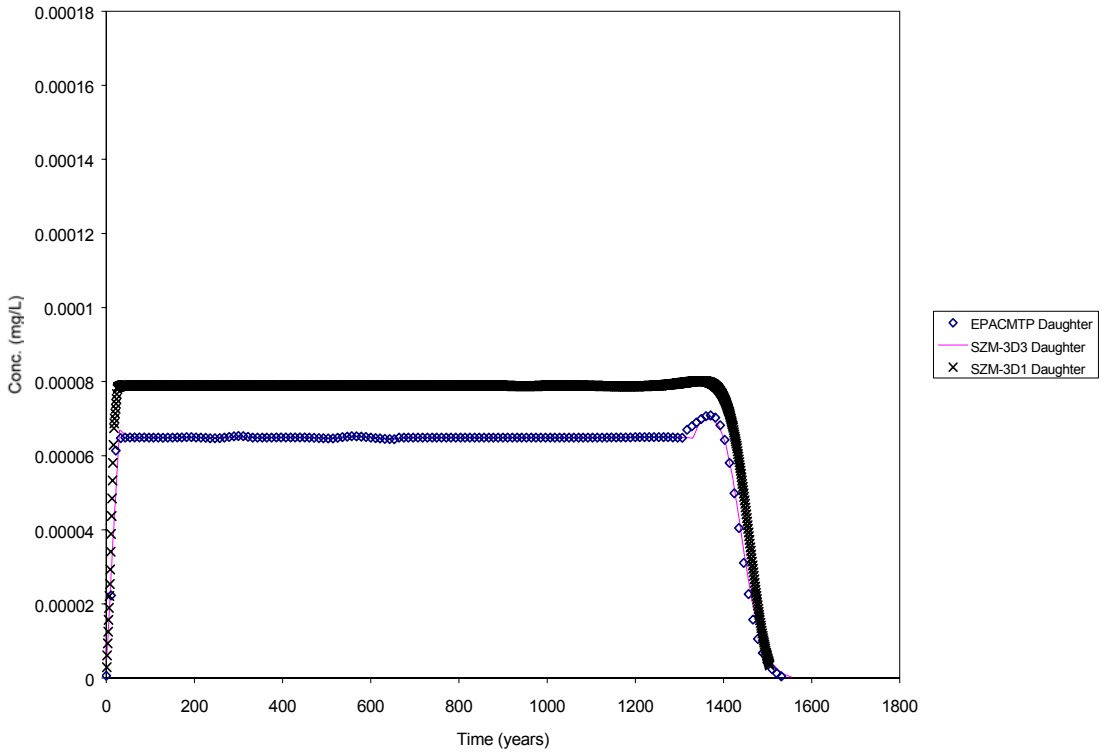

Figure D.H.5 Test Case 4b: Constant-concentration Pulse with Sorption, Hydrolysis, and Chain Decay. Comparison of SZMs and 3-D EPACMTP, Daughter Chemical

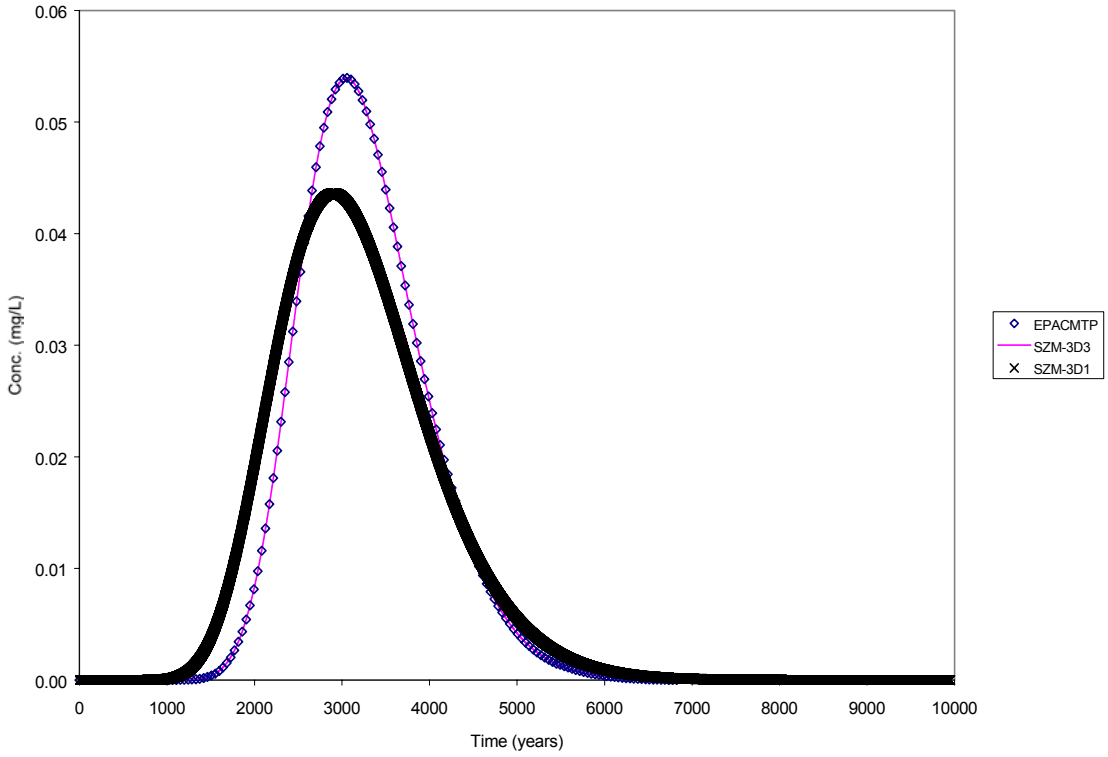

Figure D.H.6 Test Case 5: Mercury Transport. Comparison of SZMs and 3-D EPACMTP

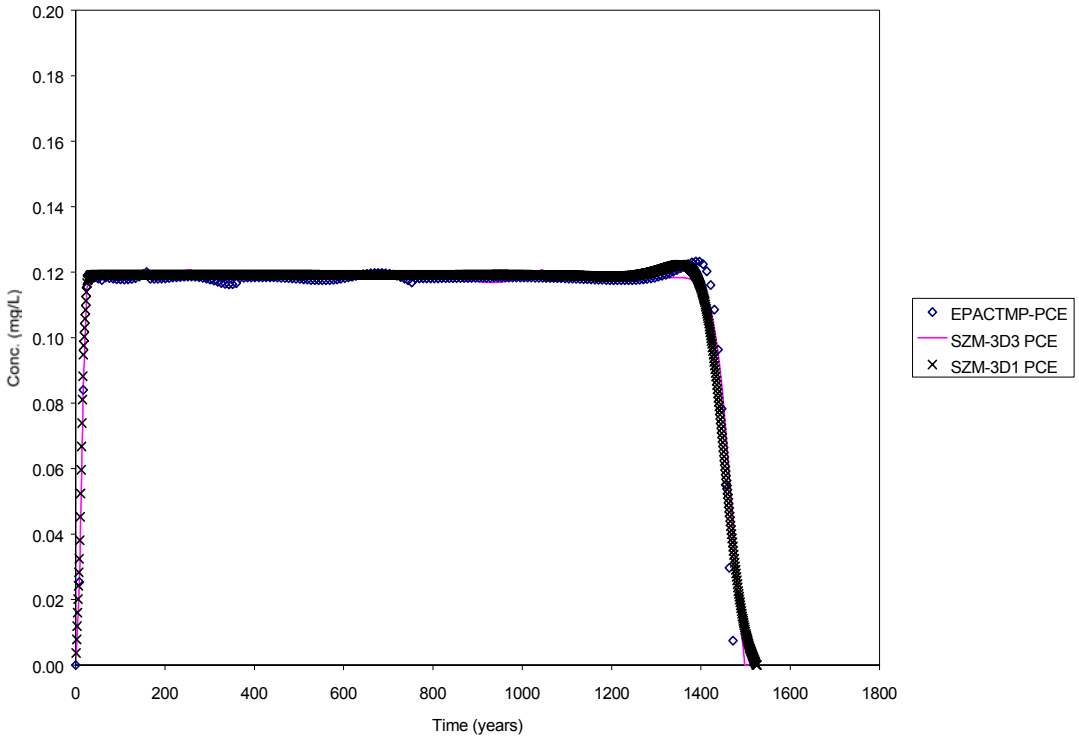

Figure D.H.7 Test Case 6a: Constant-concentration Pulse with Biodegradation and Chain Decay. Comparison of SZMs and 3-D EPACTMP, Tetrachloroethylene

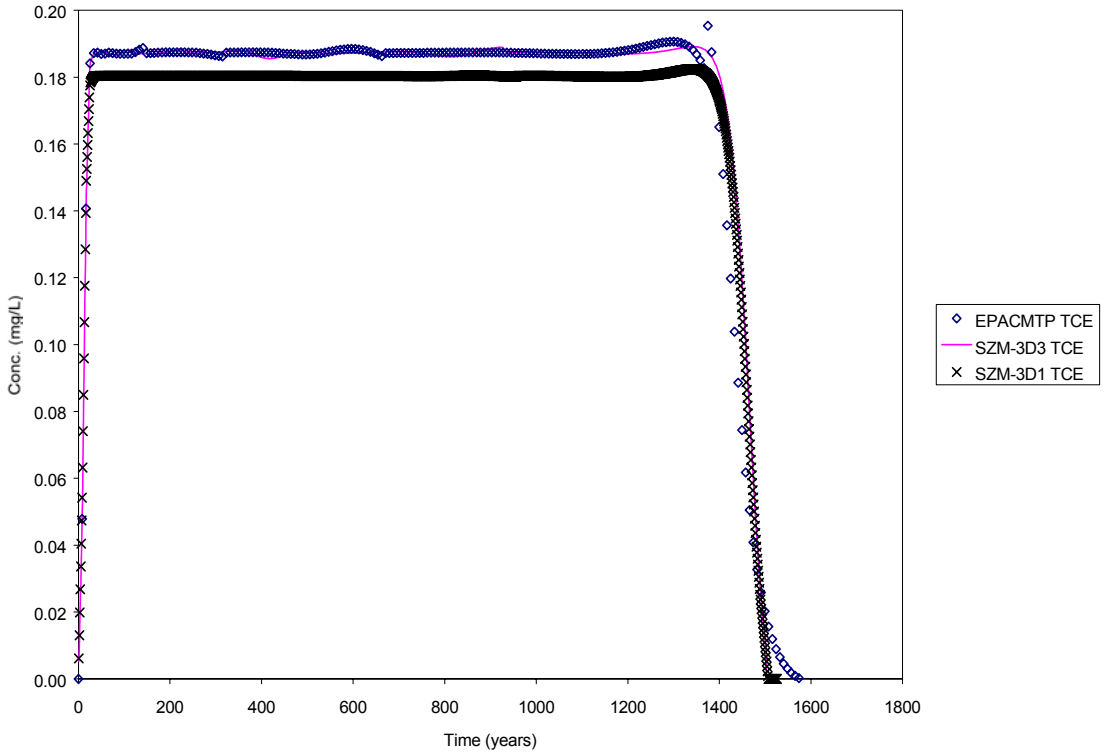

Figure D.H.8 Test Case 6b: Constant-concentration Pulse with Biodegradation and Chain Decay. Comparison of SZMs and 3-D EPACMTP, Trichloroethylene

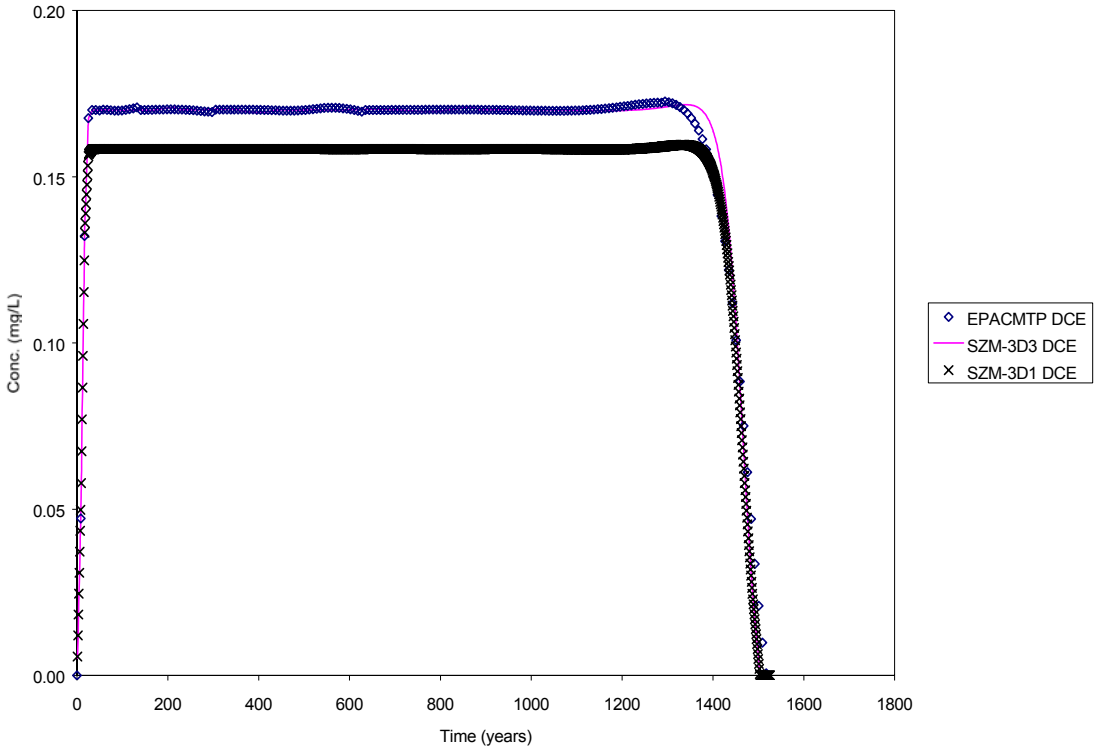

Figure D.H.9 Test Case 6c: Constant-concentration Pulse with Biodegradation and Chain Decay. Comparison of SZMs and 3-D EPACMTP, Dichloroethylene

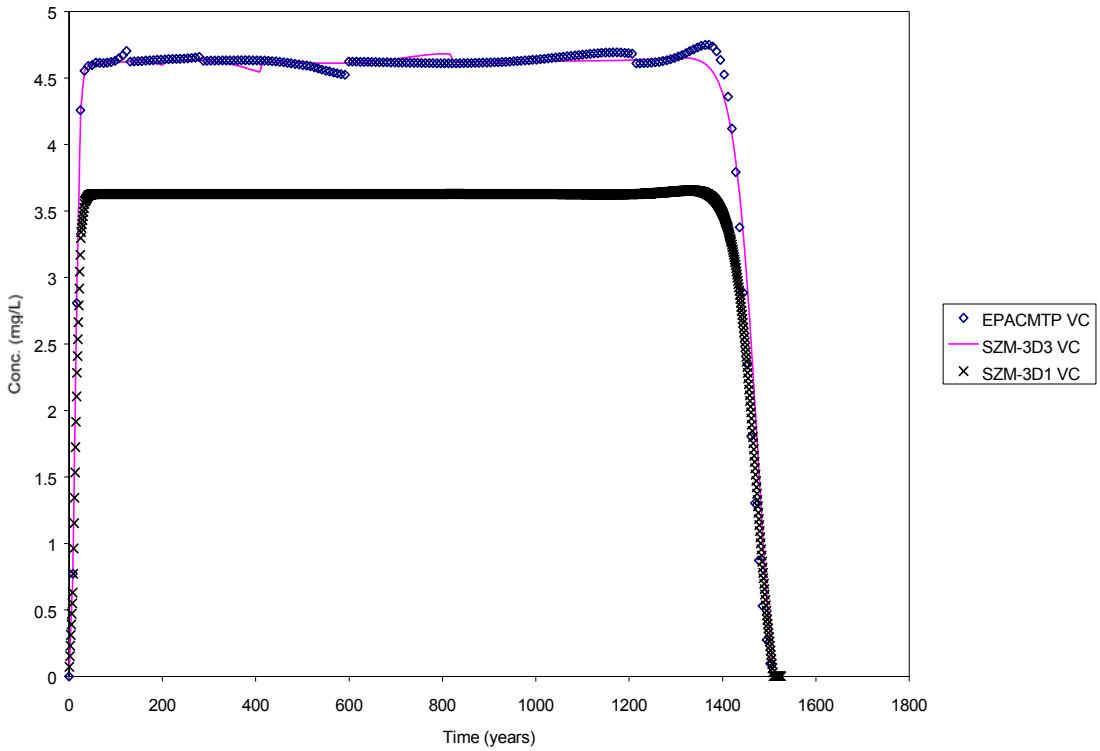

Figure D.H.10 Case 6d: Constant-concentration Pulse with Biodegradation and Chain Decay. Comparison of SZMs and 3-D EPACMTP, Vinyl Chloride

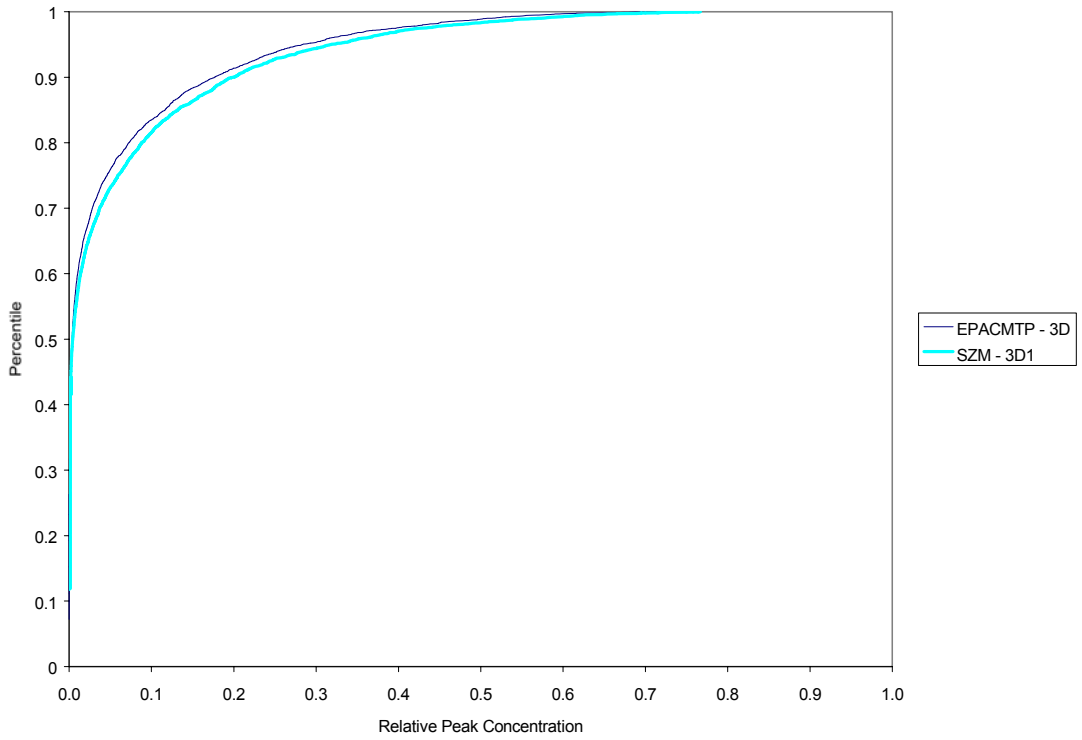

Figure D.H.11 Test Case 7: Monte-Carlo Results for Landfill Waste Management Unit Using HWIR Default Distributions Comparing 3-D EPACMTP and the Pseudo 3-D SZM (SZM-3D1)

This page was intentionally left blank.

SUBAPPENDIX D.I

3MRA PSEUDO 3-D AQUIFER MODULE VERIFICATION RESULTS (1999)

This page intentionally left blank.

LIST OF FIGURES

		Page
Figure D.I.1	Test Case 2: Centerline Breakthrough Curve for HWIR99 and Verification Modules, X = 257, for Well 58	D.I-1
Figure D.I.2	Test Case 3: Breakthrough Curves for HWIR99 and Verification Modules at Well 81	D.I-2

This page intentionally left blank.

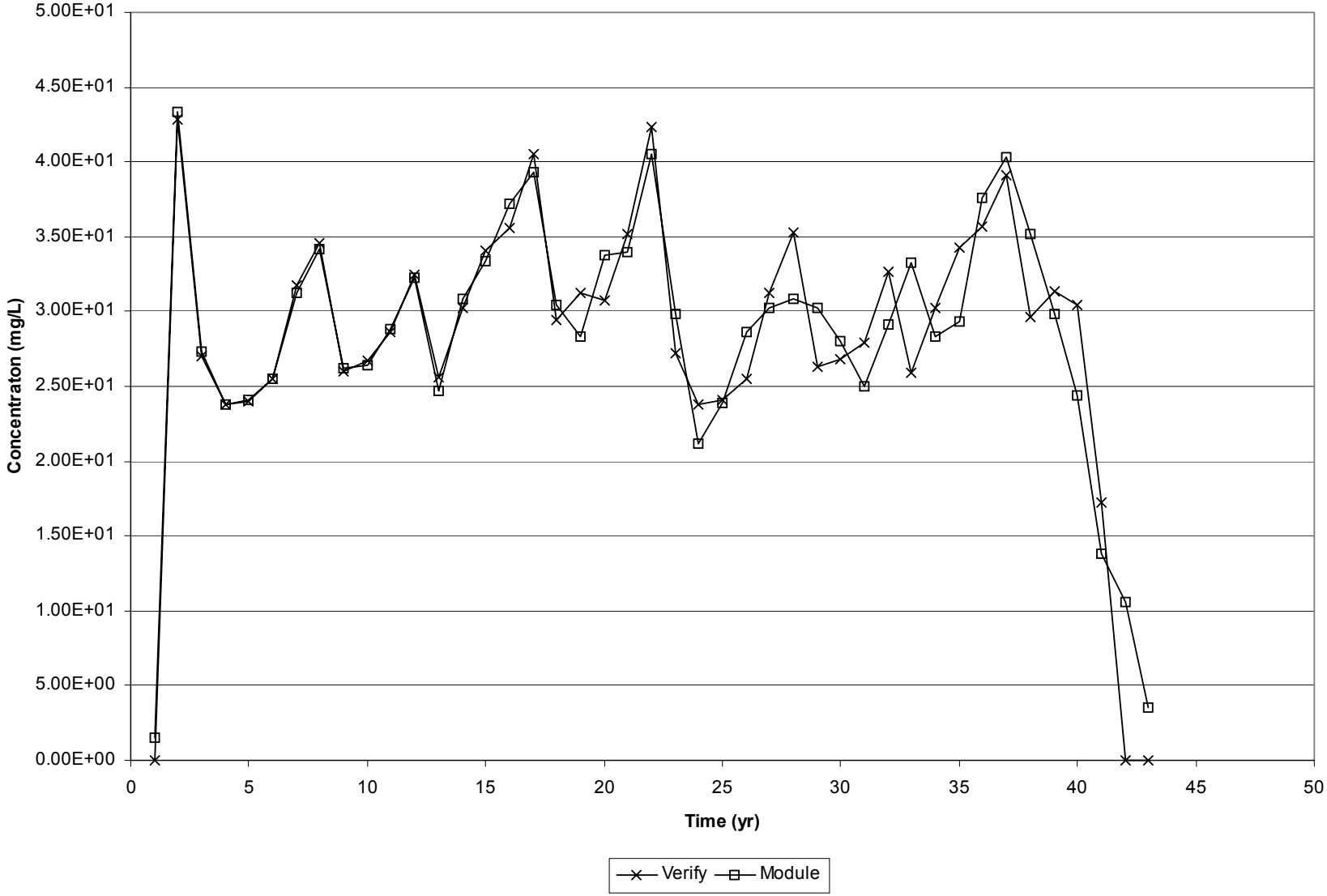

Figure D.I.1 Test Case 2: Centerline Breakthrough Curve for HWIR99 and Verification Modules, X = 257, for Well 58

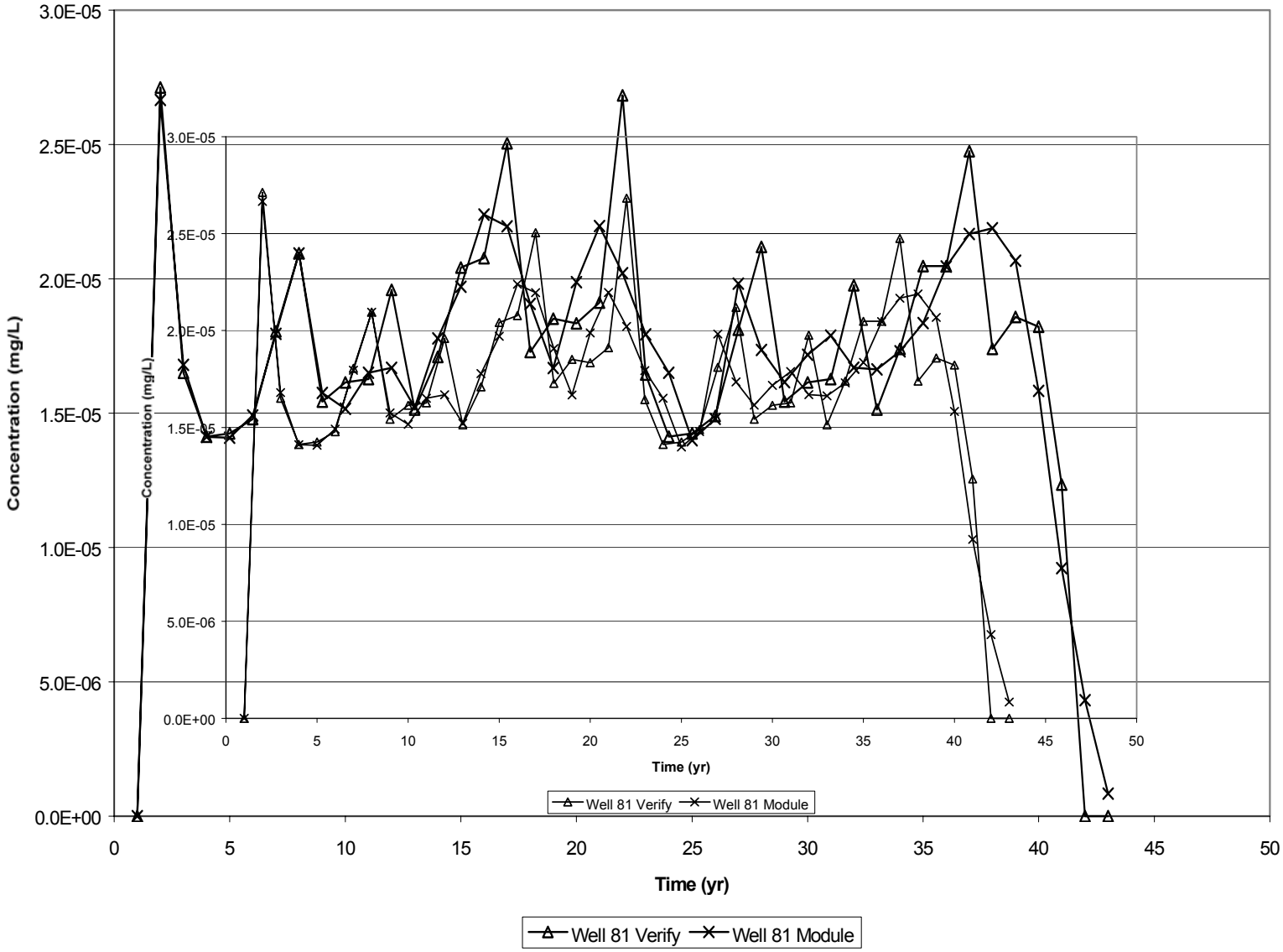

Figure D.I.2 Test Case 3: Breakthrough Curves for HWIR99 and Verification Modules at Well 81

SUBAPPENDIX D.J

3MRA VADOSE-ZONE MODULE VERIFICATION RESULTS (2000)

This page intentionally left blank.

LIST OF FIGURES

Page

Figure D.J.1 Test Area 4: Breakthrough Curve for Conservative Chemical with a Pulse Source, the Non-metals Transport Component of the Vadose-zone Module D.J-1

Figure D.J.2 Test Area 5: Breakthrough Curve for Metal Transport with Non-Linear Isotherm, the Metals Transport Component for the Vadose-zone Module D.J-2

This page intentionally left blank.

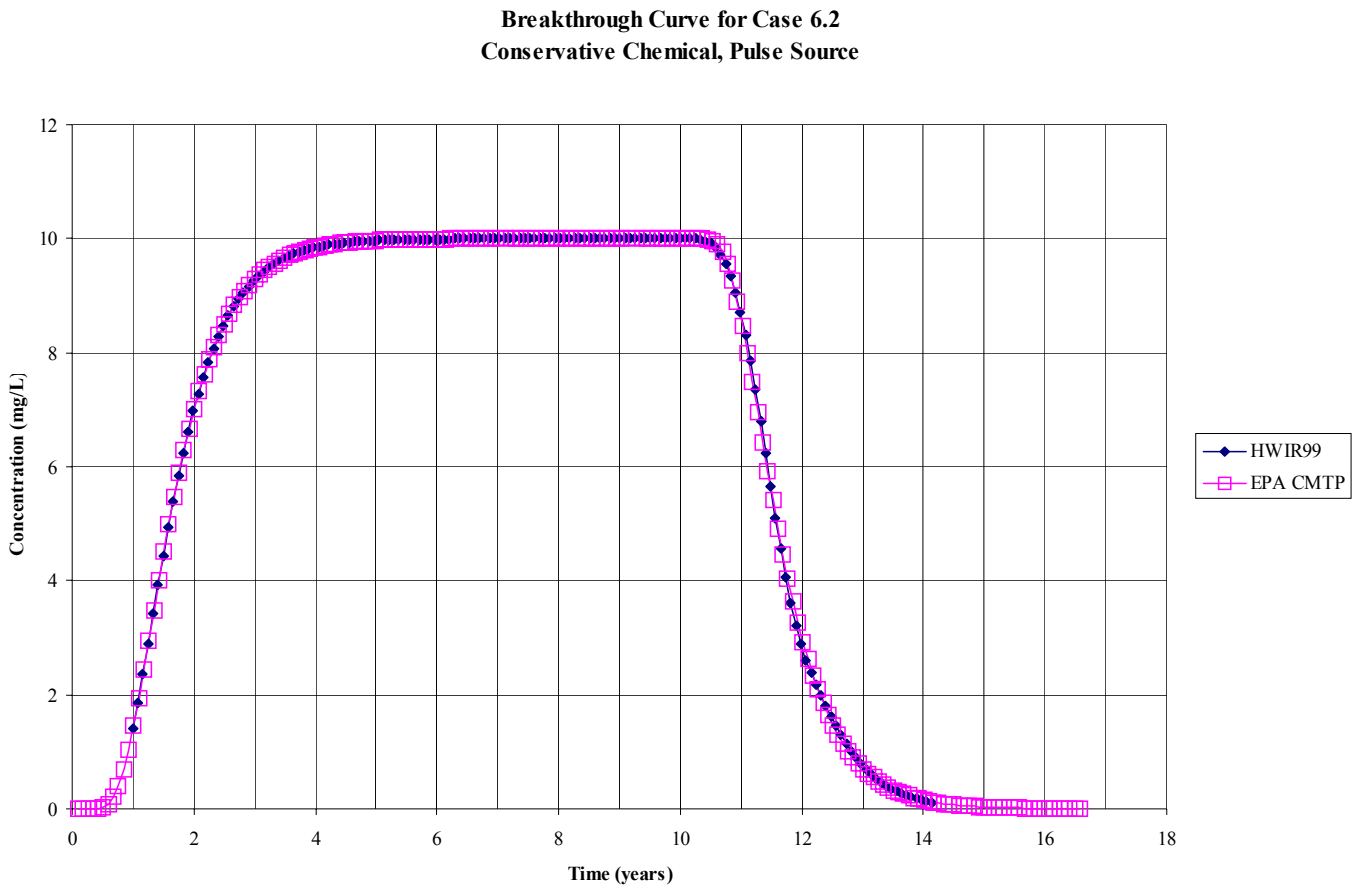

Figure D.J.1 Test Area 4: Breakthrough Curve for Conservative Chemical with a Pulse Source, the Non-metals Transport Component of the Vadose-zone Module

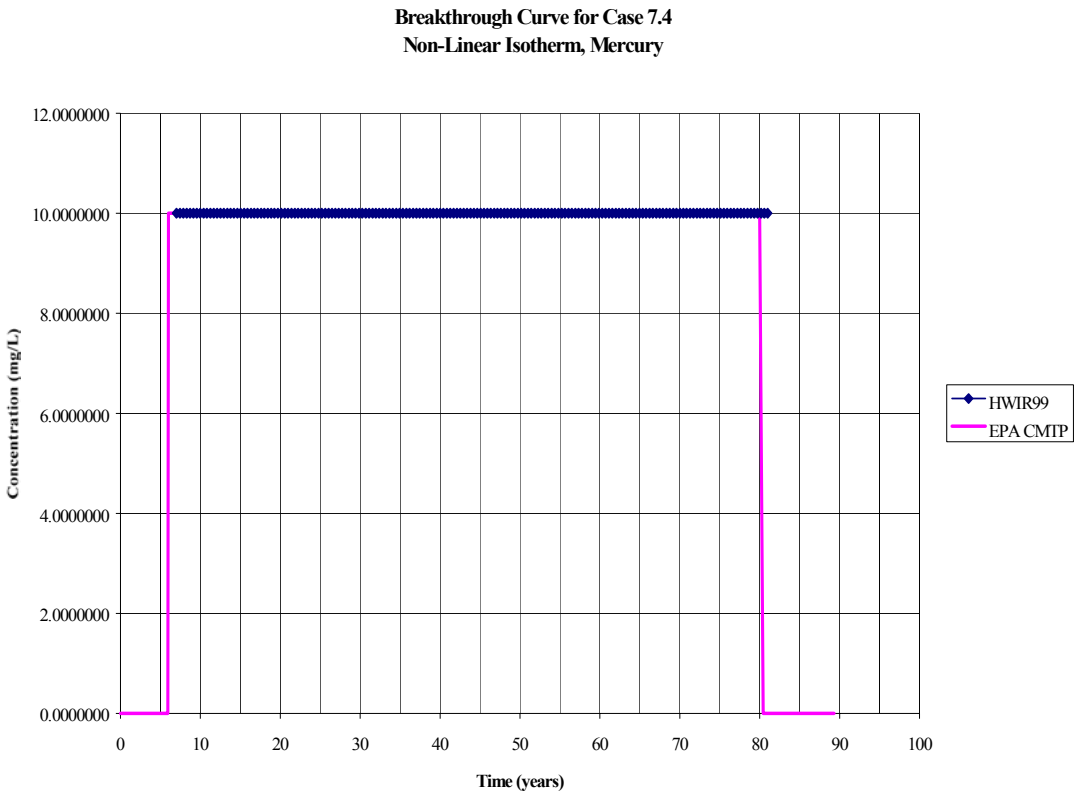

Figure D.J.2 Test Area 5: Breakthrough Curve for Metal Transport with Non-Linear Isotherm, the Metals Transport Component for the Vadose-zone Module

SUBAPPENDIX D.K

3MRA AQUIFER MODULE VERIFICATION RESULTS (2000)

This page intentionally left blank.

LIST OF FIGURES

Page

Figure D.K.1 Test Area 8: Predicted Concentrations at Receptor Well Number 64 by the Aquifer Module and the Analytical Solution . . D.K-1
Figure D.K.2 Test Area 8: Predicted Concentrations at the Receptor Well by the Aquifer Module and EPACMTP for Straight-chain (Parent to Child) Decay Scenario D.K-2

This page intentionally left blank.

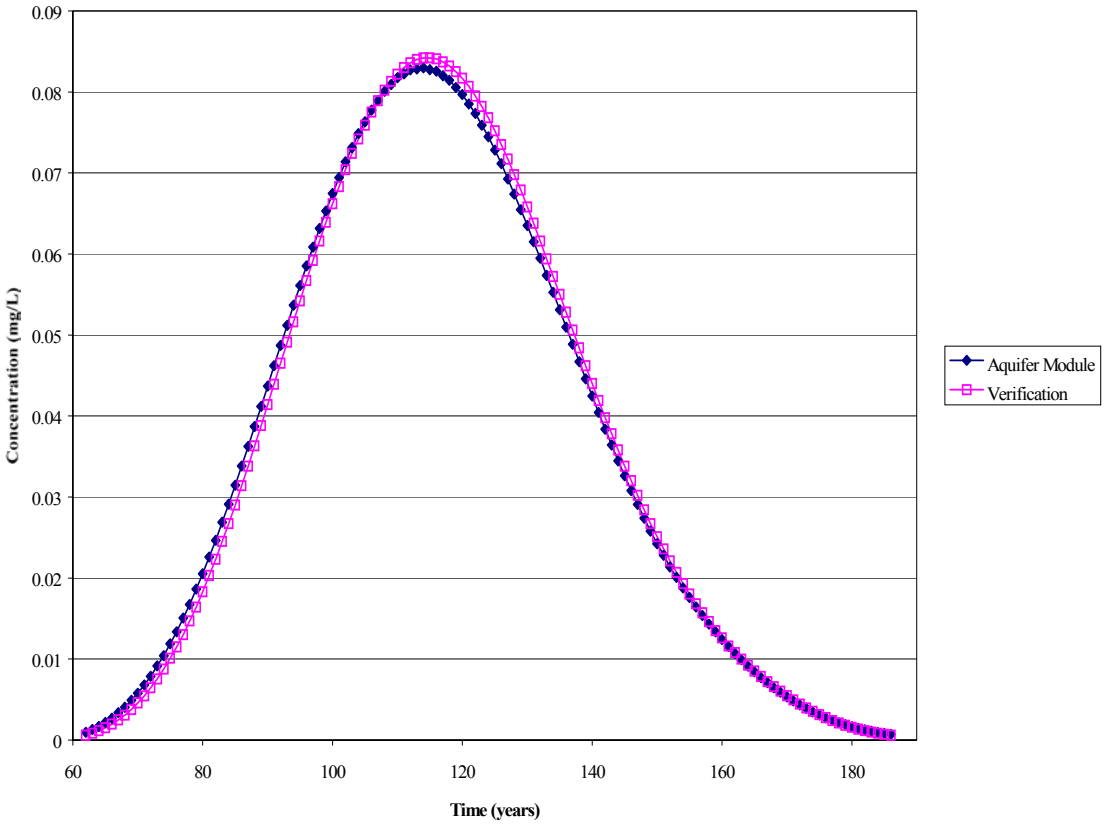

Figure D.K.1 Test Area 8: Predicted Concentrations at Receptor Well Number 64 by the Aquifer Module and the Analytical Solution

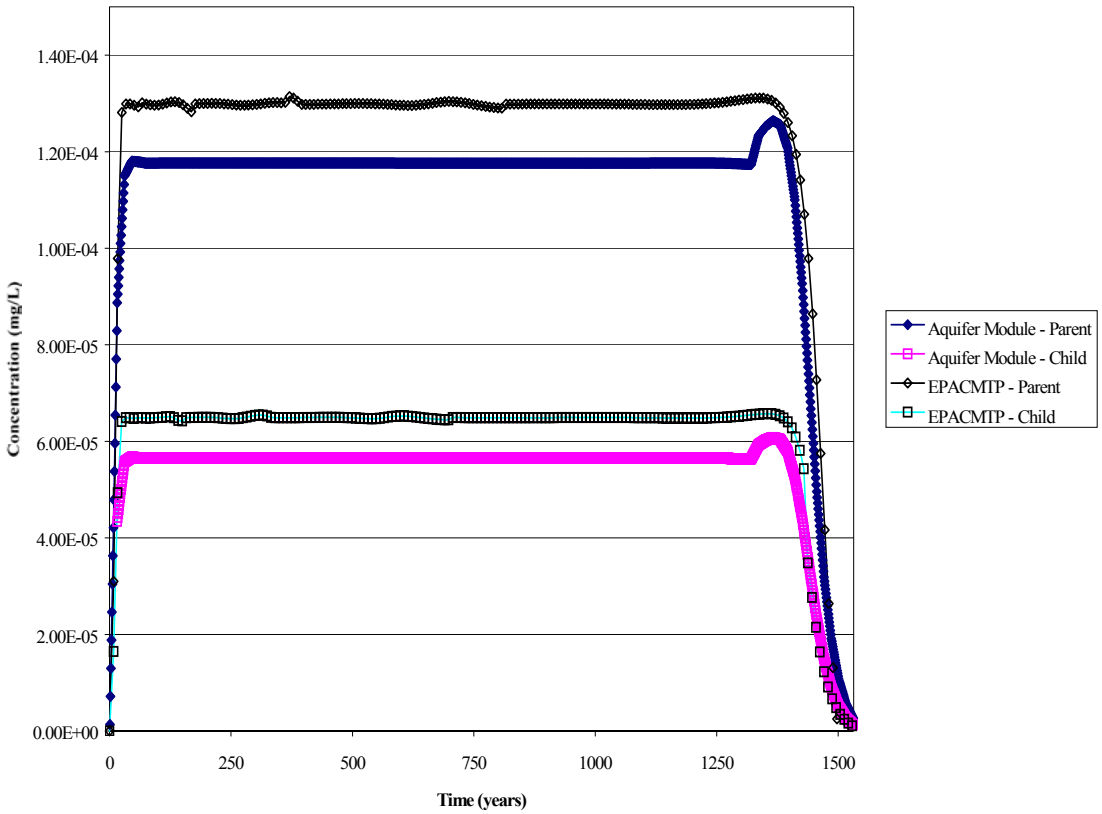

Figure D.K.2 Test Area 8: Predicted Concentrations at the Receptor Well by the Aquifer Module and EPACMTP for Straight-chain (Parent to Child) Decay Scenario

SUBAPPENDIX D.L

EPACMTP VALIDATION RESULTS

This page intentionally left blank.

LIST OF FIGURES

Page

Figure D.L.1 Location of the Borden Landfill Showing the Monitoring Network. Cross-section A-A' Is along Longitudinal Plume Axis (From Frind and Hokkanen, 1987) D.L-1
Figure D.L.2 Observed Chloride Plume along Cross-section A-A' in August 1979 (From Frind and Hokkanen, 1987) D.L-2
Figure D.L.3 The Simulated Chloride Plume Obtained by the CANSAZ Simulation D.L-3
Figure D.L.4 The Simulated Chloride Plume Obtained by Frind and Hokkanen, 1987 . . . . . D.L-4
Figure D.L.5 The Plan View of the Long Island Field Site. Groundwater Flow Directions Are Shown with Arrows D.L-5
Figure D.L.6 Comparison Between Observed and Predicted Groundwater Aldicarb Concentrations for the Long Island Site in December, 1970 and May, 1980 . . . . . D.L-6
Figure D.L.7 Plan View of Dodge City, Kansas Site Located in the Arkansas River Valley D.L-7
Figure D.L.8 Comparison of Predicted and Observed Bromide Breakthrough Curves at the Dodge City, Kansas Site D.L-8
Figure D.L.9 Comparison of Predicted and Observed Triasulfuron Breakthrough Curves at the Dodge City, Kansas Site D.L-9
Figure DL.10 EBOS Site 24 Layout and Location of Source Area D.L-10
Figure D.L.11 EBOS Site 24 Groundwater Sampling Locations D.L-11
Figure D.L.12 Changes in the Groundwater Napthalene Plume over Time A) June 1990: Before Source Removal B) October 1992: after Source Removal D.L-12
Figure D.L.13 Comparisons Along the Plume Centerline of Groundwater Napthalene Concentrations Before Source Removal D.L-13
Figure D.L.14 Comparisons along the Plume Centerline of Groundwater Napthalene Concentrations after Source Removal D.L-14

This page intentionally left blank.

BORDEN LANDFILL SITE

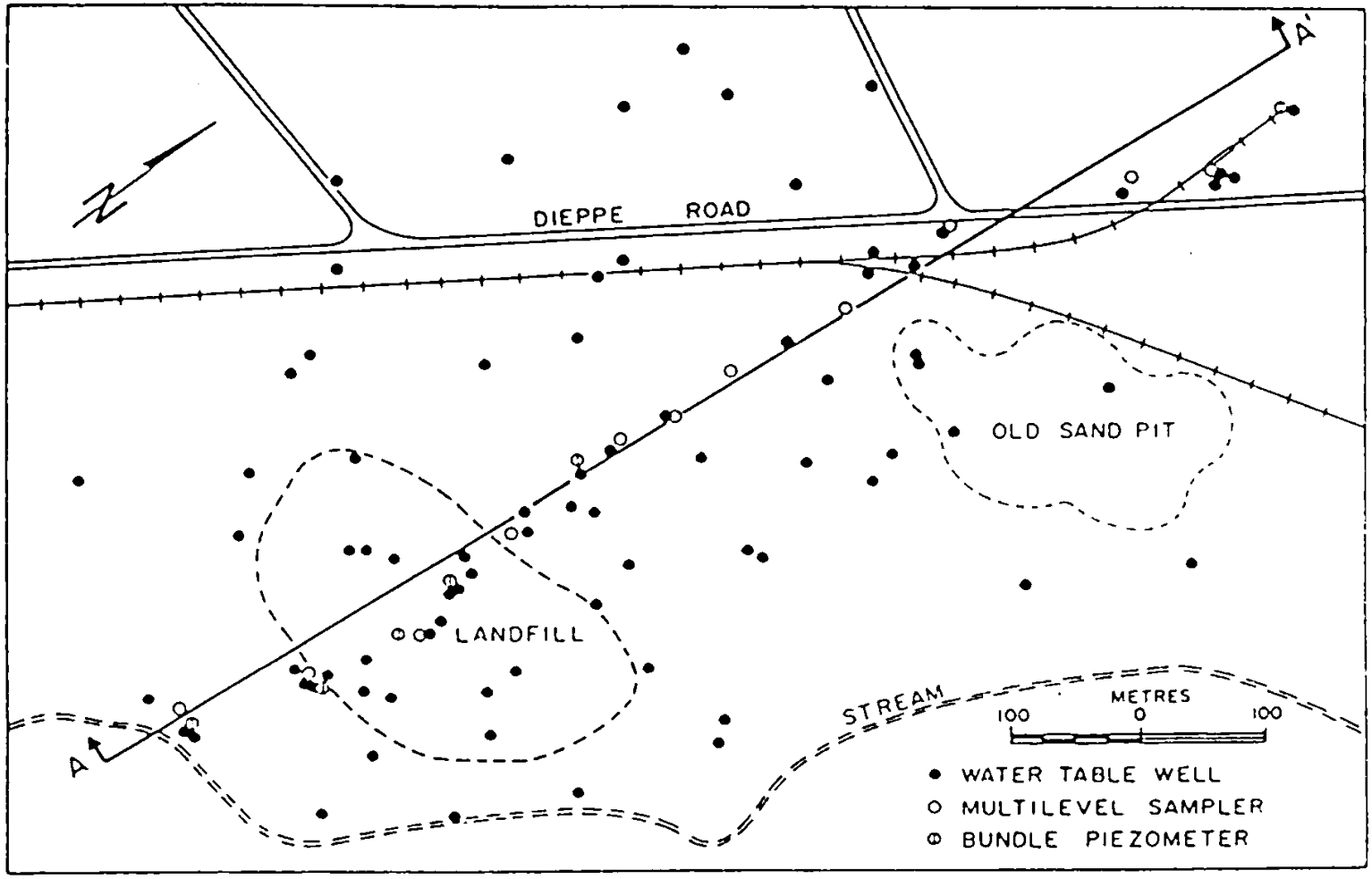

Figure D.L.1 Location of the Borden Landfill Showing the Monitoring Network. Cross-section A-A' Is along Longitudinal Plume Axis (From Frind and Hokkanen, 1987)

Borden Landfill Site

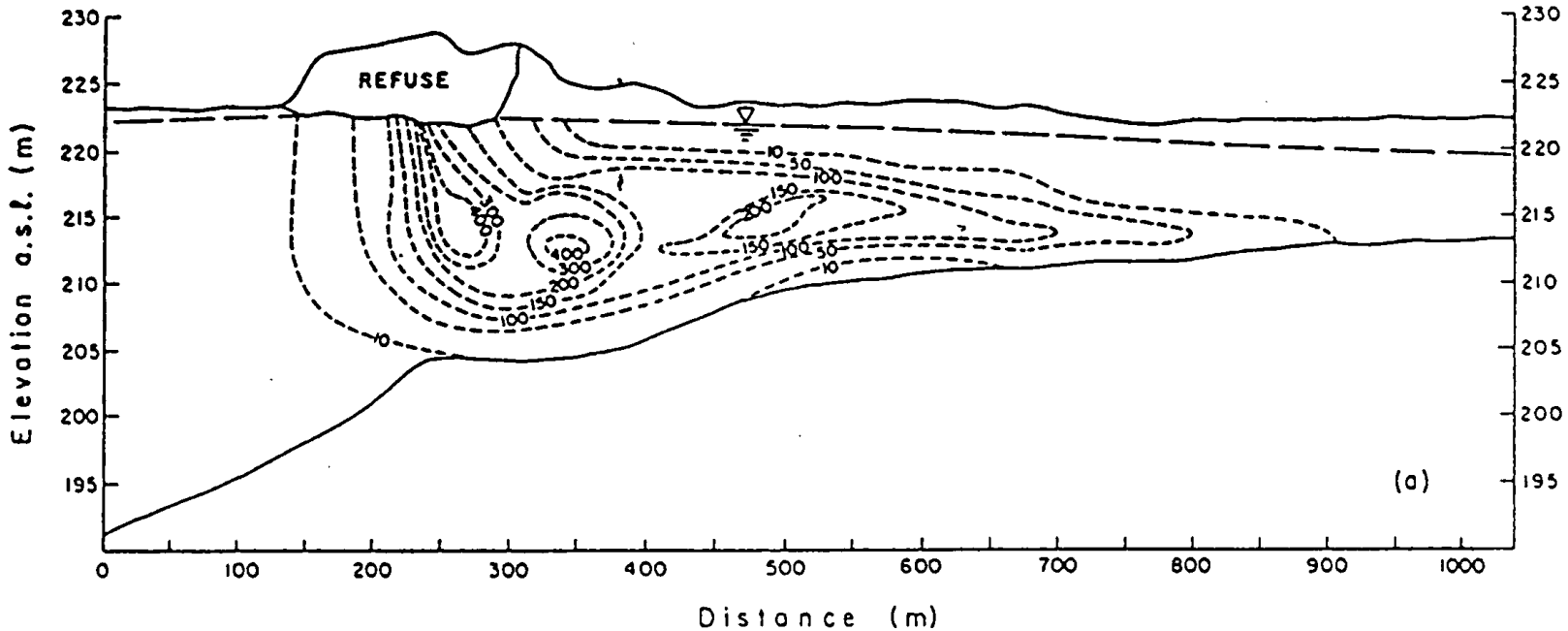

Figure D.L.2 Observed Chloride Plume along Cross-section A-A' in August 1979 (From Frind and Hokkanen, 1987)

BORDEN LANDFILL SITE

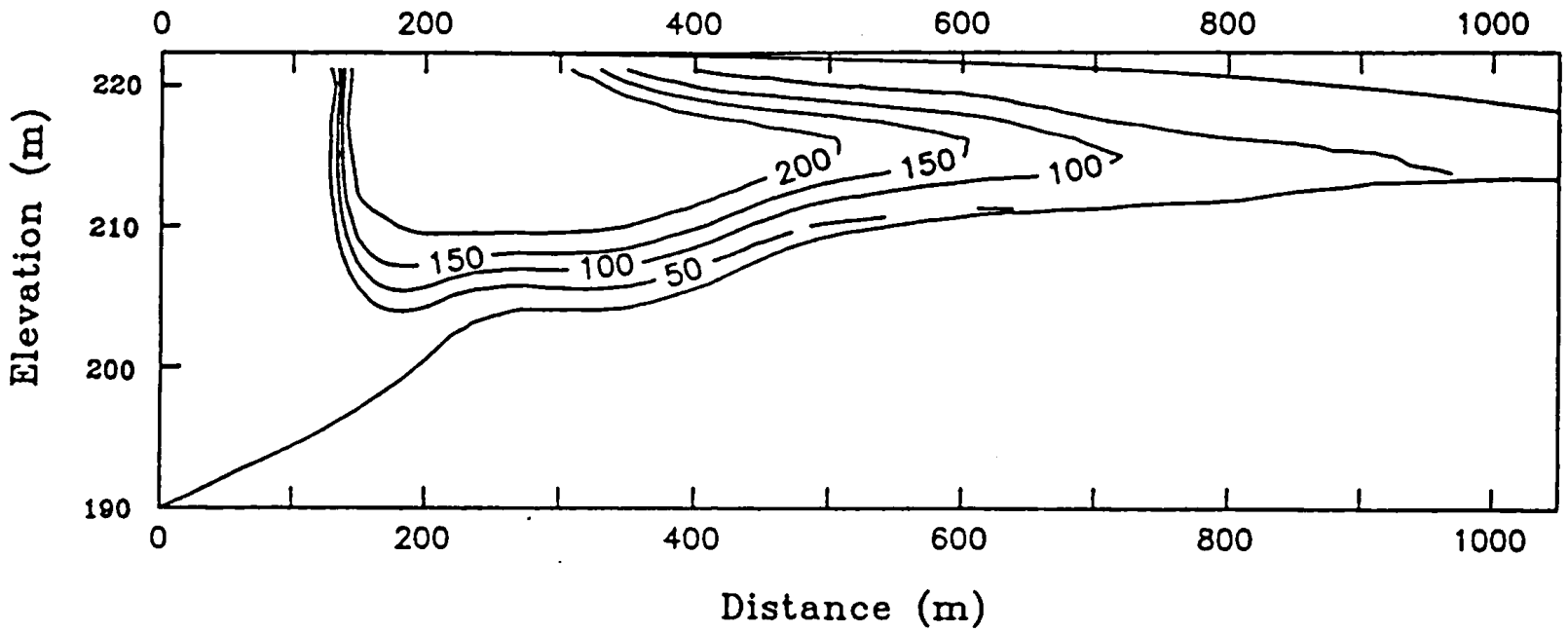

Figure D.L.3 The Simulated Chloride Plume Obtained by the CANSAZ Simulation

BORDEN LANDFILL SITE

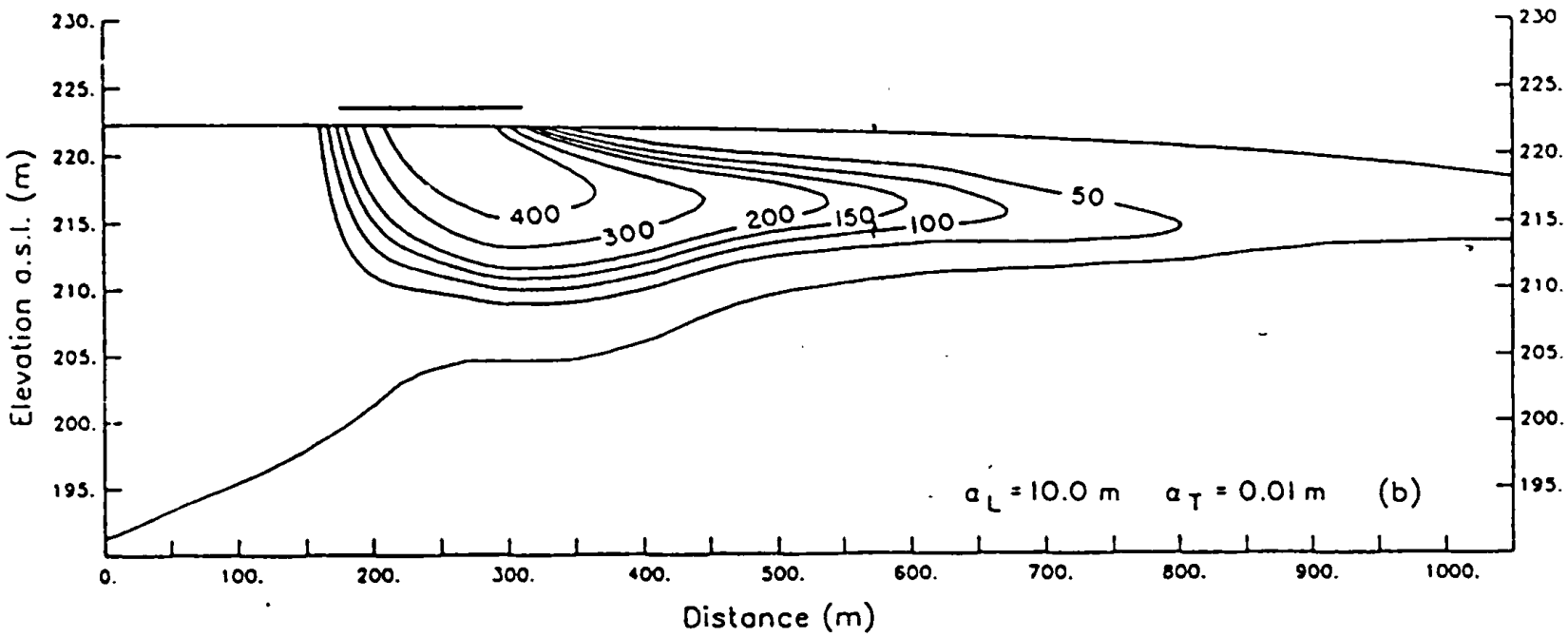

Figure D.L.4 The Simulated Chloride Plume Obtained by Frind and Hokkanen, 1987

PLAN VIEW OF LONG ISLAND FIELD SITE

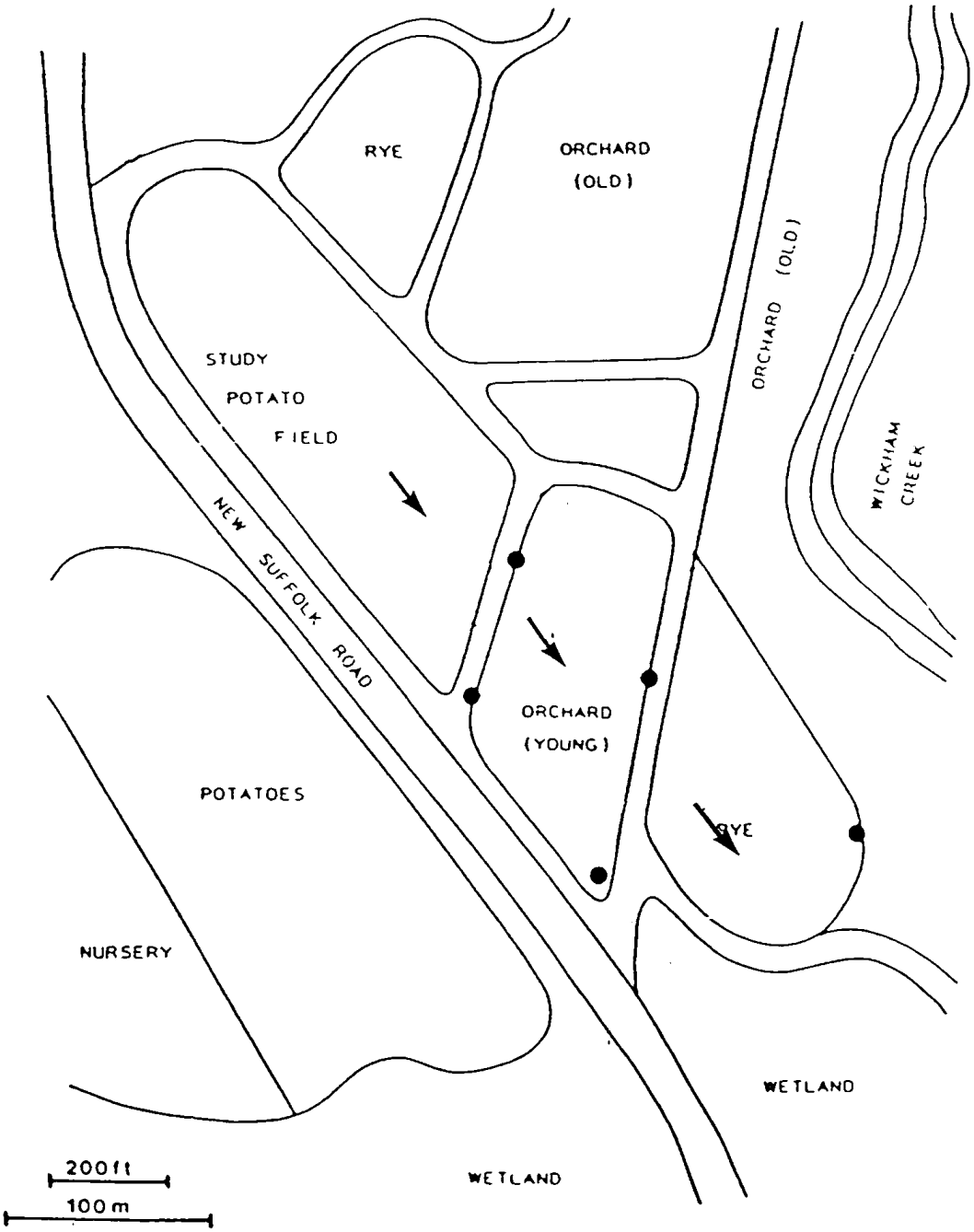

Figure D.L.5 The Plan View of the Long Island Field Site. Groundwater Flow Directions Are Shown with Arrows

COMPARISON OF EPACMTP WITH FIELD RESULTS

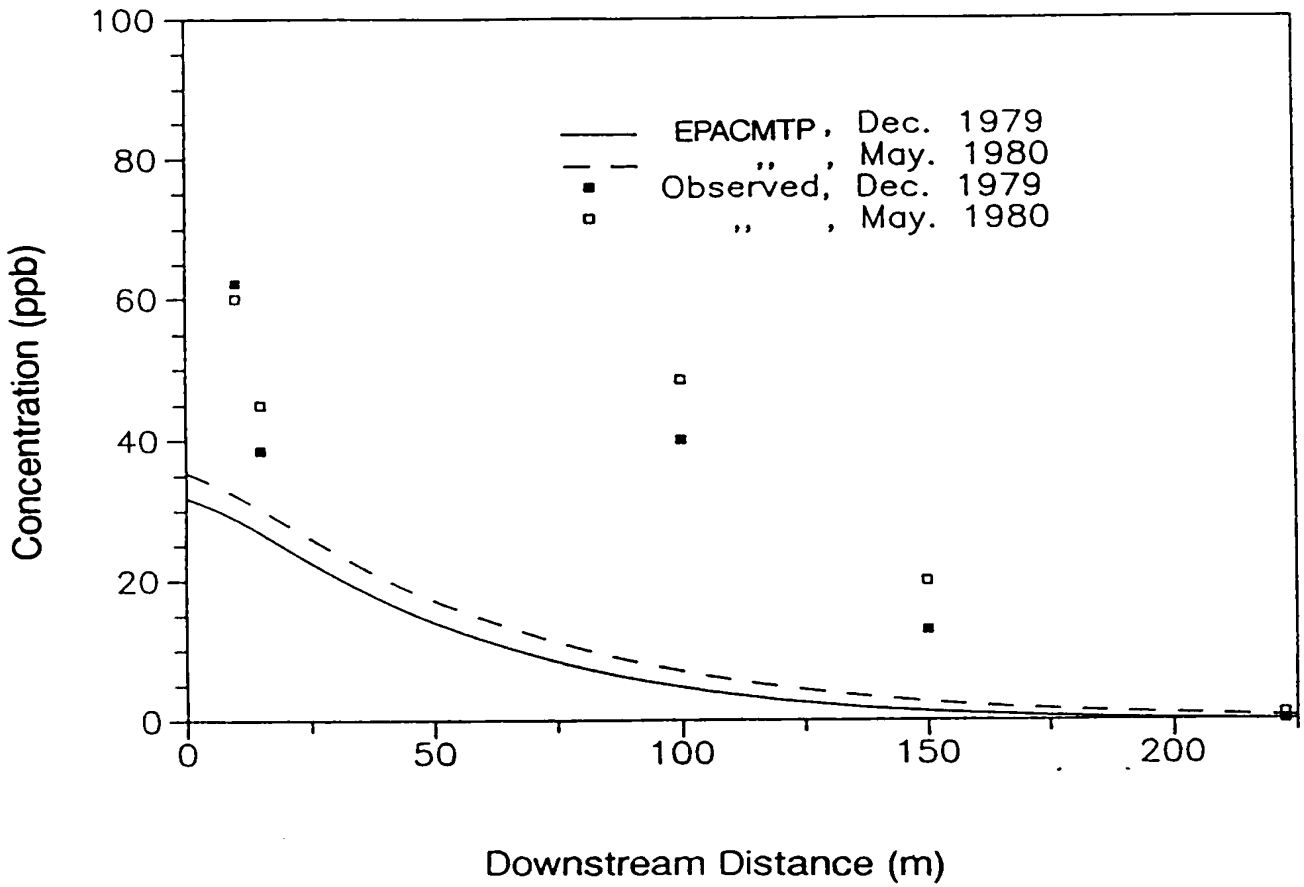

Figure D.L.6 Comparison Between Observed and Predicted Groundwater Aldicarb Concentrations for the Long Island Site in December, 1970 and May, 1980

PLAN VIEW OF THE KANSAS FIELD SITE

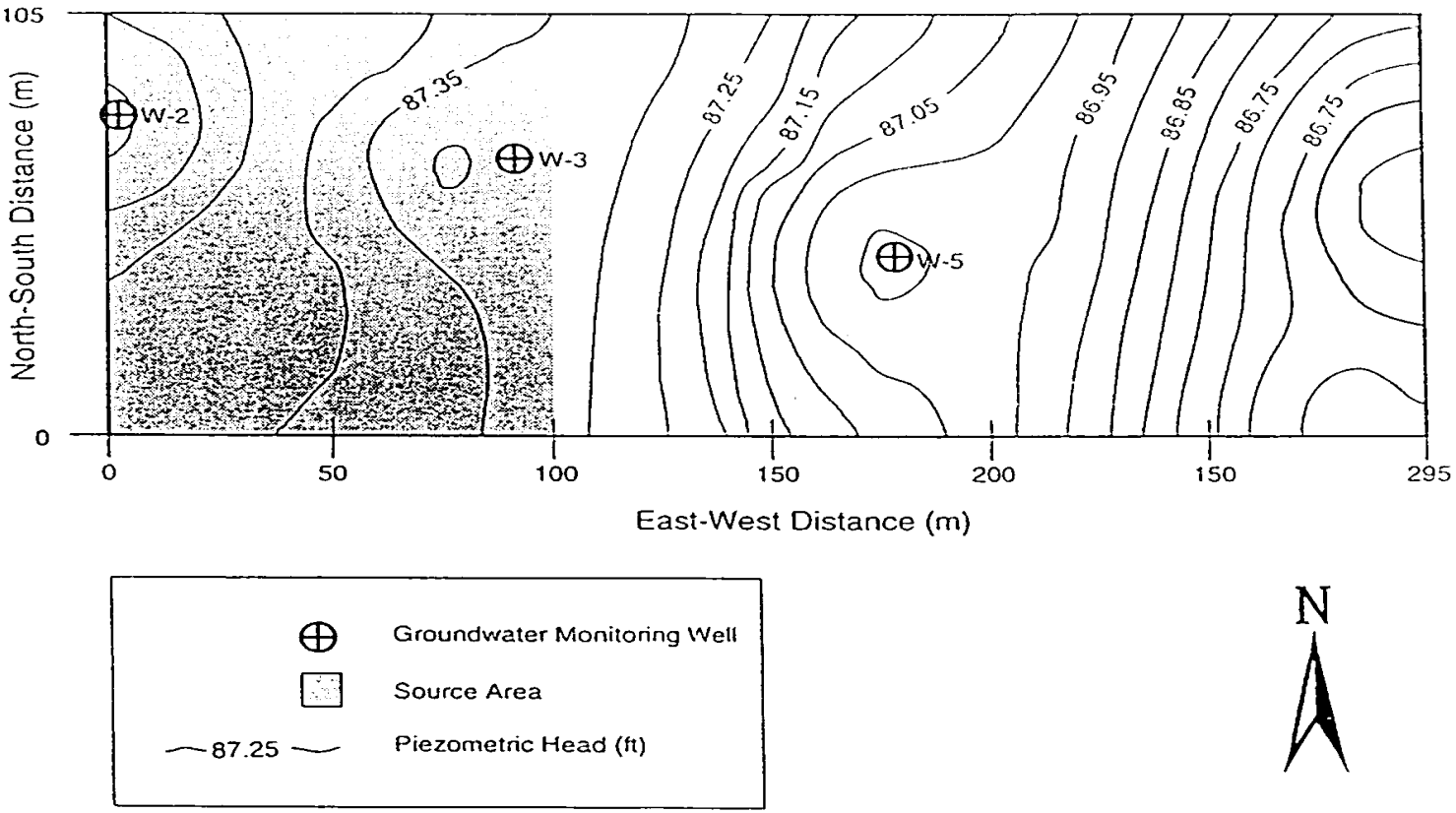

Figure D.L.7 Plan View of Dodge City, Kansas Site Located in the Arkansas River Valley

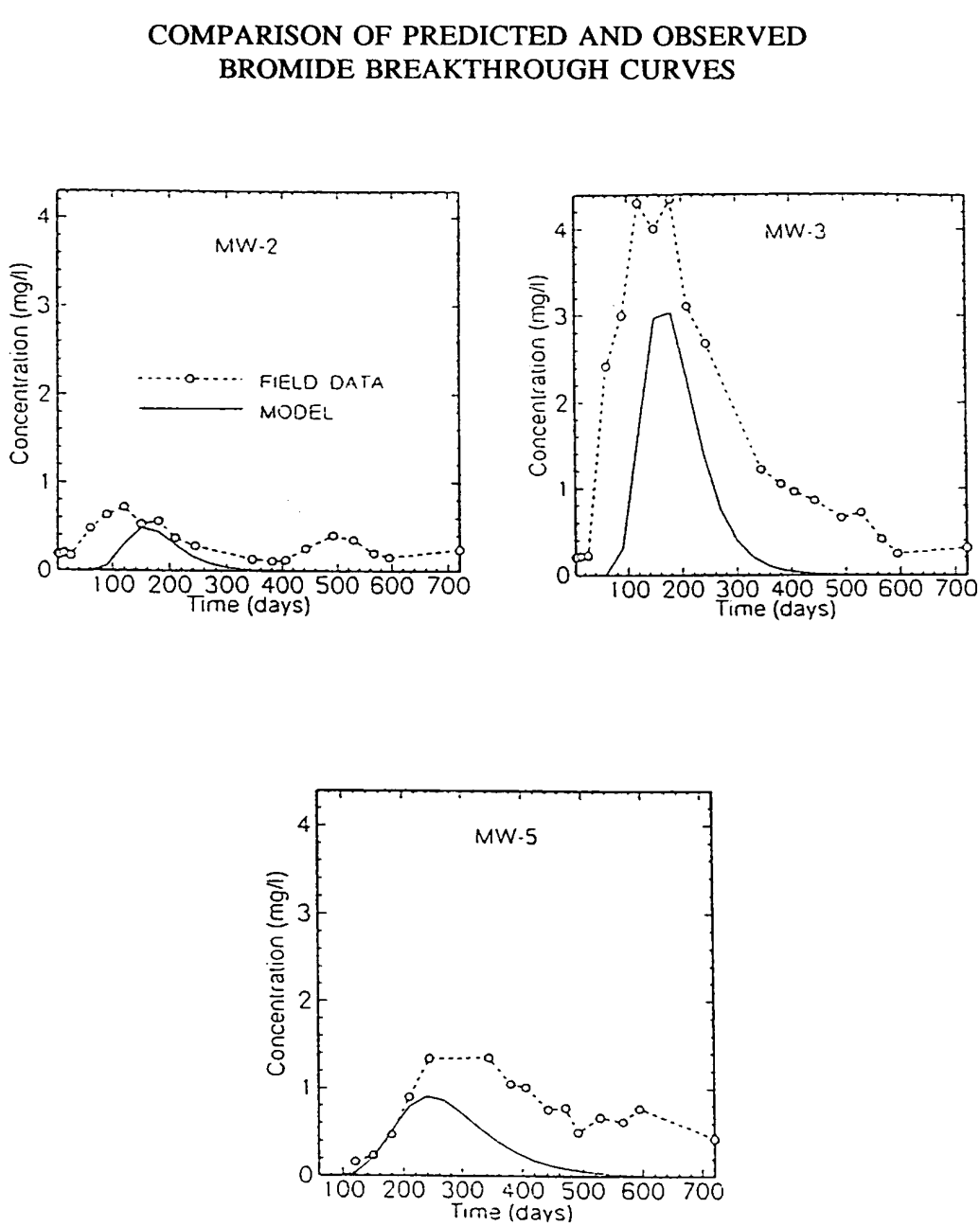

Figure D.L.8 Comparison of Predicted and Observed Bromide Breakthrough Curves at the Dodge City, Kansas Site

COMPARISON OF PREDICTED AND OBSERVED TRIASULFURON BREAKTHROUGH CURVES

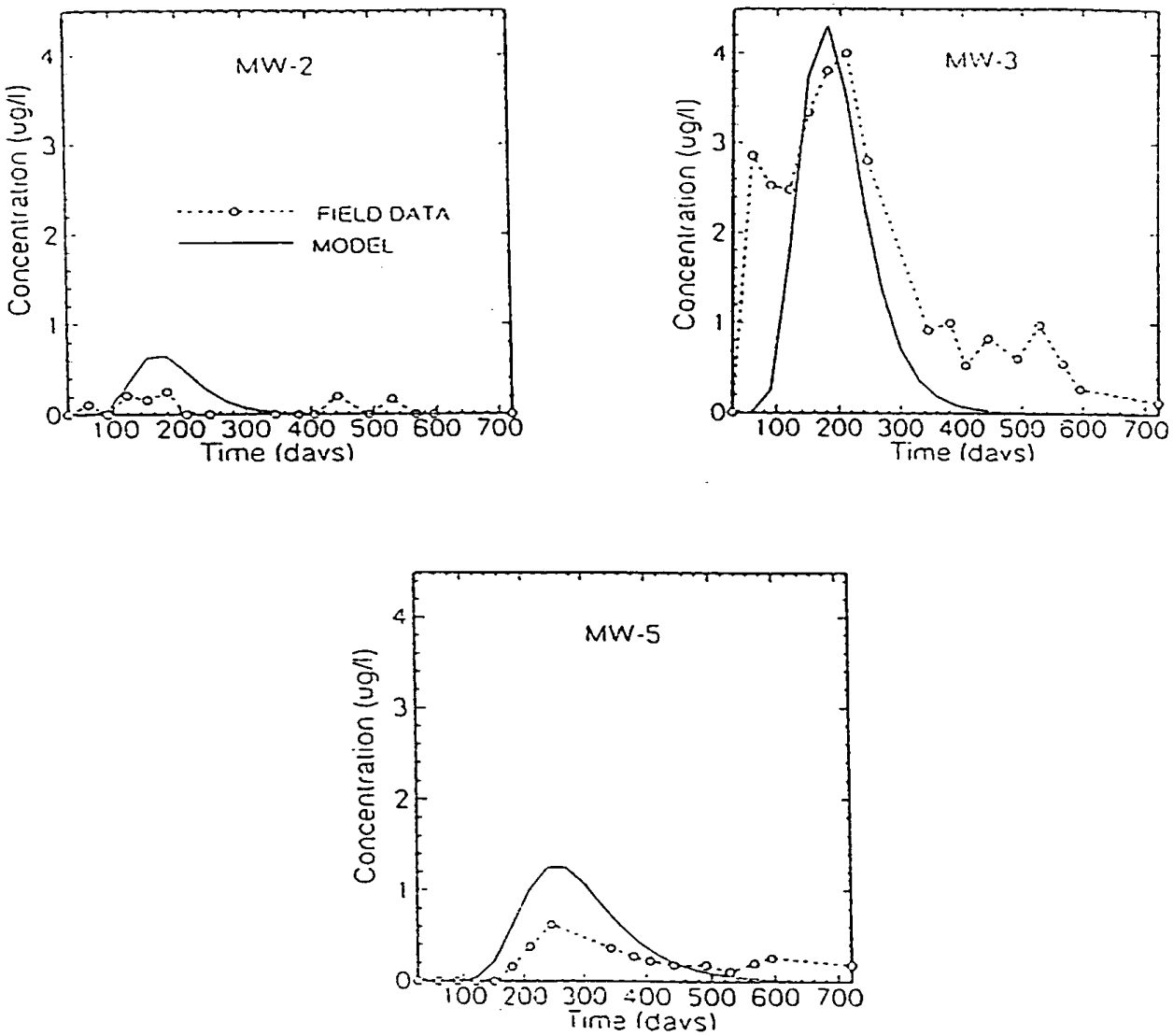

Figure D.L.9 Comparison of Predicted and Observed Triasulfuron Breakthrough Curves at the Dodge City, Kansas Site

EBOS SITE 24 LAYOUT AND LOCATION OF SOURCE AREA

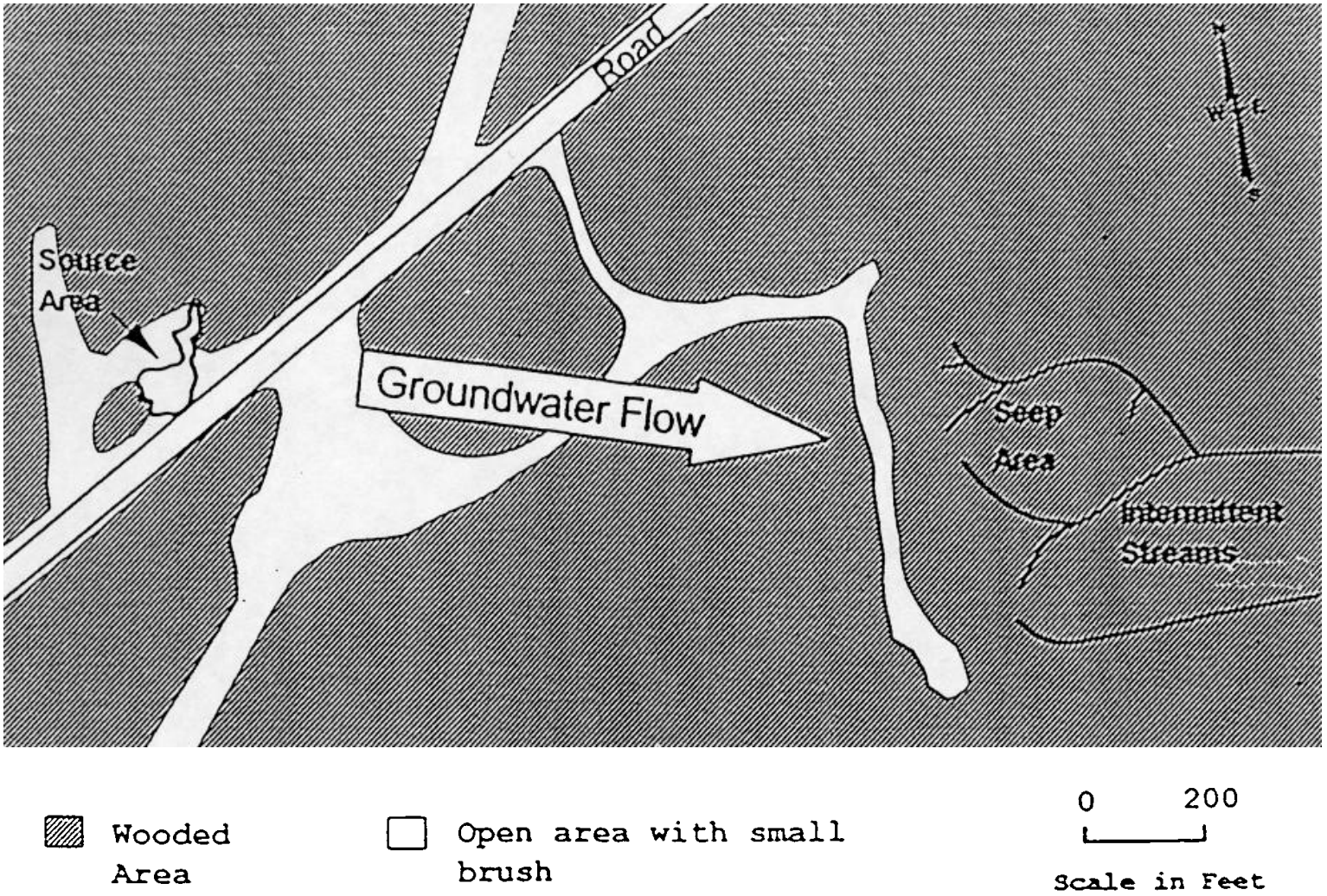

Figure D.L.10 EBOS Site 24 Layout and Location of Source Area

EBOS SITE 24 GROUNDWATER SAMPLING LOCATIONS

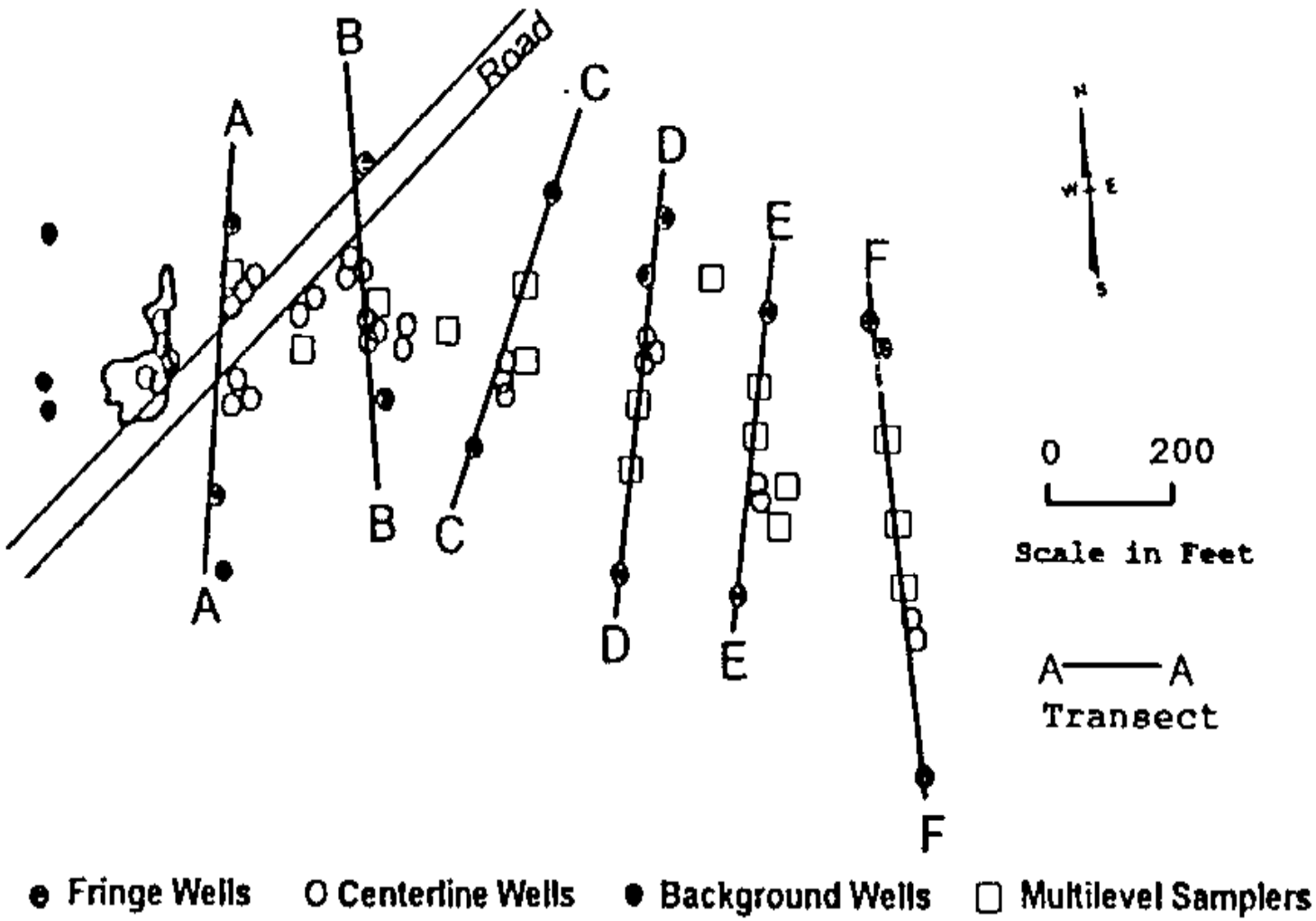

Figure D.L.11 EBOS Site 24 Groundwater Sampling Locations

CHANGES IN GROUNDWATER NAPTHALENE PLUME OVER TIME

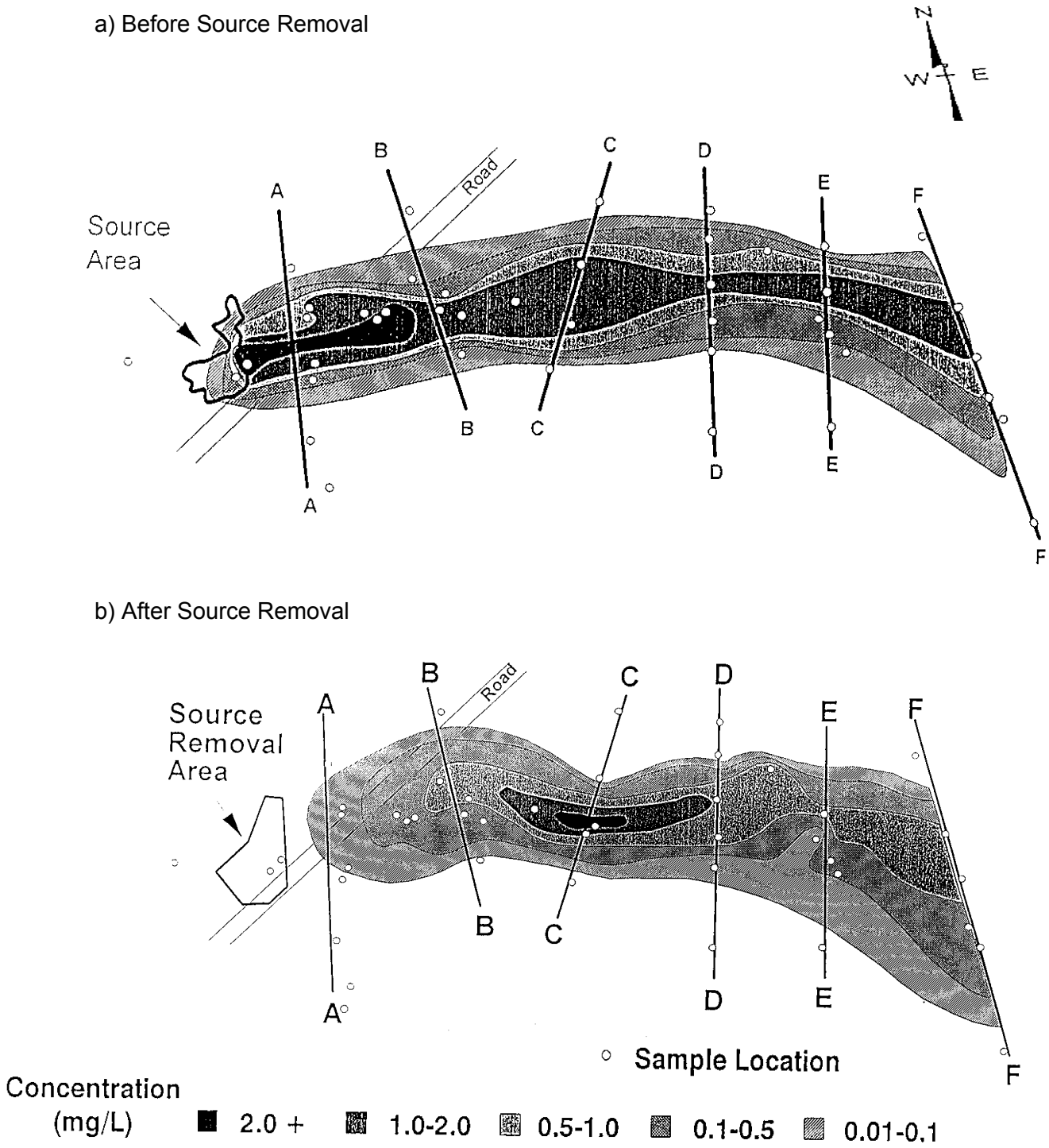

Figure D.L.12 Changes in the Groundwater Napthalene Plume over Time A) June 1990: Before Source Removal B) October 1992: after Source Removal

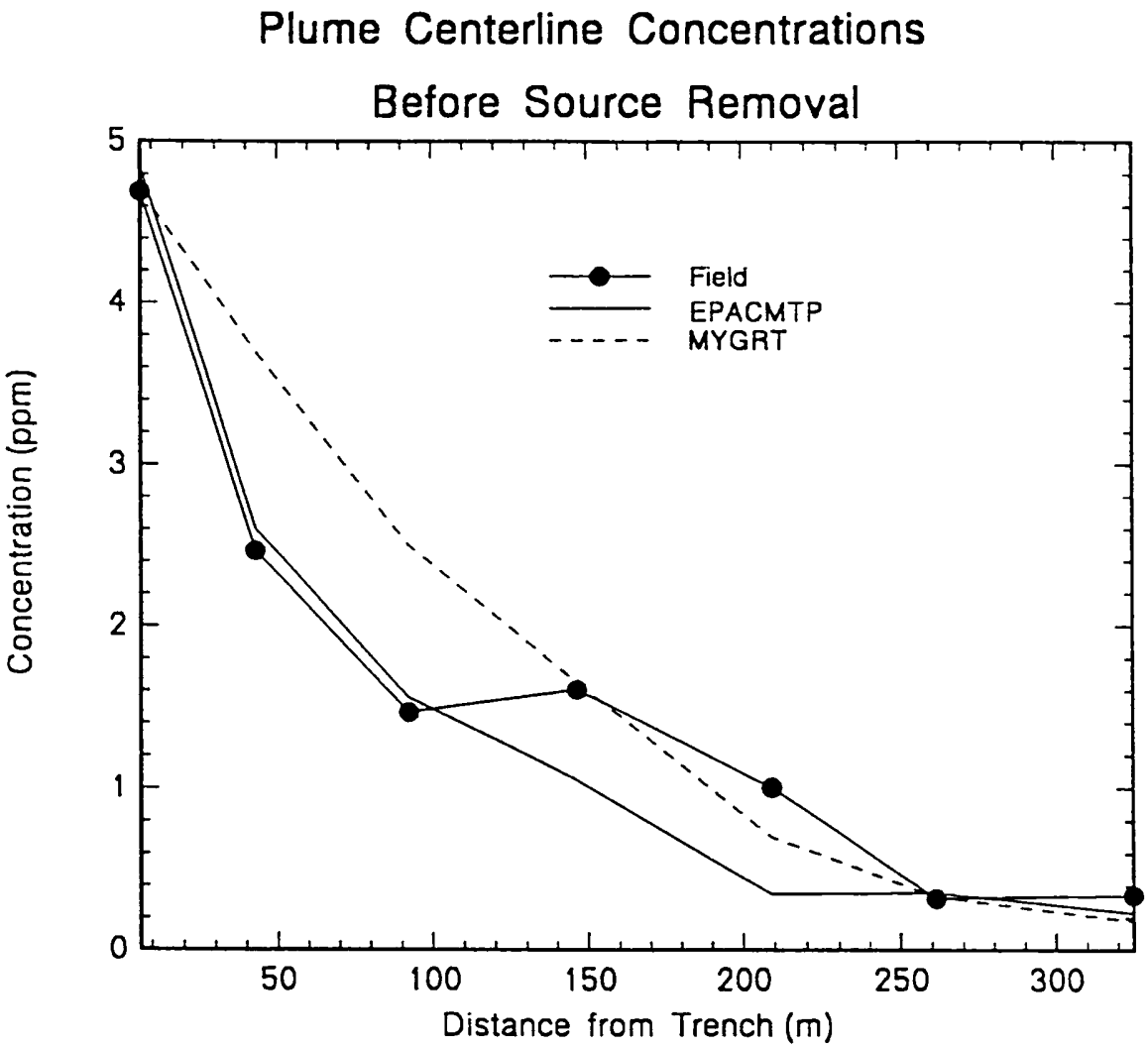

Figure D.L.13 Comparisons Along the Plume Centerline of Groundwater Napthalene Concentrations Before Source Removal

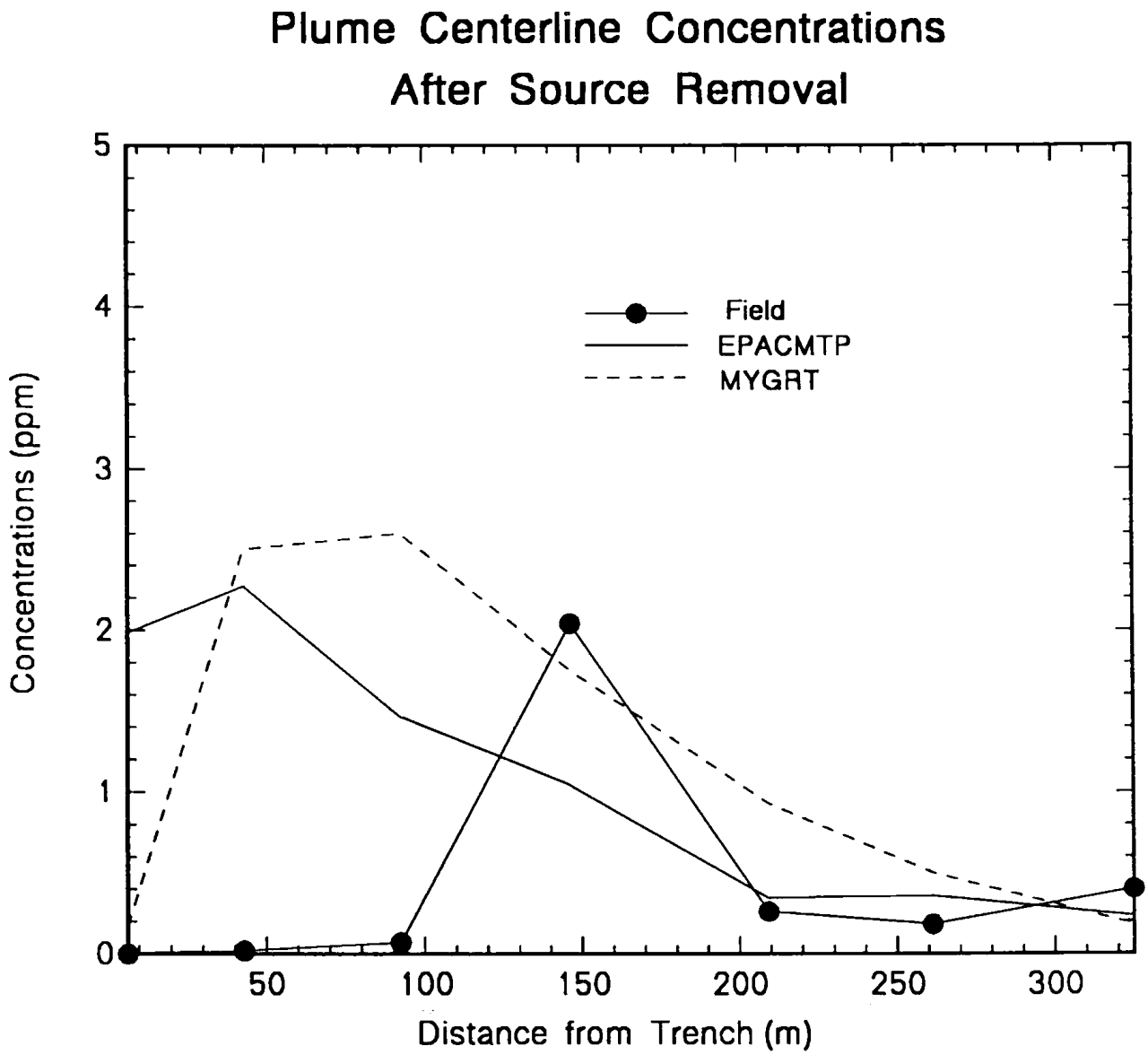

Figure D.L.14 Comparisons along the Plume Centerline of Groundwater Napthalene Concentrations after Source Removal