
Quality Control

in Remedial

Site Investigation

Hazardous and Industrial
Solid Waste Testing

Cary L. Perket *editor*



Fifth Volume

QUALITY CONTROL IN REMEDIAL SITE INVESTIGATION: HAZARDOUS AND INDUSTRIAL SOLID WASTE TESTING Fifth Volume

A symposium sponsored by ASTM
Committee D-34 on Waste Disposal
New Orleans, Louisiana, 8-9 May 1986

ASTM Standard Technical Publication 925
Cary L. Perket, Environmental Engineering
and Management, editor.

ASTM Publication Code Number (PCN) 04-925000-16



1916 Race Street, Philadelphia, Pa. 19103

Library of Congress Cataloging-in-Publication Data

Quality control in remedial site investigation.

(ASTM special technical publication; 925)

“ASTM publication code number (PCN) 04-925000-16.”

Includes bibliographies and index.

1. Hazardous wastes—Testing—Congresses.
 2. Factory and trade waste—Testing—Congresses.
 3. Quality control—Congresses. I. Perket, Cary.
- II. ASTM Committee D-34 on Waste Disposal. III. Series.
TD811.5.Q35 1986 363.7'28 86-25873
ISBN 9-8031-0451-0

Copyright © by AMERICAN SOCIETY FOR TESTING AND MATERIALS 1986
Library by Congress Catalog Card Number: 86-25873

NOTE

The Society is not responsible, as a body,
for the statements and opinions
advanced in this publication.

Printed in Ann Arbor, MI
November 1986
Second Printing, October 1988

Foreword

This publication (STP 925) contains papers presented at the symposium on Quality Control in Remedial Site Investigations, held in New Orleans, Louisiana on 8–9 May 1986. The symposium was sponsored by ASTM Committee D-34 on Waste Disposal. Cary L. Perket, Environmental Engineering and Management, served as symposium chairman and editor of this publication.

Related ASTM Publications

Hazardous Solid Waste Testing: First Conference, STP 760 (1981),
04-760000-16

Hazardous and Industrial Solid Waste Testing: Second Symposium, STP 805
(1983), 04-805000-16

Hazardous and Industrial Waste Management and Testing: Third Symposium, STP 851 (1984) 04-851000-16

Aquatic Toxicology and Hazard Assessment: Eighth Symposium, STP 891
(1985), 04-891000-16

Rationale for Sampling and Interpretation of Ecological Data in the Assessment of Freshwater Ecosystems, STP 894 (1986), 04-896000-16

A Note of Appreciation to Reviewers

The quality of the papers that appear in this publication reflects not only the obvious efforts of the authors but also the unheralded, though essential, work of the reviewers. On behalf of ASTM we acknowledge with appreciation their dedication to high professional standards and their sacrifice of time and effort.

ASTM Committee on Publications

Contents

Introduction	1
Quality Control Considerations in the Selection of Well Design, Drilling Procedures, and Well Construction Materials— MARK S. HENNE AND WALTER W. MEINERT	3
Ground Water Monitoring Data Quality Objectives for Remedial Site Investigations—ROY B. EVANS	21
A Review of Quality Control Considerations in Soil Sampling— R. J. BRUNER, III	35
Design of Soil Sampling Programs: Statistical Considerations— GEORGE T. FLATMAN	43
Preliminary Monitoring Design for Metal Pollution in Palmerton, Pennsylvania—THOMAS H. STARKS, KENNETH W. BROWN, AND NANCY J. FISHER	57
Document Control and Chain-of-Custody Considerations for the National Contract Laboratory Program—ROBERT H. LAIDLAW	67
The Role of the Environmental Protection Agency's Contract Laboratory Program in Analytical Methods Evaluation and Validation—STANLEY P. KOVELL	74
Quality Assurance Support for the Superfund Contract Laboratory Program—JOHN M. MOORE AND GARETH PEARSON	85
Inorganic Analytical Methods—General Description and Quality Control Considerations—DEBRA K. WHITE	103
Inorganic Analytical Methods Performance and Quality Control Considerations—KEITH A. ALECKSON, JOHN W. FOWLER, AND Y. JOYCE LEE	112

Dioxin Analytical Methods—General Description and Quality Control Considerations— ROBERT D. KLEOPFER	124
Performance of USEPA Methods for Analysis of 2,3,7,8-tetrachlorodibenzo-p-dioxin in Soils and Sediments by Contractor Laboratories— FOREST C. GARNER, MICHAEL T. HOMSHER, AND J. GARETH PEARSON	132
Semivolatile Organic Analytical Methods—General Description and Quality Control Considerations— JOAN F. FISK	143
Semivolatile Organic Analytical Methods Performance and Quality Control Considerations— JEFFREY S. WOLFF, MICHAEL T. HOMSHER, RICHARD D. FLOTARD, AND J. GARETH PEARSON	157
Volatile Organic Analytical Methods—General Description and Quality Control Considerations— JOAN F. FISK	173
Volatile Organic Analytical Methods Performance and Quality Control Considerations— RICHARD D. FLOTARD, MICHAEL T. HOMSHER, JEFFREY S. WOLFF, AND JOAN M. MOORE	185
Pesticide Analytical Methods—General Description and Quality Control Considerations— PAUL J. MARSDEN, J. GARETH PEARSON, AND DAVID W. BOTTRELL	198
Index	213

ISBN 0-8031-0451-0