon the request of any person, a list of laboratories located throughout the Commonwealth that possess the technical expertise to analyze water samples for the presence of MTBE. These laboratories shall be accredited laboratories under the provisions of the federal Safe Drinking Water Act (42 U.S.C. § 300f et seq.) to analyze water samples for the presence of MTBE. A listing of accredited laboratories as of November 1, 2000 can be found in Attachment C. Any lab seeking accreditation under the Safe Drinking Water Act may contact the Division of Consolidated Laboratory Services. The Division of Consolidated Laboratory Services is also directed to establish a fee system to offset the costs of tests performed on behalf of public water supply operators. Further, DCLS is required to report to the Governor and the General Assembly no later than November 1, 2000, on the estimated costs and personnel requirements for performing the MBTE tests on behalf of public water supply operators .

As stated in part A, §15.2-2144 of the COV, the purpose of the inspection of public and private water supplies by the localities is to prevent the pollution of such water supplies and to prevent the transmission or distribution of water when it is found to be polluted, adulterated, impure or dangerous. MBTE is regarded as such a pollutant when found to exist in excess of fifteen parts per billion.

The analysis of MTBE is performed using EPA Method 524.2.This method specifies both the instrumentation and preparations necessary to determine the amount of MTBE in water. The method requires analysts skilled in the operation of highly sophisticated instrumentation and interpretation of the data. Strict adherence to quality control criteria must be met prior to and during analysis. The average time to analyze, interpret and report data is approximately 1.4 hours per sample.

For purposes of this report, workload projections are based upon data retained in the Virginia Department of Health's database of Public Water Supply (PWS) systems. These data include 1,352 Community systems, 1,904 Non-Community systems, and 646 Non-Transient/Non-Community systems. These 3,902 PWS systems include about 100 systems with multiple sampling sites. For purposes of this cost analysis, a 4,500-sample load per quarter is estimated, which included these multiple distribution sites.

Attachment B provides a detailed cost package for MTBE analysis to support this report. The cost will vary with workload and the number of systems that commit to using DCLS to provide this service. Variables considered in this analysis include the following:

1. DCLS Manpower: Current staffing will only support testing 80 samples per quarter. Increased staffing of up to 11.0 FTEs will be needed to support the proposed increases in MTBE testing.

2. Instrumentation: DCLS can analyze for 546 samples per quarter using existing instrumentation and assumes instrumentation downtime of approximately two weeks per quarter. Additional instrumentation will need to be purchased and installed to meet the proposed increases in MTBE testing.

3. Maintenance & Repair: Based upon historical experience this cost is estimated as 12% of the instrument cost.

4. Supply & Materials: Costs are estimated from previous work experience.

5. Minor Equipment: Large volume refrigerators will be required for preserving samples until analysis. Additional data entry stations (computers) will be necessary for efficient workflow tracking and reporting. As the workload increases so does the need for additional refrigerators and data entry stations.

6. Renovation: As the workload increases so does the need for additional space to accommodate the additional staff and equipment. To achieve full testing capacity, an estimate of 1600 square feet of space will need renovation. The cost for this renovation is estimated as $150,000.

7. Facilities: Full cost recovery for MTBE analysis includes rent at $18 a square foot.

8. Indirect Cost: Based on experience this cost is 30% of direct costs.

9. Treasury Loans: To purchase instrumentation and perform renovation it will be necessary to obtain Treasury Loans.

MAJOR ISSUES AND FINDINGS

The MTBE analysis will be an enterprise activity funded entirely through fees from Public Water Supply (PWS) systems requesting laboratory testing. The resources required will depend on the number of commitments for testing service obtained from those PWS systems. To accommodate every PWS in the Commonwealth of Virginia, the Division of Consolidated Laboratory Services would need approval to spend the revenue generated by this enterprise activity. This approval would: (1) provide funds for salaries to support an increase of 11.0 FTE to the DCLS Maximum Employee Level (MEL), (2) provide funds to purchase and maintain eight instruments supplies and materials and other minor equipment, and (3) provide funds to renovate laboratory space. We estimate a total operational budget of $1.76 million will be needed to support the MTBE testing for all public water systems.

Before this program is implemented, the number of PWS systems that will require laboratory services from the Division of Consolidated Services needs to be defined. The fee to be charged to the PWS systems for MTBE analysis cannot be determined until this total number is known. However, if the Division of Consolidated Laboratory Services performs testing of all 3,902 PWS systems for MTBE it will result in a cost per sample of approximately $89.50. This equates to an annual estimated cost of a little more than $357.00 per sampling site. This annual charge will increase if fewer PWS systems request service. In today's market, private laboratory fees have been quoted in the range of $110-$150 per sample or an annualized cost of $440-$600 per sample site. Smaller systems may be unable financially or unwilling to comply with the requirements of §15.2-2144, part B, of the COV.

RECOMMENDATIONS

DGS recommends that, due to the uncertainty regarding the scope of the program, language be included to the Governor's Budget authorizing the program, and establishing a sum sufficient appropriation not to exceed 11.00 FTE and $1.76 million annually.

The language should also require DGS to submit a revised resource estimate to the Department of Planning and Budget, the House Appropriations Committee and the Senate Finance' Committee once the administrative process requirements have been satisfied but prior to implementation of the program.

Attachment A

VIRGINIA ACTS OF ASSEMBLY -- 2000 SESSION

CHAPTER 1004

An Act to amend and reenact § 15.2-2144 of the Code of Virginia, relating to inspection of public water supply.

[H 909]

Approved April 9, 2000

Be it enacted by the General Assembly of Virginia:

1. That § 15.2-2144 of the Code of Virginia is amended and reenacted as follows:

§ 15.2-2144. Inspection of water supplies.

A. Every locality may regulate and inspect public and private water supplies; the production, preparation, transmission and distribution of water; and the sanitation of establishments, systems,
facilities and equipment in or by means of which water is produced, prepared, transmitted and distributed. It may prevent the pollution of such water supplies; and, without liability to the owner thereof, may prevent the transmission or distribution of water when it is found to be polluted, adulterated, impure or dangerous.

B. Every public water supply operator shall at least quarterly test the public water supply for the presence of methyl tertiary-butyl ether (MTBE). The locality shall maintain a record of testing conducted pursuant to this subsection. If the results of any test conducted pursuant to this subsection indicates the presence of MTBE in excess of fifteen parts per billion, the locality shall immediately notify the Department of Environmental Quality and the Department of Health. The Division of Consolidated Laboratory Services shall maintain and make available, upon the request of any person, a list of laboratories, accredited under the provisions of the federal Safe Drinking Water Act (42 U.S.C. § 300f et seq.) to analyze samples, located throughout the Commonwealth that possess the technical expertise to analyze water samples for the presence of MTBE. Any lab seeking accreditation under the Safe Drinking Water Act may contact the Division of Consolidated Laboratory Services. The Division of Consolidated Laboratory Services shall establish a fee system to offset the costs of tests performed on behalf of public water supply operators.

2. That the Department of General Services' Division of Consolidated Laboratory Services shall report to the Governor and the General Assembly no later than November 1, 2000, on the estimated costs and personnel requirements for administering tests pursuant to this act.

Attachment C

List of In-State Certified Laboratories

HAMPTON

00030 **Universal Laboratory**
ATTN: Ms. Carol Cooper
20 Research Drive
Hampton, Va 23666
757-865-0880
Private - Micro, Inorganic, Organic

HERNDON

00125 **Fairfax County Water Authority**
Corbalis Water Treatment Plant
ATTN: Ms. Melissa Billman
12015 John Donnelly Street
Herndon, VA 20170
703-289-6550, 6549 (ET)
703-698-5600 (Customer Services)
Public - Micro, Inorganic, Organic

LYNCHBURG

00049 **Central Virginia Laboratory & Consultants**
ATTN: Mr. Adrian Mood
Postal Address: P.O. Box 10938
Lynchburg, VA 24506-0938
Lab Location: 3109 Odd Fellows Road
804-847-2852
800-296-1470
Private - Micro, Inorganic, Organic

NEWPORT NEWS

00280 **James R. Reed and Associate, Inc.**
ATTN: Ms. Elaine Claiborne
11864 Canon Blvd., Suite 103
Newport News, VA 23606
757-873-4703
Private - Micro, Inorganic, Organic

RICHMOND

00010 **Analytics Laboratory**
ATTN: Ms. Shamsi Taghavi
Postal Address: P.O. Box 25249
Richmond, VA 23260
Lab Location: 8040 Villa Park Drive, Suite 250
804-264-7100 Extension 5275
880-888-8061
Private - Inorganic, Organic

00012 **Air, Water & Soil Laboratory, Inc.**
ATTN: Ms. Carmela Tombes
2119A North Hamilton Street
Richmond, VA 23230
804-358-8295
Private - Organic

00237 **Primary Laboratories**
ATTN: Mr. David B. Stoneman
2087 Dabney Road
Richmond, VA 23230
804-213-0831
Private - Inorganic, Organic

WOODBRIDGE

00240 **Prince William County Service Authority**
ATTN: Mr. Michael Barry
P.O. Box 2266
Woodbridge, VA 22193-0266
703-670-8101
Public - Micro, Inorganic, Organic