

New England States' Drinking Water Programs Quality Assurance Project Plan

**Revision 2.3
August 12, 2002**

**Previous Versions:
Rev. 1.0, Dec. 15, 2000
Rev. 2.0, Sept. 7, 2001
Rev. 2.1, Feb. 21, 2002
Rev. 2.2, March 28, 2002**

**This QAPP was prepared jointly
by representatives of
the Drinking Water Programs of
the Six New England States
with assistance from
EPA New England.**

CONCURRENCE PAGE
New England States' Drinking Water Programs
Quality Assurance Project Plan
Rev. 2.3, August 12, 2002

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Connecticut Department of Public Health

Gerald R. Iwan, Ph.D.

Signature

Date

Massachusetts Department of Environmental Protection

David Terry

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Maine Department of Human Services

Nancy Beardsley

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Anthony Giunta

Signature

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Rhode Island Department of Health

June A. Swallow, P.E.

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Vermont Department of Health

Jay L. Rutherford, P.E.

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U.S. ENVIRONMENTAL PROTECTION AGENCY

EPA New England Associate Director for Drinking Water

Jane Downing

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EPA New England Quality Assurance Manager

Gerald Sotolongo

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Date

**New England States' Drinking Water Programs
Quality Assurance Project Plan
Workgroup**

Members	Agency
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Nancy Beardsley Mike Corbin	Maine Department of Human Services
Chuck Larson Isabel Collins	Massachusetts Department of Environmental Protection
Richard Thayer	New Hampshire Department of Environmental Services
June Swallow	Rhode Island Department of Health
Jean Nicolai	Vermont Department of Environmental Conservation
Art Clark Ellie Kwong	EPA New England

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EPA-NE QAPP Worksheet #1 - Rev. 10/99

Site Name/Project Name: CT Department of Public Health
Site Location: 410 Capitol Ave
Hartford, CT 06134

Title: CT-DW-QAPP
Revision Number: 1
Revision Date: January 1, 2001
Page: 1 of 1

Document Title: State of Connecticut Drinking Water Quality Assurance Project Plan

Lead Organization (Agency, State, Tribe, Federal Facility, PRP, or Grantee): CT Department of Public Health (CT/DPH)

Preparer's Name and Organizational Affiliation: Sandra Downie, Program Developer, Water Supplies Section, CT/DPH

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Preparation Date (Day/Month/Year): January 1, 2001

Investigative Organization's Project Manager:

Signature/Date

Printed Name/Organization

Investigative Organization's Project QA Officer:

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Lead Organization's Project Manager: Gerald R. Iwan, Ph.D

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CT/DPH, Bureau of Regulatory Services, Div. of Environmental Health, Water Supplies Section

Printed Name/Organization

Approval Signature:

Signature/Date

Printed Name/Title

Approval Authority

Other Approval Signatures:

Signature/Date

Printed Name/Title

Document Control Number:

(4)

EPA-NE QAPP Worksheet #1 - Rev. 10/99

Site Name/Project Name: MA DEP-DWP
Site Location: Massachusetts

Title: NE States DW QAPP
Revision Number: 1.0
Revision Date: January 1, 2001
Page: of

Document Title: Massachusetts Drinking water Quality Assurance Project Plan

Lead Organization (Agency, State, Tribe, Federal Facility, PRP, or Grantee): MA Department of Environmental Protection

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Preparation Date (Day/Month/Year): January 1, 2001

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Signature/Date

Printed Name/Title

Approval Authority

Other Approval Signatures:

Signature/Date

Printed Name/Title

Document Control Number:

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EPA-NE QAPP Worksheet #1 - Rev. 10/99

Site Name/Project Name: Maine Drinking Water Program
Site Location: Maine

Title: NE States DW QAPP
Revision Number: 1.0
Revision Date: 1/1/01
Page: of

Document Title: State of Maine Drinking Water Quality Assurance Project Plan

Lead Organization (Agency, State, Tribe, Federal Facility, PRP, or Grantee): Maine Drinking Water Program

Preparer's Name and Organizational Affiliation: Michael Corbin, Compliance Manager, Maine Drinking Water Program

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Investigative Organization's Project Manager: Nancy Beardsley, Director, Maine Drinking Water Program

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EPA-NE QAPP Worksheet #1 - Rev. 10/99

Site Name/Project Name: NH DES WD WSEB

Site Location: Concord, NH

Title: QAPP Title Page

Revision Number: 2nd Draft

Revision Date: 2/12/01

Page: 1 of 1

Document Title: New Hampshire Water Supply Engineering Bureau's Quality Assurance Project Plan

Lead Organization (Agency, State, Tribe, Federal Facility, PRP, or Grantee): NH Department of Environmental Services, Water Division, Water Supply Engineering Bureau

Preparer's Name and Organizational Affiliation: Richard Thayer, NH DES WD WSEB, Sanitary Engineer II

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(7)

EPA-NE QAPP Worksheet #1 - Rev. 10/99

Site Name/Project Name: Rhode Island Department of Health, Office of
Drinking Water Quality
Site Location: Rhode Island

Title: NE States DW QAPP
Revision Number: List 1.0
Revision Date: 1/1/01
Page: of

Document Title: Rhode Island Drinking Water Quality Assurance Plan

Lead Organization (Agency, State, Tribe, Federal Facility, PRP, or Grantee): Rhode Island Department of Health

Preparer's Name and Organizational Affiliation: June A. Swallow, P.E., Chief, Office of Drinking Water Quality, RI HEALTH

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EPA-NE QAPP Worksheet #1 - Rev. 10/99

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Site Name/Project Name: Department of Environmental Conservation
Water Supply Division
Site Location: 103 South Main Street, Waterbury Vermont

Title: NE States DW QAPP
Revision Number: 1.0
Revision Date: 1/1/01
Page: of

Document Title: Vermont Drinking Water Quality Assurance Project Plan

Lead Organization (Agency, State, Tribe, Federal Facility, PRP, or Grantee):
State of Vermont, Agency of Natural Resources, Department of Environmental Conservation, Water supply Division

Preparer's Name and Organizational Affiliation: Jean M. Nicolai, DEC Water Supply Division

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Preparation Date (Day/Month/Year): January 1, 2001

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Document Control Number:

EPA-NE QAPP Worksheet #2 - Rev. 10/99

Site Name/Project Name: NE States' Drinking Water Programs
Site Location: CT, MA, ME, NH, RI & VT
Site Number/Code:
Operable Unit:
Contractor Name:
Contractor Number:
Contract Title:
Work Assignment Number:
Anticipated date of QAPP Implementation: January 1, 2001

Title: NE States DW QAPP
Revision Number: 1.0
Revision Date: January 1, 2001
Page: of

1. Identify Guidance used to prepare QAPP: EPA New England Compendium of Quality Assurance, Oct. 1999

2. Identify EPA Program: Drinking Water

3. Identify approval entity: EPA-NE or State: EPA New England Quality Assurance Unit
or other entity:

4. Indicate whether the QAPP is a generic program QAPP or a project specific QAPP. (underline one) Generic

5. List dates of scoping meetings that were held: 5/25/00, 6/22/00, 7/25/00, 9/7/00, 9/28/00, 10/19/00, 11/9/00

6. List title of QAPP documents and approval dates written for previous site work, if applicable:

Title	Approval Date
-------	---------------

7. List organizational partners (stakeholders) and connection with EPA and/or State: The drinking water programs of the following state agencies worked with the EPA New England Regional Office to prepare this document: Connecticut Department of Public Health, Maine Department of Human Services, Massachusetts Department of Environmental Protection, New Hampshire Department of Environmental Services, Rhode Island Department of Health, Vermont Department of Health

8. List data users: EPA, the above state agencies, and the public.

9. If any required QAPP Elements (1-20), Worksheets and/or Required Information are not applicable the project, then circle the omitted QAPP Elements, Worksheets and Required Information on the attached Table. Provide an explanation for their exclusion below:

Worksheets 14 & 15: No field equipment is used. All samples are collected as grab samples directly into sample containers.

Worksheets 17, 18, 19, 23a & 23b: No field analyses are performed.

Worksheet 25: Non-direct measurements are not performed.

Table 1. Region I, EPA-NE QAPP Requirement Summarization

10

EPA QA/R-5 QAPP ELEMENTS	REQUIRED EPA-NE QAPP ELEMENTS and CORRESPONDING EPA-NE QAPP SECTIONS	EPA-NE QAPP Worksheet #	REQUIRED INFORMATION
Project Management and Objectives			
A1	1.0 Title and Approval Page	1	- Title and Approval Page
A2	2.0 Table of Contents and Document Format 2.1 Table of Contents 2.2 Document Control Format 2.3 Document Control Numbering System 2.4 EPA-NE QAPP Worksheet #2	2	- Table of Contents - EPA-NE QAPP Worksheet
A3	3.0 Distribution List and Project Personnel Sign-off Sheet	3 4	- Distribution List - Project Personnel Sign-off Sheet
A4, A8	4.0 Project Organization 4.1 Project Organizational Chart 4.2 Communication Pathways 4.2.1 Modifications to Approved QAPP 4.3 Personnel Responsibilities and Qualifications 4.4 Special Training Requirements/ Certification	5a 5b 6 7	- Organizational Chart - Communication Pathways - Personnel Responsibilities and Qualifications Table - Special Personnel Training Requirements Table
A5	5.0 Project Planning/Project Definition 5.1 Project Planning Meetings 5.2 Problem Definition/Site History and Background	8a 8b	- Project Scoping Meeting Attendance Sheet with Agenda and other Project Planning Meeting Documentation - Problem Definition/Site History and Background - EPA-NE DQO Summary Form - Site Maps (historical and present)
A6	6.0 Project Description and Schedule 6.1 Project Overview 6.2 Project Schedule	9a 9b 9c 9d 10	- Project Description - Contaminants of Concern and Other Target Analytes Table - Field and Quality Control Sample Summary Table - Analytical Services Table - System Designs - Project Schedule Timeline Table
A7	7.0 Project Quality Objectives and Measurement Performance Criteria 7.1 Project Quality Objectives 7.2 Measurement Performance Criteria	11a 11b	- Project Quality Objectives/Decision Statements - Measurement Performance Criteria Table
Measurement/Data Acquisition			
B1	8.0 Sampling Process Design 8.1 Sampling Design Rationale	12a 12b	- Sampling Design and Rationale - Sampling Locations, Sampling and Analysis Method/SOP Requirements Table - Sample Location Map

EPA QA/R-5 QAPP ELEMENTS	REQUIRED EPA-NE QAPP ELEMENTS and CORRESPONDING EPA-NE QAPP SECTIONS	EPA-NE QAPP Worksheet #	REQUIRED INFORMATION
B2, B6, B7, B8	9.0 Sampling Procedures and Requirements 9.1 Sampling Procedures 9.2 Sampling SOP Modifications 9.3 Cleaning and Decontamination of Equipment/Sample Containers 9.4 Field Equipment Calibration 9.5 Field Equipment Maintenance, Testing and Inspection Requirements 9.6 Inspection and Acceptance Requirements for Supplies/ Sample Containers	13 12b 14 15	- Sampling SOPs - Project Sampling SOP Reference Table - Sampling Container, Volumes and Preservation Table - Field Sampling Equipment Calibration Table - Cleaning and Decontamination SOPs - Field Equipment Maintenance, Testing and Inspection Table
B3	10.0 Sample Handling, Tracking and Custody Requirements 10.1 Sample Collection Documentation 10.1.1 Field Notes 10.1.2 Field Documentation Management System 10.2 Sample Handling and Tracking System 10.3 Sample Custody	16	- Sample Handling, Tracking and Custody SOPs - Sample Handling Flow Diagram - Sample Container Label (Sample Tag) - Chain-of-Custody Form and Seal
B4, B6, B7, B8	11.0 Field Analytical Method Requirements 11.1 Field Analytical Methods and SOPs 11.2 Field Analytical Method/SOP Modifications 11.3 Field Analytical Instrument Calibration 11.4 Field Analytical Instrument/ Equipment Maintenance, Testing and Inspection Requirements 11.5 Field Analytical Inspection and Acceptance Requirements for Supplies	17 18 19	- Field Analytical Methods/SOPs - Field Analytical Method/SOP Reference Table - Field Analytical Instrument Calibration Table - Field Analytical Instrument/Equipment Maintenance, Testing and Inspection Table
B4, B6, B7, B8	12.0 Fixed Laboratory Analytical Method Requirements 12.1 Fixed Laboratory Analytical Methods and SOPs 12.2 Fixed Laboratory Analytical Method/SOP Modifications 12.3 Fixed Laboratory Instrument Calibration 12.4 Fixed Laboratory Instrument/ Equipment Maintenance, Testing and Inspection Requirements 12.5 Fixed Laboratory Inspection and Acceptance Requirements for Supplies	20 21	- Fixed Laboratory Analytical Methods/SOPs - Fixed Laboratory Analytical Method/SOP Reference Table - Fixed Laboratory Instrument Maintenance and Calibration Table
B5	13.0 Quality Control Requirements 13.1 Sampling Quality Control 13.2 Analytical Quality Control 13.2.1 Field Analytical QC 13.2.2 Fixed Laboratory QC	22a 22b 23a 23b 24a 24b	Sampling - Field Sampling QC Table - Field Sampling QC Table cont. Analytical - Field Analytical QC Sample Table - Field Analytical QC Sample Table cont. - Field Screening/Confirmatory Analysis Decision Tree - Fixed Laboratory Analytical QC Sample Table - Fixed Laboratory Analytical QC Sample Table cont.

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EPA QA/R-5 QAPP ELEMENTS	REQUIRED EPA-NE QAPP ELEMENTS and CORRESPONDING EPA-NE QAPP SECTIONS	EPA-NE QAPP Worksheet #	REQUIRED INFORMATION
B9	14.0 Data Acquisition Requirements	25	- Non-Direct Measurements Criteria and Limitations Table
A9, B10	15.0 Documentation, Records and Data Management 15.1 Project Documentation and Records 15.2 Field Analysis Data Package Deliverables 15.3 Fixed Laboratory Data Package Deliverables 15.4 Data Reporting Formats 15.5 Data Handling and Management 15.6 Data Tracking and Control	26	- Project Documentation and Records Table - Data Management SOPs
Assessment/Oversight			
C1	16.0 Assessments and Response Actions 16.1 Planned Assessments 16.2 Assessment Findings and Corrective Action Responses 16.3 Additional QAPP Non-Conformances	27a 27b 27c	- Assessment and Response Actions - Project Assessment Table - Project Assessment Plan - Audit Checklists
C2	17.0 QA Management Reports	28	- QA Management Reports Table
Data Validation and Usability			
D1	18.0 Verification and Validation Requirements		- Validation Criteria Documents *
D2	19.0 Verification and Validation Procedures	29a 29b 29c	- Data Evaluation Process - Data Validation Summary Table - Data Validation Modifications
D3	20.0 Data Usability/Reconciliation with Project Quality Objectives	30	- Data Usability Assessment

* Include Data Validation Criteria Document as an attachment to the QAPP if Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses will not be used for validating project data.

Note: Required project-specific information should be provided in tabular format, as much as practicable. However, sufficient written discussion in text format should accompany these tables. Certain sections, by their nature, will require more written discussion than others. In particular, Section 8.0 should provide an in-depth explanation of the sampling design rationale and Sections 18-20 should describe the procedures and criteria that will be used to verify, validate and assess data usability.

Distribution List

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MA

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Distribution List

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Title: Vermont
Revision Number:
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Distribution List

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Copies of this form must be signed by project personnel from each organization to indicate that they have read the QAPP and will implement the QAPP as prescribed. Each organization must keep the original signed "Sheets" in their organization's project file and forward copies of the signed "Sheets" to the Lead Organization. (Refer to *QAPP Manual* Section 3.0 for guidance.)

Title: CT-DW-QAPP
Revision Number: 1
Revision Date: January 1, 2001
Page: 1 of 1

CT

Project Personnel Sign-Off Sheet

Organization:

Project Personnel	Title	Telephone Number	Signature	Date QAPP Read	QAPP Acceptable as Written
Gerald Iwan, Ph.D.	Section Chief, Water Supplies Section	860-509-7333			
Raymond Jarema	Section Supv., Water Supplies Section	860-509-7333			
Katherine Kelley, Ph.D.	Director, CT Dept. of Public Health Laboratory	860-509-8500			
Danuta Medynski	Quality Assurance/Quality Control Chemist	860-509-8546			
State personnel will sign this sheet upon completion of appropriate sampling training.					

EPA-NE QAPP Worksheet #4 - Rev. 10/99

Copies of this form must be signed by project personnel from each organization to indicate that they have read the QAPP and will implement the QAPP as prescribed. Each organization must keep the original signed "Sheets" in their organization's project file and forward copies of the signed "Sheets" to the Lead Organization. (Refer to *QAPP Manual* Section 3.0 for guidance.)

Title: NE States DW QAPP

Revision Number: 1.0

Revision Date: January 1, 2001

Page: of

MA

Project Personnel Sign-Off Sheet

Organization:

Project Personnel	Title	Telephone Number	Signature	Date QAPP Read	QAPP Acceptable as Written
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Robert Serabian	DEP Lab Quality assurance Officer	(978) 682-5237x322			
Damon Guterman	DEP Lab Liaison/Monitoring Compliance Officer	(617) 574-6811			
State personnel will sign this sheet upon completion of appropriate sampling training					

Copies of this form must be signed by project personnel from each organization to indicate that they have read the QAPP and will implement the QAPP as prescribed. Each organization must keep the original signed "Sheets" in their organization's project file and forward copies of the signed "Sheets" to the Lead Organization. (Refer to *QAPP Manual* Section 3.0 for guidance.)

ME

Title: NE States DW QAPP
Revision Number: 1.0
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Project Personnel Sign-Off Sheet

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HN

Title: NE States, DW QAPP, NH
Revision Number:1
Revision Date:10/10/01
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Organization:

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Title:
Revision Number:
Revision Date:
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Project Personnel Sign-Off Sheet

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Copies of this form must be signed by project personnel from each organization to indicate that they have read the QAPP and will implement the QAPP as prescribed. Each organization must keep the original signed "Sheets" in their organization's project file and forward copies of the signed "Sheets" to the Lead Organization. (Refer to *QAPP Manual* Section 3.0 for guidance.)

Title:
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Project Personnel Sign-Off Sheet

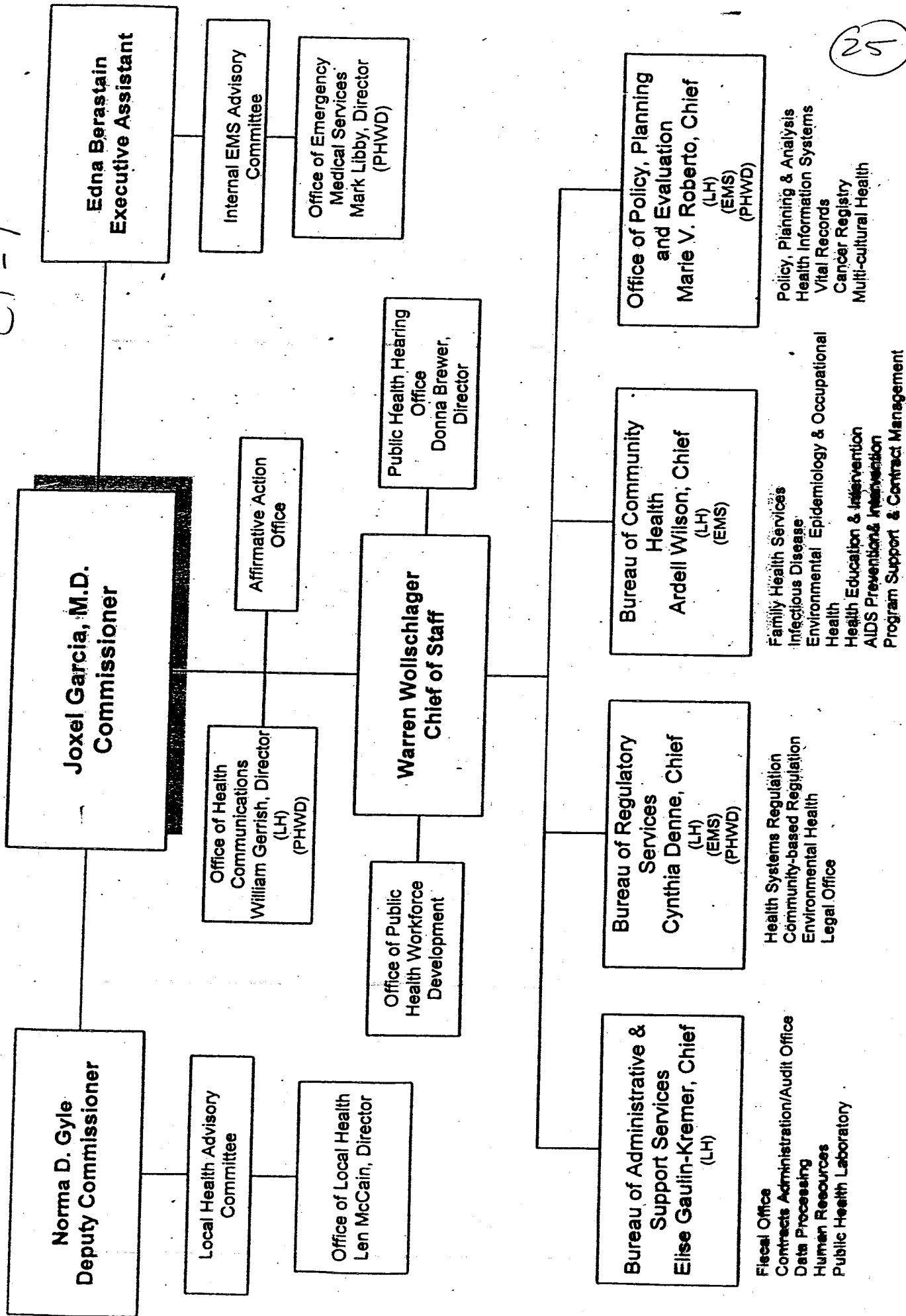
Organization:

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DEPARTMENT OF PUBLIC HEALTH

CT-1

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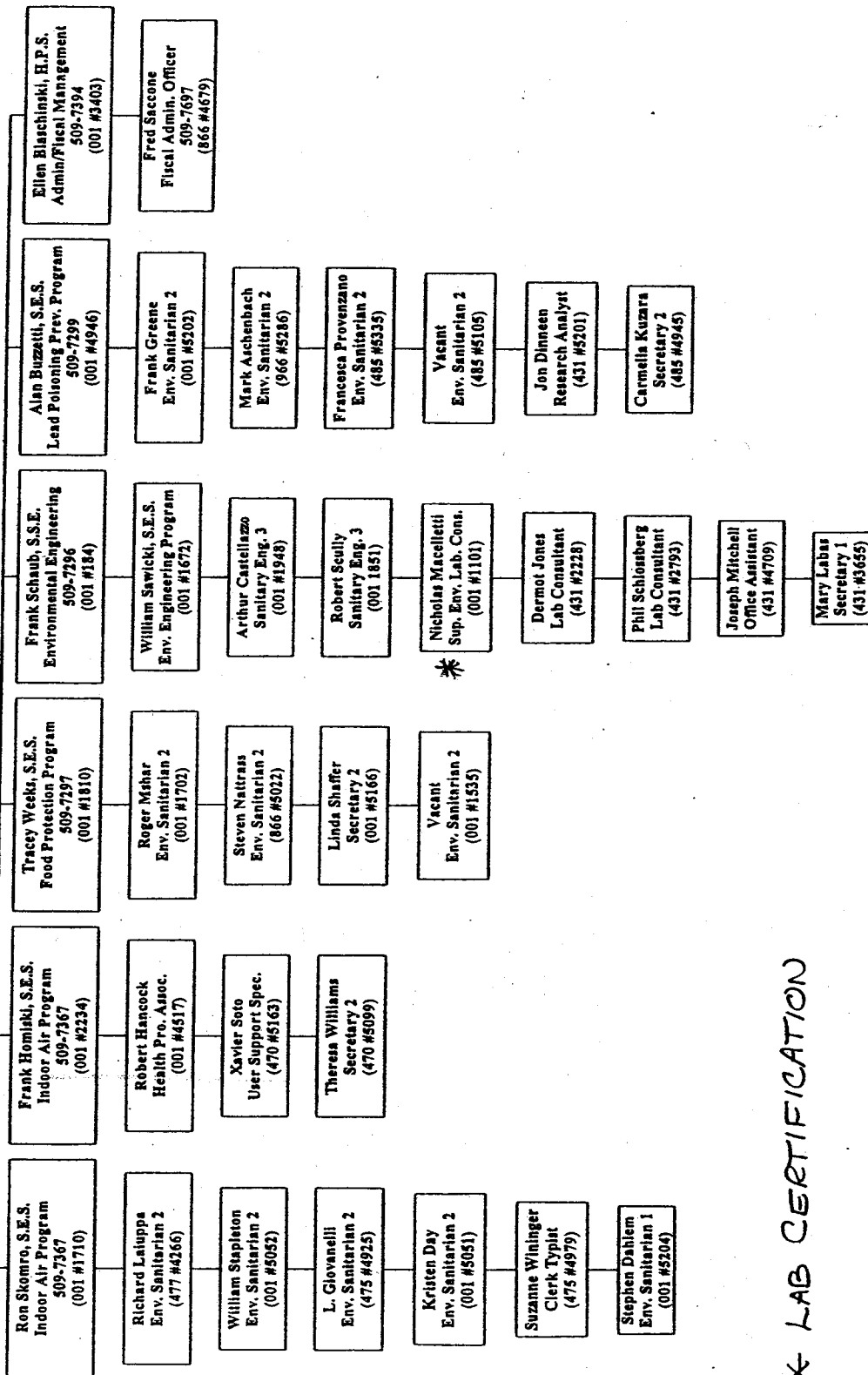
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CT - #3
- PROGRAM