

Environmental Restoration Program

**REMEDIAL INVESTIGATION/FEASIBILITY STUDY  
OPERABLE UNIT 9, SITE-WIDE SITE SCOPING  
REPORT: VOLUME 9 - ANNOTATED BIBLIOGRAPHY**

**MOUND PLANT  
MIAMISBURG, OHIO**

**January 1993**

**DRAFT FINAL  
(Revision 1)**

**Department of Energy  
Albuquerque Field Office**

**Environmental Restoration Program  
EG&G Mound Applied Technologies**





11840-D KEMPERSPRINGS DRIVE  
CINCINNATI, OH 45240-1640  
513-825-3440 • FAX: 513-825-3336

29 January 1993

EG&G Mound Applied Technologies  
Attention: Charles S. Friedman  
PO Box 3000  
Miamisburg, OH 45343

RE: DOE Mound Plant, Operable Unit 9  
Site Scoping Report, Volume 9, Bibliography

Dear Mr. Friedman:

At your direction, Roy F. Weston, Inc. (WESTON®) is transmitting copies of the "Operable Unit 9, Site-wide Site Scoping Report: Volume 9 - Annotated Bibliography" to U.S. EPA and Ohio EPA. This report is a draft final report which has been updated in accordance with additional guidance from Art Kleinrath, DOE DAO.

Only very minor changes were necessary to make this report complete:

- The Operable Unit 7 Work Plan, draft, was deleted because all of the information therein was later incorporated into the OU3 Work Plan or the OU9 Work Plan.
- Reference to the Federal Facility Agreement was deleted.
- The reference (ERDA, 1975) was added.
- The scope of the report was amended to make it more direct.

If you have any questions, please contact the Alternate Project Manager, John Price, or the Principal Investigator, Bill Criswell.

Very truly yours,

ROY F. WESTON, INC.

*John B. Price / for*  
John W. Thorsen, P.E.  
Project Manager

JWT/acg

m:\mound\vol9.ltr

**ENVIRONMENTAL RESTORATION PROGRAM**

**REMEDIAL INVESTIGATION/FEASIBILITY STUDY  
OPERABLE UNIT 9, SITE-WIDE  
SITE SCOPING REPORT:  
VOLUME 9 - ANNOTATED BIBLIOGRAPHY**

**MOUND PLANT  
MIAMISBURG, OHIO**

**January 1993**

**DEPARTMENT OF ENERGY  
ALBUQUERQUE FIELD OFFICE**

**ENVIRONMENTAL RESTORATION PROGRAM  
EG&G MOUND APPLIED TECHNOLOGIES**

**DRAFT FINAL  
(REVISION 1)**

## **ACKNOWLEDGEMENTS**

This report was prepared by Roy F. Weston, Inc., Albuquerque, New Mexico, under subcontracts 9-XS8-0146R-1 and 9-XS1-Q7181-1 to the University of California, Los Alamos National Laboratory, Los Alamos, New Mexico. It is finalized by WESTON under Basic Ordering Agreement 24251 with EG&G Mound Applied Technologies.

## 1. INTRODUCTION

The U.S. Department of Energy (DOE), Mound Plant, Miamisburg, Ohio, was placed on the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) list (also known as Superfund National Priority List) on November 21, 1989 (54 Federal Register 48184). Pursuant to its National Priority List status, the DOE signed a CERCLA Section 120 Federal Facility Agreement (FFA) with the U.S. Environmental Protection Agency (EPA), which became effective October 11, 1990. A similar agreement is in negotiation between the DOE and the Ohio EPA (December 1990). The terms of the FFA require that the DOE develop and implement remedial investigations and feasibility studies and conduct interim remedial actions in order to ensure that environmental impacts associated with past and present activities at the Site are thoroughly investigated and appropriate action is taken to protect the public health and welfare and the environment.

The Albuquerque Field Office of the DOE established the Environmental Restoration (ER) Program in 1984 to collect and assess environmental data in order to develop a conceptual site model, to assess both the nature and extent of contamination, and to identify potential exposure pathways and potential human and environmental receptors. These activities have been conducted under the DOE policy for all facilities to comply with applicable environmental regulations. In order to provide the EPA with sufficient information and data gathered during these previous investigations, a multi-volume scoping report has been prepared. The Site Scoping Report will provide descriptions and summaries of the current conditions and characteristics of Mound Plant and will consist of at least the following volumes:

1. Groundwater Data: February 1987 - July 1990
2. Geologic Log and Well Information
3. Radiologic Site Survey
4. Engineering Map Series
5. Topographic Map Series
6. Photo History
7. Waste Management
8. Environmental Monitoring Data
9. Annotated Bibliography
10. Permits and Enforcement Actions
11. Spills and Response Actions

## **2. SCOPE OF REPORT**

**This report provides an annotated bibliography of existing reports prepared for the Mound Plant Site. It includes reports prepared by government agencies and Mound Plant subcontractors, scientific journal articles, maps, and drawings.**

**The U.S. Department of Energy and U.S. Environmental Protection Agency, Region V, have an FFA for the Mound Plant. That FFA states that "DOE shall provide an annotated bibliography of existing reports for the Site, including reports relevant to the RI/FS." This bibliography is submitted in fulfillment of that requirement.**

**This bibliography includes all known, relevant reports existing or substantively complete prior to the signing of the FFA in August, 1990. Citations for other later reports are available in the Administrative Record, the Public Repository, and as references to succeeding work plans and reports.**

### 3. ANNOTATED BIBLIOGRAPHY

Ahart. 1972. "Effluent Water Continuous Monitoring Station." Drawing #305500-04001-04002. James A. Ahart and Associates, Dayton, Ohio. March 15, 1972.

Anderson, H. E., and T. M. Flanagan. 1974. "Environmental Survey Plan." Monsanto Research Corporation Report MLM-MU-74-65-0001 for the U.S. Department of Energy. May 1974.

Sampling plan for activities designed to confirm the presence of plutonium-238 in waterways adjacent to Mound Plant and to describe the distribution of plutonium-238 in the sediments.

Bair, W. J., R. Blanchard, L. T. Odland, E. L. Saenger, L. Wilding, and M. E. Wren. 1976. "Report of the Ad Hoc Committee to Evaluate the Health and Safety Aspects of Pu-238 in the Environment Adjacent to Mound Laboratory." Report to Energy Research and Development Administration (ERDA), Albuquerque Operations Office, Albuquerque, New Mexico. February 1976.

Report to ERDA regarding January 1969 ruptures of an underground pipeline at Mound Plant that released plutonium-238 into the environment at Mound and on adjacent property. Includes recommendations for avoidance, monitoring, and remediation.

Bobula, III, C. M., C. W. Kennedy, and G. E. Bartelt. 1978. "Plutonium Removal and Diurnal Variation of Suspended Sediment Concentrations in the Great Miami River." Argonne National Laboratory, Radiological and Environmental Research Division Annual Report ANL-78-65, Part III. 1978.

Study of suspended sediment concentration and inorganic particulate discharge in the Miami River near Franklin, Ohio in relation to transport of plutonium. Ash wt/dry wt ratios for filtered solids varied approximately 16 percent each day during sampling. Changes in the absolute and proportionate component of sediment load may significantly affect estimates of Pu transport in aquatic systems.

Bowser-Morner. 1975. "Soil Investigation and Construction Drawings for Proposed Low Flow Retention Basin, Mound Laboratory, Miamisburg, Ohio." Bowser-Morner Testing Laboratories, Inc., Report No. 789844, Dayton, Ohio. August 15, 1975.

The purposes of the investigation were to determine the physical characteristics and the grain-size distribution of the soil strata in the retention basin area and to determine whether the pond needs to be lined. It was concluded that it was not necessary to line the pond.

Bowser-Morner. 1981. "Review of Slope Stability of Waste Disposal Site Adjacent to Overflow Pond; Monsanto Research Corporation, Mound Facility, Miamisburg, Ohio." Bowser-Morner Testing Laboratories, Inc., Dayton, Ohio, for Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Laboratory Report No. 26335-981. September 8, 1981.

Review was performed to determine whether slope stability has been affected by site conditions. Report concluded that slope stability was not a problem, some differential settling was causing embankment distortion, and small erosion channels were forming in the embankment.

Bowser-Morner. 1983. "Preliminary Geotechnical Study for the Mound Facility (New Property)." Mound Laboratory Report No. MD-27755-1083-420. Prepared by Bowser-Morner Testing Laboratories, Inc., Dayton, Ohio, for Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. October 26, 1983.

Geotechnical investigation intended to provide information enabling consistent, efficient, and practical planning for construction of future buildings, landfills, and appurtenant structures. Site contains relatively high bearing soils and competent bedrock for loaded column support. Intermittent drainages may complicate construction.

Bowser-Morner. 1985. "Hydrology and Sedimentology Study for the Mound Facility, Miamisburg, Ohio." Bowser-Morner, Inc., Dayton, Ohio, for Booker Associates, St. Louis, Missouri. January 30, 1985.

Study was performed to aid in overall planning of the design for hydrology and sedimentology structures to limit the flow rate and silt generated by development. The study determined peak flows for a 10-year, 24-hour precipitation event, annual erosion rates, and erosion from the 10-year, 24-hour storm for the entire Mound property and smaller sub-watershed areas. The influence of existing and possible future development was analyzed and compared to 1949 topographic data.

Carfagno, D. G., and B. M. Farmer. 1983. "Environmental Monitoring at Mound: 1982 Report." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report MLM-3055. April 25, 1983.

Carfagno, D. G., and B. M. Farmer. 1984. "Environmental Monitoring at Mound: 1983 Report." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report MLM-3143. April 25, 1984.

Results and discussion of monitoring activities conducted during the year as part of the Mound environmental program. Air, water, vegetation, foodstuff, and sediment samples were collected from an area up to 30 miles from Mound Plant and analyzed for radioactive and non-radioactive contaminants. Evaluates effective dose equivalent to the public.

Carfagno, D. G., and B. M. Farmer. 1985. "Annual Environmental Monitoring at Mound: 1984 Report." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report MLM-3246. April 25, 1985.

Carfagno, D. G., and B. M. Farmer. 1986. "Environmental Monitoring at Mound: 1985 Report." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report MLM-3349. May 1986.

Carfagno D. G., and B. M. Farmer. 1987. "Environmental Monitoring at Mound: 1986 Report." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report MLM-3427. May 11, 1987.

Carfagno, D. G., and B. M. Farmer. 1988. "Environmental Monitoring at Mound: 1987 Report." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report MLM-3942. April 25, 1988.

Carfagno, D. G., and B. Robinson. 1975. "Annual Environmental Monitoring Report: Calendar Year 1974." Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. Report MLM-2232. April 1975.

- DOE. 1977. "Specifications and Bidding Documents for Overflow Pond, Mound Laboratory, Miamisburg, Ohio." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. May 2, 1977.

Standards, provisions, conditions, and instructions for bidders for construction of the overflow pond.

- DOE. 1979. "Final Environmental Impact Statement, Mound Facility, Miamisburg, Ohio." U.S. Department of Energy Report DOE-EIS-0014. June 1979.

Largely based on the 1973 safety assessment, this report provides an overview of regional geology and hydrology, mainly using existing reports, and provides site-specific geology, biology, and environmental impacts of various activities and pollutants.

- DOE. 1986a. "Phase 1: Installation Assessment, Mound [DRAFT]." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. April 1986.

Submitted with the Preliminary Assessment/Site Inspection (PA/SI) form to the EPA. Provides brief general background regarding geology and hydrology of Mound Plant and discusses the status of potential contaminant sources as they were known at the time.

- DOE. 1986b. "RCRA Part B Permit Application." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. November 7, 1986.

Request for a permit for hazardous waste storage at Building 72, incineration of hazardous and radioactive waste at the WD Building Annex, and storage of containerized radioactive mixed waste at Building 23.

- DOE. 1987a. "Phase 2: Mound Installation Generic Monitoring Plan/Site-Specific Monitoring Plan [WORKING DRAFT]." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. January 1987.

Details generic guidance for implementation of Phase 2 at Mound. Includes Sampling Plan, Synopsis, Technical Data Management Plan, Health and Safety Plan, and QA/QC Plan.

- DOE. 1987b. "Environmental Survey Preliminary Report, Mound Plant, Miamisburg, Ohio." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. March 1987.

Preliminary findings from the first phase of the environmental survey at Mound Plant. No environmental problems representing an immediate threat to human life were found.

- DOE. 1987c. "DOE Environmental Survey Sampling and Analysis Plan Mound Site, Miamisburg, Ohio, [SECOND DRAFT]." U.S. Department of Energy and Battelle, Columbus Division, Columbus, Ohio. May 12, 1987.

Sampling and laboratory analysis plan establishing procedures and protocols specific to Mound Plant.

- DOE. 1987d. "Phase 2: Installation Generic Monitoring Plan/Remedial Investigation Plan, Stage 2 Supplement, Mound [DRAFT]." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. September 1987.

Sampling plan and standard operating procedures for activities during Phase 2. Describes the current situation and history of response actions, evaluates hydrological data, and discusses possible remedial alternatives for tritium and organic contamination.

- DOE. 1987e. "Installation Generic Monitoring Plan/Remedial Investigation Plan, Mound, Stage 2 - Supplemental Health and Safety Plan [DRAFT]." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. November 1987.

Generic health and safety plan for Stage 2 sampling activities at Mound Plant.

- DOE. 1989a. "Reconnaissance Plan, Mound Plant, Task AL-MD-3-1, Miami-Erie Canal [DRAFT]." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. February 1989 (Addendum issued in May 1989).

The objective of the investigation was to determine if hazardous, nonradioactive substances were present in sediments of the section of the abandoned Miami-Erie Canal and associated waterways adjacent to Mound. The report includes specifications for sampling multiple locations for hazardous substances included in the target compound list.

- DOE. 1989b. "Reconnaissance Sampling Plan, Mound Plant, Decontamination and Decommissioning Program Sites Hazardous Constituents, Operable Unit (AL-MD-4) [DRAFT]." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. September 1989.

Discusses the reconnaissance data needs, site histories, existing situations, and field investigation plan for the 10 areas in the operable unit. Includes the Health and Safety Plan and Quality Assurance/Quality Control Plan as appendixes.

- DOE. 1989c. "Remedial Investigation Plan Task AL-MD-1, Stage 3 Investigation, Mound Plant - Area B and The Main Hill Seeps: Installation Groundwater [DRAFT, REV.2]." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. September 1989.

Includes specifications for the third stage of the remedial investigation. Presents available data, interpretation, and conclusions generated by the two previous stages of investigation. Presents plan to collect data for risk assessment, feasibility study, and design of remedial alternatives. Sampling Plan, Quality Assurance/Quality Control Plan, and Health and Safety Plan included.

- DOE. 1990a. "Groundwater Protection Management Program Plan, Mound Plant." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. March 1990.

Established in response to DOE Order 5400.1. Describes the groundwater regime with respect to quality and quantity and proposes a groundwater management program for compliance with applicable regulatory requirements, identifies areas that may be contaminated and develops a strategy for controlling sources of contamination, and discusses decontamination and decommissioning (D&D) and other remediation programs.

DOE. 1990b. "RCRA Part A Permit Application, Revised." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. May 1990.

Provides facility description, waste characteristics, process information, groundwater monitoring, procedures to prevent hazards, contingency plan, personnel training, closure and post-closure requirements, and other federal laws and certifications.

DOE. 1990c. "Preliminary Report: Seismic Refraction Survey at the Mound Plant." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. July 1990.

Survey to define depth to bedrock beneath selected portions of the plant and identify bedrock channels that might provide preferential pathways for contaminant migration.

DOE. 1990d. "Letter Report: Preliminary Results of Reconnaissance Magnetic Survey of Mound Plant Areas 2, 6, 7, and C." U.S. Department of Energy, Albuquerque Operations Office, Albuquerque, New Mexico. November 1990.

Results of magnetic survey performed in September 1990 to determine the location of buried ferrous waste. Used in designing boring and sampling programs in the area.

DOE. n.d. "Letter Report: Evaluation of Chemical and Radiological Reconnaissance Sampling Data at Mound." Oak Ridge National Laboratory, Grand Junction Office, Colorado, for the U.S. Department of Energy. No date.

Evaluates chemical and radiological reconnaissance sampling data to determine whether a mixed waste problem exists and develops a strategy for the D&D to proceed. Evaluation of data indicates that the soils contain traces of organic and radioactive contaminants in low concentrations and are not classified as hazardous or mixed wastes. Concludes D&D at Mound may proceed.

DOE. n.d. "Preliminary Remedial Investigation of Chemical and Radiological Reconnaissance." Oak Ridge National Laboratory for the U.S. Department of Energy. No date.

Evaluation of chemical and radiological data from previous investigations to determine whether a mixed waste problem exists at Mound. Results indicate chemical and radioactive contaminants are present in low concentrations.

Dames and Moore. 1973. "Description and Safety Assessment of the Mound Laboratory Site." Dames and Moore, Cincinnati, Ohio, for the U.S. Atomic Energy Commission and Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. March 15, 1973.

Overview of the geography and topography of the Mound Plant, including a detailed site description, population demographics, public facilities and institutions, land uses, water uses, and archaeological sites.

Dames and Moore. 1976a. "Hydrologic and Soils/Foundation Investigations Proposed Overflow Pond, Mound Laboratory for Monsanto Research Corporation." Dames and Moore, Cincinnati, Ohio. Report 5627-006-17 for Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. March 31, 1976.

Analysis of proposed overflow pond design. Suggests that the proposed pond configuration is not appropriate and makes recommendations for alternative system configuration.

Dames and Moore. 1976b. "Phase 1 Potable Water Standard Project, Mound Laboratory for Monsanto Research Corporation." Dames and Moore, Cincinnati, Ohio, for Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. April 27, 1976.

Report of initial phases of investigation to define the area of hydrogeologic concern and evaluate relationships between tritium emissions and observed concentrations. Recommendations for further work given. Includes some data for tritium rainout for 1971 to 1976, tritium in groundwater wells adjacent to the plant, and tritium levels in test borings on the plant.

Dames and Moore. 1976c. "Potable Water Standards Project, Mound Laboratory for Monsanto Research Corporation." Dames and Moore, Cincinnati, Ohio. Report MD-0151 for Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. August 17, 1976.

Study to determine the extent and concentration of tritium in groundwater at Mound and contaminant transport, to identify sources, and to consider alternative water supplies. Tritium concentrations greater than 100 nanocuries per liter (nCi/L) were found in four areas: the landfill area, the SW-WD complex, the Building HH area, and the Buried Valley aquifer.

Dames and Moore. 1976d. "Evaluation of the Buried Valley Aquifer Adjacent to Mound Laboratory." Dames and Moore, Cincinnati, Ohio, for Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. December 1976.

Characterization of tritium levels in groundwater in the Buried Valley aquifer. Tritium contamination in the lower zone of the Buried Valley aquifer is below the EPA standard. Tritium concentrations in the Miami-Erie Canal and Buried Valley aquifer range from 30 to 300 curies (Ci).

Dames and Moore. 1977a. Letter report concerning tritium-contaminated soils under the SW and B Buildings. Dames and Moore, Cincinnati, Ohio, to Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. February 24, 1977.

Letter contained map showing seven core locations and tritium concentrations detected in each sample. It was estimated that 1,300 Ci of tritium were present at the time of the survey.

Dames and Moore. 1977b. "Water Well Inventory and Replacement Along Cincinnati Pike Near Mound Laboratory, Miamisburg, Ohio." Dames and Moore, Cincinnati, Ohio, for Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. May 27, 1977.

Reports the number and condition of private wells that lie within the likely zone of influence created by the pumping of Miamisburg city well No. 2. Includes wells that could be affected by the simultaneous pumping of Mound well No. 1. Includes a location map.

Dames and Moore. 1977c. "Phase I Hydrologic Engineering Study, Monsanto Research Corporation, Mound Facility Site [DRAFT]." Dames and Moore, Cincinnati, Ohio, for Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Job No. 5627-30-17. June 12, 1977.

Report performed analysis of current runoff system for entire (old and new properties) Mound Facility and assessed existing culvert system for ability to handle 24-hour storms of 2-, 5-, 10-, 25-, 50-, and 100-year frequencies. Possible routes for closed outfall systems for old and new properties and costs for each system were developed.

Dames and Moore. 1977d. "Weir Installation and Monitoring Recommendations for Segment of Miami-Erie Canal Near Mound Laboratory." Dames and Moore, Cincinnati, Ohio, for Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. June 29, 1977.

Dames and Moore. 1978a. "Potable Water Standards Project, Mound Laboratory for Monsanto Research Corporation, Continuation of Data (Effects of Pumping)." Dames and Moore, Cincinnati, Ohio, for Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. January 1978.

Provides results from water samples collected during periods of pumping indicating decreases in tritium concentrations. Recommends acceleration of the pumping program.

Dames and Moore. 1978b. "Tritium Rainout Project at the Mound Plant." Dames and Moore, Cincinnati, Ohio, for Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. March 6, 1978.

Report of precipitation sampling and analysis in and around the plant to monitor for tritium levels. Includes precipitation and tritium concentration data for 1977, map of sampling sites, and an estimate of tritium contribution to the aquifer.

Dames and Moore. 1979. "Seismic Risk Evaluation, Mound Facility, Miamisburg, Ohio." Dames and Moore, Cincinnati, Ohio, for Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report No. 5627-025-03. May 10, 1979.

EG&G. 1978. "An Aerial Radiological Survey of the U.S. Department of Energy's Mound Facility, Miamisburg, Ohio." EG&G Mound Applied Technologies Report EG&G-1183-1722. March 1978.

Results of an aerial radiological survey measuring terrestrial gamma radiation over Mound Facility to document background radiation levels around nuclear processing and handling facilities. Offsite background activity ranged from 10.0 to 11.0 microRoentgens per hour ( $\mu\text{R/hr}$ ) in agricultural areas, 7.5 to 8.5  $\mu\text{R/hr}$  in populated areas, and 7.0  $\mu\text{R/hr}$  in low-lying non-agricultural areas. Maximum onsite activity was 23.5  $\mu\text{R/hr}$ .

EG&G. 1988. "The Mound Site Development Plan." EG&G Mound Applied Technologies Report MLM-ML-88-51-0001 for the U.S. Department of Energy. December 1988.

Comprehensive management guide for maximizing resources as they relate to land, facilities, and personnel. Presents description of existing conditions and a five-year plan regarding building and structures, utilities and support systems, transportation and parking, and energy conservation. This document contains unclassified nuclear information subject to Section 148 of the Atomic Energy Act (AEA) and has restricted distribution.

EG&G. 1989. "Environmental Monitoring at Mound: 1988 Report." EG&G Mound Applied Technologies, Miamisburg, Ohio. Report MLM-3589. May 1989.

EG&G. 1990a. "Community Relations Plan for the Remedial Investigation/Feasibility Study at EG&G Mound Applied Technologies, Miamisburg, Ohio." EG&G Mound Applied Technologies, Miamisburg, Ohio. January 1990.

EG&G Community Relations Plan for the remedial investigation/feasibility study (RI/FS) as stated in CERCLA community relations requirements.

EG&G. 1990b. "Characterization of Mound's Hazardous, Radioactive, and Mixed Wastes." EG&G Mound Applied Technologies, Mound Plant, Miamisburg, Ohio. Report MLM-ML-90-48-0001 for the U.S. Department of Energy. August 15, 1990.

Report contains volumes of hazardous, radioactive, and mixed wastes generated in 1988 and 1989. These volumes are reported by building and as plant-wide quantities. Costs associated

with disposal of the hazardous and radioactive wastes are provided. Several waste streams are analyzed to determine if volume reduction or alternative waste treatment methods can be used. Predictions for future waste stream types and volumes are provided.

- EG&G. 1990c. "Project Specifications for Underground Storage Tank Program." EG&G Mound Applied Technologies, Miamisburg, Ohio. August 15, 1990.

Specifications for supervision, labor, equipment, supplies, and material to perform all work in the underground storage tank (UST) program. Also includes the sampling techniques of material in existing USTs and the means for legally disposing of said material.

- ERDA. 1975. "Investigation of the Circumstances Associated with the Appearance of Plutonium-238 Contamination in Waterways Adjacent to Mound Laboratory." U.S. Energy Research and Development, Albuquerque Operations Office, Albuquerque, New Mexico. March 1975.

Report of task force assigned to investigate the source and events of the 1969 plutonium release, the probable mechanism by which the plutonium reached the offsite locations, and the determination of the date of occurrences of the events. Includes summary of plutonium-238 concentrations in the plant drainage ditch and at the plant fenceline.

- ESL. 1961a. "Report of Groundwater Survey - Mound Labs." Earth Science Laboratories, Inc., for Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. April 30, 1961.

Results of aquifer test performed in April 1961.

- ESL. 1961b. "Report of Subsurface Exploration Work, North Area, Mound Laboratory." Earth Sciences Laboratories, Inc., for Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. July 27, 1961.

- EUS. 1984. "Summary Report of the Findings of Modules 3 and 3A Utilities Systems Study Program." Eastern Utilities Specialists, Inc., Manassas, Virginia, for Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. September 1984.

Final report of program to locate and measure site process water flows and measure storm and sanitary sewer flows. Dye tracer studies revealed several sinks (two in nuclear buildings) connected to the storm sewer. Recommends a comprehensive dye testing plan be implemented.

- EUS. 1985. "Utilities Study Program - Mound - Module V - Domestic Water System." Eastern Utilities Specialists, Inc., Manassas, Virginia, for Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. October 1985.

Findings from work Module V. Contains map of all water systems and analysis of the domestic water system used for utility restoration, site development, and long range site planning. Recommends a review of mapping data to eliminate inconsistencies, construction of an elevated storage tank, improvements in backflow prevention practices, and construction of a central water treatment facility.

- Eckart, R., R. Janke, and R. Janke. n.d. "Preliminary Results of the Mound Plant - Pathway Analysis to Determine Residual Radioactivity Soil Guidelines." University of Cincinnati, Department of Nuclear Engineering. No date.

Identifies and analyzes key environmental pathways that would lead to the highest human exposure from residual radioactivity in the soil at Mound. Site-specific parameters include erosion rates, resuspension factors, and particle size.

Evans, Kenneth F. 1977. "Water Quality of the Glacial - Outwash Aquifer in the Miami River Basin, Ohio." U.S. Geological Survey and the Miami Conservancy District, Water Resource Investigation 77-76. Columbus, Ohio.

A graphic depiction of element concentrations in the Great Miami River Basin aquifer.

Farmer, B. M., B. Robinson, and D. G. Carfagno. 1976. "Annual Environmental Monitoring Report: Calendar Year 1975." Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. Report MLM-2318. April 26, 1976.

Farmer, B. M., B. Robinson, and D. G. Carfagno. 1977. "Annual Environmental Monitoring Report: Calendar Year 1976." Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. Report MLM-2416. April 25, 1977.

Farmer, B. M., B. Robinson, and W. H. Westendorf. 1977. "Hazard Analysis of Miamisburg Park Improvement Project." Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. Report MD-0164 for the U.S. Energy Research and Development Administration. March 17, 1977.

Analysis of health and safety impacts of Miamisburg Park pond improvements proposed by city of Miamisburg. Sediments of existing ponds contain small amounts of plutonium as a result of Mound operations. Concludes that planned modifications would not require special procedures and would not result in a hazard to workers during construction and the general public in the long-term.

Farmer, B. M., and D. G. Carfagno. 1978a. "Stability of Plutonium Contaminated Sediments in the Miami - Erie Canal." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report MLM-2483 for the U.S. Department of Energy. March 1978.

Evaluates stability of plutonium contaminated soil in the Miami-Erie Canal. Concluded that contaminated sediment present is stable and further actions such as removal or covering are not warranted.

Farmer, B. M., and D. G. Carfagno. 1978b. "Annual Environmental Monitoring Report: Calendar Year 1977." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report MLM-2515. April 25, 1978.

Farmer, B. M., and D. G. Carfagno. 1979a. "Annual Environmental Monitoring Report: Calendar Year 1978." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report MLM-2608. April 25, 1979.

Farmer, B. M., and D. G. Carfagno. 1979b. "Environmental Monitoring During Construction of the Miamisburg Solar and Fishing Ponds." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report MLM-2621 for the U.S. Department of Energy. June 8, 1979.

Provides reassurance that there is no significant risk from potential radiation exposures to health and safety of construction workers or to park visitors at the Solar Pond in the Miamisburg Community Park.

Farmer, B. M., and D. G. Carfagno. 1980. "Annual Environmental Monitoring Report: Calendar Year 1979." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report MLM-2700. April 25, 1980.

Farmer, B. M., and D. G. Carfagno. 1981. "Annual Environmental Monitoring Report: Calendar Year 1980." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report MLM-2822. April 24, 1981.

Farmer, B. M., and D. G. Carfagno. 1982. "Annual Environmental Monitoring Report: Calendar Year 1981." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report MLM-2930. April 21, 1982.

Frost, Jack P., and Lance E. Peterson. 1988. "Groundwater Contamination Susceptibility Map for the Greater Dayton Area." The Center for Groundwater Management, Wright State University, Dayton, Ohio.

An examination and description of the aquifers in Montgomery County and their potential for contamination.

GAO. 1985. "Environment, Safety, and Health Information of Three Ohio Defense Facilities - Fact Sheet for the Ranking Minority Member." U.S. General Accounting Office. November 1985.

Report discusses environmental and health and safety programs and historical problems at Mound and two other defense facilities.

Garner, J. M., and W. P. Davis. 1975. "A Summary Review of Mound Laboratory's Experience in D&D Radioactive Facilities, 1949-1973." Presented at the ERDA conference on D&D of ERDA facilities, Idaho Falls, Idaho. August 19-21, 1975.

Review of four major D&D projects completed by Mound between 1949 and 1973. Decontamination techniques described included Navy cocooning, entombment, removal, foaming, bagging, tents, chutes, portable exhausters, dry ice, vents, zoning, painting and sealing, high pressure water, and chemical cleaning.

Halford, D. J. 1990. "Results for South Pond Sampling." Letter report to Dwain Farley, ER Program, Technical Support Office, Los Alamos, New Mexico. June 29, 1990.

Sampling program and results of sampling sediments in South Pond in response to the city of Miamisburg's intention to dredge the South Pond. Concentrations of analytes in all but two samples were within regulatory limits.

ITC. 1987. "Water and Sediment Sampling/Analysis, USDOE-Mound Run-off Ponds." Final Report. Prepared for Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio, by International Technology Corporation, Knoxville, Tennessee. July 13, 1987.

Results of chemical and radiological analyses for water and sediment samples collected at three ponds. No pesticides or polychlorinated biphenyls (PCBs) were detected in any of the samples, methylene chloride was detected in three sediment samples, and acetone was detected in one water sample. Data validation is not discussed relative to these results.

Kennedy, C. W., and G. E. Bartlet. 1978. "Distribution of Pu-238 in Tissues of Fish from the Canal in Miamisburg, Ohio." *Environmental Research* Vol. 17, pp. 228-235.

Study measured concentrations of plutonium-238 in seven species of fish in the Miami-Erie Canal. Highest levels of plutonium in freshwater fish are associated with gastrointestinal tracts, gills, and livers. Further investigation is required to determine importance of absorption through gut wall as opposed to absorption through the gills.

Kershner, C. J., and T. Ben Rhinehammer. 1978. "Mound Laboratory Tritium Environmental Study: 1976-1977." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report MLM-2495. April 10, 1978.

Results of continuing study of tritium contamination in groundwater at Mound. Concluded that 90% of tritium in the Miami-Erie Canal soil is not water exchangeable and may contribute as much as 30 Ci per year to the underlying aquifer.

Klaer. 1969. "Logs of Wells TW1, TW2, TW3, PW1, PW2, and PW3." Fred H. Klaer, Jr., and Associates for Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. January 1969.

Blueprints of wells.

MCC. 1947. "WD Building Foundation Plan." Drawing #C1302. Monsanto Chemical Company, Dayton, Ohio. November 26, 1947.

MCD. 1974. "Water Quality Management Plan Report Great Miami River." Miami Conservancy District, Water Conservation Subdistrict. 1974.

MRC. 1972a. "Site Plan, Hot Waste Burial Area." Drawing #SKC-2281. Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. February 15, 1972.

Site location map compiled to show locations of buried radioactive wastes on the plant site. Includes some isotopes and dates of burials.

MRC. 1972b. "Site Plan-Existing and Abandoned Waste Disposal Areas." Drawing #SKC2424. Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. April 5, 1972.

Repeats information in Drawing No. SKC 2281.

MRC. 1972c. "Mound Laboratory Radioactive Waste Management Site Plan." Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. June 19, 1972.

Update of annual report (1972-1978) describing radioactive waste generation processes and waste management facilities, storage, disposal, and waste reduction efforts at Mound. Includes "Part I AEC Solid Waste Management Questionnaire."

MRC. 1973a. "Mound Laboratory Radioactive Waste Management Site Plan." Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. June 15, 1973.

MRC. 1973b. "Sewage Disposal Plant, Lower Area-Site Plan and Standard Symbols." Drawing No. 305700. Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. August 17, 1973.

MRC. 1974a. "Mound Laboratory Radioactive Waste Management Site Plan." Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. May 31, 1974.

MRC. 1974b. "Miami-Erie Canal and Pond Sample Locations." Drawing #SD740533, 3 sheets. Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. June 4, 1974.

Records locations of samples reported by Rogers in 1975.

MRC. 1974c. "Survey Location of Off-Site Samples by M.R.C." Drawing #SD740537, 6 sheets. Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. August 16, 1974.

Continuation of Drawing No. SD 740533 (MRC 1974b).

MRC. 1975a. "Mound Laboratory Radioactive Waste Management Site Plan." Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. June 19, 1975.

MRC. 1975b. "Low Flow Retention Basins for Main Drainage Channel." Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. November 5, 1975.

MRC. 1976a. "Safety Manual - Mound Laboratories." Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. May 1, 1976.

Established structure, responsibilities, and activities of the Executive Safety Committee.

MRC. 1976b. "Hot Waste Sewer." Drawing #FSE16466. Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. May 10, 1976.

MRC. 1976c. "Mound Laboratory Radioactive Waste Management Site Plan." Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. June 1, 1976.

MRC. 1977. "Mound Laboratory Radioactive Waste Management Site Plan." Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. June 1, 1977.

MRC. 1978. "Mound Laboratory Radioactive Waste Management Site Plan." Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. December 1978.

MRC. 1979. "Mound Facility Waste Management Site Plan." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. October 1, 1979.

Update of annual report (1979-1987) describing waste generation processes and waste management facilities, storage, disposal, and waste reduction efforts at Mound. Plan has been expanded to include non-radioactive waste management (sanitary, solvent, and liquid wastes; paper waste; and garbage).

MRC. 1980. "Mound Facility Waste Management Site Plan." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. October 1, 1980.

MRC. 1981a. "Environmental Assessment and Planning Section Quality Control Manual." Technical Manual MD-10176, Issue 1. Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. August 6, 1981.

Policies and procedures regarding environmental analyses.

MRC. 1981b. "Mound Facility Waste Management Site Plan." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. November 1, 1981.

MRC. 1983. "Mound Waste Management Site Plan." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. December 1, 1983.

MRC. 1984a. "Loss, Prevention, and Environmental Control." Technical Manual MD-10193, Issue 1. Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. January 31, 1984.

Policy and procedures regarding loss prevention and environmental control program.

MRC. 1984b. "Mound Waste Management Site Plan." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. December 1, 1984.

MRC. 1986a. "Site Plan Test Borings." Drawing FSE 16472, 11 sheets. Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. January 1986.

Compiled drawing of test borings conducted for foundation and engineering studies at the plant.

MRC. 1986b. "Mound Waste Management Site Plan." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. January 24, 1986.

MRC. 1986c. "Existing Monitoring, Production, and Domestic Wells." Drawing #FSE860304. Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. March 11, 1986.

Provides locations of existing monitoring and supply wells on the plant.

MRC. 1986d. "Coordinated ANSPD (NE) and OMA Decontamination and Decommissioning (D&D) Program Plan." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report MLM-ML-86-52-0004. March 31, 1978; revised December 23, 1986.

Work plan for the extensive D&D of inactive radioactively contaminated areas at Mound previously operated by Advanced Nuclear Systems and Projects Division (ANSPD) and the Office of Military Applications (OMA).

MRC. 1987a. "Underground Water Control Building SW Roadway." Drawing #FSD870962. Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. May 29, 1987.

MRC. 1987b. "Mound Waste Management Site Plan." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. December 31, 1987.

NUS. 1989. "Mound Underground Storage Tank Management Plan and Preliminary Cost Estimate." NUS Corporation for EG&G Mound Applied Technologies and Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. April 14, 1989.

Provides DOE's strategy for managing Mound's USTs and proposes a 5-year management plan for repairing, replacing, or properly retiring each UST and taking into account the risk posed by each tank as well as existing and impending regulations.

Norris, S. E., W. F. Cross, and R. P. Goldthwait. 1948. "The Water Resources of Montgomery County, Ohio." Ohio Department of Public Work and the U.S. Geological Survey, Bulletin 12, Columbus, Ohio. June 1948.

Discusses surface water, groundwater, and water quality of Montgomery County relative to urban planning and industrialization.

Norris, Stanley E. 1951. "The Bedrock Surface and the Distribution of the Consolidated Rocks in Montgomery, Greene, Clark, and Madison Counties, Ohio." *Ohio Journal of Science*, Vol. 51, p. 113-15.

Discussion of bedrock and consolidated rocks in the Mound area. Ordovician rocks crop out from beneath glacial drift in Montgomery County. Water-bearing properties of these rocks are important since groundwater often cannot be obtained from drift.

Norris, Stanley E. 1959. "Vertical Leakage through Till as a Source of Recharge to a Buried Valley Aquifer at Dayton, Ohio." Ohio Department of Natural Resources; U.S. Geological Survey; and Water Division, Miami Conservancy District. 1959.

Paine, Robert. n.d. "Actinide Waste Remediation Technology." Prepared for Roy F. Weston, Inc., Albuquerque, New Mexico. No date.

Discussion of geochemistry of actinide elements (uranium, plutonium, neptunium, americium); oxidation states; hydrolysis and speciation, coordination, and chelation and sorption properties. Potential remediations discussed are *in situ* processing, exhumation processing, selective ion extraction design, bioremediation, supercritical extractions, and photochemical oxidation.

Pallet, Fredrick L., Benjamin H. Richard, and Ronald G. Schmidt. 1977. "A Preliminary Investigation of Groundwater Quality in Southern Montgomery County, Ohio." Montgomery County Board of Commissioners, Dayton, Ohio. 1977.

Robinson, B., D. R. Rogers, and W. H. Westendorf. 1974. "Mound Laboratory Plutonium-238 Study, Off-Site Analytical Data: May - Dec. 1974." Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. Report MLM-MU-74-65-0001 for the U.S. Atomic Energy Commission. December 1974.

Presentation of plutonium concentration data from sediment, water, vegetation, and fish samples collected in the Miami-Erie Canal and adjacent waterways and the Great Miami River. Detailed interpretation of the data is presented in subsequent reports.

Rogers, D. R. 1975. "Mound Laboratory Environmental Plutonium Study, 1974." Monsanto Research Corporation, Mound Laboratory, Miamisburg, Ohio. Report MLM-2249 for the U.S. Department of Energy. September 15, 1975.

A study to determine the full extent of the plutonium-238 contamination, the course and mechanisms of the release, and the health and safety impact of these deposits on the public. Maximum concentrations of plutonium in the soil are two orders of magnitudes less than the worst decision guide pathway. The report concluded that plutonium-238 does not present hazards to residents and there is no reason to restrict access.

Schmidt, James J. 1986. "Groundwater Resources of Montgomery County." Ohio Department of Natural Resources, Groundwater Resources Map Series.

Map showing yields, well sites, and aquifer type for groundwater resources in Montgomery County.

Spieker, Andrew M. 1968. "Future Development of the Ground-Water Resource in the Lower Great Miami River Valley, Ohio - Problems and Alternative Solutions." U.S. Geological Survey Professional Paper 605-D. 1968.

Identifies and analyzes the following groundwater problems of particular importance: 1) availability of water, 2) local overdraft and declining groundwater levels, 3) groundwater contamination, and 4) water rights.

Spieker, Andrew M. 1968. "Groundwater Hydrology and Geology of the Lower Great Miami River Valley, Ohio." U.S. Geological Survey Professional Paper 605-A. May 1969.

Provides quantitative hydrologic, geologic, geographic, hydrogeologic, and chemical information on the lower Great Miami River Valley.

Stenhouse, M. J., and G. E. Kirsch. 1986. "Verification Survey of the WTS Excavation Area at the Mound Facility." Battelle, Columbus Division, Columbus, Ohio, for Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. October 1986.

The purpose of this survey was to establish whether or not previous decontamination efforts had been effective in reducing plutonium-238 content of soil to less than 25 picocuries per gram (pCi/g) along the location of a former waste transfer system pipeline at the Mound facility. Ninety percent of samples analyzed can be accepted as successfully decontaminated.

Stought, R. L., D. A. Edling, and D. G. Draper. 1988. "The Mound Site Survey Project for the Characterization of Radioactive Materials in Site Soils." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report MLM-3517 for the U.S. Department of Energy. May 16, 1988.

Summarizes results of a site survey characterizing 19 sites having known levels of contamination. Identifies and characterizes quantities and types of radionuclides, estimates volume of contaminated soil, and presents cost estimates for remediation. Results demonstrate that most soil at Mound has such low radioactive contamination that minimal remedial action will be necessary.

Struble, R. A. 1987. "Sand and Gravel Resources of Montgomery County, Ohio." Report of Investigation No. 135, Ohio Department of Natural Resources, Division of Geological Survey.

Styron, C. E., and H. E. Meyer. 1977. "Environmental Stability of Tritium in the Miami-Erie Canal." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report No. 77-8-157 for the U.S. Department of Energy. October 7, 1977.

Report details a tritium ecological research program that was proposed to take place in the Miami-Erie Canal and at Mound's environmental analytical facilities. The program was divided into four areas: field radiological studies, field biological studies, field chemical studies, and laboratory microcosm studies. The planned study duration was 36 months.

Styron, C. E., and H. E. Meyer. 1981. "Potable Water Standards Project: Final Report." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. Report No. MLM-2819 for the U.S. Department of Energy. April 7, 1981.

Discusses the source of tritium to the Buried Valley aquifer, approaches used to try to resolve the problem, natural and unnatural removal of tritium, and the effects of pumping on aquifer water levels. Concludes that tritium levels in drinking water can be brought into compliance and controlled by high-volume pumping.

Styron, C. E. 1983a. "A Program for Removing Low Levels of Tritiated Water from an Aquifer." *Groundwater Monitoring Review*. Summer 1983.

Description of Mound's program of high-volume pumping with induced infiltration to bring the aquifer into compliance with EPA standards for tritium. Approximately 6.3 billion liters of water were pumped from the aquifer, removing an estimated 110 Ci of tritium. Continuous pumping has been found to be important in reducing tritium concentrations in localized areas.

Styron, C. E. 1983b. "Potable Water Standards Project Annual Review." Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. December 1983.

The results of environmental monitoring of atmospheric and hydrologic tritium levels near Mound Plant during the early 1970s.

Terran. 1985. "Hydrogeologic Assessment of the Building 41 Site Phase I: Evaluation of Existing Information." Terran Corporation for Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. December 13, 1985.

Compilation of hydrogeological data including detailed geological maps and cross sections. Groundwater monitoring well network and monitoring program were designed to monitor groundwater during the removal of Building 41.

Terran. 1987a. "Preliminary Determination of Aquifer Characteristics and Areal Effects of Pumpage for Production Well Field at U.S.DOE Mound Lab., Miamisburg, Ohio." Terran Corporation for the Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. January 21, 1987.

The results of a constant-rate aquifer test conducted between December 29, 1986, and January 5, 1987. Transmissivity was estimated at 200,000 gallons per day per foot, and storativity ranged between 0.028 and 0.048.

Terran. 1987b. "Groundwater Occurrence and Movement in the Consolidated Bedrock at the U.S. DOE Mound Laboratory, Miamisburg, Ohio." Letter report from Terran Corporation to Monsanto Research Corporation, Mound Plant, Miamisburg, Ohio. March 19, 1987.

Results of test pit excavation program designed to explore subsurface geologic conditions and define the occurrence and movement of groundwater beneath the facility. Found that under natural conditions, flow through seepage zones is approximately 100 gallons per day; however, where enhanced by leaky pipes, flow may increase to 1,500 gallons per day.