

Data on Selected Herbicides and Two Triazine Metabolites in Precipitation of the Midwestern and Northeastern United States, 1990–91

By DONALD A. GOOLSBY, ELISABETH A. SCRIBNER,
E. MICHAEL THURMAN, MICHAEL L. POMES, and
MICHAEL T. MEYER

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U.S. GEOLOGICAL SURVEY
GORDON P. EATON, Director

For additional information write to:

District Chief
U.S. Geological Survey
4821 Quail Crest Place
Lawrence, Kansas 66049-3839

**To obtain data presented in this
report in digital form contact:**

NADP/NTN Coordination Office
Natural Resource Ecology Laboratory
Colorado State University
Fort Collins, Colorado 80523-1499
(970) 491-3615
email: nadp@nrel.ColoState.edu

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CONVERSION FACTORS, MISCELLANEOUS ABBREVIATIONS, ABBREVIATED WATER-QUALITY UNITS, AND VERTICAL DATUM

Conversion Factors

Multiply	By	To obtain
kilogram (kg)	2.205	pound
kilopascal (kPa)	0.1450	pound per square inch
liter (L)	33.82	ounce
meter (m)	3.281	foot
microgram (μg)	0.00001543	grain
microgram per square meter ($\mu\text{g}/\text{m}^2$)	0.003276×10^{-6}	ounce per square foot
micrometer (μm)	0.00003937	inch
milliliter (mL)	0.0338	ounce
millimeter (mm)	0.03937	inch

Temperature can be converted to degrees Celsius ($^{\circ}\text{C}$) or Fahrenheit ($^{\circ}\text{F}$) by the equations:

$$^{\circ}\text{C} = 5/9 (^{\circ}\text{F} - 32),$$

$$^{\circ}\text{F} = 9/5 (^{\circ}\text{C}) + 32.$$

Miscellaneous Abbreviations

internal dimension (id)
 mass to charge (m/z)
 millisecond (ms)
 revolutions per minute (rpm)
 degrees Celsius per minute ($^{\circ}\text{C}/\text{min}$)

Abbreviated Water-Quality Units

microgram per liter ($\mu\text{g}/\text{L}$)
 microliter (μL)
 milliliter per minute (mL/min)
 nanogram (ng)
 nanogram per microliter ($\text{ng}/\mu\text{L}$)

Vertical Datum

Sea level: In this report, "sea level" refers to the National Geodetic Vertical Datum of 1929—a geodetic datum derived from a general adjustment of the first-order level nets of the United States and Canada, formerly called Sea level Datum of 1929.

Data on Selected Herbicides and Two Triazine Metabolites in Precipitation of the Midwestern and Northeastern United States, 1990–91

By Donald A. Goolsby, Elisabeth A. Scribner, E. Michael Thurman, Michael L. Pomes, and Michael T. Meyer

Abstract

Weekly precipitation (rain and snow) samples were collected from 81 National Atmospheric Deposition Program/National Trends Network sites in the Midwestern and Northeastern United States for the analysis of herbicides. In addition, five high-elevation background sites along the Rocky Mountains and in Alaska were sampled to provide data on herbicides in precipitation at sites far from the study area. The study began in March 1990 and continued through September 1991. The precipitation samples were shipped to the Central Analytical Laboratory operated by the Illinois State Water Survey for analyses of inorganic compounds. Subsamples of the precipitation were shipped to the U.S. Geological Survey laboratory in Lawrence, Kansas, for the analysis of 11 herbicides and 2 triazine metabolites.

This report provides descriptions of the study area, sample-collection methods, laboratory methods, and quality assurance. The report also includes a compilation of herbicide concentration data from both enzyme-linked immunosorbent assay and gas chromatography/mass spectrometry methods. Laboratory analyses consisted of 6,230 samples that were analyzed by enzyme-linked immunosorbent assay using alachlor and atrazine microtiter plates and 2,341 samples that were confirmed by gas chromatography/mass spectrometry analysis. Graphical and statistical

comparisons of the two analytical methods are given in this report.

Data from this study have been useful in determining the spatial and temporal distribution of herbicide concentrations and deposition in precipitation over a 26-State area of the Midwestern and Northeastern United States. The data also provide evidence of long-range atmospheric transport of herbicides and triazine metabolites.

INTRODUCTION

This is the fourth in a series of water-quality reports intended to present the analytical results from studies of herbicides in water resources of the Midwestern United States. This report presents data on the concentrations of 11 preemergent herbicides and 2 triazine metabolites in precipitation of the Midwestern and Northeastern United States. Previous reports have presented analytical results from regional studies of herbicides and nutrients in ground water (Kolpin and others, 1993), surface water (Scribner and others, 1993), and storm runoff (Scribner and others, 1994).

Current (1995) agricultural practices in the United States often require extensive use of herbicides for economical production of corn, soybeans, sorghum, and other row crops. Data compiled by Gianessi and Puffer (1990) indicate that about two-thirds of the 285 million kg of herbicides applied annually in the United States (Aspelin and others, 1992) are used in crop production in the Midwestern United States. As a consequence, the Midwest is a

major source area for transport of herbicides into streams and ground water as well as to the atmosphere.

Previous research has shown that herbicides can be transported into the atmosphere by various processes. In the atmosphere, these compounds can be dispersed by air currents and redeposited on the land surface, lakes, and streams by rainfall, snow, and dry deposition, often at considerable distances from their source areas. Herbicides have been reported in fog (Glotfelty and others, 1987) and rainfall in the Midwestern United States (Richards and others, 1987; Capel, 1991; Nations and Hallberg, 1992; Williams and others, 1992), Eastern United States (Wu, 1981; Glotfelty and others, 1990), and in Europe (Buser, 1990; Trevisan and others, 1993). In spite of these studies, relatively little is known on a regional or multistate scale about depositional patterns of herbicides in precipitation and the magnitude of herbicide deposition in precipitation in comparison to quantities applied to cropland or to surface-runoff losses.

To learn more about herbicides in precipitation, a study was conducted by the U.S. Geological Survey (USGS) during 1990–91 to determine the occurrence and distribution of herbicides in precipitation for a large part of the United States, including much of the Mississippi River Basin where most of the herbicides are used. The study attempted to determine the mass of alachlor and atrazine deposited in precipitation over nearly one-quarter of the United States. These two compounds are the most extensively used herbicides in the United States (Gianessi and Puffer, 1990).

Objectives of Study

The overall objective of this study was to obtain detailed information on the concentrations of herbicides in precipitation. Specific objectives were to:

1. Determine the occurrence and temporal distribution of several major herbicides in precipitation.
2. Estimate the amounts of alachlor and atrazine deposited by precipitation annually in individual States and over a large part of the conterminous United States.
3. Relate annual deposition of alachlor and atrazine to amounts applied annually.
4. Compare annual herbicide deposition by precipitation within the Mississippi River Basin to the estimated annual amount transported out of the basin in streamflow.

Purpose and Scope

The purpose of this report is to describe the data-collection and analytical methods, the onsite and laboratory quality-assurance procedures, and to present the data on 11 herbicides and 2 triazine metabolites from precipitation samples collected during the study. These data were derived from 6,230 precipitation samples that were analyzed for alachlor and atrazine by enzyme-linked immunosorbent assay (ELISA) methods using microtiter plates and from 2,341 precipitation samples that were confirmed by gas chromatography/mass spectrometry (GC/MS) analysis. A summary of results from this study is presented in Goolsby and others (1994).

Acknowledgments

This study was conducted during 1990–91 by the USGS as part of the Toxic Substances Hydrology Program (Goolsby and others, 1993). The precipitation samples were obtained through the cooperation and support of Carol Simmons of the National Atmospheric Deposition Program/National Trends Network (NADP/NTN), Ft. Collins, Colorado, and Mark Peden and Kathy Douglas of the Central Analytical Laboratory (CAL) operated by the Illinois State Water Survey, Champaign, Illinois. The assistance provided by these agencies and individuals is sincerely appreciated.

DESCRIPTION OF STUDY AREA

The study area for this investigation encompassed 26 States as shown in figure 1. It includes States in the upper Midwest where the use of herbicides, such as alachlor and atrazine, is most intense, and States eastward to the Atlantic Ocean and northward to the Canadian border that potentially may receive atmospheric deposition of herbicides applied in the Midwest. Precipitation samples were obtained from the study area through the assistance of the NADP/NTN and the Illinois State Water Survey. The NADP/NTN operates a network of about 200 sampling sites nationwide to monitor the status and trends in atmospheric deposition of chemical constituents. Weekly accumulation samples of precipitation were obtained at 81 NADP/NTN sampling sites located in 23 States within the 26-State study area (fig. 1). In addition, four NADP/NTN sites in high-elevation

Table 1. Description of National Atmospheric Deposition Program/National Trends Network sites sampled for study of herbicides in precipitation

[Site locations are shown in figure 1, except for AK03, not shown]

Site Identifier (fig. 1)	State	County	Sampling-site name	Latitude (degrees, minutes, seconds)	Longitude (degrees, minutes, seconds)	Elevation (meters)
AK03	Alaska	None	Denali National Park	63°43'25"	148°57'50"	649
C098	Colorado	Larimer	Rocky Mountain National Park-Loch Vale	40°17'16"	105°39'46"	3,159
IA08	Iowa	Clayton	Big Springs Fish Hatchery	42°54'35"	91°28'12"	229
IA23		Lucas	McNay Research Center	40°57'47"	93°23'33"	320
IL11	Illinois	Champaign	Bondville	40°03'12"	88°22'19"	212
IL18		Dekalb	Shabbona	41°50'29"	88°51'04"	265
IL19		Du Page	Argonne	41°42'04"	87°59'43"	229
IL35		Jackson	Southern Illinois University	37°42'36"	89°16'08"	146
IL63		Pope	Dixon Springs Agricultural Center	37°26'08"	88°40'19"	161
IL78		Warren	Monmouth	40°56'00"	90°43'23"	229
IL99		Marion	Omega	38°42'36"	88°43'23"	153
IN20	Indiana	Huntington	Huntington Reservoir	40°50'24"	85°27'50"	244
IN22		Knox	Southwest Purdue Agricultural Center	38°44'27"	87°29'08"	134
IN34		Porter	Indiana Dunes National Lakeshore	41°37'57"	87°05'16"	208
IN41		Tippecanoe	Purdue University Agricultural Farm	40°28'31"	86°59'32"	215
KS07	Kansas	Crawford	Farlington Fish Hatchery	37°39'04"	94°48'13"	281
KS31		Riley	Konza Prairie	39°06'08"	96°36'33"	350
KS32		Scott	Lake Scott State Park	38°40'18"	100°54'59"	863
KY03	Kentucky	Boyle	Perryville Battlefield	37°40'29"	84°58'32"	281
KY22		Letcher	Lilley Cornett Woods	37°04'40"	82°59'37"	335
KY35		Rowan	Clark State Fish Hatchery	38°07'06"	83°32'49"	204
KY38		Trigg	Land Between the Lakes	36°47'26"	88°04'02"	181
MA01	Massachusetts	Barnstable	North Atlantic Coastal Laboratory	41°58'33"	70°01'29"	41
MA08		Franklin	Quabbin Reservoir	42°23'33"	72°20'40"	306
MA13		Middlesex	East	42°23'02"	71°12'53"	18
MD03	Maryland	Carroll	White Rock	39°24'32"	76°59'43"	172
MD13		Queene Anne	Wye	38°54'47"	76°09'09"	6
ME00	Maine	Aroostook	Caribou	46°52'08"	68°00'53"	191
ME02		Cumberland	Bridgton	44°06'27"	70°43'44"	222
ME09		Piscataquis	Greenville Station	45°29'21"	69°39'55"	322
ME98		Hancock	Acadia National Park-McFarland Hill	44°22'26"	68°15'38"	129

Table 1. Description of National Atmospheric Deposition Program/National Trends Network sites sampled for study of herbicides in precipitation—Continued

Site identifier (fig. 1)	State	County	Sampling-site name	Latitude (degrees, minutes, seconds)	Longitude (degrees, minutes, seconds)	Elevation (meters)
MI09	Michigan	Cheboygan	Douglas Lake	45°33'39"	84°40'42"	238
MI26		Kalamazoo	Kellogg Biological Station	42°24'37"	85°23'34"	288
MI53		Wexford	Wellston	44°13'26"	85°49'05"	292
MI97		Keweenaw	Isle Royale National Park-Wallace Lake	48°03'27"	88°38'03"	201
MI98		Chippewa	Raco	46°22'27"	84°44'29"	262
MI99		Houghton	Chassell	47°06'17"	88°33'05"	277
MN16	Minnesota	Itasca	Marcell Experimental Forest	47°31'52"	93°28'07"	431
MN18		Lake	Fernberg	47°56'45"	91°29'43"	524
MN23		Morrison	Camp Ripley	46°14'58"	94°29'50"	410
MN27		Redwood	Lamberton	44°14'14"	95°18'02"	343
MO03	Missouri	Boone	Ashland Wildlife Area	38°45'13"	92°11'56"	239
MO05		Butler	University Forest	36°54'39"	90°19'07"	154
MT05	Montana	Flathead	Glacier National Park-Fire Weather Station	48°30'37"	113°59'45"	968
MT07		Jefferson	Clancy	46°29'07"	112°04'03"	1,489
ND07	North Dakota	McKenzie	Theodore Roosevelt National Park	47°36'05"	103°15'51"	611
ND08		Pembina	Icelandic State Park	48°46'57"	97°45'15"	306
ND11		Stutsman	Woodworth	47°07'32"	99°14'13"	578
NE15	Nebraska	Saunders	Mead	41°09'11"	96°29'34"	352
NE99		Lincoln	North Platte Agricultural Experimental Station	41°03'33"	100°44'47"	919
NH02	New Hampshire	Grafton	Hubbard Brook	43°56'35"	71°42'12"	250
NJ99	New Jersey	Mercer	Washington Crossing	40°18'54"	74°51'17"	72
NY08	New York	Cayuga	Aurora Research Farm	42°44'02"	76°39'35"	249
NY10		Chautauqua	Chautauqua	42°17'58"	79°23'47"	488
NY20		Essex	Huntington Wildlife	43°58'23"	74°13'23"	500
NY52		Oswego	Bennett Bridge	43°31'34"	75°56'50"	245
NY65		Steuben	Jasper	42°06'23"	77°32'09"	634
NY68		Ulster	Biscuit Brook	41°59'39"	74°30'13"	634
NY98		Essex	Whiteface Mountain	44°23'36"	73°51'34"	610
NY99		Orange	West Point	41°21'03"	74°02'55"	201
OH09	Ohio	Butler	Oxford	39°31'53"	84°43'27"	284
OH17		Delaware	Delaware	40°21'19"	83°03'58"	285
OH49		Noble	Caldwell	39°47'34"	81°31'52"	276
OH71		Wayne	Wooster	40°46'56"	81°55'12"	308

Table 1. Description of National Atmospheric Deposition Program/National Trends Network sites sampled for study of herbicides in precipitation—Continued

Site identifier (fig. 1)	State	County	Sampling-site name	Latitude (degrees, minutes, seconds)	Longitude (degrees, minutes, seconds)	Elevation (meters)
PA15	Pennsylvania	Centre	Penn State	40°47'18"	77°56'45"	393
PA29		Elk	Kane Experimental Forest	41°35'52"	78°46'03"	618
PA42		Huntingdon	Leading Ridge	40°39'27"	77°56'23"	287
PA72		Pike	Milford	41°19'39"	74°49'13"	212
SD08	South Dakota	Jackson	Cottonwood	43°56'57"	101°51'30"	733
SD99		Beadle	Huron Well Field	44°21'18"	98°17'27"	398
VA00	Virginia	Albemarle	Charlottesville	38°02'26"	78°32'35"	174
VA13		Giles	Horton's Station	37°19'53"	80°33'27"	963
VA28		Madison	Shenandoah National Park-Big Meadows	38°31'21"	78°26'09"	1,074
VA29		Smyth	Whitetop Mountain	36°38'20"	81°36'21"	1,686
VT01	Vermont	Bennington	Bennington	42°52'34"	73°09'48"	305
VT99		Chittenden	Underhill	44°31'42"	72°52'08"	399
WI09	Wisconsin	Florence	Popple River	45°47'47"	88°23'58"	421
WI25		Oconto	Suring	45°03'12"	88°22'22"	247
WI28		Portage	Lake Dubay	44°39'52"	89°39'08"	338
WI36		Vilas	Trout Lake	46°03'10"	89°39'11"	501
WI37		Washburn	Spooner	45°49'22"	91°52'28"	331
WI98		Vernon	Wildcat Mountain	43°42'07"	90°34'07"	386
WI99		Walworth	Lake Geneva	42°34'49"	88°30'01"	288
WV04	West Virginia	Fayette	Babcock State Park	37°58'48"	80°57'00"	753
WV18		Tucker	Parsons	39°05'23"	79°39'44"	505
WY02	Wyoming	Fremont	Sinks Canyon	42°44'02"	108°51'00"	2,164

deposited in precipitation (rain and snow) were determined in this study. No samples of dry deposition were analyzed.

Laboratory Methods

Precipitation samples received at the USGS laboratory in Lawrence, Kansas, were logged in manual and computer files, assigned identification numbers, and stored under refrigeration until analyzed. All precipitation samples were analyzed by ELISA for both alachlor and atrazine. Samples in

which herbicides were detected and that had a sample volume of at least 60 mL were confirmed and quantified by GC/MS. Samples with volumes less than 60 mL were not confirmed by GC/MS. In addition, about 10 percent of all samples found to contain no herbicides by ELISA were randomly selected for analysis by GC/MS. An exception to the above procedure occurred during the first few months of the study when 20 percent of all samples with 60 mL or more of water were randomly selected for GC/MS analysis regardless of whether herbicides were detected by ELISA. During the 19-month study, 6,230 precipitation samples (including quality-

assurance samples) were analyzed by ELISA, and 2,341 samples were confirmed by GC/MS analysis. About 11 percent of all samples analyzed were used for quality-assurance (QA) purposes.

Enzyme-Linked Immunosorbent Assay

Resi-Quant immunoassay kits (ImmunoSystems, Scarborough, ME) were used for the ELISA analysis (Pomes and Thurman, 1991; Thurman and others, 1992). These kits consisted of 96-well polystyrene plates that were coated with polyclonal antibodies. Separate kits with different antibody coatings were used to analyze for alachlor and atrazine. An 80- μ L aliquot of sample or standard was transferred to each well followed by an 80- μ L aliquot of enzyme conjugate. The plate was covered with a paraffin film and allowed to incubate for 1 hour at room temperature while being shaken at 200 rpm on an orbital shaker. During the incubation period, alachlor or atrazine in the sample and the enzyme conjugate competed for antibody binding sites on the polystyrene plates. After 1 hour, the plate was emptied, flushed five times with deionized water, and tapped dry. Next, 160 μ L of substrate and chromogen were transferred to each well using a 12-channel pipette and allowed to react for 30 minutes while being shaken at 200 rpm on an orbital shaker. Finally, 40 μ L of sulfuric acid were added to stop the reaction.

Results were quantified with a VMAX microtiter-plate reader (Molecular Devices, Palo Alto, CA) using calibration curves developed from four standard solutions of known alachlor or atrazine concentration that ranged from 0 to 5 μ g/L. Standards were analyzed in triplicate or quadruplicate. Samples were analyzed in duplicate, and the results averaged. The precision of the ELISA analysis for alachlor ranged from \pm 73 percent relative standard deviation (RSD) at 0.15 μ g/L to \pm 22 percent RSD at 1.0 μ g/L based on analysis of duplicates (Taylor, 1987). For atrazine, the relative standard deviation ranged from \pm 60 percent at 0.10 μ g/L (table 2) to \pm 15 percent at 1.0 μ g/L. The reporting limits were 0.15 μ g/L for alachlor and 0.10 μ g/L for atrazine.

The cross reactivity of the ELISA analyses with other acetanilide and triazine compounds expressed as the concentration that produces a 50-percent inhibition (IC_{50}) or 50-percent reduction in the optical density is shown in table 3. The lower the IC_{50} , the more reactivity there is between the herbicide and the ELISA antibody. Herbicides having significant reactivity in

Table 2. Precision of results for acetanilide and triazine herbicides analyzed by microtiter-plate immunoassay methods

[μ g/L, micrograms per liter, %, percent; --, no data]

Herbicide	Concentration and standard deviation (μ g/L)	Tested interval (μ g/L)	Number of samples	Relative standard deviation (%)
Acetanilide	0.15 \pm 0.11	0.15 - 0.25	--	73
compounds	.50 \pm .16	.45 - .55	--	32
	1.0 \pm .22	.90 - 1.1	20	22
Triazine	.10 \pm .06	.10 - .20	731	60
compounds	.50 \pm .09	.45 - .55	48	18
	1.0 \pm .15	.90 - 1.1	24	15

the ELISA methods other than alachlor and atrazine rarely were detected in this study and probably had little or no effect on the ELISA analysis. However, because the ELISA methods are not 100-percent specific, the ELISA results from this study are referred to as acetanilide and triazine concentrations rather than alachlor and atrazine concentrations.

Gas Chromatography/Mass Spectrometry

Samples selected for GC/MS confirmation were extracted on C-18 solid-phase cartridges by an automated procedure (Meyer and others, 1993). A Waters Millilab workstation (Milford, MA) was used for solid-phase extraction of the analytes. C₁₈ Sep-Pak

Table 3. Cross reactivity for acetanilide and triazine herbicides analyzed by microtiter-plate immunoassay methods

[μ g/L, micrograms per liter; --, no data]

Herbicide or metabolite	Concentration for 50-percent inhibition (IC_{50})	
	Acetanilide immunoassay (μ g/L)	Triazine immunoassay (μ g/L)
Alachlor	0.75	No response
Atrazine	No response	0.42
Cyanazine	--	31
Deethylatrazine	--	8.7
Deisopropylatrazine	--	84
Metolachlor	27	--
Propazine	--	.49
Simazine	--	3.1

cartridges were preconditioned sequentially with 2 mL each of distilled water, ethyl acetate, and methanol. Each 123-mL water sample was spiked with 100 μ L of a surrogate standard, terbutylazine (2.4 ng/ μ L), and pumped through the cartridge at a rate of 20 mL/min by the robotic probe. Analytes were eluted with ethyl acetate and spiked robotically with phenanthrene- d_{10} . The ethyl acetate layer was transferred by probe to a clean test tube. Finally, the extract was evaporated automatically by a Turbovap (Zymark, Palo Alto, CA) at 45 °C under a nitrogen stream to 100 μ L. The robotic probe was washed between samples by immersing in ethyl acetate and bubbling air through the probe to ensure thorough removal of any herbicide or spike residues adhering to the outside of the probe.

Automated GC/MS analyses of the eluates were performed on a Hewlett-Packard Model 5890 GC (Palo Alto, CA) and a 5970A mass selective detector (MSD). Operating conditions (Thurman and others, 1990) were as follows: ionization voltage, 70 electron-volts; ion-source temperature, 250 °C; electron multiplier, 220 volts; direct capillary interface at 280 °C, tuned daily with perfluorotributylamine; dwell time, 50 ms. Separation of the herbicides was carried out using a fused-silica capillary column of methyl silicone (HP-1), a film thickness of 0.33 μ m, 12 m x 0.2 mm id (Hewlett Packard). Helium was used as the carrier gas at a flow rate of 1 mL/min and a head pressure of 35 kPa. The column temperature was held at 50 °C for 1 minute and then ramped at 6 °C/min to 250 °C where it was held for 10 minutes. Injector temperature was 280 °C. The filament and multiplier were not turned on until 5 minutes into the analysis. Quantification of the base peak of each compound was based on the response of the 188-ion m/z of the internal standard, phenanthrene- d_{10} . Confirmation of the compound was based on the presence of the molecular ion and two confirming ions with a retention-time match of \pm 0.2 percent relative to phenanthrene- d_{10} . Eleven parent herbicides were analyzed by GC/MS analysis. They included alachlor, ametryn, atrazine, cyanazine, metolachlor, metribuzin, prometon, prometryn, propazine, simazine, and terbutryn. Two triazine metabolites, primarily atrazine metabolites, deethylatrazine and deisopropylatrazine, also were analyzed by GC/MS.

The precision of the GC/MS analysis is \pm 10 percent relative standard deviation at 1 μ g/L and \pm 20 percent relative standard deviation at the reporting limit of 0.05 μ g/L. The accuracy of the GC/MS analysis

based on round-robin analyses with the USGS National Water-Quality Laboratory in Denver, Colorado, is \pm 10 percent at the 0.20- and 1.0- μ g/L concentrations. A blank sample consisting of organic-free distilled water was analyzed with every 10 samples, and results were always less than the instrument detection level of 0.01 μ g/L for alachlor and atrazine. No carryover was detected in the blank samples. In recovery studies for alachlor and atrazine, results were 95 \pm 5 percent of the theoretical value based on GC/MS analysis of neat standards.

Quality Assurance

A total of 6,230 samples were analyzed during this study. These included samples from the study area and background area (fig. 1), blank samples, and other quality-assurance samples. About 37 percent of all samples were confirmed by GC/MS; 6.6 percent of the GC/MS samples were analyzed for quality-assurance purposes as shown in table 4. Quality assurance included experiments to determine if the NADP/NTN HDPE collection buckets had an effect on the concentration of herbicides analyzed in this study, and the analysis of both clean bucket and system blank samples to determine if the sample buckets introduced sample contamination.

Collection Container Experiments

Because the sample collection containers used by NADP/NTN were made from HDPE, it was essential, prior to undertaking this study, to determine if these containers caused sorption, leaching, or degradation of the herbicides analyzed. Several experiments were conducted prior to and during the

Table 4. Summary of samples analyzed and analytical methods used in precipitation study

[ELISA, enzyme-linked immunosorbent assay; GC/MS, gas chromatography/mass spectrometry]

Source or type of sample	ELISA analyses	GC/MS analyses
81 study-area sites	5,297	2,085
5 background sites	298	100
Bucket blank samples	62	20
System blank samples	247	11
Other quality-assurance samples	326	125
Total	6,230	2,341

study to address this concern. Precipitation from the NADP/NTN network was spiked with herbicides at two concentrations and stored at ambient temperatures in both NADP/NTN buckets and in 4-L amber glass solvent bottles. The experiments included storage of these containers both indoors and outdoors. Samples were removed from the containers at weekly intervals for 3 weeks and analyzed in duplicate by GC/MS as shown in table 5. Results indicate there was no difference in concentration between the plastic and glass containers within analytical error at both concentrations. These results confirmed that no significant sorption, degradation, or other losses of the major herbicides analyzed occurred in the buckets.

Bucket Blank Samples

Bucket blank samples were prepared each week at the CAL by placing 125 mL of deionized water in contact with a clean HDPE bucket for 24 hours. One bucket blank sample was analyzed nearly every week. Of the 62 bucket blank samples analyzed during the study, 10 percent had triazine concentrations greater than the ELISA reporting limit of 0.10 µg/L, and the maximum triazine concentration detected by ELISA was 0.22 µg/L. For acetanilides, 4 percent of the samples had concentrations greater than the ELISA reporting limit of 0.15 µg/L, and the maximum concentration measured was 0.32 µg/L. No herbicides were detected in 20 bucket blank samples analyzed by GC/MS. These results indicate that little or no herbicide contamination was contributed by the collection buckets.

System Blank Samples

Collection buckets from NADP/NTN sites where no precipitation occurred the previous week were returned to the CAL where they were leached for 24 hours with 50 mL of deionized water and used as a system blank sample to determine if contamination by herbicides had occurred anywhere during the week-long sampling process. Of 247 system blank samples analyzed during the study, 97 percent contained no detectable acetanilides herbicides, and 91 percent contained no detectable triazine herbicides by ELISA. Because no precipitation was sampled, herbicide concentrations in the 50 mL of distilled-water leachate have little meaning. However, except for one obviously contaminated bucket out of 247, the maximum concentration of acetanilide or triazine

compounds measured in the 50 mL of leachate was 0.8 µg/L and represented a mass of less than 0.05 µg of herbicide. These results indicate that in a small percentage of samples herbicides may have entered the collection bucket by means other than precipitation, such as from particulate material or vapors. This small amount of contamination, however, should have little effect on volume-weighted concentrations and even less effect on mass deposition.

Enzyme-Linked Immunosorbent Assay

For the ELISA method, results were quantified with four solutions of known alachlor or atrazine concentration that ranged from 0 to 5 µg/L. Using the calibration curves, optical densities associated with calibration standards were examined. Microtiter-plate wells with optical densities producing calculated values greater than 5 percent different from actual standard values were eliminated, and the calibration curve was recalculated. Samples were analyzed in duplicate, and the results averaged. The reporting limits for ELISA were 0.15 µg/L for alachlor and 0.10 µg/L for atrazine.

Gas Chromatography/Mass Spectrometry

For the GC/MS method, each water sample to be analyzed for herbicides was spiked with a surrogate standard, terbuthylazine. An internal standard, phenanthrene-d₁₀, was added to the sample after it was extracted by SPE. The ratio of the terbuthylazine to the phenanthrene-d₁₀ was used to calculate the percent "recovery" of the sample. The internal standard also was ratioed against each individual compound to calculate concentrations. Quality-assurance protocols, to ensure the integrity of the sample handling, extraction, and analytical procedures, consisted of 10 percent blank samples and 10 percent standard solutions.

CORRELATION BETWEEN RESULTS OF ANALYSIS METHODS

Scatter plots showing the linear relation between ELISA and GC/MS analyses for alachlor and atrazine are shown in figures 2 and 3. Linear-regression equations 1–4 were developed from the 2,085 precipitation samples analyzed for alachlor and atrazine by both ELISA and GC/MS methods as shown in table 4. The regression equations then were used to estimate the alachlor and atrazine concentra-

Table 5. Results of experiment to investigate the effects of short-term storage of precipitation samples at ambient temperature on herbicide concentrations

[Precipitation spiked with herbicides at two concentrations; analyzed in duplicate, results as shown.
--, no data]

Herbicide	Container type	Initial concentration (micrograms per liter)	Concentrations after indicated number of weeks stored in container (micrograms per liter)		
			1	2	3
Low concentration sample (0.2 microgram per liter)					
Alachlor	plastic	0.36	0.43	0.43	0.41
		.38	.39	.40	.39
	glass	.36	.31	.38	.34
		.35	.37	.36	.37
Atrazine	plastic	.26	.27	.26	.28
		.28	.26	.26	.26
	glass	.26	.23	.27	.24
		.27	.26	.26	.26
Cyanazine	plastic	.22	.24	.23	.27
		.23	.23	.22	.24
	glass	.21	--	.23	.24
		.21	.24	.23	.24
Metolachlor	plastic	.22	.26	.24	.24
		.25	.25	.23	.23
	glass	.21	.21	.24	.22
		.23	.25	.24	.24
High concentration sample (1.2 micrograms per liter)					
Alachlor	plastic	1.3	1.1	1.1	1.1
		1.2	1.1	1.2	1.1
	glass	1.1	1.1	1.1	1.1
		1.1	1.1	1.2	1.1
Atrazine	plastic	1.2	1.1	1.1	1.1
		1.2	1.1	1.2	1.1
	glass	1.1	1.0	1.0	1.0
		1.1	1.1	1.1	1.1

Table 5. Results of experiment to investigate the effects of short-term storage of precipitation samples at ambient temperature on herbicide concentrations—Continued

Herbicide	Container type	Initial concentration (micrograms per liter)	Concentrations after indicated number of weeks stored in container (micrograms per liter)		
			1	2	3
High concentration sample—Continued (1.2 micrograms per liter)					
Cyanazine	plastic	1.2	1.1	1.1	1.2
		1.2	1.1	1.3	1.3
	glass	1.1	1.1	1.0	1.1
		1.1	1.1	1.1	1.0
Metolachlor	plastic	1.1	1.0	.97	.98
		1.1	1.0	1.1	1.0
	glass	1.0	.99	.97	.99
		1.0	1.1	1.0	1.0

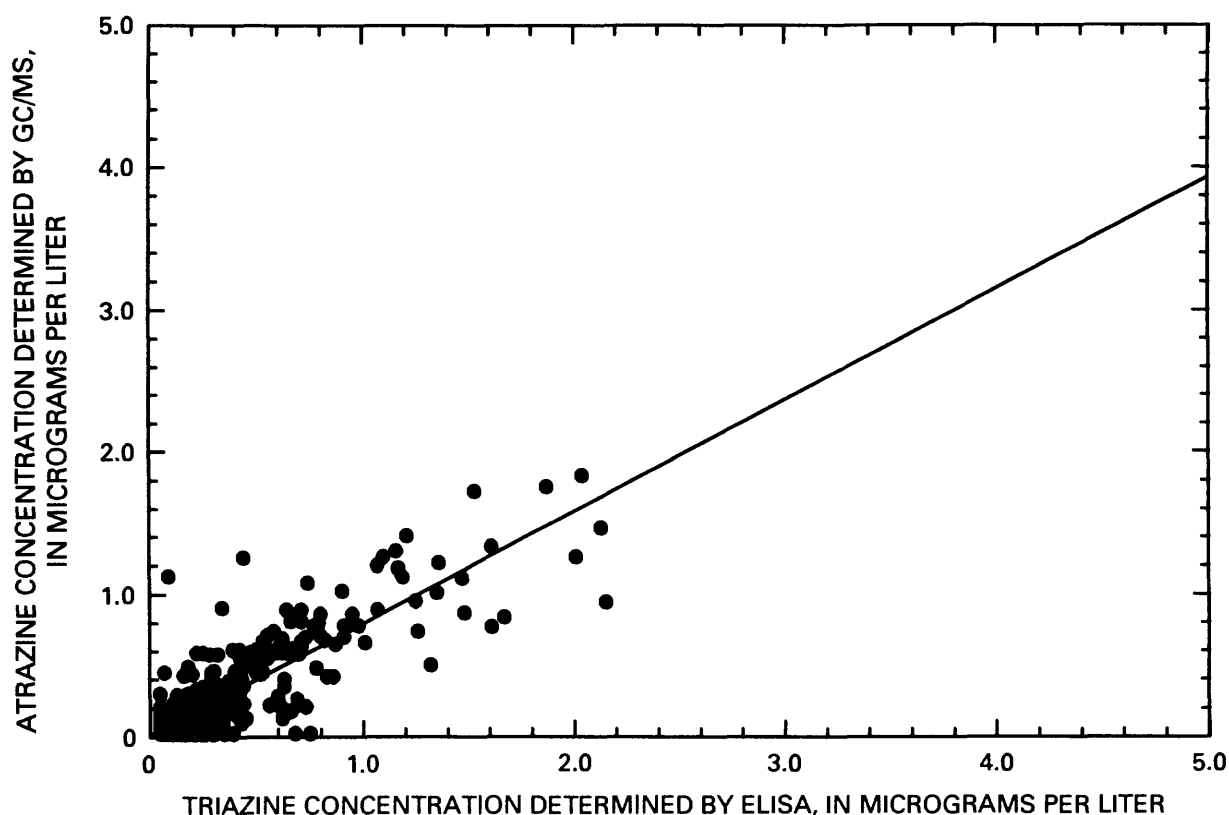


Figure 2. Acetanilide concentrations determined by immunoassay (ELISA) versus alachlor concentrations determined by gas chromatography/mass spectrometry (GC/MS), April through August 1990–91.

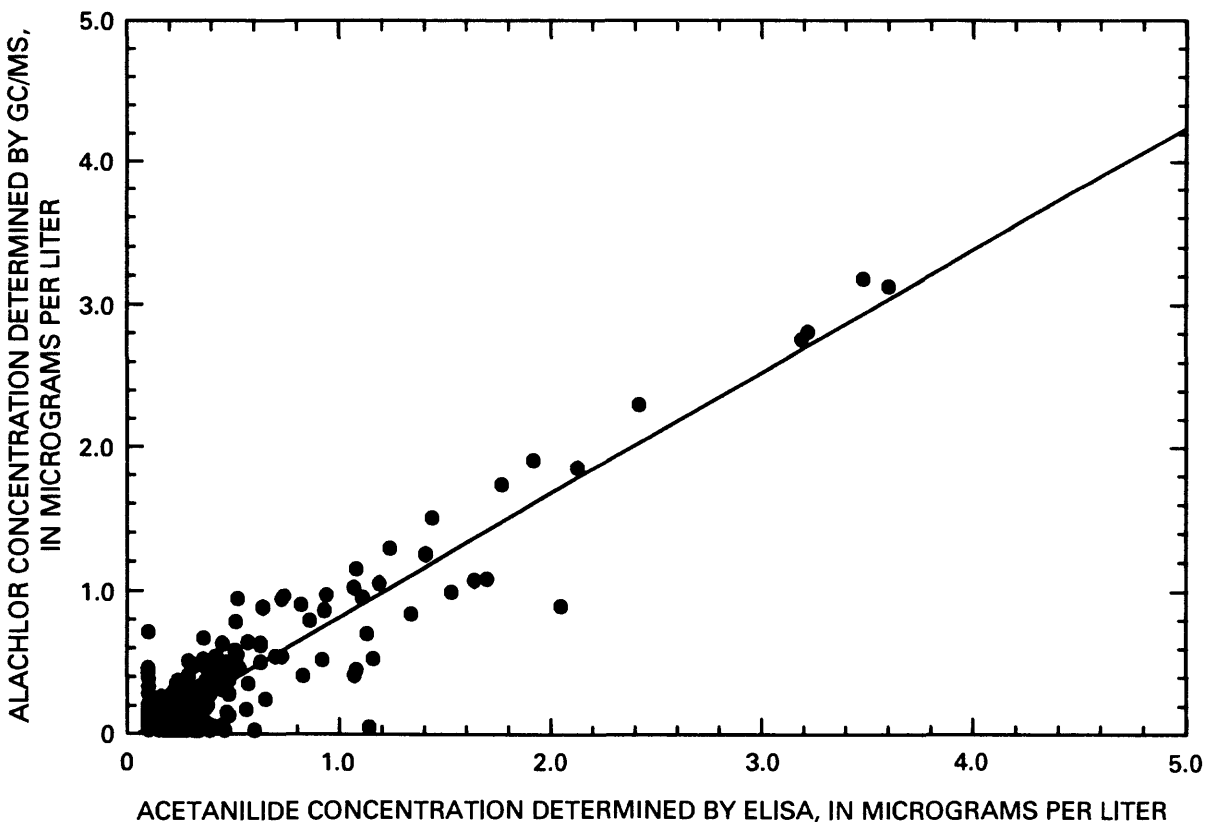


Figure 3. Triazine concentrations determined by immunoassay (ELISA) versus atrazine concentrations determined by gas chromatography/mass spectrometry (GC/MS), April through August 1990–91.

tion in the 3,212 samples analyzed only by ELISA. Because of slight changes in methodology and differing batches of ELISA antibodies, regression results were improved slightly by developing the following equations for samples collected in 1990 and 1991.

Samples from 1990:

alachlor concentration = $0.00 + 0.64 \text{ ELISA}$ (1)
 $R^2 = 0.76$;
 standard error of estimate = $0.08 \mu\text{g/L}$.

Samples from 1991:

alachlor concentration = $0.00 + 0.84 \text{ ELISA}$ (2)
 $R^2 = 0.86$;
 standard error of estimate = $0.09 \mu\text{g/L}$.

Samples from 1990:

atrazine concentration = $-0.01 + 0.70 \text{ ELISA}$ (3)
 $R^2 = 0.94$;
 standard error of estimate = $0.09 \mu\text{g/L}$.

Samples from 1991:

atrazine concentration = $0.00 + 0.80 \text{ ELISA}$ (4)
 $R^2 = 0.78$;
 standard error of estimate = $0.10 \mu\text{g/L}$.

The slopes of the regression lines varied from 0.64 to 0.84, which indicates that somewhat lower concentrations were obtained by GC/MS than by ELISA. This can be attributed, in part, to the cross reactivity of the ELISA analyses with other acetanilide and triazine compounds (table 3). Herbicides other than alachlor and atrazine having significant reactivity within the ELISA methods were rarely detected in this study and probably had little effect on the ELISA analysis. Since this study was completed, the alachlor ELISA has been shown to have significant cross reactivity with alachlor-ESA, an ethane sulfonic acid soil metabolite of alachlor (Aga and Thurman, 1993; Baker and others, 1993). However, ESA is believed to have low volatility, and the scatterplot (fig. 2) shows no definitive evidence for the presence of ESA in the precipitation samples. By using equations 1–4 to estimate alachlor and atrazine concentrations where GC/MS results were not available, the apparent overestimate by ELISA is corrected. The concentrations measured by GC/MS or estimated from the regression equations then were used to estimate the weekly mass deposition of alachlor and atrazine. The

weekly mass deposition, reported in micrograms per square meter per week, was calculated as the product of herbicide concentration in micrograms per liter and precipitation in millimeters per week. Results were rounded to the nearest millimeter. Deposition amounts less than 1 µg/L were reported as nd (not detected).

ANALYTICAL RESULTS

One third of the 5,297 precipitation samples collected from the study area contained detectable concentrations of alachlor and (or) atrazine by ELISA or GC/MS methods, and 10 of the 13 herbicides and metabolites analyzed were detected in one or more samples. A summary of the occurrence and concentrations of herbicides detected in samples collected during the 19-month study is given in table 6. The most frequently detected herbicides were alachlor and atrazine, which were present in 19.2 percent and 30.2 percent of the samples analyzed by GC/MS, respectively. These two herbicides also occurred in the highest concentrations. Deethylatrazine was the third most frequently detected compound in the GC/MS

analyses (17.4 percent), followed by metolachlor (13.3 percent), and cyanazine (7.2 percent). Five other herbicides and metabolites were detected in fewer than 3 percent of the samples. Although herbicides were measured in a significant number of samples, concentrations were generally low. Only about 1 percent of the samples had herbicide concentrations exceeding 1 µg/L, and only about 10 percent of the concentrations exceeded 0.2 µg/L. Because of the proximity of some sampling sites to cropland, spray drift cannot be ruled out as a possible source for some of the high concentrations.

Alachlor and atrazine were detected most frequently at sites in the Midwest; however, they were detected and confirmed by GC/MS in samples from all 23 States sampled within the 26-State study area. These detections included sites in areas remote from cropland, such as Maine and Isle Royale in northern Lake Superior. Detections of alachlor and atrazine were confirmed by GC/MS in about 4 percent of the 298 samples from background sites in the Rocky Mountains (fig. 1) and Alaska.

Table 6. Summary of herbicide concentrations measured in precipitation samples from 81 National Atmospheric Program/National Trends Network sites, March 1990 through September 1991

[µg/L, micrograms per liter; reporting limits: 0.15 µg/L for acetanilide herbicides, 0.1 µg/L for triazine herbicides, and 0.05 µg/L for GC/MS; ELISA, enzyme-linked immunosorbent assay; GC/MS gas chromatography/mass spectrometry; ametryn, prometryn, and terbutryn were not detected]

Herbicide or metabolite	Percent detections	Concentration, in µg/L, for indicated percentiles					
		50 (median)	75	90	95	99	100 (maximum)
ELISA analysis (all samples): N= 5,297 samples							
Acetanilide	11.8		<0.15	0.18	0.35	1.2	16
Triazine	25.5	<0.10	.10	.24	.42	1.3	16
GC/MS analysis (samples prescreened by ELISA): N= 2,085 samples							
Alachlor	19.2		<.05	.11	.26	.95	3.2
Atrazine	30.2	<.05	.07	.23	.40	1.0	10.9
Cyanazine	7.2			<.05	.07	.27	2.0
Deethylatrazine	17.4		<.05	.09	.15	.39	.75
Deisopropylatrazine	2.6				<.05	.17	1.2
Metolachlor	13.3		<.05	.07	.19	.65	3.0
Metribuzin	.70					<.05	.18
Prometon	.50					<.05	.21
Propazine	.10					<.05	.19
Simazine	1.5				<.05	.07	1.5

Figure 4 shows the seasonal distribution of two herbicides, alachlor and atrazine, in precipitation in the study area. The percentage of 81 sampling sites at which these herbicides were detected each week began to increase in mid-April, following application of herbicides to cropland, and peaked in May or June. During this period, in both 1990 and 1991, alachlor was detected at 30 to 45 percent of the sites, and atrazine was detected at 60 to 75 percent of the sites sampled each week. After mid-June 1990 detections began to decrease, and by late August herbicides were detected at less than 10 percent of the sites. Detections remained low until the following March when the pattern was repeated.

Figures 5 through 8 show the temporal distribution of alachlor and atrazine concentrations and precipitation at a few selected sites. Concentrations as high as 3 $\mu\text{g/L}$ were detected in individual samples at some sites in mid-April through June following application. In areas remote from the Midwest Corn Belt, such as Maine and parts of Michigan, herbicide concentrations were very low, and detections were infrequent.

Analytical results for samples collected during this study are given in table 7 at the end of this report.

These include the results of ELISA and GC/MS analyses, alachlor and atrazine concentrations estimated from regression equations 1 through 4, and estimated mass deposition of alachlor and atrazine. Precipitation is also given in table 7.

AVAILABILITY OF DATA IN ELECTRONIC FORM

Data collected from this study are given in table 7 at the end of this report. Data from this study also are available in electronic form from the NADP/NTN Coordination Office, Natural Resource Ecology Laboratory, Colorado State University, Fort Collins, CO 80523-1499; telephone: (970) 491-3615; Internet: nadp@nreL.ColoState.edu. The data are in the form of ASCII data files and are available on floppy diskettes or via Internet by file transfer protocol (ftp). Corresponding data on inorganic compounds that were analyzed for these samples by the Illinois State Water Survey and documentation of the file contents and format also are available from the NADP/NTN Coordination Office.

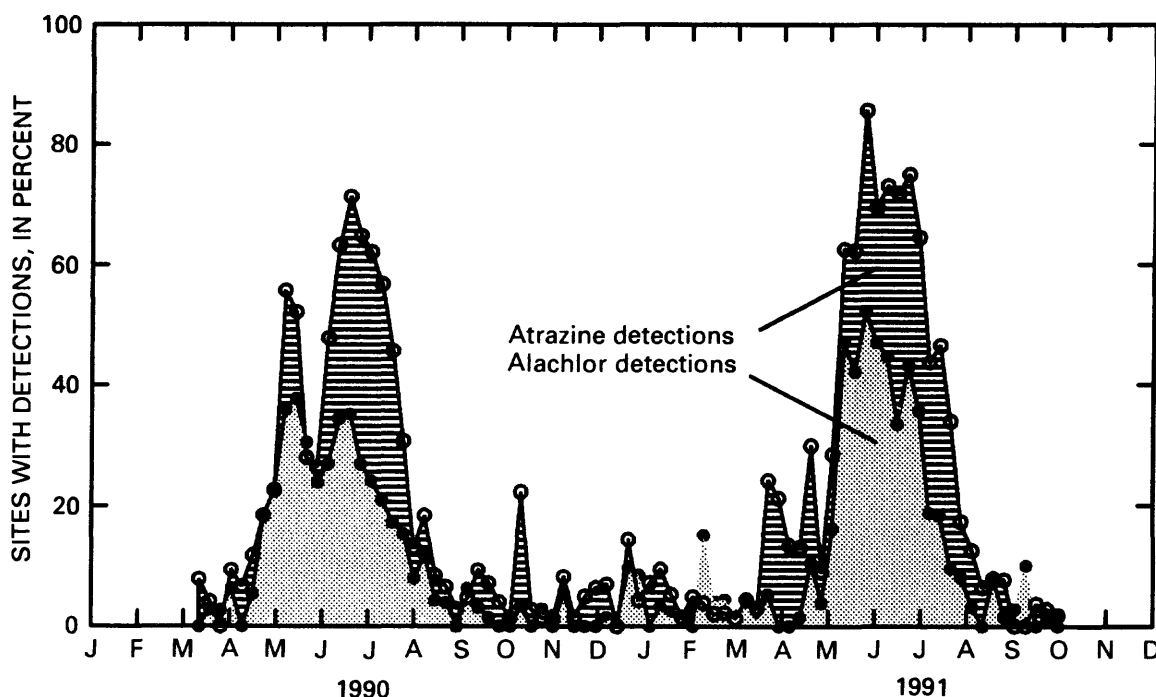


Figure 4. Frequency of alachlor and atrazine detections, by week, for 81 sites in study area. Includes detections by immunoassay and gas chromatography/mass spectrometry. Immunoassay reporting limits are 0.15 and 0.10 microgram per liter, respectively, for alachlor and atrazine, and the gas chromatography/mass spectrometry reporting limit for both alachlor and atrazine is 0.05 microgram per liter.

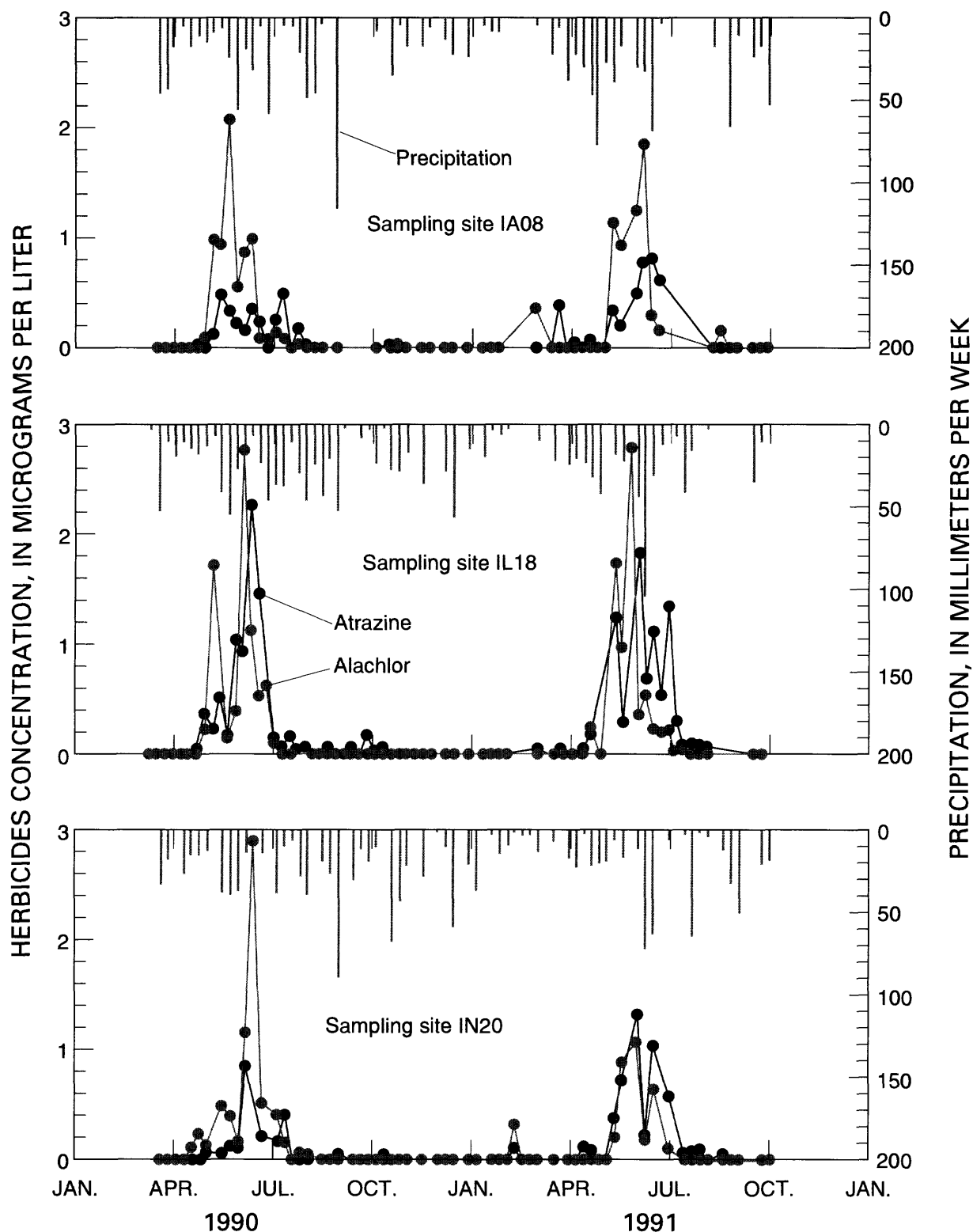


Figure 5. Alachlor and atrazine concentrations in precipitation and precipitation amounts, March 1990 through September 1991, for selected sampling sites in Iowa, Illinois, and Indiana. Some herbicide concentrations estimated from immunoassay-gas chromatography/mass spectrometry regression equations. Sampling sites are located in figure 1.

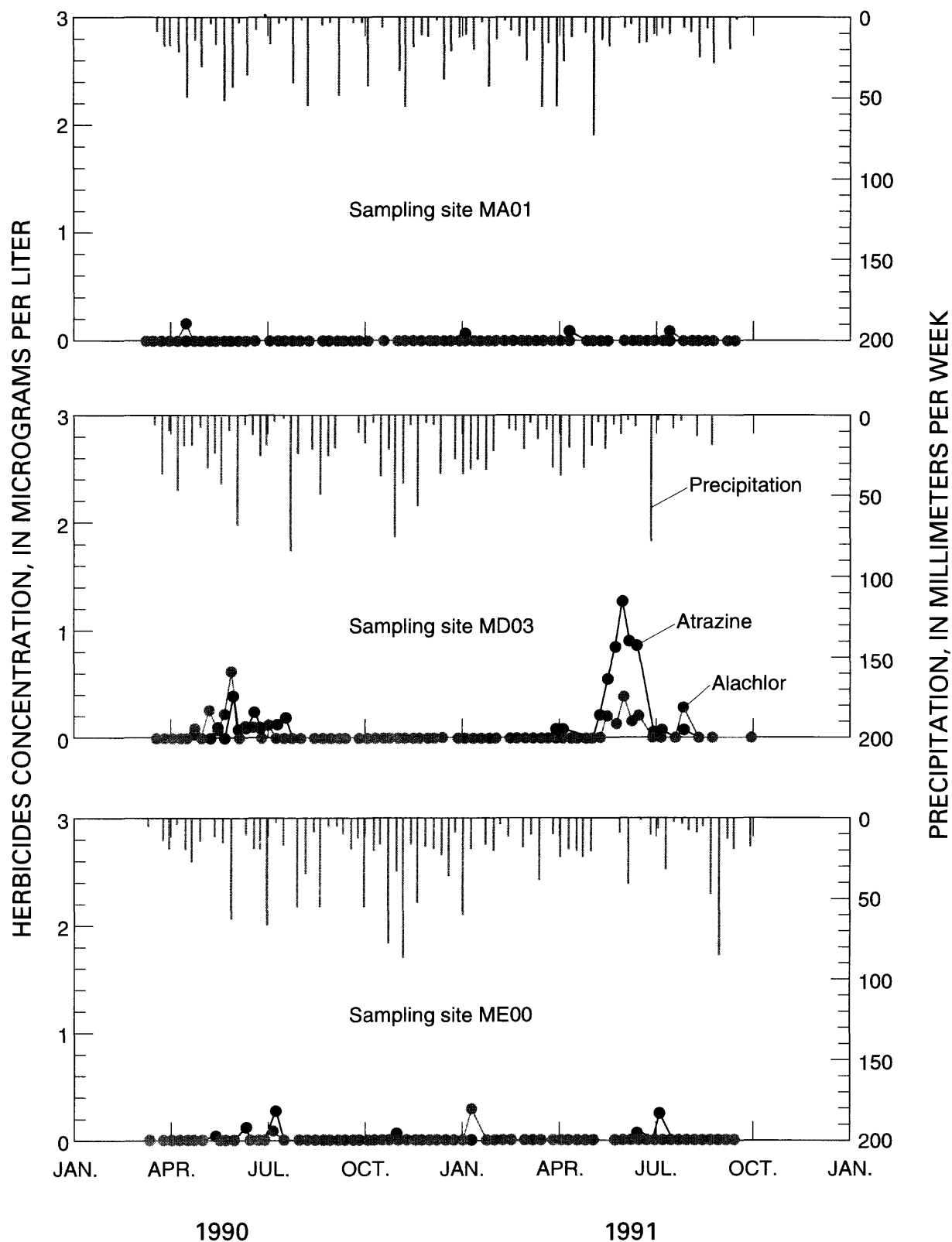


Figure 6. Alachlor and atrazine concentrations in precipitation and precipitation amounts, March 1990 through September 1991, for selected sampling sites in Massachusetts, Maryland, and Maine. Some herbicide concentrations estimated from immunoassay-gas chromatography/mass spectrometry regression equations. Sampling sites are located in figure 1.

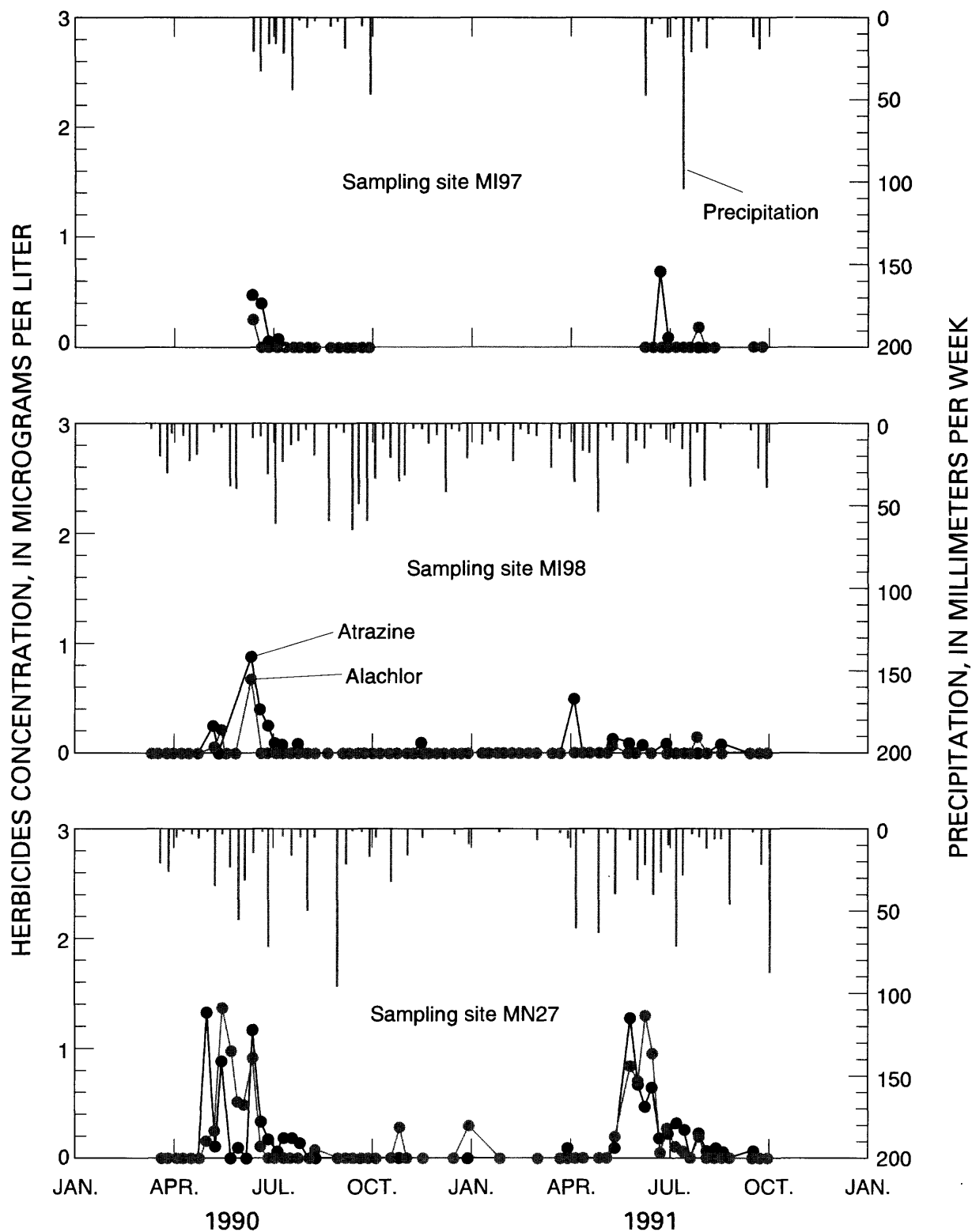


Figure 7. Alachlor and atrazine concentrations in precipitation and precipitation amounts, March 1990 through September 1991, for selected sampling sites in Michigan and Minnesota. Some herbicide concentrations estimated from immunoassay-gas chromatography/mass spectrometry regression equations. Sampling sites are located in figure 1.

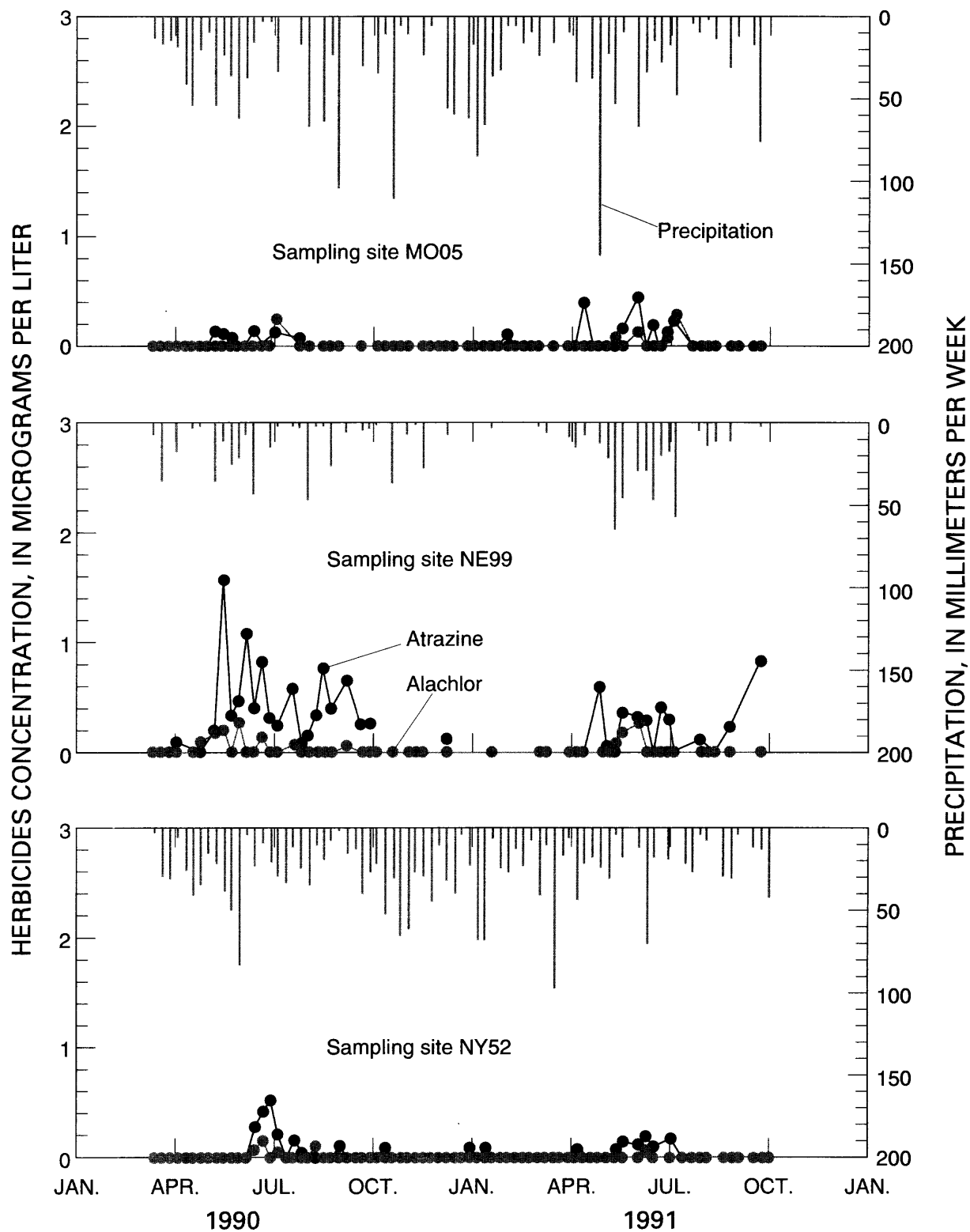


Figure 8. Alachlor and atrazine concentrations in precipitation and precipitation amounts, March 1990 through September 1991, for selected sampling sites in Missouri, Nebraska, and New York. Some herbicide concentrations estimated from immunoassay-gas chromatography/mass spectrometry regression equations. Sampling sites are located in figure 1.

REFERENCES CITED

- Aga, D.S., and Thurman, E.M., 1993, Coupling solid-phase extraction (SPE) and enzyme-linked immunosorbent assay (ELISA) for ultratrace analysis of herbicides in pristine water: *Analytical Chemistry*, v. 65, p. 2894–2898.
- Aspelin, A.L., 1994, Pesticide industry sales and usage, 1992 and 1993 market estimates: Washington, D.C., U.S. Environmental Protection Agency Publication 723-K-94-001, 33 p.
- Baker, D.B., Bushway, R.J., Adams, S.A., and Macomber, Carol., 1993, Immunoassay screens for alachlor in rural wells—false positives and an alachlor soil metabolite: *Environmental Science and Technology*, v. 27, p. 562–564.
- Buser, Hans-Rudolf, 1990, Atrazine and other s-triazine herbicides in lake and in rain in Switzerland: *Environmental Science and Technology*, v. 24, p. 1049–1058.
- Capel, P.D., 1991, Wet deposition of herbicides in Minnesota, in Mallard, G.E., and Aronson, D.A., eds., U.S. Geological Survey Toxics Substances Hydrology Program—Proceedings of technical meeting, Monterey, California, March 11–15, 1991: U.S. Geological Survey Water-Resources Investigations Report 91–4034, p. 334–337.
- Gianessi, L.P., and Puffer, C.M., 1990, Herbicide use in the United States—National summary report, revised April 1991: Washington, D.C., Resources for the Future, 128 p.
- Glotfelty, D.E., Seiber, J.N., and Lilijahl, L.A., 1987, Pesticides in fog: *Nature*, v. 325, p. 602–605.
- Glotfelty, D.E., Williams, G.H., Freeman, H.P., and Leech, M.M., 1990, Regional atmospheric transport and deposition of pesticides in Maryland, in Kurtz, D.L., ed., Long-range transport of pesticides: Chelsea, Michigan, Lewis Publishers, p. 199–221.
- Goolsby, D.A., Boyer, L.L., and Mallard, G.M., 1993, Selected papers on agricultural chemicals in water resources of the Midcontinental United States: U.S. Geological Survey Open-File Report 93–418, 89 p.
- Goolsby, D.A., Thurman, E.M., Pomes, M.L., and Battaglin, W.A., 1994, Temporal and geographic distribution of herbicides in precipitation in the Midwest and Northeast United States, 1990–91, in *Proceedings of the Fourth National Pesticide Conference*, November 1–3, 1993, Richmond, Virginia: Blacksburg, Virginia, Virginia Polytechnic Institute and State University, p. 697–710.
- Kolpin, D.W., Burkart, M.R., and Thurman, E.M., 1993, Hydrogeologic, water-quality and land-use data for the reconnaissance of herbicides and nitrate in near-surface aquifers of the Midcontinental United States: U.S. Geological Survey Open-File Report 93–114, 61 p.
- Meyer, M.T., Mills, M.S., and Thurman, E.M., 1993, Automated solid-phase extraction of herbicides from water for gas chromatographic-mass spectrometric analysis: *Journal of Chromatography*, v. 629, p. 55–59.
- Nations, B.K., and Hallberg, G.R., 1992, Pesticides in Iowa precipitation: *Journal of Environmental Quality*, v. 21, p. 486–92.
- Pomes, M.L., and Thurman, E.M., 1991, Comparison of microtitre-plate immunoassay (ELISA) and gas chromatography/mass spectrometry (GC/MS) for analysis of herbicides in storm-runoff samples: U.S. Geological Survey Water-Resources Investigations Report 91–4034, p. 572–575.
- Richards, P.R., Kramer, J.W., Baker, D.B., and Kreiger, K.A., 1987, Pesticides in rainwater in the northeastern United States: *Nature*, v. 327, p. 129–131.
- Scribner, E.A., Goolsby, D.A., Thurman, E.M., Meyer, M.T., and Pomes, M.L., 1994, Concentrations of selected herbicides, two triazine metabolites, and nutrients in storm runoff from nine stream basins in the Midwestern United States, 1990–92: U.S. Geological Survey Open-File Report 94–396, 144 p.
- Scribner, E.A., Thurman, E.M., Goolsby, D.A., Meyer, M.T., Mills, M.S., and Pomes, M.L., 1993, Reconnaissance data for selected herbicides, two atrazine metabolites, and nitrate in surface water of the Midwestern United States, 1989–90: U.S. Geological Survey Open-File Report 93–457, 77 p.
- Taylor, J.K., 1987, Quality assurance of chemical measurements: Chelsea, Michigan, Lewis Publishers, 22 p.
- Thurman, E.M., Goolsby, D.A., Meyer, M.T., and Kolpin, D.W., 1992, A reconnaissance study of herbicides and their metabolites in surface water of the Midwestern United States using immunoassay and gas chromatography/mass spectrometry: *Environmental Science and Technology*, v. 26, p. 2440–2447.
- Thurman, E.M., Meyer, Michael, Pomes, Michael, Perry, C.A., and Schwab, A.P., 1990, Enzyme-linked immunosorbent assay compared with gas chromatography/mass spectrometry for the determination of triazine herbicides in water: *Analytical Chemistry*, v. 62, p. 2043–2048.
- Trevisan, M., Montepiani, C., Ragozza, L., Bartoletti, C., Ioannilli, E., and Del Re, A.A.M., 1993, Pesticides in rainfall and air in Italy: *Environmental Pollution*, v. 80, p. 31–39.
- Williams, A.L., Sweet, C.W., and Peters, Cathy, 1992, Herbicide concentrations in air and rain, in *Proceedings of the 85th Annual Meeting and Exhibition of the Air and Waste Management Association*, 1992: Air and Waste Management Association, p. 2–12.
- Wu, T.L., 1981, Atrazine residues in estuarine water and the areal deposition of atrazine into Rhode River, Maryland: *Water, Air, and Soil Pollution*, v. 15, p. 173–184.

Table 7. Concentrations and deposition of herbicides and metabolites in

[mm, millimeter, µg/L, micrograms per liter; DEA, deethylatrazine, DIA, deisopropylatrazine; µg/m², micrograms
were not detected; location of

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
							AK03 Denali National	
02/27/90	03/06/90	--	<0.15	<0.10	--	--	--	--
03/13/90	03/20/90	2.3	<.15	<.10	--	--	--	--
03/27/90	04/03/90	1.8	<.15	<.10	--	--	--	--
05/15/90	05/22/90	7.4	<.15	<.10	--	--	--	--
05/29/90	06/05/90	18.8	<.15	<.10	--	--	--	--
06/05/90	06/12/90	31.5	<.15	<.10	--	--	--	--
06/12/90	06/19/90	23.1	<.15	<.10	--	--	--	--
06/26/90	07/03/90	1.0	<.15	<.10	--	--	--	--
07/03/90	07/10/90	11.2	.19	<.10	0.05	<0.05	<0.05	<0.05
07/10/90	07/17/90	83.8	<.15	<.10	<.05	<.05	<.05	<.05
07/24/90	07/31/90	13.7	<.15	<.10	--	--	--	--
07/31/90	08/07/90	2.5	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	20.3	<.15	<.10	--	--	--	--
08/14/90	08/21/90	35.8	<.15	<.10	--	--	--	--
08/21/90	08/28/90	52.6	<.15	<.10	<.05	<.05	<.05	<.05
08/28/90	09/04/90	37.1	<.15	<.10	--	--	--	--
09/04/90	09/11/90	57.2	<.32	<.10	--	--	--	--
09/11/90	09/18/90	20.3	<.32	.14	<.05	<.05	<.05	<.05
09/18/90	09/25/90	6.4	<.32	.15	<.05	<.05	<.05	<.05
09/25/90	10/02/90	5.1	<.32	<.10	--	--	--	--
10/02/90	10/09/90	5.6	<.32	.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	3.1	<.32	<.10	--	--	--	--
10/16/90	10/23/90	3.6	<.32	<.10	--	--	--	--
10/23/90	10/30/90	2.5	<.32	.10	--	--	--	--
10/30/90	11/06/90	14.2	<.32	<.10	<.05	<.05	<.05	<.05
11/13/90	11/20/90	45.2	<.32	<.10	<.05	<.05	<.05	<.05
12/04/90	12/11/90	1.8	<.32	<.10	--	--	--	--
12/11/90	12/18/90	3.6	<.32	.18	--	--	--	--
12/18/90	12/25/90	31.5	<.32	<.10	--	--	--	--
01/01/91	01/08/91	1.8	<.32	<.10	--	--	--	--
01/08/91	01/15/91	16.5	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	8.6	<.32	<.22	--	--	--	--
01/22/91	01/29/91	14.2	<.32	<.10	<.05	<.05	<.05	<.05
02/12/91	02/19/91	11.9	<.32	<.23	<.05	<.05	<.05	<.05
02/19/91	02/26/91	.76	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91

per square meter; --, no data; nd, no detection; <, less than; >, greater than; ametryn, prometryn, and terbutryn
sampling sites shown in figure 1]

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Park, AK									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.05	<.05	1	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.11	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
AK03 Denali National								
02/26/91	03/05/91	1.3	<0.32	0.12	--	--	--	--
03/05/91	03/12/91	2.0	<.32	<.10	--	--	--	--
03/12/91	03/19/91	1.0	<.32	<.10	--	--	--	--
03/19/91	03/26/91	60.2	<.32	<.10	<0.05	<0.05	<0.05	<0.05
05/14/91	05/21/91	11.4	<.15	<.10	<.05	<.05	<.05	<.05
05/28/91	06/04/91	3.1	<.15	<.10	--	--	--	--
06/04/91	06/11/91	13.5	.76	.25	.96	.28	<.05	<.05
06/11/91	06/18/91	7.1	<.15	<.10	<.05	<.05	<.05	<.05
06/25/91	07/02/91	12.2	<.15	<.10	--	--	--	--
07/02/91	07/09/91	50.3	<.15	<.10	--	--	--	--
07/09/91	07/16/91	12.5	<.15	.21	<.05	<.05	<.05	<.05
07/16/91	07/23/91	5.1	<.15	<.10	--	--	--	--
07/23/91	07/30/91	11.7	<.15	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	21.6	<.15	<.10	--	--	--	--
08/06/91	08/13/91	10.2	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	1.8	<.15	<.10	--	--	--	--
09/10/91	09/17/91	7.4	<.15	<.10	<.05	<.05	<.05	<.05
CO98 Rocky Mountain								
02/22/90	03/13/90	127.0	<.15	<.10	<.05	<.05	<.05	<.05
03/13/90	03/20/90	47.2	<.15	<.10	<.05	<.05	<.05	<.05
03/20/90	03/27/90	17.0	<.15	<.10	--	--	--	--
03/27/90	04/03/90	40.4	<.15	<.10	--	--	--	--
04/03/90	04/10/90	29.5	<.15	<.10	--	--	--	--
04/10/90	04/17/90	13.7	<.15	<.10	--	--	--	--
04/17/90	04/24/90	25.7	<.15	<.10	--	--	--	--
04/24/90	05/01/90	67.6	<.15	<.10	--	--	--	--
05/01/90	05/08/90	7.6	<.15	.10	--	--	--	--
05/08/90	05/15/90	46.5	<.15	<.10	--	--	--	--
05/15/90	05/22/90	17.0	<.15	<.10	--	--	--	--
05/22/90	05/29/90	14.5	<.15	<.10	--	--	--	--
05/29/90	06/05/90	30.5	<.15	<.10	--	--	--	--
06/05/90	06/12/90	11.9	<.15	<.10	--	--	--	--
06/12/90	06/19/90	4.8	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Park, AK—Continued									
--	--	--	--	--	--	<0.05	0.09	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.41	<.05	<.05	<.05	<.05	.96	.28	13	4
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
National Park, CO									
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
CO98 Rocky Mountain								
07/03/90	07/10/90	49.8	<0.15	<0.10	--	--	--	--
07/10/90	07/17/90	13.7	<.15	<.10	--	--	--	--
07/17/90	07/24/90	21.1	<.15	<.10	--	--	--	--
07/24/90	07/31/90	16.3	<.15	<.10	--	--	--	--
07/31/90	08/07/90	9.7	<.15	.10	--	--	--	--
08/07/90	08/14/90	21.3	<.15	<.10	--	--	--	--
08/14/90	08/21/90	22.4	<.15	<.10	--	--	--	--
08/21/90	08/28/90	11.4	<.15	.15	<0.05	<0.05	<0.05	<0.05
08/28/90	09/04/90	15.8	<.15	<.10	--	--	--	--
09/04/90	09/11/90	2.7	<.32	<.10	--	--	--	--
09/11/90	09/18/90	9.4	<.32	.14	<.05	<.05	<.05	<.05
09/18/90	09/25/90	4.3	<.32	.11	--	--	--	--
09/25/90	10/02/90	20.1	<.32	<.10	--	--	--	--
10/02/90	10/09/90	39.1	<.32	<.10	--	--	--	--
10/16/90	10/23/90	42.7	<.32	<.10	--	--	--	--
10/30/90	11/06/90	35.8	<.32	<.10	<.05	<.05	<.05	<.05
11/20/90	11/27/90	12.7	<.32	<.10	<.05	<.05	<.05	<.05
11/27/90	12/04/90	12.2	<.32	<.10	--	--	--	--
12/11/90	12/18/90	38.1	<.32	<.10	--	--	--	--
12/26/90	01/02/91	9.9	<.32	<.10	--	--	--	--
01/02/91	01/08/91	13.7	.64	.17	--	--	--	--
01/08/91	01/15/91	18.0	<.32	<.22	--	--	--	--
01/15/91	01/22/91	19.6	<.32	<.22	--	--	--	--
01/22/91	01/29/91	20.6	.33	<.10	<.05	<.05	<.05	<.05
02/12/91	02/19/91	43.2	<.32	<.23	--	--	--	--
02/19/91	02/26/91	12.5	<.32	<.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	39.9	<.32	.18	<.05	<.05	<.05	<.05
03/05/91	03/12/91	47.0	<.32	<.10	--	--	--	--
03/12/91	03/19/91	13.5	<.32	<.10	--	--	--	--
03/19/91	03/26/91	22.9	<.32	<.10	--	--	--	--
03/26/91	04/02/91	31.0	<.15	<.10	--	--	--	--
04/02/91	04/09/91	10.2	<.15	<.10	--	--	--	--
04/09/91	04/16/91	53.1	<.15	<.10	--	--	--	--
04/16/91	04/23/91	15.5	<.15	<.10	.07	.07	<.05	<.05
04/23/91	04/30/91	22.2	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
National Park, CO—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.54	.14	7	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.07	.07	1	1
--	--	--	--	--	--	<.05	.06	nd	1

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
CO98 Rocky Mountain								
05/07/91	05/14/91	1.5	<0.15	0.13	--	--	--	--
05/14/91	05/21/91	53.9	<.15	<.10	<0.05	<0.05	<0.05	<0.05
05/21/91	05/28/91	14.7	<.15	<.10	<.05	<.05	<.05	<.05
05/28/91	06/04/91	73.4	<.15	<.10	<.05	<.05	<.05	<.05
06/04/91	06/11/91	23.9	<.15	<.10	<.05	<.05	<.05	<.05
06/11/91	06/18/91	14.0	<.15	<.10	<.05	<.05	<.05	<.05
06/25/91	07/02/91	9.1	<.15	<.10	<.05	<.05	<.05	<.05
07/02/91	07/09/91	10.2	<.15	<.10	--	--	--	--
07/09/91	07/16/91	7.9	<.15	.24	<.05	<.05	<.05	<.05
07/16/91	07/23/91	25.2	<.15	<.10	--	--	--	--
07/23/91	07/30/91	28.2	<.15	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	32.3	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/03/91	9.1	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	13.5	<.15	<.10	--	--	--	--
IA08 Big Springs Fish								
03/06/90	03/13/90	45.5	<.15	<.10	--	--	--	--
03/13/90	03/20/90	42.7	<.15	<.10	--	--	--	--
03/20/90	03/27/90	9.1	<.15	<.10	--	--	--	--
03/27/90	04/03/90	5.6	<.15	<.10	--	--	--	--
04/03/90	04/10/90	16.5	<.15	<.10	--	--	--	--
04/10/90	04/17/90	11.2	.22	<.10	<.05	.06	<.05	<.05
04/17/90	04/24/90	14.5	.18	<.10	--	--	--	--
04/24/90	05/01/90	8.1	1.6	.23	--	--	--	--
05/01/90	05/08/90	6.4	1.5	.75	--	--	--	--
05/08/90	05/15/90	24.4	3.3	.54	--	--	--	--
05/15/90	05/22/90	55.6	.90	.39	--	--	--	--
05/22/90	05/29/90	18.3	2.1	.62	.89	.20	<.05	.12
05/29/90	06/05/90	31.8	1.6	.56	--	--	--	--
06/05/90	06/12/90	4.3	.18	.40	--	--	--	--
06/12/90	06/19/90	58.7	.17	<.10	--	--	--	--
06/19/90	06/26/90	29.5	<.15	.18	.17	.28	<.05	.12
06/26/90	07/03/90	4.6	.19	.76	--	--	--	--
07/03/90	07/10/90	5.1	<.15	<.10	--	--	--	--
07/10/90	07/17/90	21.6	<.15	.26	.05	.21	.13	.11
07/17/90	07/24/90	48.8	<.15	<.10	<.05	.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
National Park, CO—Continued									
--	--	--	--	--	--	<0.05	0.10	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
Hatchery, IA									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	1
--	--	--	--	--	--	.11	<.05	2	nd
--	--	--	--	--	--	1.0	.15	8	1
--	--	--	--	--	--	.96	.50	6	3
--	--	--	--	--	--	2.1	.36	51	9
--	--	--	--	--	--	.57	.26	32	14
<.05	.20	<.05	<.05	<.05	<.05	.89	.20	16	4
--	--	--	--	--	--	1.0	.37	32	12
--	--	--	--	--	--	.11	.26	nd	1
--	--	--	--	--	--	.11	<.05	6	nd
<.05	.05	<.05	<.05	<.05	<.05	.17	.28	5	8
--	--	--	--	--	--	.12	.51	1	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.05	.21	1	5
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	2

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
IA08 Big Springs Fish								
07/24/90	07/31/90	46.5	<0.15	<0.10	--	--	--	--
07/31/90	08/07/90	3.3	<.15	<.10	--	--	--	--
08/14/90	08/21/90	115.1	<.15	<.10	--	--	--	--
09/18/90	09/25/90	6.9	<.32	.21	<0.05	<0.05	<0.05	<0.05
10/02/90	10/09/90	35.1	<.32	.11	--	--	--	--
10/09/90	10/16/90	3.6	<.32	.24	.07	<.05	<.05	<.05
10/16/90	10/23/90	15.8	<.32	.14	<.05	<.05	<.05	<.05
10/30/90	11/06/90	17.0	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	5.3	<.32	<.10	<.05	<.05	<.05	<.05
11/20/90	11/27/90	12.2	<.32	<.10	--	--	--	--
11/27/90	12/04/90	21.1	<.32	<.10	--	--	--	--
12/11/90	12/18/90	22.6	<.32	<.10	--	--	--	--
12/26/90	01/01/91	2.8	<.32	<.22	--	--	--	--
01/01/91	01/08/91	8.4	.36	<.22	<.05	<.05	<.05	<.05
01/08/91	01/15/91	8.1	.49	<.22	<.05	<.05	<.05	<.05
02/12/91	02/19/91	4.3	.43	<.10	--	--	--	--
02/26/91	03/05/91	22.1	<.32	.18	<.05	<.05	<.05	<.05
03/05/91	03/12/91	6.1	<.32	.48	--	--	--	--
03/12/91	03/19/91	38.4	.54	<.10	<.05	<.05	<.05	<.05
03/19/91	03/26/91	22.1	<.32	<.10	--	--	--	--
03/26/91	04/02/91	30.0	<.15	<.10	--	--	--	--
04/02/91	04/09/91	46.2	<.15	.11	<.05	.09	<.05	<.05
04/09/91	04/16/91	76.7	<.15	<.10	--	--	--	--
04/16/91	04/23/91	27.1	<.15	<.10	<.05	<.05	<.05	<.05
04/23/91	04/30/91	39.6	1.1	.25	1.2	.35	.10	.23
04/30/91	05/07/91	17.5	.52	.24	.94	.22	.08	.07
05/14/91	05/21/91	30.5	1.4	1.3	1.3	.50	.06	.11
05/21/91	05/28/91	32.3	2.1	.77	1.9	.78	.09	.24
05/28/91	06/04/91	68.1	.32	.66	.31	.81	.07	.21
06/04/91	06/11/91	3.1	.20	.76	--	--	--	--
07/23/91	07/30/91	17.8	<.15	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	1.3	.21	<.10	--	--	--	--
08/06/91	08/13/91	66.0	<.15	.17	<.05	<.05	<.05	<.05
08/13/91	08/20/91	10.5	<.15	<.10	--	--	--	--
08/27/91	09/03/91	23.6	<.15	<.10	--	--	--	--
09/03/91	09/10/91	17.3	<.15	<.10	--	--	--	--
09/10/91	09/17/91	53.3	<.15	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Hatchery, IA—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	.07	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.36	<.05	2	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.39	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	nd	4
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
.10	.92	<.05	<.05	<.05	<.05	1.2	.35	46	14
<.05	.28	<.05	<.05	<.05	<.05	.94	.22	16	4
<.05	.13	<.05	<.05	<.05	<.05	1.3	.50	38	15
.17	.49	<.05	<.05	<.05	<.05	1.9	.78	60	25
.21	.10	<.05	<.05	<.05	<.05	.31	.81	21	55
--	--	--	--	--	--	.17	.62	1	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.18	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
IA23 McNay								
03/06/90	03/13/90	39.4	<0.15	<0.10	<0.05	0.10	<0.05	<0.05
03/13/90	03/20/90	34.3	<.15	<.10	--	--	--	--
03/20/90	03/27/90	1.3	<.15	.10	--	--	--	--
03/27/90	04/03/90	17.8	<.15	<.10	--	--	--	--
04/03/90	04/10/90	1.8	<.15	<.10	--	--	--	--
04/19/90	04/17/90	16.5	<.15	<.10	<.05	<.05	<.05	<.05
04/17/90	04/24/90	5.8	.19	<.10	--	--	--	--
04/24/90	05/01/90	50.8	.17	.12	.09	.06	<.05	<.05
05/01/90	05/08/90	41.9	.18	.20	.14	.06	<.05	<.05
05/08/90	05/15/90	37.5	<.15	<.10	--	--	--	--
05/15/90	05/22/90	30.5	<.15	.18	--	--	--	--
05/22/90	05/29/90	59.7	<.15	.14	--	--	--	--
06/05/90	06/12/90	7.9	.88	1.8	--	--	--	--
06/12/90	06/19/90	74.4	<.15	<.10	.13	.20	.05	.07
06/19/90	06/26/90	44.7	<.15	.31	--	--	--	--
06/26/90	07/03/90	16.8	.20	.54	--	--	--	--
07/03/90	07/10/90	19.1	<.15	<.10	.05	.07	<.05	<.05
07/10/90	07/17/90	37.3	<.15	<.10	--	--	--	--
07/19/90	07/24/90	81.5	<.15	<.10	--	--	--	--
07/24/90	07/31/90	37.1	<.15	<.10	--	--	--	--
07/31/90	08/07/90	33.5	<.15	<.10	--	--	--	--
08/07/90	08/14/90	22.9	<.15	.11	--	--	--	--
08/14/90	08/21/90	19.6	<.15	<.10	<.05	<.05	<.05	<.05
08/28/90	09/04/90	14.0	<.15	<.10	--	--	--	--
09/04/90	09/11/90	33.0	<.32	<.10	--	--	--	--
09/11/90	09/18/90	3.8	<.32	.13	<.05	<.05	<.05	<.05
09/13/90	09/25/90	10.4	<.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	1.0	<.32	<.10	--	--	--	--
10/02/90	10/09/90	62.0	<.32	<.10	--	--	--	--
10/09/90	10/16/90	2.5	<.32	<.10	--	--	--	--
10/16/90	10/23/90	18.8	<.32	<.10	--	--	--	--
10/30/90	11/06/90	26.9	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	6.4	<.32	.10	--	--	--	--
11/20/90	11/27/90	23.4	<.32	<.10	--	--	--	--
11/27/90	12/04/90	10.2	<.32	.11	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Research Center, IA									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.10	nd	4
--	--	--	--	--	--	<0.05	<.05	nd	nd
--	--	--	--	--	--	<0.05	.06	nd	nd
--	--	--	--	--	--	<0.05	<.05	nd	nd
--	--	--	--	--	--	<0.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.12	<.05	1	nd
<.05	.10	<.05	<.05	<.05	<.05	.09	.06	5	3
<.05	<.05	<.05	<.05	<.05	<.05	.14	.06	6	3
--	--	--	--	--	--	<.05	.05	nd	2
--	--	--	--	--	--	<.05	.11	nd	3
--	--	--	--	--	--	<.05	.08	nd	5
--	--	--	--	--	--	.56	1.2	4	10
<.05	.14	<.05	<.05	<.05	<.05	.13	.20	10	15
--	--	--	--	--	--	<.05	.20	nd	9
--	--	--	--	--	--	.12	.36	2	6
<.05	<.05	<.05	<.05	<.05	<.05	.05	.07	1	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyanazine	DEA
IA23 McNay								
12/11/90	12/18/90	7.9	<0.32	0.22	<0.05	<0.05	<0.05	<0.05
12/26/90	01/01/91	3.7	<.32	<.10	--	--	--	--
01/08/91	01/15/91	2.2	<.32	<.22	--	--	--	--
01/15/91	01/22/91	5.3	<.32	<.22	--	--	--	--
01/22/91	01/29/91	.50	<.32	1.4	--	--	--	--
02/12/91	02/19/91	2.8	<.32	<.10	--	--	--	--
02/26/91	03/05/91	26.4	<.32	.15	<.05	<.05	<.05	<.05
02/05/91	03/12/91	5.1	<.32	.75	<.05	.26	<.05	<.05
03/12/91	03/19/91	30.5	<.32	<.10	--	--	--	--
03/19/91	03/26/91	17.0	<.32	<.10	--	--	--	--
03/26/91	04/02/91	17.8	<.15	<.10	--	--	--	--
04/02/91	04/09/91	14.0	<.15	<.10	--	--	--	--
04/09/91	04/16/91	76.2	<.15	<.10	.07	.05	.05	<.05
04/16/91	04/23/91	90.2	<.15	.19	.15	.16	.06	.10
04/23/91	04/30/91	79.4	<.15	<.10	.08	.13	<.05	.07
05/14/91	05/21/91	53.3	<.15	.12	.14	.20	.06	.09
05/21/91	05/28/91	8.4	1.7	1.4	1.1	1.2	1.9	.11
05/28/91	06/04/91	19.3	.28	.53	.23	.67	.17	.26
06/04/91	06/11/91	2.0	.18	.99	--	--	--	--
06/11/91	06/18/91	43.7	<.15	.18	.16	.19	<.05	<.05
07/02/91	07/09/91	20.3	<.15	.10	--	--	--	--
07/09/91	07/16/91	16.5	<.15	<.10	--	--	--	--
07/16/91	07/23/91	16.5	<.15	.19	<.05	.11	<.05	<.05
07/30/91	08/06/91	10.9	<.15	<.10	--	--	--	--
08/06/91	08/13/91	26.7	<.15	<.10	--	--	--	--
08/13/91	08/20/91	.50	<.15	<.10	--	--	--	--
08/27/91	09/03/91	11.2	<.15	<.10	--	--	--	--
09/03/91	09/10/91	17.8	<.15	<.10	--	--	--	--
IL11 Bondville,								
02/27/90	03/06/90	.51	<.15	<.10	--	--	--	--
03/06/90	03/13/90	76.2	<.15	<.10	--	--	--	--
03/13/90	03/20/90	4.1	<.15	<.10	--	--	--	--
03/20/90	03/27/90	5.3	<.15	.20	<.05	.16	<.05	<.05
03/27/90	04/03/90	11.2	<.15	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
Research Center, IA—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	1.2	nd	1
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.26	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.05	<.05	<.05	<.05	<.05	.07	.05	5	4
<.05	.15	<.05	<.05	<.05	<.05	.15	.16	14	14
.06	.05	<.05	<.05	<.05	<.05	.08	.13	6	10
<.05	.07	<.05	<.05	<.05	<.05	.14	.20	7	11
.18	.30	<.05	<.05	<.05	<.05	1.1	1.2	9	10
.25	.38	<.05	<.05	<.05	<.05	.23	.67	4	13
--	--	--	--	--	--	.15	.81	nd	2
<.05	.08	.08	.05	<.05	<.05	.16	.19	7	8
--	--	--	--	--	--	<.05	.08	nd	2
--	--	--	--	--	--	<.05	.05	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.11	nd	2
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
IL									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.11	<.05	<.05	<.05	<.05	<.05	.16	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
IL11 Bondville,								
04/03/90	04/10/90	21.1	<0.15	<0.10	0.06	0.09	<0.05	<0.05
04/10/90	04/17/90	22.4	<.15	<.10	--	--	--	--
04/17/90	04/24/90	6.6	.90	<.10	--	--	--	--
04/24/90	05/01/90	.80	16	.58	--	--	--	--
05/01/90	05/08/90	22.9	.66	.20	--	--	--	--
05/08/90	05/15/90	56.6	.27	.24	--	--	--	--
05/15/90	05/22/90	86.4	.22	.15	--	--	--	--
05/22/90	05/29/90	23.9	.23	.39	--	--	--	--
05/29/90	06/05/90	1.0	3.4	14	--	--	--	--
06/05/90	06/12/90	27.9	.65	.68	--	--	--	--
06/12/90	06/19/90	53.9	<.15	.58	--	--	--	--
06/19/90	06/26/90	80.0	1.3	.33	--	--	--	--
06/26/90	07/03/90	34.0	<.15	.10	.06	.11	<.05	.08
07/03/90	07/10/90	9.4	<.15	.25	--	--	--	--
07/10/90	07/17/90	39.1	<.15	<.10	--	--	--	--
07/17/90	07/24/90	24.9	<.15	.17	<.05	.07	<.05	<.05
07/24/90	07/31/90	2.8	<.15	.13	.08	.08	<.05	<.05
07/31/90	08/07/90	4.3	<.15	<.10	--	--	--	--
08/07/90	08/14/90	26.2	<.15	<.10	<.05	<.05	<.05	<.05
08/14/90	08/21/90	24.9	<.15	<.10	--	--	--	--
08/21/90	08/28/90	4.3	<.15	<.10	--	--	--	--
08/28/90	09/04/90	28.7	<.15	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	.50	<.15	<.10	--	--	--	--
09/11/90	09/18/90	2.5	<.32	<.10	--	--	--	--
09/18/90	09/25/90	18.3	<.32	.13	<.05	<.05	<.05	<.05
09/25/90	10/02/90	15.0	<.32	<.10	--	--	--	--
10/02/90	10/09/90	112.5	<.32	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	25.9	<.32	<.10	--	--	--	--
10/16/90	10/23/90	14.2	<.32	<.10	<.05	<.05	<.05	<.05
10/30/90	11/06/90	26.9	<.32	<.10	--	--	--	--
11/20/90	11/27/90	18.0	<.32	<.10	--	--	--	--
11/27/90	12/04/90	53.6	<.32	<.10	--	--	--	--
12/11/90	12/18/90	25.2	.43	<.23	<.05	<.05	<.05	<.05
12/18/90	12/26/90	38.1	<.32	<.10	<.05	<.05	<.05	<.05
12/26/90	01/02/91	65.5	<.32	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
II—Continued									
<0.05	0.14	<0.05	<0.05	<0.05	<0.05	0.06	0.09	1	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.57	<.05	4	nd
--	--	--	--	--	--	10	.39	8	nd
--	--	--	--	--	--	.42	.13	10	3
--	--	--	--	--	--	.17	.15	10	9
--	--	--	--	--	--	.14	.09	12	8
--	--	--	--	--	--	.14	.26	3	6
--	--	--	--	--	--	2.2	9.4	2	10
--	--	--	--	--	--	.41	.45	12	13
--	--	--	--	--	--	<.05	.39	nd	21
--	--	--	--	--	--	.84	.21	67	17
.06	<.05	<.05	<.05	<.05	<.05	.06	.11	2	4
--	--	--	--	--	--	<.05	.16	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	2
<.05	.08	<.05	<.05	<.05	<.05	.08	.08	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
IL11 Bondville,								
01/08/91	01/15/91	17.8	<0.32	<0.22	--	--	--	--
01/15/91	01/22/91	6.9	<.32	<.22	<0.05	<0.05	<0.05	<0.05
01/22/91	01/29/91	1.3	<.32	<.22	--	--	--	--
01/29/91	02/05/91	2.5	<.32	<.10	--	--	--	--
02/12/91	02/19/91	8.9	<.32	<.22	--	--	--	--
02/26/91	03/05/91	19.6	<.32	<.10	--	--	--	--
03/05/91	03/12/91	3.3	<.32	.32	<.05	.07	<.05	<.05
03/12/91	03/19/91	37.6	<.32	<.10	--	--	--	--
03/19/91	03/26/91	25.4	<.32	<.10	<.05	<.05	<.05	<.05
03/26/91	04/02/91	1.3	<.32	<.10	--	--	--	--
04/02/91	04/09/91	8.4	.32	.18	.48	.19	.12	<.05
04/09/91	04/16/91	34.0	.44	.16	.37	.09	<.05	<.05
04/16/91	04/23/91	1.8	.46	.31	--	--	--	--
04/23/91	04/30/91	6.6	3.6	.71	3.1	.89	.25	.13
04/30/91	05/07/91	52.3	.47	.27	.50	.30	.11	.11
05/14/91	05/21/91	47.8	.42	.91	.43	.78	.06	.53
05/21/91	05/28/91	11.4	<.15	<.10	.15	1.1	.07	.41
05/28/91	06/04/91	3.6	.19	1.7	--	--	--	--
06/11/91	06/18/91	28.5	<.15	.12	<.05	.11	<.05	.08
06/18/91	06/25/91	.50	<.15	.26	--	--	--	--
06/25/91	07/02/91	2.5	<.15	<.10	--	--	--	--
07/02/91	07/09/91	2.5	<.15	<.10	--	--	--	--
07/09/91	07/16/91	56.4	<.15	<.10	--	--	--	--
07/23/91	07/30/91	2.0	<.15	<.10	--	--	--	--
07/30/91	08/06/91	64.5	<.15	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	4.6	<.15	<.10	.05	.05	<.05	<.05
08/13/91	08/20/91	4.3	<.15	<.10	--	--	--	--
09/03/91	09/10/91	18.8	<.15	<.10	--	--	--	--
09/17/91	09/24/91	9.1	<.15	.19	<.05	<.05	<.05	<.05
IL18 Shabbona,								
02/27/90	03/06/90	2.0	<.15	<.10	--	--	--	--
03/06/90	03/13/90	51.6	<.15	<.10	--	--	--	--
03/13/90	03/20/90	9.7	<.15	<.10	--	--	--	--
03/20/90	03/27/90	10.7	<.15	<.10	<.05	<.05	<.05	<.05
03/27/90	04/03/90	10.0	<.15	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metolachlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
II.—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.64	<.05	<.05	<.05	<.05	.48	.19	4	2
<.05	.49	<.05	<.05	<.05	<.05	.37	.09	13	3
--	--	--	--	--	--	.39	.25	1	nd
.08	1.2	<.05	<.05	<.05	<.05	3.1	.89	21	6
.08	.24	<.05	<.05	<.05	<.05	.50	.30	26	16
.35	.21	<.05	<.05	<.05	<.05	.43	.78	21	37
.36	.05	.18	<.05	<.05	<.05	.15	1.1	2	13
--	--	--	--	--	--	.16	1.4	1	5
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.11	nd	3
--	--	--	--	--	--	<.05	.21	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.05	.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
II.									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chlor	Atra- zine	Cyana- zine	DEA
IL18 Shabbona,								
04/03/90	04/10/90	12.8	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
04/10/90	04/17/90	16.5	<.15	<.10	<.05	.07	<.05	<.05
04/17/90	04/24/90	11.4	.37	.59	--	--	--	--
02/24/90	05/01/90	5.3	2.7	.39	--	--	--	--
05/01/90	05/08/90	39.1	3.5	.43	3.2	.53	<.05	.08
05/08/90	05/15/90	54.9	.28	.30	--	--	--	--
05/15/90	05/22/90	26.2	.64	1.5	--	--	--	--
05/22/90	05/29/90	13.2	3.2	2.2	2.8	.94	.22	.17
05/29/90	06/05/90	5.6	1.8	3.3	--	--	--	--
06/05/90	06/12/90	22.1	.85	2.2	--	--	--	--
06/12/90	06/19/90	45.2	.99	.95	--	--	--	--
06/19/90	06/26/90	34.8	.19	.26	--	--	--	--
06/26/90	07/03/90	35.8	<.15	.14	--	--	--	--
07/03/90	07/10/90	9.1	<.15	.28	--	--	--	--
07/10/90	07/17/90	28.2	<.15	<.10	.05	.07	<.05	.06
07/17/90	07/24/90	45.0	<.15	<.10	.05	.08	.11	<.05
07/24/90	07/31/90	24.1	<.15	<.10	--	--	--	--
07/31/90	08/07/90	41.8	<.15	<.10	--	--	--	--
08/07/90	08/14/90	19.7	<.15	.15	--	--	--	--
08/14/90	08/21/90	51.6	<.15	<.10	--	--	--	--
08/21/90	08/28/90	1.8	<.15	.13	<.05	<.05	<.05	<.05
08/28/90	09/04/90	.80	<.15	.14	<.05	.09	<.05	<.05
09/04/90	09/11/90	6.6	<.32	<.10	--	--	--	--
09/11/90	09/18/90	1.8	<.32	.30	--	--	--	--
09/18/90	09/25/90	22.1	<.32	<.10	--	--	--	--
09/25/90	10/02/90	.80	<.32	.13	--	--	--	--
10/02/90	10/09/90	25.7	<.32	<.10	--	--	--	--
10/09/90	10/16/90	27.2	<.32	.11	<.05	<.05	<.05	<.05
10/16/90	10/23/90	16.0	<.32	.10	<.05	<.05	<.05	<.05
10/30/90	11/06/90	34.4	<.32	<.10	--	--	--	--
11/06/90	11/13/90	1.2	<.32	<.10	--	--	--	--
11/20/90	11/27/90	27.7	<.32	<.10	<.05	<.05	<.05	<.05
11/27/90	12/04/90	56.4	<.32	<.10	<.05	<.05	<.05	<.05
12/11/90	12/18/90	14.7	<.32	<.10	--	--	--	--
12/26/90	01/02/91	20.3	<.32	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
IL—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	.19	<.05	<.05	<.05	<.05	<.05	.07	nd	1
--	--	--	--	--	--	.23	.39	3	4
--	--	--	--	--	--	1.7	.26	9	1
<.05	.31	<.05	<.05	<.05	<.05	3.2	.53	124	21
--	--	--	--	--	--	.18	.19	10	11
--	--	--	--	--	--	.41	1.0	11	27
<.05	.45	<.05	<.05	<.05	<.05	2.8	.94	36	12
--	--	--	--	--	--	1.1	2.3	6	13
--	--	--	--	--	--	.54	1.5	12	32
--	--	--	--	--	--	.63	.64	29	29
--	--	--	--	--	--	.12	.17	4	6
--	--	--	--	--	--	<.05	.08	nd	3
--	--	--	--	--	--	<.05	.18	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	.05	.07	1	2
<.05	<.05	<.05	<.05	<.05	<.05	.05	.08	2	4
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.19	nd	nd
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	.08	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chior	Atra- zine	Cyana- zine	DEA
IL18 Shabbona,								
01/02/91	01/08/91	3.8	<0.32	<0.10	--	--	--	--
01/08/91	01/15/91	6.4	<.32	<.22	<0.05	<0.05	<0.05	<0.05
01/15/91	01/22/91	2.0	<.32	<.22	--	--	--	--
02/12/91	02/19/91	8.9	<.32	<.10	--	--	--	--
02/26/91	03/05/91	21.6	<.32	<.10	--	--	--	--
03/05/91	03/12/91	2.0	<.32	<.10	--	--	--	--
03/12/91	03/19/91	23.1	<.32	.10	<.05	<.05	<.05	<.05
03/19/91	03/26/91	19.8	<.32	<.10	<.05	<.05	<.05	<.05
03/26/91	04/02/91	22.4	<.15	<.10	--	--	--	--
04/02/91	04/09/91	32.3	.17	.17	.25	.19	.13	<.05
04/09/91	04/16/91	41.4	<.15	<.10	--	--	--	--
04/23/91	04/30/91	18.0	1.8	1.1	1.7	1.3	.87	.22
04/30/91	05/07/91	21.1	.94	.26	.97	.30	.05	.10
05/07/91	05/14/91	.80	3.3	3.9	--	--	--	--
05/14/91	05/21/91	42.7	.37	2.0	.37	1.8	.08	.38
05/21/91	05/28/91	103.6	.42	.62	.54	.69	.13	.40
05/28/91	06/04/91	31.5	.32	1.2	.24	1.1	<.05	.52
06/04/91	06/11/91	11.9	.22	.50	.22	.55	<.05	.16
06/11/91	06/18/91	2.0	.27	1.6	--	--	--	--
06/18/91	06/25/91	5.8	.41	.18	.05	.30	.14	.31
06/25/91	07/02/91	40.6	<.15	.10	.06	.08	<.05	.21
07/02/91	07/09/91	15.8	<.15	.14	<.05	.11	<.05	.06
07/09/91	07/16/91	.80	<.15	.13	--	--	--	--
07/16/91	07/23/91	2.5	<.15	.10	--	--	--	--
08/26/91	09/04/91	34.3	<.15	<.10	<.05	<.05	<.05	<.05
09/04/91	09/10/91	10.7	<.15	<.10	<.05	<.05	<.05	<.05
IL19 Argonne,								
02/27/90	03/06/90	7.1	<.15	<.10	--	--	--	--
03/06/90	03/13/90	44.2	<.15	<.10	--	--	--	--
03/13/90	03/20/90	3.8	<.15	<.10	--	--	--	--
03/20/90	03/27/90	21.6	<.15	<.10	--	--	--	--
03/27/90	04/03/90	15.8	<.15	<.10	--	--	--	--
04/03/90	04/10/90	14.2	<.15	<.10	.09	.09	<.05	<.05
04/10/90	04/17/90	13.7	.16	<.10	--	--	--	--
04/17/90	04/24/90	16.3	.34	<.10	--	--	--	--
05/01/90	05/08/90	44.7	.79	.19	--	--	--	--
05/08/90	05/15/90	104.9	.45	1.3	.31	.95	.57	.07

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metolachlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
II—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.06	nd	1
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.06	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.06	nd	1
<0.05	.41	<0.05	<0.05	<0.05	<0.05	.25	.19	8	6
--	--	--	--	--	--	<0.05	<0.05	nd	nd
.17	3.0	<0.05	<0.05	<0.05	<0.05	1.7	1.3	31	23
<0.05	.82	<0.05	<0.05	<0.05	<0.05	.97	.30	20	6
--	--	--	--	--	--	2.8	3.2	2	2
<0.05	.13	<0.05	<0.05	<0.05	<0.05	.37	1.8	16	78
<0.05	.22	<0.05	<0.05	<0.05	<0.05	.54	.69	56	72
<0.05	.15	<0.05	<0.05	<0.05	<0.05	.24	1.1	8	35
<0.05	.20	<0.05	<0.05	<0.05	<0.05	.22	.55	3	7
--	--	--	--	--	--	.23	1.3	nd	3
<0.05	.67	.14	<0.05	<0.05	<0.05	.05	.30	nd	2
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.06	.08	2	3
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.11	nd	2
--	--	--	--	--	--	<0.05	.10	nd	nd
--	--	--	--	--	--	<0.05	.08	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
II									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	.14	<0.05	<0.05	<0.05	<0.05	.09	.09	1	1
--	--	--	--	--	--	.10	<0.05	1	nd
--	--	--	--	--	--	.21	<0.05	3	nd
--	--	--	--	--	--	.50	.12	23	5
<0.05	.21	<0.05	<0.05	<0.05	<0.05	.31	.95	33	100

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
IL19 Argonne,								
05/15/90	05/22/90	18.5	0.47	0.49	--	--	--	--
05/22/90	05/29/90	18.8	<.15	.81	--	--	--	--
05/29/90	06/05/90	1.8	.19	3.6	--	--	--	--
06/05/90	06/12/90	36.3	.19	.25	0.17	0.27	<0.05	0.10
06/12/90	06/19/90	22.1	.23	.31	<.05	.18	<.05	.16
06/19/90	06/26/90	29.5	<.15	.28	.21	.28	<.05	.17
06/26/90	07/10/90	45.2	<.15	.33	--	--	--	--
07/10/90	07/24/90	138.0	<.15	<.10	--	--	--	--
07/24/90	07/31/90	1.8	<.15	<.10	--	--	--	--
07/31/90	08/07/90	15.2	<.15	<.10	--	--	--	--
08/07/90	08/14/90	15.8	<.15	<.10	--	--	--	--
08/14/90	08/21/90	51.1	.15	.10	--	--	--	--
08/21/90	08/28/90	.80	<.15	<.10	<.05	<.05	<.05	<.05
08/28/90	09/04/90	8.9	<.15	<.10	<.05	.06	<.05	<.05
09/04/90	09/11/90	12.5	<.15	<.10	--	--	--	--
09/11/90	09/18/90	7.1	<.32	<.10	--	--	--	--
09/18/90	09/25/90	29.0	<.32	<.10	--	--	--	--
10/02/90	10/09/90	48.8	<.32	<.10	--	--	--	--
10/09/90	10/16/90	48.5	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	14.5	<.32	<.10	--	--	--	--
10/30/90	11/06/90	54.9	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	.80	<.32	.11	--	--	--	--
11/20/90	11/27/90	48.8	<.32	<.10	<.05	<.05	<.05	<.05
11/27/90	12/04/90	78.2	<.32	<.10	<.05	<.05	<.05	<.05
12/11/90	12/18/90	10.7	<.32	<.10	--	--	--	--
12/18/90	01/08/91	39.9	<.32	<.22	<.05	<.05	<.05	<.05
01/08/91	01/15/91	15.2	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	13.7	<.32	<.22	<.05	<.05	<.05	<.05
02/12/91	02/19/91	12.2	<.32	<.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	18.8	<.32	<.10	--	--	--	--
03/05/91	03/12/91	2.8	<.32	.26	<.05	.08	<.05	<.05
03/12/91	03/19/91	34.8	<.32	.11	--	--	--	--
03/19/91	03/26/91	20.8	<.32	<.10	<.05	<.05	<.05	<.05
03/26/91	04/02/91	26.7	<.15	.11	<.05	.09	<.05	<.05
04/02/91	04/09/91	53.3	.47	.33	.45	.34	.26	.12

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
II—Continued									
--	--	--	--	--	--	0.30	0.32	6	6
--	--	--	--	--	--	<.05	.54	nd	10
--	--	--	--	--	--	.12	2.4	nd	4
<.05	0.10	<.05	<.05	<.05	<.05	.17	.27	6	10
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.18	nd	4
<.05	.06	<.05	<.05	<.05	<.05	.21	.28	6	8
--	--	--	--	--	--	<.05	.21	nd	10
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.09	.06	5	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	nd
--	--	--	--	--	--	<.05	.09	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.06	<.05	<.05	<.05	<.05	<.05	.09	nd	2
<.05	.95	<.05	<.05	<.05	<.05	.45	.34	24	18

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- iide herbicides	Tri- azines herbicides	Ala- chior	Atra- zine	Cyana- zine	DEA
IL19 Argonne,								
04/09/91	04/16/91	54.4	<0.15	<0.10	--	--	--	--
04/16/91	04/23/91	.50	<.15	.36	--	--	--	--
04/23/91	04/30/91	19.3	.82	.50	0.90	0.61	0.29	0.11
04/30/91	05/07/91	39.9	.18	.15	.24	.11	<.05	<.05
05/14/91	05/21/91	28.7	<.15	<.10	.09	.16	<.05	.07
05/21/91	05/28/91	51.3	<.15	.44	--	--	--	--
05/28/91	06/04/91	9.4	<.15	.48	.07	.59	<.05	.33
06/04/91	06/11/91	25.4	<.15	.13	.11	.13	<.05	.08
06/25/91	07/02/91	1.0	<.15	.13	--	--	--	--
07/02/91	07/09/91	5.3	<.15	.21	<.05	.16	<.05	.15
07/09/91	07/16/91	1.8		.16	--	--	--	--
07/16/91	07/23/91	.80	<.15	.11	--	--	--	--
07/23/91	07/30/91	.50	<.15	<.10	--	--	--	--
07/30/91	08/06/91	1.5	1.9	<.10	--	--	--	--
08/06/91	08/13/91	28.2	<.15	<.10	--	--	--	--
08/27/91	09/03/91	.80	<.15	<.10	--	--	--	--
09/03/91	09/10/91	36.3	<.15	<.10	--	--	--	--
09/10/91	09/17/91	14.2	<.15	.11	<.05	<.05	<.05	<.05
IL35 Southern Illinois								
02/27/90	03/06/90	.50	<.15	<.10	--	--	--	--
03/06/90	03/13/90	4.1	<.15	<.10	--	--	--	--
03/13/90	03/20/90	17.5	<.15	<.10	--	--	--	--
03/20/90	03/27/90	24.4	<.15	<.10	<.05	<.05	<.05	<.05
03/27/90	04/03/90	32.0	<.15	<.10	--	--	--	--
04/03/90	04/10/90	39.9	<.15	<.10	<.05	<.05	<.05	<.05
04/10/90	04/17/90	50.0	.17	<.10	--	--	--	--
04/17/90	04/24/90	12.2	.18	<.10	--	--	--	--
04/24/90	05/01/90	75.2	<.15	<.10	--	--	--	--
05/01/90	05/08/90	19.6	<.15	.21	.05	.17	<.05	.06
05/08/90	05/15/90	42.2	.27	.25	--	--	--	--
05/15/90	05/22/90	113.5	.34	.30	--	--	--	--
05/22/90	05/29/90	70.4	<.15	.25	--	--	--	--
05/29/90	06/05/90	24.6	.17	.15	--	--	--	--
06/05/90	06/12/90	22.1	.35	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
IL—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	.29	nd	nd
<0.05	0.91	<0.05	<0.05	<0.05	<0.05	.90	.61	17	12
<.05	.13	<.05	<.05	<.05	<.05	.24	.11	10	4
<.05	.06	<.05	<.05	<.05	<.05	.09	.16	3	5
--	--	--	--	--	--	<.05	.36	nd	18
.24	<.05	<.05	<.05	<.05	<.05	.07	.59	1	6
<.05	.07	<.05	<.05	<.05	<.05	.11	.13	3	3
--	--	--	--	--	--	<.05	.10	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.16	nd	1
--	--	--	--	--	--	<.05	.13	nd	nd
--	--	--	--	--	--	<.05	.09	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	1.6	.05	2	nd
--	--	--	--	--	--	<.05	.07	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
University, IL									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.11	<.05	5	nd
--	--	--	--	--	--	.11	<.05	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.05	.17	1	3
--	--	--	--	--	--	.17	.16	7	7
--	--	--	--	--	--	.21	.19	24	22
--	--	--	--	--	--	<.05	.16	nd	11
--	--	--	--	--	--	.11	.09	3	2
--	--	--	--	--	--	.22	<.05	5	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipita- tion (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
IL35 Southern Illinois								
06/12/90	06/19/90	0.80	0.41	0.45	--	--	--	--
06/19/90	06/26/90	10.4	1.6	.59	--	--	--	--
07/03/90	07/10/90	26.9	<.15	<.10	--	--	--	--
07/10/90	07/17/90	17.5	<.15	<.10	--	--	--	--
07/17/90	07/24/90	94.7	<.15	<.10	--	--	--	--
07/24/90	07/31/90	15.0	.19	.14	<0.05	0.05	<0.05	<0.05
07/31/90	08/07/90	20.6	<.15	<.10	--	--	--	--
08/07/90	08/14/90	91.7	<.15	<.10	<.05	<.05	<.05	<.05
08/14/90	08/21/90	19.3	<.15	<.10	--	--	--	--
08/28/90	09/04/90	.50	<.15	.32	<.05	<.05	<.05	<.05
09/04/90	09/11/90	16.0	<.32	<.10	--	--	--	--
09/11/90	09/18/90	.80	<.32	<.10	--	--	--	--
09/18/90	09/25/90	12.7	<.32	.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	15.8	<.32	<.10	--	--	--	--
10/02/90	10/09/90	75.4	<.32	<.10	<.05	.10	<.05	<.05
10/09/90	10/16/90	18.5	<.32	<.10	--	--	--	--
10/16/90	10/23/90	9.4	<.32	.18	<.05	<.05	<.05	<.05
10/30/90	11/06/90	16.8	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	3.1	<.32	.16	--	--	--	--
11/20/90	11/27/90	41.2	<.32	<.10	<.05	<.05	<.05	<.05
11/27/90	12/04/90	40.4	<.32	<.10	--	--	--	--
12/11/90	12/18/90	43.9	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/24/90	68.3	<.32	<.10	--	--	--	--
12/24/90	01/01/91	68.3	<.32	<.10	--	--	--	--
01/01/91	01/08/91	32.0	<.32	<.22	<.05	<.05	<.05	<.05
01/08/91	01/15/91	32.8	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	9.4	<.32	<.22	--	--	--	--
01/22/91	01/29/91	9.9	<.32	.18	<.05	<.05	<.05	<.05
01/29/91	02/05/91	2.3	<.32	.47	--	--	--	--
02/05/91	02/12/91	25.9	<.32	<.10	--	--	--	--
02/12/91	02/19/91	27.2	<.32	<.10	--	--	--	--
02/19/91	02/26/91	.80	<.32	<.10	--	--	--	--
02/26/91	03/05/91	9.7	<.32	<.10	<.05	<.05	<.05	<.05
03/05/91	03/12/91	.80	.38	.33	--	--	--	--
03/12/91	03/19/91	20.6	<.32	.76	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
University, IL—Continued									
--	--	--	--	--	--	0.26	0.30	nd	nd
--	--	--	--	--	--	1.0	.39	11	4
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	.05	<.05	<.05	<.05	<.05	.10	nd	8
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.10	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.38	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.32	.27	nd	nd
--	--	--	--	--	--	<.05	.62	nd	13

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
IL35 Southern Illinois								
03/19/91	03/26/91	42.7	<0.32	<0.10	--	--	--	--
04/02/91	04/09/91	19.1	<.15	<.10	--	--	--	--
04/09/91	04/16/91	57.4	<.15	<.10	<0.05	<0.05	<0.05	<0.05
04/16/91	04/23/91	7.4	<.15	.21	.11	.25	<.05	<.05
04/23/91	04/30/91	22.4	.27	<.10	.24	.09	<.05	.05
04/30/91	05/07/91	15.0	<.15	<.10	.11	.10	<.05	<.05
05/14/91	05/21/91	50.8	<.15	<.10	.16	.07	<.05	.05
05/21/91	05/28/91	11.4	.17	<.10	.15	.06	<.05	<.05
05/28/91	06/04/91	12.2	<.15	.17	--	--	--	--
06/11/91	06/18/91	11.7	.28	.11	.24	.13	<.05	<.05
06/18/91	06/25/91	13.5	<.15	<.10	--	--	--	--
07/02/91	07/09/91	30.7	<.15	.10	--	--	--	--
07/09/91	07/16/91	7.9	<.15	<.10	--	--	--	--
07/23/91	07/30/91	.50	<.15	<.10	--	--	--	--
07/30/91	08/06/91	4.3	<.15	<.10	--	--	--	--
08/06/91	08/13/91	41.7	<.15	<.10	<.05	<.05	<.05	<.05
08/13/91	08/20/91	3.8	<.15	<.10	--	--	--	--
09/03/91	09/10/91	19.1	<.15	<.10	--	--	--	--
09/10/91	09/17/91	5.8	<.15	<.10	--	--	--	--
IL63 Dixon Springs								
02/27/90	03/07/90	1.0	<.15	<.10	--	--	--	--
03/07/90	03/13/90	.50	<.15	<.10	--	--	--	--
03/13/90	03/20/90	17.3	.35	<.10	<.05	<.05	<.05	<.05
03/20/90	03/27/90	17.0	.30	<.10	--	--	--	--
03/27/90	04/03/90	33.8	<.15	<.10	<.05	<.05	<.05	<.05
04/03/90	04/10/90	54.4	<.15	<.10	--	--	--	--
04/10/90	04/17/90	41.9	.31	<.10	.06	<.05	<.05	<.05
04/17/90	04/24/90	8.6	<.15	<.10	<.05	<.05	<.05	<.05
04/24/90	05/01/90	75.2	<.15	<.10	--	--	--	--
05/01/90	05/08/90	33.0	<.15	.43	<.05	.10	<.05	<.05
05/08/90	05/15/90	41.9	.70	<.10	--	--	--	--
05/15/90	05/22/90	109.2	.20	.14	--	--	--	--
05/22/90	05/29/90	88.7	<.15	.12	.10	.06	<.05	<.05
05/29/90	06/05/90	6.9	.27	.31	.19	.26	<.05	.05
06/05/90	06/12/90	21.8	.27	.38	.12	.28	<.05	.12

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
University, IL—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	1
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.11	.25	1	2
<.05	.12	<.05	<.05	<.05	<.05	.24	.09	5	2
<.05	.05	<.05	<.05	<.05	<.05	.11	.10	2	1
<.05	.05	<.05	<.05	<.05	<.05	.16	.07	8	4
<.05	.05	<.05	<.05	<.05	<.05	.15	.06	2	1
--	--	--	--	--	--	<.05	.14	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	.24	.13	3	2
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	.08	nd	2
--	--	--	--	--	--	<.05	.07	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
Agricultural Center, IL									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.19	<.05	3	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	<.05	3	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	.08	<.05	.10	nd	3
--	--	--	--	--	--	.45	<.05	19	nd
--	--	--	--	--	--	.12	.08	14	9
<.05	<.05	<.05	<.05	<.05	.05	.10	.06	9	5
<.05	.19	<.05	<.05	<.05	<.05	.19	.26	1	2
<.05	<.05	<.05	<.05	<.05	<.05	.12	.28	3	6

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
IL63 Dixon Springs								
06/19/90	06/26/90	11.7	0.25	0.10	--	--	--	--
07/03/90	07/10/90	6.9	<.15	.32	0.06	0.26	<0.05	0.18
07/10/90	07/17/90	1.5	.31	.29	<.05	<.05	<.05	<.05
07/17/90	07/24/90	51.1	<.15	<.10	<.05	<.05	<.05	<.05
07/24/90	07/31/90	6.4	<.15	.25	--	--	--	--
07/31/90	08/07/90	55.1	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	37.6	<.15	<.10	--	--	--	--
08/14/90	08/21/90	11.2	<.15	<.10	--	--	--	--
08/28/90	09/04/90	3.6	<.15	<.10	--	--	--	--
09/04/90	09/11/90	44.5	<.15	<.10	--	--	--	--
09/11/90	09/18/90	3.3	<.32	.21	<.05	<.05	<.05	<.05
09/18/90	09/25/90	40.6	<.32	.16	<.05	<.05	<.05	<.05
09/25/90	10/02/90	5.1	<.32	.16	--	--	--	--
10/02/90	10/09/90	120.4	<.32	<.10	--	--	--	--
10/09/90	10/16/90	15.2	.48	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	21.1	<.32	<.10	--	--	--	--
10/30/90	11/06/90	20.8	<.32	<.10	--	--	--	--
11/06/90	11/13/90	6.4	<.32	<.10	--	--	--	--
11/13/90	11/20/90	2.3	<.32	<.10	--	--	--	--
11/20/90	11/27/90	23.6	<.32	<.10	--	--	--	--
11/27/90	12/04/90	49.3	<.32	<.10	<.05	<.05	<.05	<.05
12/11/90	12/18/90	66.8	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/25/90	95.3	<.32	<.10	--	--	--	--
12/25/90	01/01/91	50.8	<.32	<.10	--	--	--	--
01/01/91	01/08/91	47.8	<.32	<.22	<.05	<.05	<.05	<.05
01/08/91	01/15/91	30.0	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	11.7	<.32	<.10	--	--	--	--
01/22/91	01/29/91	11.2	.33	<.10	<.05	<.05	<.05	<.05
01/29/91	02/05/91	16.0	<.32	<.22	--	--	--	--
02/05/91	02/12/91	50.3	<.32	<.10	<.05	<.05	<.05	<.05
02/12/91	02/19/91	66.0	<.32	<.10	--	--	--	--
02/26/91	03/05/91	27.4	<.32	<.10	<.05	<.05	<.05	<.05
03/12/91	03/19/91	43.9	<.32	<.10	--	--	--	--
03/19/91	03/26/91	79.0	<.32	<.10	--	--	--	--
03/26/91	04/02/91	5.1	<.15	.14	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
Agricultural Center, IL—Continued									
--	--	--	--	--	--	0.16	0.06	2	1
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.06	.26	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.16	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.10	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.11	nd	1

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
IL63 Dixon Springs								
04/02/91	04/09/91	45.0	<0.15	0.24	<0.05	<0.05	<0.05	<0.05
04/09/91	04/16/91	55.9	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	3.3	<.15	.74	.11	1.1	<.05	.10
04/23/91	04/30/91	31.8	.57	.43	.64	.53	<.05	.11
05/07/91	05/14/91	36.1	<.15	.25	.21	.16	<.05	.07
05/14/91	05/21/91	24.4	<.15	<.10	--	--	--	--
05/21/91	05/28/91	24.9	<.15	.19	--	--	--	--
05/28/91	06/04/91	1.5	.20	2.9	--	--	--	--
06/11/91	06/18/91	8.1	.41	.87	.41	.65	<.05	.07
06/18/91	06/25/91	3.8	<.15	.29	--	--	--	--
07/02/91	07/09/91	18.3	<.15	<.10	<.05	.07	<.05	<.05
07/09/91	07/16/91	9.9	<.15	.15	<.05	.07	<.05	.05
07/23/91	07/30/91	10.4	<.15	<.10	--	--	--	--
08/06/91	08/13/91	41.9	<.15	<.10	--	--	--	--
08/27/91	09/03/91	32.0	<.15	<.10	--	--	--	--
09/03/91	09/10/91	39.6	<.15	<.10	--	--	--	--
09/10/91	09/17/91	52.1	<.15	.16	<.05	<.05	<.05	<.05
IL78 Monmouth,								
02/27/90	03/06/90	5.1	<.15	<.10	<.05	<.05	<.05	<.05
03/06/90	03/13/90	62.7	<.15	<.10	--	--	--	--
03/13/90	03/20/90	30.7	<.15	<.10	--	--	--	--
03/20/90	03/27/90	2.8	<.15	<.10	--	--	--	--
03/27/90	04/03/90	4.3	<.15	<.10	--	--	--	--
04/03/90	04/10/90	15.2	<.15	<.10	--	--	--	--
04/10/90	04/17/90	15.2	<.15	<.10	--	--	--	--
04/17/90	04/24/90	2.0	.77	.18	--	--	--	--
04/24/90	05/01/90	15.5	1.1	.29	--	--	--	--
05/01/90	05/08/90	56.6	.47	<.10	--	--	--	--
05/08/90	05/15/90	23.1	1.2	<.10	.53	.16	.12	<.05
05/15/90	05/22/90	14.2	.39	.22	--	--	--	--
05/22/90	05/29/90	52.1	<.15	<.10	.39	.09	<.05	<.05
06/05/90	06/12/90	22.9	.24	.17	--	--	--	--
06/12/90	06/19/90	59.7	.33	.87	--	--	--	--
06/19/90	06/26/90	112.5	.17	.11	--	--	--	--
06/26/90	07/03/90	4.8	.23	.51	--	--	--	--
07/10/90	07/17/90	43.9	<.15	<.10	.06	.09	<.05	.08
07/17/90	07/24/90	50.3	<.15	<.10	--	--	--	--
07/24/90	07/31/90	23.6	<.15	<.10	.07	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Agricultural Center, IL—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	0.25	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	.20	.11	1.1	nd	4
.10	.48	<.05	<.05	<.05	.32	.64	.53	20	17
<.05	.16	<.05	<.05	<.05	.06	.21	.16	8	6
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.15	nd	4
--	--	--	--	--	--	.17	2.4	nd	4
<.05	.38	.08	<.05	<.05	.30	.41	.65	3	5
--	--	--	--	--	--	<.05	.23	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
IL									
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.49	.11	1	nd
--	--	--	--	--	--	.69	.19	11	3
--	--	--	--	--	--	.30	<.05	17	nd
<.05	.61	<.05	<.05	<.05	<.05	.53	.16	12	4
--	--	--	--	--	--	.25	.14	4	2
<.05	.13	<.05	<.05	<.05	<.05	.39	.09	20	5
--	--	--	--	--	--	.15	.10	3	2
--	--	--	--	--	--	.21	.58	12	35
--	--	--	--	--	--	.11	.06	12	7
--	--	--	--	--	--	.14	.34	1	2
.05	<.05	<.05	<.05	<.05	<.05	.06	.09	3	4
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.07	<.05	2	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chior	Atra- zine	Cyana- zine	DEA
IL78 Monmouth,								
07/31/90	08/07/90	19.6	<0.15	<0.10	--	--	--	--
08/07/90	08/14/90	16.5	<.15	<.10	--	--	--	--
08/14/90	08/21/90	8.9	<.15	<.10	--	--	--	--
08/21/90	08/28/90	6.1	<.15	.21	<0.05	<0.05	<0.05	<0.05
08/28/90	09/04/90	31.5	<.15	<.10	--	--	--	--
09/11/90	09/18/90	4.6	<.32	<.10	--	--	--	--
09/18/90	09/25/90	14.0	<.32	.14	<.05	<.05	<.05	<.05
09/25/90	10/02/90	1.3	<.32	<.10	--	--	--	--
10/02/90	10/09/90	17.5	<.32	<.10	--	--	--	--
10/09/90	10/16/90	14.5	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	11.9	<.32	<.10	--	--	--	--
10/30/90	11/06/90	33.8	<.32	.10	--	--	--	--
11/06/90	11/13/90	4.3	<.32	<.10	<.05	<.05	<.05	<.05
11/20/90	11/27/90	23.9	<.32	<.10	--	--	--	--
11/27/90	12/04/90	65.5	<.32	<.10	<.05	<.05	<.05	<.05
12/11/90	12/18/90	10.2	<.32	<.10	--	--	--	--
12/25/90	01/01/91	22.6	<.32	<.10	--	--	--	--
01/08/91	01/15/91	3.6	<.32	<.22	--	--	--	--
01/15/91	01/22/91	8.6	<.32	<.10	<.05	<.05	<.05	<.05
01/22/91	01/29/91	.76	.39	<.10	--	--	--	--
02/12/91	02/19/91	12.5	<.32	<.10	--	--	--	--
02/26/91	03/05/91	28.2	<.32	<.10	--	--	--	--
03/05/91	03/12/91	5.6	<.32	<.10	<.05	<.05	<.05	<.05
03/12/91	03/19/91	24.9	<.32	.11	<.05	<.05	<.05	<.05
03/19/91	03/26/91	5.3	<.32	.36	<.05	.23	<.05	<.05
03/26/91	04/02/91	33.0	<.15	<.10	--	--	--	--
04/02/91	04/09/91	4.6	.27	.34	--	--	--	--
04/09/91	04/16/91	47.8	<.15	<.10	--	--	--	--
04/16/91	04/23/91	16.3	.17	.16	.12	.25	.16	.07
04/23/91	04/30/91	4.8	1.8	.20	--	--	--	--
05/14/91	05/21/91	25.7	1.9	1.9	1.9	1.8	.21	.54
05/21/91	05/28/91	32.5	.37	.79	.35	.80	.05	.21
05/28/91	06/04/91	18.8	.19	1.1	.19	1.2	.15	.33
06/04/91	06/11/91	4.1	.44	.69	--	--	--	--
06/18/91	06/25/91	6.4	<.15	.11	<.05	.12	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achior	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
II—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.33	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.33	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.09	<.05	<.05	<.05	<.05	<.05	.23	nd	1
--	--	--	--	--	--	<.05	.06	nd	2
--	--	--	--	--	--	.23	.28	1	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.14	<.05	<.05	<.05	<.05	.12	.25	2	4
--	--	--	--	--	--	1.5	.16	7	1
.45	.78	<.05	<.05	<.05	<.05	1.9	1.8	49	45
.19	.15	<.05	<.05	<.05	<.05	.35	.80	11	26
.28	.12	<.05	<.05	<.05	<.05	.19	1.2	4	23
--	--	--	--	--	--	.37	.56	2	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.12	nd	1

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
IL78 Monmouth,								
07/02/91	07/09/91	2.8	<0.15	0.12	--	--	--	--
07/09/91	07/16/91	9.9	<.15	<.10	--	--	--	--
07/16/91	07/23/91	88.9	<.15	<.10	--	--	--	--
07/23/91	07/30/91	3.3	<.15	<.10	--	--	--	--
07/30/91	08/06/91	39.4	1.9	<.10	--	--	--	--
08/06/91	08/13/91	13.7	<.15	<.10	--	--	--	--
08/13/91	08/20/91	9.7	<.15	<.10	--	--	--	--
08/27/91	09/03/91	35.8	<.15	<.10	--	--	--	--
09/03/91	09/10/91	31.2	<.15	<.10	--	--	--	--
09/10/91	09/17/91	16.8	<.15	<.10	--	--	--	--
IL99 Omega,								
03/06/90	03/13/90	6.6	<.15	<.10	<0.05	<0.05	<0.05	<0.05
03/13/90	03/20/90	4.6	<.15	<.10	--	--	--	--
03/20/90	03/27/90	21.6	<.15	<.10	--	--	--	--
03/27/90	04/03/90	35.3	<.15	<.10	--	--	--	--
04/03/90	04/10/90	22.9	<.15	<.10	--	--	--	--
04/10/90	04/17/90	22.4	<.15	.15	--	--	--	--
04/17/90	04/24/90	31.2	<.15	<.10	--	--	--	--
04/24/90	05/01/90	33.0	.37	.70	--	--	--	--
05/01/90	05/08/90	29.2	.48	<.10	--	--	--	--
05/08/90	05/15/90	87.6	.26	<.10	--	--	--	--
05/15/90	05/22/90	147.3	<.15	<.10	--	--	--	--
05/22/90	05/29/90	32.5	<.15	<.10	--	--	--	--
05/29/90	06/05/90	1.3	<.15	3.8	--	--	--	--
06/05/90	06/12/90	33.0	.20	.16	--	--	--	--
06/19/90	06/26/90	58.7	.71	.19	--	--	--	--
06/26/90	07/03/90	2.5	.46	.16	--	--	--	--
07/03/90	07/10/90	3.8	1.5	.57	--	--	--	--
07/10/90	07/17/90	4.2	1.5	.38	.99	.30	<.05	.16
07/17/90	07/24/90	48.3	<.15	<.10	--	--	--	--
07/24/90	07/31/90	3.8	<.15	.12	.11	.11	<.05	.10
07/31/90	08/07/90	9.7	<.15	<.10	--	--	--	--
08/07/90	08/14/90	2.0	<.15	<.10	--	--	--	--
08/14/90	08/21/90	6.4	.19	<.10	--	--	--	--
08/28/90	09/04/90	18.5	.15	<.10	--	--	--	--
09/04/90	09/11/90	14.7	<.15	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
IL—Continued									
--	--	--	--	--	--	<0.05	0.09	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	1.6	<.05	63	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
IL									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.23	.47	8	15
--	--	--	--	--	--	.30	<.05	9	nd
--	--	--	--	--	--	.16	<.05	14	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	2.6	nd	3
--	--	--	--	--	--	.12	.10	4	3
--	--	--	--	--	--	.45	.12	27	7
--	--	--	--	--	--	.29	.10	1	nd
--	--	--	--	--	--	.95	.38	4	1
.09	.27	<.05	<.05	<.05	<.05	.99	.30	4	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.09	<.05	<.05	<.05	<.05	.11	.11	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.12	<.05	1	nd
--	--	--	--	--	--	.09	<.05	2	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
								IL99 Omega,
09/18/90	09/25/90	14.7	<0.32	0.19	<0.05	<0.05	<0.05	<0.05
10/02/90	10/09/90	103.4	<.32	<.10	--	--	--	--
10/09/90	10/16/90	16.5	<.32	<.10	--	--	--	--
10/16/90	10/23/90	13.5	<.32	<.10	--	--	--	--
10/30/90	11/06/90	32.5	<.32	<.10	--	--	--	--
11/06/90	11/13/90	1.3	<.32	.11	--	--	--	--
11/20/90	11/28/90	72.6	<.32	<.10	--	--	--	--
11/27/90	12/04/90	35.6	<.32	<.10	--	--	--	--
12/11/90	12/18/90	38.9	<.32	<.23	<.05	<.05	<.05	<.05
12/18/90	12/25/90	54.9	<.32	<.10	<.05	<.05	<.05	<.05
12/25/90	01/02/91	90.9	<.32	<.10	--	--	--	--
01/02/91	01/08/91	13.5	<.32	<.10	<.05	<.05	<.05	<.05
01/08/91	01/15/91	19.1	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	8.4	<.32	<.10	--	--	--	--
01/22/91	01/29/91	2.0	<.32	<.10	--	--	--	--
01/29/91	02/05/91	3.8	.33	<.10	--	--	--	--
02/05/91	02/11/91	12.2	<.32	<.22	--	--	--	--
02/11/91	02/19/91	25.2	<.32	<.10	--	--	--	--
02/19/91	02/26/91	1.3	.69	<.10	--	--	--	--
02/26/91	03/05/91	9.1	<.32	<.10	--	--	--	--
03/05/91	03/12/91	5.3	<.32	.27	<.05	<.05	<.05	<.05
03/12/91	03/19/91	50.8	<.32	.36	--	--	--	--
03/19/91	03/26/91	17.8	<.32	.24	<.05	<.05	<.05	<.05
03/26/91	04/02/91	1.3	<.32	.18	--	--	--	--
04/02/91	04/09/91	25.4	<.15	<.10	--	--	--	--
04/09/91	04/16/91	21.1	<.15	.12	.08	.06	<.05	<.05
04/23/91	04/30/91	8.9	.35	.18	.27	.24	.05	.06
04/30/91	05/07/91	22.9	.37	.82	.47	.68	<.05	.14
05/14/91	05/21/91	1.3	.28	3.8	--	--	--	--
05/21/91	05/28/91	27.9	.26	.56	.27	.57	<.05	.18
05/28/91	06/04/91	3.3	<.15	.20	--	--	--	--
06/11/91	06/18/91	38.6	<.15	.16	.12	.18	<.05	.07
06/18/91	06/25/91	8.9	.28	.38	.33	.35	<.05	.12
06/25/91	07/02/91	9.7	.20	.39	.24	.61	<.05	<.05
07/02/91	07/09/91	2.5	<.15	.12	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
IL—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.28	<.05	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.58	.05	1	nd
--	--	--	--	--	--	<.05	.06	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.29	nd	15
.06	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.14	nd	nd
--	--	--	--	--	--	<.05	.06	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	.08	.06	2	1
<.05	.25	<.05	<.05	<.05	<.05	.27	.24	2	2
.11	.28	<.05	<.05	<.05	<.05	.47	.68	11	16
--	--	--	--	--	--	.24	3.1	nd	4
.15	.14	<.05	<.05	<.05	<.05	.27	.57	8	16
--	--	--	--	--	--	<.05	.16	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	.12	.18	5	7
<.05	.13	.07	<.05	<.05	<.05	.33	.35	3	3
<.05	.11	<.05	<.05	<.05	<.05	.24	.61	2	6
--	--	--	--	--	--	<.05	.09	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
IL99 Omega,								
07/09/91	07/16/91	36.8	<0.15	<0.10	--	--	--	--
07/30/91	08/06/91	8.9	<.15	<.10	--	--	--	--
08/06/91	08/13/91	27.4	<.15	<.10	--	--	--	--
08/13/91	08/20/91	12.2	<.15	<.10	--	--	--	--
09/03/91	09/10/91	35.0	<.15	<.10	<0.05	<0.05	<0.05	<0.05
09/10/91	09/17/91	.61	<.15	<.10	--	--	--	--
IN20 Huntington								
03/06/90	03/13/90	31.8	<.15	<.10	--	--	--	--
03/13/90	03/20/90	16.4	<.15	<.10	--	--	--	--
03/20/90	03/27/90	1.5	<.15	<.10	--	--	--	--
03/27/90	04/03/90	25.4	<.15	<.10	--	--	--	--
04/03/90	04/10/90	13.9	.20	<.10	--	--	--	--
04/10/90	04/17/90	14.8	.39	<.10	--	--	--	--
04/17/90	04/24/90	11.1	.47	<.10	.15	.09	<.05	<.05
05/01/90	05/08/90	37.6	.78	.12	--	--	--	--
05/08/90	05/15/90	37.9	.83	<.10	.41	.13	.06	<.05
05/15/90	05/22/90	35.6	.19	<.10	.19	.12	<.05	<.05
05/22/90	05/29/90	12.2	1.8	1.3	--	--	--	--
05/29/90	06/05/90	7.6	4.5	8.9	--	--	--	--
06/05/90	06/12/90	13.0	.92	.33	.52	.22	.06	.09
06/19/90	06/26/90	38.1	.41	.13	.42	.18	<.05	.07
06/26/90	07/03/90	9.6	.27	.62	--	--	--	--
07/03/90	07/10/90	5.6	<.15	<.10	--	--	--	--
07/10/90	07/17/90	27.2	.17	<.10	.08	<.05	<.05	.05
07/17/90	07/24/90	38.4	<.15	<.10	.05	<.05	<.05	<.05
07/31/90	08/07/90	18.5	<.15	<.10	--	--	--	--
08/07/90	08/14/90	26.2	<.15	<.10	--	--	--	--
08/14/90	08/21/90	89.2	<.15	<.10	--	--	--	--
08/28/90	09/04/90	30.0	<.15	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	11.2	<.15	<.10	--	--	--	--
09/11/90	09/18/90	17.8	<.32	<.10	--	--	--	--
09/18/90	09/25/90	10.6	<.32	.13	<.05	<.05	<.05	<.05
09/25/90	10/02/90	.13	<.32	.10	--	--	--	--
10/02/90	10/09/90	67.8	<.32	<.10	--	--	--	--
10/09/90	10/16/90	42.7	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	21.1	<.32	<.10	--	--	--	--
10/30/90	11/06/90	27.7	<.32	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
II.—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
Reservoir, IN									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.12	<.05	2	nd
--	--	--	--	--	--	.25	<.05	4	nd
<.05	.15	<.05	<.05	<.05	<.05	.15	.09	2	1
--	--	--	--	--	--	.50	.07	19	3
<.05	.16	<.05	<.05	<.05	<.05	.41	.13	16	5
<.05	.07	<.05	<.05	<.05	<.05	.19	.12	7	4
--	--	--	--	--	--	1.2	.85	14	10
--	--	--	--	--	--	2.9	6.1	22	46
<.05	.30	<.05	<.05	<.05	<.05	.52	.22	7	3
<.05	.16	<.05	<.05	<.05	<.05	.42	.18	16	7
--	--	--	--	--	--	.17	.41	2	4
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.06	<.05	<.05	<.05	<.05	.08	<.05	2	nd
<.05	.05	<.05	<.05	<.05	<.05	.05	<.05	2	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	4
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
IN20 Huntington								
11/13/90	11/20/90	0.50	<0.32	<0.10	--	--	--	--
11/20/90	11/27/90	10.7	<.32	<.10	--	--	--	--
11/27/90	12/04/90	58.9	<.32	<.10	--	--	--	--
12/11/90	12/18/90	21.6	<.32	<.10	--	--	--	--
12/18/90	12/25/90	36.8	<.32	.14	<0.05	<0.05	<0.05	<0.05
01/01/91	01/08/91	2.5	<.32	<.22	--	--	--	--
01/08/91	01/15/91	14.0	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	9.1	<.32	<.10	--	--	--	--
01/22/91	01/29/91	.80	.37	.12	--	--	--	--
01/29/91	02/05/91	2.3	<.32	<.10	--	--	--	--
02/05/91	02/12/91	2.3	<.32	<.10	--	--	--	--
02/12/91	02/19/91	13.2	<.32	<.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	6.6	<.32	.19	<.05	<.05	<.05	<.05
03/12/91	03/19/91	17.5	<.32	<.10	--	--	--	--
03/19/91	03/26/91	21.8	<.32	<.10	--	--	--	--
03/26/91	04/02/91	2.5	<.15	.14	<.05	.10	<.05	<.05
04/02/91	04/09/91	20.3	<.15	<.10	--	--	--	--
04/09/91	04/16/91	19.1	<.15	<.10	--	--	--	--
04/16/91	04/23/91	17.8	<.15	<.10	--	--	--	--
04/23/91	04/30/91	6.1	.18	.31	.19	.37	.16	.06
04/30/91	05/07/91	16.5	.93	.73	.86	.70	.13	.21
05/14/91	05/21/91	10.9	1.2	1.2	1.1	1.3	.35	.75
05/21/91	05/28/91	69.9	.22	.21	.18	.20	<.05	.14
05/28/91	06/04/91	61.7	.45	.90	.63	1.0	<.05	.66
06/11/91	06/18/91	4.8	<.15	.54	.09	.56	<.05	<.05
06/25/91	07/02/91	1.8	<.15	<.10	--	--	--	--
07/02/91	07/09/91	64.3	<.15	<.10	--	--	--	--
07/09/91	07/16/91	.80	<.15	.10	--	--	--	--
07/16/91	07/23/91	3.6	<.15	<.10	--	--	--	--
07/30/91	08/06/91	10.4	<.15	<.10	<.05	.05	<.05	<.05
08/06/91	08/13/91	31.5	<.15	<.10	--	--	--	--
08/13/91	08/20/91	49.5	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	20.6	<.15	<.10	--	--	--	--
09/10/91	09/17/91	5.3	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Reservoir, IN—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.31	.09	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.10	nd	nd
--	--	--	--	--	--	<.05	.07	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.22	<.05	<.05	<.05	<.05	.19	.37	1	2
.11	.81	<.05	<.05	<.05	<.05	.86	.70	14	12
<.05	.79	.10	<.05	<.05	<.05	1.1	1.3	11	14
.10	.09	<.05	<.05	<.05	<.05	.18	.20	13	14
.36	.32	<.05	<.05	<.05	<.05	.63	1.0	39	63
<.05	.05	<.05	<.05	<.05	<.05	.09	.56	nd	3
--	--	--	--	--	--	<.05	.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	4
--	--	--	--	--	--	<.05	.08	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chior	Atra- zine	Cyana- zine	DEA
IN22 Southwest Purdue								
02/27/90	03/06/90	1.0	<0.15	<0.10	--	--	--	--
03/06/90	03/13/90	9.9	<.15	<.10	<0.05	<0.05	<0.05	<0.05
03/13/90	03/20/90	10.9	<.15	<.10	--	--	--	--
03/20/90	03/27/90	14.0	.35	<.10	<.05	<.05	<.05	<.05
03/27/90	04/03/90	21.8	<.15	<.10	--	--	--	--
04/03/90	04/10/90	24.1	<.15	.18	<.05	<.05	<.05	<.05
04/10/90	04/17/90	23.1	<.15	<.10	--	--	--	--
04/17/90	04/24/90	25.4	<.15	<.10	--	--	--	--
04/24/90	05/01/90	14.7	1.2	1.2	--	--	--	--
05/01/90	05/08/90	48.3	.45	.29	.06	.07	<.05	<.05
05/08/90	05/15/90	44.5	.25	<.10	.20	.12	<.05	<.05
05/15/90	05/22/90	135.4	<.15	<.10	--	--	--	--
05/22/90	05/29/90	21.1	<.15	<.10	--	--	--	--
05/29/90	06/05/90	5.1	1.3	2.0	--	--	--	--
06/05/90	06/12/90	111.8	.23	.63	--	--	--	--
06/12/90	06/19/90	37.3	1.3	.91	--	--	--	--
06/19/90	06/26/90	44.5	.57	.20	.35	.22	<.05	.10
06/27/90	07/03/90	10.7	1.6	.37	1.1	.36	<.05	.17
07/03/90	07/10/90	11.9	1.2	.59	--	--	--	--
07/10/90	07/17/90	44.2	.42	.12	.36	.07	<.05	.05
07/17/90	07/24/90	18.0	<.15	<.10	.05	<.05	<.05	<.05
07/24/90	07/31/90	11.2	<.15	.12	.07	.08	<.05	<.05
07/31/90	08/07/90	2.3	<.15	<.10	--	--	--	--
08/07/90	08/14/90	1.0	<.15	<.10	--	--	--	--
08/14/90	08/21/90	41.7	<.15	<.10	--	--	--	--
08/28/90	09/04/90	10.9	<.15	<.10	--	--	--	--
09/04/90	09/11/90	29.7	<.15	<.10	--	--	--	--
09/11/90	09/18/90	1.5	<.32	<.10	--	--	--	--
09/18/90	09/25/90	18.3	<.32	.15	<.05	<.05	<.05	<.05
09/25/90	10/02/90	2.0	<.32	<.10	<.05	<.05	<.05	<.05
10/02/90	10/09/90	65.8	<.32	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	29.0	<.32	<.10	--	--	--	--
10/16/90	10/23/90	15.2	<.32	.12	<.05	<.05	<.05	<.05
10/30/90	11/06/90	17.0	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	1.8	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Agricultural Center, IN									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.75	.79	11	12
<.05	<.05	<.05	<.05	<.05	<.05	.06	.07	3	3
<.05	.07	<.05	<.05	<.05	<.05	.20	.12	9	5
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.84	1.4	4	7
--	--	--	--	--	--	.14	.42	16	47
--	--	--	--	--	--	.85	.61	32	23
<.05	.07	<.05	<.05	<.05	<.05	.35	.22	16	10
<.05	.09	<.05	<.05	<.05	<.05	1.1	.36	11	4
--	--	--	--	--	--	.76	.39	9	5
<.05	<.05	<.05	<.05	<.05	<.05	.36	.07	16	3
<.05	<.05	<.05	<.05	<.05	<.05	.05	<.05	1	nd
<.05	.05	<.05	<.05	<.05	<.05	.07	.08	1	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyana-zine	DEA
IN22 Southwest Purdue								
11/13/90	11/20/90	1.5	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
11/20/90	11/27/90	43.2	<.32	<.10	--	--	--	--
11/27/90	12/04/90	49.8	<.32	<.10	<.05	<.05	<.05	<.05
12/11/90	12/18/90	37.1	<.32	<.23	<.05	<.05	<.05	<.05
12/18/90	12/25/90	43.2	<.32	<.10	--	--	--	--
12/25/90	01/01/91	76.8	<.32	<.10	<.05	<.05	<.05	<.05
01/01/91	01/08/91	13.2	<.32	<.10	--	--	--	--
01/08/91	01/15/91	14.0	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	2.0	<.32	<.10	--	--	--	--
01/22/91	01/29/91	5.1	<.32	<.10	--	--	--	--
01/29/91	02/05/91	3.8	<.32	<.10	--	--	--	--
02/05/91	02/12/91	31.8	<.32	<.10	--	--	--	--
02/12/91	02/19/91	26.4	<.32	.19	<.05	<.05	<.05	<.05
02/26/91	03/05/91	7.4	<.32	<.10	--	--	--	--
03/05/91	03/12/91	7.4	<.32	.25	<.05	<.05	<.05	<.05
03/12/91	03/19/91	55.9	<.32	<.10	--	--	--	--
03/19/91	03/26/91	35.8	<.32	<.10	--	--	--	--
04/02/91	04/09/91	21.6	<.15	<.10	--	--	--	--
04/09/91	04/16/91	30.5	<.15	<.10	--	--	--	--
04/16/91	04/23/91	11.4	3.2	.12	2.8	.19	.08	<.05
04/23/91	04/30/91	6.1	.44	.42	.43	.61	.08	.08
04/30/91	05/07/91	11.7	.39	.55	.41	.71	.11	.06
05/14/91	05/21/91	17.3	.34	.34	.33	.91	.09	.66
05/21/91	05/28/91	19.6	.47	.59	.39	.59	<.05	.32
05/28/91	06/04/91	13.2	<.15	.37	--	--	--	--
06/11/91	06/18/91	7.6	.60	.22	<.05	<.05	<.05	<.05
06/18/91	06/25/91	8.1	.21	<.10	.19	<.05	<.05	<.05
06/25/91	07/02/91	6.1	.15	.21	.11	.28	<.05	<.05
07/02/91	07/09/91	13.0	.23	.18	.21	.21	<.05	.19
07/09/91	07/16/91	17.5	<.15	<.10	.05	<.05	<.05	<.05
08/06/91	08/13/91	53.9	<.15	<.10	--	--	--	--
08/27/91	09/03/91	32.0	<.15	<.10	--	--	--	--
09/03/91	09/10/91	28.2	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Agricultural Center, IN—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.19	<.05	<.05	<.05	<.05	2.8	.19	32	2
<.05	.52	<.05	<.05	<.05	<.05	.43	.61	3	4
<.05	.38	<.05	<.05	<.05	.06	.41	.71	5	8
.54	.09	.07	<.05	<.05	<.05	.33	.91	6	16
.24	.17	<.05	<.05	<.05	<.05	.39	.59	8	12
--	--	--	--	--	--	<.05	.30	nd	4
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.05	<.05	<.05	<.05	<.05	.19	<.05	2	nd
<.05	<.05	<.05	<.05	<.05	<.05	.11	.28	1	2
<.05	.09	<.05	<.05	<.05	<.05	.21	.21	3	3
<.05	<.05	<.05	<.05	<.05	<.05	.05	<.05	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
IN34 Indiana Dunes National								
02/27/90	03/06/90	6.6	<0.15	<0.10	--	--	--	--
03/06/90	03/13/90	26.9	<.15	<.10	--	--	--	--
03/13/90	03/20/90	5.1	<.15	<.10	--	--	--	--
03/20/90	03/27/90	19.8	.25	<.10	--	--	--	--
03/27/90	04/03/90	19.8	<.15	<.10	--	--	--	--
04/03/90	04/10/90	11.9	<.15	.15	0.10	0.15	<0.05	<0.05
04/10/90	04/17/90	17.0	.18	<.10	.13	<.05	<.05	.06
04/17/90	04/24/90	23.6	.25	<.10	--	--	--	--
04/24/90	05/01/90	7.6	.21	.81	--	--	--	--
05/01/90	05/08/90	34.0	1.5	.18	--	--	--	--
05/15/90	05/15/90	70.4	.47	.26	.37	.27	.10	<.05
05/15/90	05/22/90	23.6	.60	.33	--	--	--	--
05/22/90	05/29/90	16.8	1.4	.42	--	--	--	--
05/29/90	06/05/90	3.6	.45	2.8	--	--	--	--
06/04/90	06/12/90	13.0	.37	.51	--	--	--	--
06/12/90	06/19/90	20.1	.19	<.10	.18	.21	<.05	.20
06/19/90	06/26/90	23.4	.33	.18	.15	.17	<.05	.21
06/26/90	07/03/90	37.9	<.15	<.10	.10	.07	<.05	.08
07/03/90	07/10/90	5.6	<.15	<.10	--	--	--	--
07/10/90	07/17/90	36.6	<.15	<.10	--	--	--	--
07/17/90	07/24/90	61.5	<.15	<.10	<.05	<.05	<.05	<.05
07/24/90	07/31/90	12.2	<.15	<.10	--	--	--	--
07/31/90	08/07/90	48.8	<.15	<.10	--	--	--	--
08/07/90	08/14/90	27.9	<.15	<.10	--	--	--	--
08/14/90	08/21/90	223.0	<.15	<.10	--	--	--	--
08/21/90	08/28/90	.80	<.15	.12	<.05	<.05	<.05	<.05
08/28/90	09/04/90	2.0	<.15	<.10	--	--	--	--
09/04/90	09/11/90	10.2	<.32	<.10	--	--	--	--
09/11/90	09/18/90	30.0	<.32	<.10	<.05	<.05	<.05	<.05
09/18/90	09/25/90	18.8	<.32	<.10	--	--	--	--
10/09/90	10/16/90	53.3	<.32	.23	<.05	<.05	<.05	<.05
10/16/90	10/23/90	10.9	<.32	<.10	<.05	<.05	<.05	<.05
10/23/90	10/30/90	.80	<.32	.19	--	--	--	--
10/30/90	11/06/90	61.2	<.32	<.10	<.05	<.05	<.05	<.05
11/20/90	11/27/90	41.7	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Lakes, IN									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.16	<.05	3	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	0.11	<0.05	<0.05	<0.05	<0.05	.10	.15	1	2
<.05	<.05	<.05	<.05	<.05	<.05	.13	<.05	2	nd
--	--	--	--	--	--	.16	<.05	4	nd
--	--	--	--	--	--	.13	.54	1	4
--	--	--	--	--	--	.97	.11	33	4
<.05	.18	<.05	<.05	<.05	<.05	.37	.27	26	19
--	--	--	--	--	--	.38	.21	9	5
--	--	--	--	--	--	.91	.28	15	5
--	--	--	--	--	--	.29	1.9	1	7
--	--	--	--	--	--	.23	.34	3	4
<.05	.06	<.05	<.05	<.05	<.05	.18	.21	4	4
<.05	<.05	<.05	<.05	<.05	<.05	.15	.17	4	4
<.05	<.05	<.05	<.05	<.05	<.05	.10	.07	4	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.12	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
IN34 Indiana Dunes National								
11/27/90	12/04/90	84.8	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
12/11/90	12/18/90	12.2	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/24/90	19.3	<.32	<.10	--	--	--	--
12/24/90	12/31/90	48.3	.35	<.22	<.05	<.05	<.05	<.05
01/08/91	01/15/91	18.8	<.32	<.22	--	--	--	--
01/15/91	01/22/91	14.2	<.32	<.10	<.05	<.05	<.05	<.05
01/29/91	02/05/91	2.3	<.32	<.22	--	--	--	--
02/12/91	02/19/91	23.1	<.32	<.10	--	--	--	--
02/26/91	03/05/91	44.7	<.32	.19	<.05	<.05	<.05	<.05
03/05/91	03/12/91	2.5	<.32	.32	--	--	--	--
03/12/91	03/19/91	26.7	<.32	<.10	<.05	<.05	<.05	<.05
03/19/91	03/26/91	15.5	<.32	<.10	<.05	<.05	<.05	<.05
03/26/91	04/02/91	41.9	<.15	<.10	<.05	<.05	<.05	<.05
04/02/91	04/09/91	15.2	.52	.11	.55	.15	.07	.09
04/09/91	04/16/91	53.3	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	9.1	<.15	.14	.06	.19	<.05	.26
04/23/91	04/30/91	20.3	.92	.46	--	--	--	--
05/14/91	05/21/91	24.9	<.15	.11	.18	.23	.07	.17
05/21/91	05/28/91	46.5	.22	.27	.28	.29	<.05	.36
05/28/91	06/04/91	56.4	<.15	.71	.10	.67	<.05	.39
06/04/91	06/11/91	2.5	.68	.28	--	--	--	--
06/11/91	06/18/91	8.2	<.15	.28	.11	.30	.05	.05
06/18/91	06/25/91	3.6	<.15	.63	--	--	--	--
07/02/91	07/09/91	22.6	<.15	.15	.07	.12	<.05	.12
07/16/91	07/23/91	8.4	.25	<.10	.08	<.05	<.05	<.05
07/23/91	07/30/91	1.8	<.15	<.10	--	--	--	--
08/06/91	08/13/91	40.1	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/03/91	10.2	<.15	<.10	--	--	--	--
09/03/91	09/10/91	20.3	<.15	<.10	--	--	--	--
09/10/91	09/17/91	25.2	<.15	.11	<.05	<.05	<.05	<.05
IN41 Purdue University								
03/06/90	03/13/90	115.3	<.15	<.10	<.05	<.05	<.05	<.05
03/13/90	03/20/90	4.6	<.15	<.10	--	--	--	--
03/20/90	03/27/90	4.6	<.15	<.10	.14	.15	<.05	<.05
03/27/90	04/03/90	15.5	<.15	<.10	--	--	--	--
04/03/90	04/10/90	26.2	<.15	.15	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Lakes, IN—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.26	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.91	<.05	<.05	<.05	<.05	.55	.15	8	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	.19	1	2
--	--	--	--	--	--	.77	.37	16	8
.11	.17	.07	<.05	<.05	<.05	.18	.23	4	6
<.05	.08	<.05	<.05	<.05	<.05	.28	.29	13	13
.33	.06	<.05	<.05	<.05	<.05	.10	.67	6	38
--	--	--	--	--	--	.57	.23	1	1
<.05	.05	<.05	<.05	<.05	<.05	.11	.30	1	2
--	--	--	--	--	--	<.05	.51	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	.07	.12	2	3
<.05	.17	<.05	<.05	<.05	<.05	.08	<.05	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
Agricultural Farm, IN									
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.23	<.05	<.05	<.05	<.05	.14	.15	1	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
IN41 Purdue University								
04/10/90	04/17/90	12.5	<0.15	<0.10	--	--	--	--
04/17/90	04/24/90	15.5	.28	<.10	--	--	--	--
05/01/90	05/08/90	21.8	2.8	.35	--	--	--	--
05/08/90	05/15/90	31.5	.66	<.10	--	--	--	--
05/15/90	05/22/90	34.8	<.15	<.10	0.21	0.06	<0.05	<0.05
05/22/90	05/29/90	24.9	.41	2.2	--	--	--	--
05/29/90	06/05/90	16.8	2.4	2.5	--	--	--	--
06/05/90	06/12/90	35.1	.48	.27	.13	.18	<.05	.21
06/12/90	06/19/90	.80	.64	.74	--	--	--	--
06/19/90	06/26/90	43.2	.42	.21	.43	.14	<.05	.10
06/26/90	07/03/90	13.0	<.15	<.10	--	--	--	--
07/03/90	07/10/90	13.2	<.15	.11	--	--	--	--
07/10/90	07/17/90	51.8	<.15	<.10	--	--	--	--
07/17/90	07/24/90	45.7	<.15	<.10	--	--	--	--
07/24/90	07/31/90	41.4	<.15	<.10	--	--	--	--
07/31/90	08/07/90	17.8	<.15	<.10	--	--	--	--
08/07/90	08/14/90	40.4	<.15	<.10	<.05	<.05	<.05	<.05
08/14/90	08/21/90	25.2	<.15	<.10	--	--	--	--
08/21/90	08/28/90	.80	.18	.15	<.05	<.05	<.05	<.05
08/28/90	09/04/90	10.9	.20	<.10	<.05	.06	<.05	<.05
09/04/90	09/11/90	12.7	<.32	<.10	--	--	--	--
09/11/90	09/18/90	3.1	<.32	<.10	--	--	--	--
09/18/90	09/25/90	16.5	<.32	<.10	--	--	--	--
09/25/90	10/02/90	1.8	<.32	<.10	--	--	--	--
10/02/90	10/10/90	112.3	<.32	<.10	--	--	--	--
10/10/90	10/16/90	2.0	<.32	<.10	--	--	--	--
10/16/90	10/23/90	19.1	<.32	<.10	--	--	--	--
10/30/90	11/06/90	38.6	<.32	<.10	<.05	<.05	<.05	<.05
11/20/90	11/27/90	12.2	<.32	<.10	--	--	--	--
11/27/90	12/04/90	39.1	<.32	<.10	--	--	--	--
12/11/90	12/18/90	23.9	<.32	<.23	<.05	<.05	<.05	<.05
12/18/90	12/26/90	18.3	<.32	<.10	--	--	--	--
12/26/90	01/02/91	63.8	<.32	<.22	<.05	<.05	<.05	<.05
01/02/91	01/08/91	3.1	<.32	<.22	--	--	--	--
01/08/91	01/15/91	13.7	<.32	<.22	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Agricultural Farm, IN—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	.18	<.05	3	nd
--	--	--	--	--	--	1.8	.23	39	5
--	--	--	--	--	--	.42	.05	13	2
<0.05	0.10	<0.05	<0.05	<0.05	<0.05	.21	.06	7	2
--	--	--	--	--	--	.26	1.5	6	37
--	--	--	--	--	--	1.5	1.7	26	28
<.05	.08	<.05	<.05	<.05	<.05	.13	.18	5	6
--	--	--	--	--	--	.41	.49	nd	nd
<.05	.16	<.05	<.05	<.05	<.05	.43	.14	19	6
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
IN41 Purdue University								
01/15/91	01/22/91	12.7	<0.32	<0.10	--	--	--	--
01/22/91	01/29/91	.80	.38	<.10	--	--	--	--
01/29/91	02/05/91	3.8	<.32	<.10	--	--	--	--
02/05/91	02/12/91	2.3	<.32	<.10	--	--	--	--
02/12/91	02/19/91	8.6	<.32	<.10	--	--	--	--
02/26/91	03/05/91	7.4	<.32	.33	--	--	--	--
03/05/91	03/19/91	94.2	<.32	<.10	--	--	--	--
03/19/91	03/26/91	31.2	<.32	.14	--	--	--	--
03/26/91	04/02/91	2.5	<.15	.22	--	--	--	--
04/02/91	04/09/91	13.5	<.15	<.10	<0.05	<0.05	<0.05	<0.05
04/09/91	04/16/91	27.7	<.15	<.10	--	--	--	--
04/16/91	04/23/91	6.4	<.15	<.10	--	--	--	--
04/23/91	04/30/91	14.0	.64	1.5	.88	1.7	1.2	.17
04/30/91	05/07/91	19.8	.74	1.5	.96	.87	.24	.15
05/14/91	05/21/91	31.8	2.4	1.5	2.3	1.1	.13	.68
05/21/91	05/28/91	7.1	.48	1.2	.46	1.4	.08	.62
05/28/91	06/04/91	37.9	.16	1.4	--	--	--	--
06/11/91	06/18/91	4.6	<.15	.57	.12	.60	.09	<.05
06/25/91	07/02/91	3.6	<.15	.12	--	--	--	--
07/02/91	07/09/91	1.5	<.15	.22	--	--	--	--
07/09/91	07/16/91	16.5	<.15	<.10	--	--	--	--
07/30/91	08/06/91	13.0	<.15	<.10	--	--	--	--
08/06/91	08/13/91	58.2	<.15	<.10	--	--	--	--
08/13/91	08/20/91	21.8	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	11.7	<.15	<.10	--	--	--	--
09/10/91	09/17/91	25.4	<.15	<.10	--	--	--	--
KS07 Farlington Fish								
02/27/90	03/06/90	29.5	<.15	<.10	--	--	--	--
03/06/90	03/13/90	80.0	<.15	<.10	--	--	--	--
03/13/90	03/20/90	65.5	<.15	<.10	--	--	--	--
03/20/90	03/27/90	13.2	<.15	<.10	<.05	<.05	<.05	<.05
03/27/90	04/03/90	7.9	<.15	<.10	<.05	.07	<.05	<.05
04/03/90	04/10/90	28.5	<.15	<.10	--	--	--	--
04/10/90	04/17/90	18.8	<.15	.10	<.05	.10	<.05	<.05
04/17/90	04/24/90	8.9	<.15	<.10	--	--	--	--
04/24/90	05/01/90	41.7	.19	.10	--	--	--	--
05/08/90	05/15/90	58.7	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Agricultural Farm, IN—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	.32	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.27	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.11	nd	3
--	--	--	--	--	--	<.05	.18	nd	nd
<0.05	0.13	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.94	<.05	<.05	<.05	<.05	.88	1.7	12	24
.08	.74	<.05	<.05	<.05	<.05	.96	.87	19	17
<.05	1.1	<.05	<.05	<.05	<.05	2.3	1.1	73	35
1.2	.70	<.05	<.05	<.05	<.05	.46	1.4	3	10
--	--	--	--	--	--	.14	1.2	5	43
<.05	.05	<.05	<.05	<.05	<.05	.12	.60	1	3
--	--	--	--	--	--	<.05	.09	nd	nd
--	--	--	--	--	--	<.05	.18	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
Hatchery, KS									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.10	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.12	.06	5	2
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chlor	Atra- zine	Cyana- zine	DEA
KS07 Farlington Fish								
05/15/90	05/22/90	158.0	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
05/22/90	05/29/90	119.9	<.15	.23	--	--	--	--
05/29/90	06/05/90	31.2	<.15	.13	--	--	--	--
06/05/90	06/12/90	16.3	.15	.21	--	--	--	--
06/12/90	06/19/90	36.1	<.15	.36	--	--	--	--
06/19/90	06/26/90	67.6	<.15	.14	.05	.06	<.05	<.05
06/26/90	07/03/90	2.5	<.15	.10	--	--	--	--
07/03/90	07/10/90	12.7	<.15	<.10	--	--	--	--
07/10/90	07/17/90	16.0	.25	<.10	.10	.05	<.05	<.05
07/17/90	07/24/90	30.5	<.15	<.10	--	--	--	--
07/24/90	07/31/90	11.4	<.15	<.10	--	--	--	--
07/31/90	08/07/90	55.4	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	54.1	<.15	<.10	--	--	--	--
08/14/90	08/21/90	11.2	<.15	<.10	--	--	--	--
09/04/90	09/11/90	46.7	<.32	<.10	--	--	--	--
09/11/90	09/18/90	7.9	<.32	<.10	--	--	--	--
09/18/90	09/25/90	30.0	<.32	.13	<.05	<.05	<.05	<.05
09/25/90	10/02/90	3.3	<.32	<.10	--	--	--	--
10/02/90	10/09/90	46.2	<.32	<.10	--	--	--	--
10/09/90	10/16/90	1.5	<.32	<.10	--	--	--	--
10/30/90	11/06/90	37.4	<.32	<.10	--	--	--	--
11/06/90	11/13/90	7.1	<.32	.13	--	--	--	--
11/20/90	11/27/90	4.1	<.32	<.10	--	--	--	--
11/27/90	12/04/90	19.6	<.32	<.10	--	--	--	--
12/11/90	12/18/90	13.7	<.32	<.10	--	--	--	--
12/25/90	01/01/91	15.5	<.32	<.10	--	--	--	--
01/01/91	01/08/91	5.8	<.32	<.22	--	--	--	--
01/08/91	01/15/91	24.5	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	15.5	<.32	<.10	--	--	--	--
01/22/91	01/29/91	8.4	<.32	<.10	<.05	<.05	<.05	<.05
01/29/91	02/05/91	7.1	<.32	<.10	--	--	--	--
02/12/91	02/19/91	3.1	<.32	<.10	--	--	--	--
02/26/91	03/05/91	7.1	<.32	<.10	--	--	--	--
03/12/91	03/19/91	14.0	<.32	<.10	--	--	--	--
--	03/26/91	3.6	<.15	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Hatchery, KS—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	.15	nd	17
--	--	--	--	--	--	<.05	.08	nd	2
--	--	--	--	--	--	.09	.13	2	2
--	--	--	--	--	--	<.05	.23	nd	8
<.05	<.05	<.05	<.05	<.05	<.05	.05	.06	3	4
--	--	--	--	--	--	<.05	.06	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.05	<.05	<.05	<.05	<.05	.10	.05	2	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chlor	Atra- zine	Cyana- zine	DEA
KS07 Farlington Fish								
04/02/91	04/09/91	11.7	0.18	0.17	0.21	0.09	<0.05	<0.05
04/09/91	04/16/91	21.8	<.15	<.10	--	--	--	--
04/16/91	04/23/91	30.7	<.15	<.10	.05	.08	<.05	<.05
04/23/91	04/30/91	50.0	<.15	<.10	<.05	.08	<.05	<.05
05/14/91	05/21/91	48.0	<.15	<.10	<.05	.09	<.05	.05
05/21/91	05/28/91	87.1	<.15	.24	--	--	--	--
05/28/91	06/04/91	1.5	<.15	.65	--	--	--	--
06/04/91	06/11/91	12.5	<.15	<.10	.06	<.05	<.05	<.05
06/18/91	06/25/91	4.8	<.15	.23	<.05	.25	<.05	<.05
06/25/91	07/02/91	2.5	<.15	<.10	--	--	--	--
07/02/91	07/09/91	26.7	<.15	<.10	--	--	--	--
07/09/91	07/16/91	2.8	<.15	.21	--	--	--	--
07/23/91	07/30/91	41.9	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/03/91	2.5	<.15	<.10	--	--	--	--
09/03/91	09/10/91	23.9	<.15	<.10	--	--	--	--
09/10/91	09/17/91	22.1	<.15	<.10	--	--	--	--
KS31 Konza Prairie,								
02/27/90	03/06/90	6.1	<.15	<.10	<.05	.06	<.05	<.05
03/06/90	03/13/90	--	<.15	<.10	--	--	--	--
03/13/90	03/20/90	25.7	<.15	<.10	--	--	--	--
03/20/90	03/27/90	10.9	<.15	<.10	--	--	--	--
03/27/90	04/03/90	11.9	<.15	<.10	--	--	--	--
04/03/90	04/10/90	14.7	<.15	<.10	--	--	--	--
04/10/90	04/17/90	2.0	.27	.23	--	--	--	--
04/17/90	04/24/90	.50	.16	<.10	--	--	--	--
04/24/90	05/01/90	1.5	<.15	.13	--	--	--	--
05/01/90	05/08/90	10.4	.31	.18	.11	.17	.15	.06
05/08/90	05/15/90	58.2	.30	<.10	.09	.10	<.05	<.05
05/15/90	05/22/90	15.2	<.15	.14	--	--	--	--
05/22/90	05/29/90	14.7	<.15	.43	--	--	--	--
05/29/90	06/05/90	4.6	<.15	.16	--	--	--	--
06/05/90	06/12/90	30.2	<.15	<.10	<.05	<.05	<.05	<.05
06/12/90	06/19/90	44.5	.42	.18	--	--	--	--
06/19/90	06/26/90	23.9	<.15	.31	<.05	.20	<.05	.07
07/03/90	07/10/90	7.6	<.15	.18	<.05	.18	<.05	.07
07/10/90	07/17/90	.80	<.15	.22	<.05	.59	<.05	<.05
07/17/90	07/24/90	48.5	<.15	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
Hatchery, KS—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.21	0.09	2	1
--	--	--	--	--	--	<0.05	.05	nd	1
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.05	.08	2	2
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.08	nd	4
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.09	nd	4
--	--	--	--	--	--	<0.05	.19	nd	17
--	--	--	--	--	--	<0.05	.53	nd	1
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.06	<0.05	1	nd
<0.05	<0.05	.12	<0.05	<0.05	<0.05	<0.05	.25	nd	1
--	--	--	--	--	--	<0.05	.05	nd	nd
--	--	--	--	--	--	<0.05	.05	nd	1
--	--	--	--	--	--	<0.05	.17	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
KS									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.06	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	.17	.15	nd	nd
--	--	--	--	--	--	.10	.05	nd	nd
--	--	--	--	--	--	<0.05	.08	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.11	.17	1	2
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.09	.10	5	6
--	--	--	--	--	--	<0.05	.08	nd	1
--	--	--	--	--	--	<0.05	.28	nd	4
--	--	--	--	--	--	<0.05	.10	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	.27	.11	12	5
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.20	nd	5
.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.18	nd	1
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.59	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
KS31 Konza Prairie,								
07/24/90	07/31/90	49.8	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
07/31/90	08/07/90	44.5	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	30.2	<.15	<.10	--	--	--	--
08/14/90	08/21/90	119.9	<.15	<.10	<.05	<.05	<.05	<.05
09/11/90	09/18/90	7.4	<.32	.12	<.05	<.05	<.05	<.05
09/25/90	10/02/90	5.6	<.32	<.10	--	--	--	--
10/02/90	10/09/90	22.6	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	1.3	<.32	<.10	--	--	--	--
10/23/90	10/30/90	1.0	<.32	<.10	--	--	--	--
10/30/90	11/06/90	42.9	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	2.0	<.32	.11	--	--	--	--
11/20/90	11/27/90	6.6	<.32	<.10	<.05	<.05	<.05	<.05
11/24/90	12/04/90	1.8	<.32	<.10	--	--	--	--
12/11/90	12/18/90	2.3	<.32	<.10	--	--	--	--
12/25/90	01/01/91	10.2	<.32	<.10	<.05	<.05	<.05	<.05
01/01/91	01/08/91	.80	<.32	<.22	--	--	--	--
01/08/91	01/15/91	5.8	<.32	<.22	--	--	--	--
01/15/91	01/22/91	.50	<.32	<.10	--	--	--	--
01/22/91	01/29/91	6.6	.40	<.10	--	--	--	--
02/26/91	03/05/91	15.0	<.32	<.10	<.05	<.05	<.05	<.05
03/12/91	03/19/91	20.1	<.32	<.10	--	--	--	--
03/26/91	04/02/91	1.3	<.32	.14	--	--	--	--
04/02/91	04/09/91	7.1	<.15	.43	--	--	--	--
04/09/91	04/16/91	40.9	<.15	<.10	--	--	--	--
04/16/91	04/23/91	25.9	<.15	<.10	--	--	--	--
04/23/91	04/30/91	7.1	1.1	.23	.05	.21	<.05	<.05
04/30/91	05/07/91	4.8	<.15	.12	.08	.06	<.05	<.05
05/14/91	05/21/91	3.1	<.15	<.10	--	--	--	--
05/21/91	05/28/91	65.3	<.15	<.10	<.05	.08	<.05	<.05
05/28/91	06/04/91	35.1	<.15	<.10	--	--	--	--
06/04/91	06/11/91	38.1	<.15	.24	.05	.26	<.05	<.05
06/11/91	06/18/91	6.6	<.15	.15	.05	.13	<.05	<.05
06/18/91	06/25/91	30.7	<.15	.40	.05	.34	<.05	<.05
06/25/91	07/02/91	3.3	<.15	.17	--	--	--	--
07/09/91	07/16/91	38.4	<.15	.38	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
KS—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.34	<.05	2	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	1
--	--	--	--	--	--	<.05	.11	nd	nd
--	--	--	--	--	--	<.05	.35	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.05	.21	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	.08	.06	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	5
--	--	--	--	--	--	<.05	.06	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	.05	.26	2	10
<.05	.05	<.05	<.05	<.05	<.05	.05	.13	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	.05	.34	2	10
--	--	--	--	--	--	<.05	.14	nd	nd
--	--	--	--	--	--	<.05	.31	nd	12

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chlor	Atra- zine	Cyana- zine	DEA
KS31 Konza Prairie,								
07/16/91	07/23/91	0.50	<0.15	0.92	--	--	--	--
--	07/30/91	3.6	<.15	<.10	--	--	--	--
07/30/91	08/06/91	27.7	<.15	<.10	<0.05	<0.05	<0.05	<0.05
08/06/91	08/13/91	.50	<.15	.14	--	--	--	--
08/27/91	09/03/91	1.0	<.15	<.10	--	--	--	--
09/03/91	09/10/91	7.6	<.15	<.10	--	--	--	--
09/10/91	09/17/91	5.1	<.15	.13	<.05	<.05	<.05	<.05
KS32 Lake Scott State								
02/27/90	03/06/90	15.5	<.15	<.10	--	--	--	--
03/27/90	04/03/90	16.5	<.15	<.10	--	--	--	--
04/03/90	04/10/90	24.6	<.15	<.10	--	--	--	--
04/17/90	04/24/90	20.3	.34	.70	<.05	.23	<.05	<.05
04/24/90	05/01/90	15.5	.24	.56	.05	.22	<.05	<.05
05/01/90	05/08/90	33.0	<.15	.18	<.05	.12	<.05	<.05
05/08/90	05/15/90	18.5	.41	.65	--	--	--	--
05/15/90	05/22/90	7.6	<.15	.44	.05	.23	<.05	.06
05/22/90	05/29/90	23.4	<.15	<.10	.05	.05	<.05	<.05
05/29/90	06/05/90	31.8	<.15	<.10	--	--	--	--
06/05/90	06/12/90	25.9	<.15	.15	<.05	.08	<.05	.07
06/12/90	06/19/90	3.6	<.15	1.2	--	--	--	--
06/19/90	06/26/90	18.3	<.15	.18	--	--	--	--
06/26/90	07/03/90	29.2	<.15	.18	--	--	--	--
07/03/90	07/10/90	4.3	<.15	.27	--	--	--	--
07/10/90	07/17/90	33.3	<.15	.14	<.05	.08	<.05	<.05
07/17/90	07/24/90	95.8	<.15	.12	<.05	.08	<.05	.05
07/24/90	07/31/90	26.4	<.15	<.10	--	--	--	--
07/31/90	08/07/90	8.1	<.15	.29	.08	.38	<.05	.10
08/07/90	08/14/90	14.7	<.15	<.10	.08	.11	<.05	.08
08/14/90	08/21/90	16.3	<.15	.15	<.05	.29	<.05	<.05
08/21/90	08/28/90	5.1	<.15	.29	<.05	<.05	<.05	<.05
09/04/90	09/11/90	20.6	<.32	1.3	<.05	.74	<.05	.30
09/11/90	09/18/90	22.9	<.32	.18	<.05	.08	<.05	<.05
09/18/90	09/25/90	1.0	<.32	.15	<.05	<.05	<.05	<.05
09/25/90	10/02/90	4.3	<.32	.17	<.05	<.05	<.05	<.05
10/02/90	10/09/90	2.3	<.32	<.10	--	--	--	--
10/16/90	10/23/90	3.1	<.32	.16	<.05	<.05	<.05	<.05
10/30/90	11/06/90	16.8	<.32	<.10	<.05	<.05	<.05	<.05
12/11/90	12/18/90	10.2	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
KS—Continued									
--	--	--	--	--	--	<0.05	0.75	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.11	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
Park, KS									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.23	nd	5
<.05	<.05	<.05	<.05	<.05	<.05	.05	.22	1	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.12	nd	4
--	--	--	--	--	--	.26	.43	5	8
<.05	<.05	<.05	<.05	<.05	<.05	.05	.23	nd	2
<.05	.08	<.05	<.05	<.05	<.05	.05	.05	1	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	2
--	--	--	--	--	--	<.05	.78	nd	3
--	--	--	--	--	--	<.05	.11	nd	2
--	--	--	--	--	--	<.05	.11	nd	3
--	--	--	--	--	--	<.05	.17	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	8
--	--	--	--	--	--	<.05	.05	nd	1
.08	.06	<.05	<.05	<.05	<.05	.08	.38	1	3
<.05	<.05	<.05	<.05	<.05	<.05	.08	.11	1	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.29	nd	5
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.74	nd	15
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyanazine	DEA
KS32 Lake Scott State								
12/26/90	01/02/91	2.0	<0.32	<0.10	--	--	--	--
01/08/91	01/15/91	3.8	<.32	<.22	<0.05	<0.05	<0.05	<0.05
03/05/91	03/13/91	2.0	<.32	<.10	--	--	--	--
03/13/91	03/19/91	25.7	<.32	<.10	<.05	<.05	<.05	<.05
03/26/91	04/02/91	1.3	<.32	<.10	--	--	--	--
04/02/91	04/09/91	8.9	<.15	.19	<.05	.16	<.05	<.05
04/09/91	04/16/91	10.2	<.15	<.10	--	--	--	--
04/16/91	04/23/91	19.1	<.15	<.10	.06	.09	<.05	<.05
04/23/91	04/30/91	6.4	<.15	.22	--	--	--	--
04/30/91	05/07/91	17.6	<.15	<.10	--	--	--	--
05/14/91	05/21/91	9.1	<.15	<.10	--	--	--	--
05/21/91	05/28/91	41.4	<.15	<.10	.05	.07	<.05	<.05
05/28/91	06/04/91	8.1	<.15	.84	--	--	--	--
06/04/91	06/11/91	21.3	<.15	.35	<.05	.36	<.05	.05
06/11/91	06/18/91	9.9	<.15	.95	<.05	.86	.08	<.05
06/18/91	06/25/91	39.4	<.15	.10	<.05	.09	<.05	<.05
06/25/91	07/02/91	31.2	<.15	.19	<.05	.19	<.05	.05
07/02/91	07/09/91	.50	<.15	9.0	--	--	--	--
07/09/91	07/16/91	29.2	<.15	1.0	<.05	.66	<.05	.21
07/16/91	07/23/91	16.8	<.15	2.1	<.05	1.5	<.05	.71
07/23/91	07/30/91	9.1	<.15	.25	<.05	.31	<.05	.07
07/30/91	08/06/91	45.9	<.15	.10	--	--	--	--
08/06/91	08/13/91	31.2	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/03/91	4.3	<.15	.25	<.05	.19	<.05	<.05
09/03/91	09/10/91	8.9	<.15	<.10	--	--	--	--
09/10/91	09/17/91	2.0	<.15	.12	--	--	--	--
KY03 Perryville								
02/27/90	03/06/90	4.3	<.15	<.10	--	--	--	--
03/06/90	03/13/90	2.5	<.15	<.10	--	--	--	--
03/13/90	03/20/90	33.3	<.15	<.10	--	--	--	--
03/20/90	03/27/90	7.6	<.15	<.10	--	--	--	--
03/27/90	04/03/90	22.6	<.15	<.10	--	--	--	--
04/03/90	04/10/90	7.6	<.15	<.10	<.05	.08	<.05	<.05
04/10/90	04/17/90	14.7	<.15	<.10	--	--	--	--
04/17/90	04/24/90	10.9	.15	<.10	--	--	--	--
04/24/90	05/01/90	11.2	<.15	.47	--	--	--	--
05/01/90	05/08/90	29.5	<.15	.21	<.05	.10	<.05	.06

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Park, KS—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.16	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	.09	1	2
--	--	--	--	--	--	<.05	.18	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.05	.07	2	3
--	--	--	--	--	--	<.05	.69	nd	6
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.36	nd	8
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.86	nd	9
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	nd	4
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.19	nd	6
--	--	--	--	--	--	<.05	7.4	nd	4
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.66	nd	19
<.05	<.05	<.05	<.05	<.05	<.05	<.05	1.5	nd	24
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.31	nd	3
--	--	--	--	--	--	<.05	.08	nd	4
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.19	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	nd
Battlefield, KY									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.09	<.05	1	nd
--	--	--	--	--	--	<.05	.31	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.10	nd	3

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by Immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
			KY03 Perryville					
05/08/90	05/15/90	10.2	<0.15	0.13	0.06	0.10	<0.05	<0.05
05/15/90	05/22/90	36.1	<.15	<.10	--	--	--	--
05/22/90	05/29/90	35.1	<.15	<.10	--	--	--	--
05/29/90	06/05/90	11.2	<.15	.42	--	--	--	--
06/05/90	06/12/90	23.6	<.15	<.10	--	--	--	--
06/12/90	06/19/90	26.9	.27	.22	--	--	--	--
06/19/90	06/26/90	17.0	<.15	.10	--	--	--	--
07/10/90	07/17/90	91.2	<.15	<.10	--	--	--	--
07/17/90	07/24/90	59.7	<.15	<.10	<.05	<.05	<.05	<.05
07/31/90	08/07/90	4.3	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	5.8	<.15	<.10	--	--	--	--
08/14/90	08/21/90	27.4	<.15	<.10	--	--	--	--
08/21/90	08/28/90	46.7	<.15	<.10	--	--	--	--
08/28/90	09/04/90	29.5	<.15	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	16.3	<.15	<.10	--	--	--	--
09/11/90	09/18/90	13.5	<.32	<.10	--	--	--	--
09/18/90	09/25/90	43.9	<.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	3.6	<.32	<.10	--	--	--	--
10/02/90	10/09/90	42.7	<.32	<.10	--	--	--	--
10/09/90	10/16/90	35.6	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	48.5	<.32	<.10	--	--	--	--
10/23/90	10/30/90	3.8	<.32	.13	--	--	--	--
10/30/90	11/06/90	7.9	<.32	<.10	--	--	--	--
11/06/90	11/13/90	24.1	<.32	<.10	--	--	--	--
11/13/90	11/20/90	8.1	<.32	<.10	--	--	--	--
11/20/90	11/27/90	27.4	<.32	<.10	--	--	--	--
11/27/90	12/04/90	43.4	<.32	<.10	--	--	--	--
12/11/90	12/18/90	88.4	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/24/90	52.8	<.32	<.10	--	--	--	--
12/24/90	12/31/90	103.6	.36	<.10	<.05	<.05	<.05	<.05
12/31/90	01/08/91	46.7	.32	<.22	<.05	<.05	<.05	<.05
01/08/91	01/15/91	8.9	<.32	<.22	--	--	--	--
01/15/91	01/22/91	5.6	<.32	<.22	<.05	<.05	<.05	<.05
01/22/91	01/29/91	6.9	<.32	<.10	<.05	<.05	<.05	<.05
01/29/91	02/05/91	8.1	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Battlefield, KY—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	0.10	1	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.28	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.17	.14	5	4
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.08	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by Immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
KY03 Perryville								
02/05/91	02/12/91	53.1	<0.32	<0.10	--	--	--	--
02/12/91	02/19/91	62.7	<.32	<.10	<0.05	<0.05	<0.05	<0.05
02/19/91	02/26/91	5.6	<.32	<.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	16.3	<.32	<.10	--	--	--	--
03/05/91	03/12/91	3.6	<.32	.54	<.05	.35	<.05	<.05
03/12/91	03/19/91	31.2	<.32	<.10	--	--	--	--
03/19/91	03/26/91	34.3	<.32	<.10	--	--	--	--
03/26/91	04/02/91	24.9	<.15	<.10	<.05	<.05	<.05	<.05
04/02/91	04/09/91	8.1	<.15	<.10	<.05	<.05	<.05	<.05
04/09/91	04/16/91	41.9	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	4.3	<.15	<.10	--	--	--	--
04/23/91	04/30/91	3.6	<.15	.22	.09	.27	<.05	.10
04/30/91	05/07/91	14.7	<.15	<.10	--	--	--	--
05/14/91	05/21/91	91.7	<.15	<.10	<.05	.06	<.05	.08
05/21/91	05/28/91	42.9	<.15	<.10	<.05	<.05	<.05	<.05
05/28/91	06/04/91	46.2	<.15	.11	.06	.12	<.05	.13
06/11/91	06/18/91	21.1	<.15	<.10	<.05	.07	<.05	<.05
06/18/91	06/25/91	33.3	<.15	<.10	<.05	<.05	<.05	<.05
06/25/91	07/02/91	9.1	<.15	.20	.05	.18	<.05	.05
07/02/91	07/09/91	85.9	<.15	.11	<.05	<.05	<.05	<.05
07/09/91	07/16/91	18.3	<.15	.16	<.05	<.05	<.05	<.05
07/16/91	07/23/91	1.0	<.15	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	21.1	<.15	<.10	--	--	--	--
08/13/91	08/20/91	72.4	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/09/91	3.8	<.15	<.10	--	--	--	--
09/09/91	09/17/91	36.1	<.15	<.10	--	--	--	--
KY22 Lilley Cornett								
02/27/90	03/06/90	15.2	<.15	<.10	--	--	--	--
03/06/90	03/13/90	7.4	<.15	<.10	--	--	--	--
03/13/90	03/20/90	45.2	<.15	<.10	--	--	--	--
03/20/90	03/27/90	18.3	<.15	<.10	--	--	--	--
03/27/90	04/03/90	1.5	<.15	<.10	--	--	--	--
04/03/90	04/10/90	30.7	<.15	<.10	--	--	--	--
04/10/90	04/17/90	25.9	<.15	<.10	--	--	--	--
04/17/90	04/24/90	25.9	<.15	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Battlefield, KY—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.35	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.09	.27	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	6
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
.08	<.05	<.05	<.05	<.05	<.05	.06	.12	3	6
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.05	.18	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
Woods, KY									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
							KY22 Lilley Cornett	
04/24/90	05/01/90	16.3	<0.15	<0.10	--	--	--	--
05/01/90	05/08/90	40.4	<.15	<.10	--	--	--	--
05/08/90	05/15/90	10.9	<.15	<.10	<.05	<.05	<.05	<.05
05/15/90	05/22/90	49.5	<.15	<.10	<.05	<.05	<.05	<.05
05/22/90	05/29/90	66.3	<.15	<.10	--	--	--	--
05/29/90	06/05/90	24.9	<.15	.17	<.05	<.05	<.05	<.05
06/05/90	06/12/90	28.2	<.15	.11	--	--	--	--
06/12/90	06/19/90	33.0	<.15	<.10	<.05	<.05	<.05	.05
06/19/90	06/26/90	30.5	<.15	.10	--	--	--	--
07/03/90	07/10/90	14.2	<.15	<.10	--	--	--	--
07/10/90	07/17/90	66.0	<.15	<.10	--	--	--	--
07/17/90	07/24/90	5.3	<.15	<.10	.05	<.05	<.05	<.05
07/24/90	07/31/90	15.5	<.15	<.10	--	--	--	--
07/31/90	08/07/90	31.0	<.15	<.10	--	--	--	--
08/07/90	08/14/90	46.2	<.15	<.10	--	--	--	--
08/14/90	08/21/90	26.7	<.15	<.10	--	--	--	--
08/21/90	08/28/90	15.8	<.15	<.10	<.05	<.05	<.05	<.05
08/28/90	09/04/90	7.1	<.15	<.10	--	--	--	--
09/04/90	09/11/90	3.6	<.32	<.10	--	--	--	--
09/11/90	09/18/90	4.8	<.32	.10	<.05	<.05	<.05	<.05
09/18/90	09/25/90	45.0	<.32	<.10	--	--	--	--
10/02/90	10/09/90	62.5	<.32	<.10	--	--	--	--
10/09/90	10/16/90	10.4	<.32	<.10	--	--	--	--
10/16/90	10/23/90	37.1	<.32	<.10	--	--	--	--
10/23/90	10/30/90	3.1	<.32	<.10	--	--	--	--
10/30/90	11/06/90	9.4	<.32	<.10	--	--	--	--
11/06/90	11/13/90	12.2	<.32	<.10	<.05	<.05	<.05	<.05
11/13/90	11/20/90	3.8	<.32	<.10	--	--	--	--
11/20/90	11/27/90	7.9	<.32	<.10	--	--	--	--
11/27/90	12/04/90	33.0	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/25/90	63.3	<.32	<.10	--	--	--	--
12/25/90	01/01/91	55.1	.36	<.10	<.05	<.05	<.05	<.05
01/01/91	01/08/91	42.4	.35	<.22	<.05	<.05	<.05	<.05
01/08/91	01/15/91	11.4	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	10.2	<.32	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Woods, KY—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by Immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan-llide herbicides	Tri-azines herbicides	Ala-chlor	Atra-zine	Cyana-zine	DEA
KY22 Lilley Cornett								
01/22/91	01/29/91	6.4	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
01/28/91	02/05/91	16.5	<.32	<.10	--	--	--	--
02/05/91	02/12/91	18.8	<.32	<.10	--	--	--	--
02/12/91	02/19/91	52.6	<.32	<.10	--	--	--	--
02/19/91	02/26/91	22.9	<.32	<.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	27.2	<.32	<.10	--	--	--	--
03/05/91	03/12/91	7.6	<.32	<.10	--	--	--	--
03/12/91	03/19/91	27.9	<.32	.18	--	--	--	--
03/19/91	03/26/91	52.6	<.32	<.10	<.05	<.05	<.05	<.05
03/26/91	04/02/91	47.2	<.15	<.10	--	--	--	--
04/02/91	04/09/91	3.1	<.15	<.10	--	--	--	--
04/09/91	04/16/91	17.8	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	6.9	<.15	<.10	--	--	--	--
04/23/91	04/30/91	3.3	<.15	<.10	--	--	--	--
04/30/91	05/07/91	4.8	<.15	<.10	<.05	<.05	<.05	<.05
05/14/91	05/21/91	22.1	<.15	<.10	--	--	--	--
05/21/91	05/28/91	1.3	<.15	<.10	--	--	--	--
05/28/91	06/04/91	68.6	<.15	<.10	<.05	<.05	<.05	<.05
06/11/91	06/18/91	31.5	<.15	<.10	<.05	<.05	<.05	<.05
06/18/91	06/25/91	26.7	<.15	<.10	--	--	--	--
06/25/91	07/02/91	7.4	<.15	<.10	<.05	<.05	<.05	<.05
07/02/91	07/09/91	38.4	<.15	.11	<.05	<.05	<.05	<.05
07/09/91	07/16/91	40.1	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/30/91	42.7	<.15	<.10	--	--	--	--
07/30/91	08/06/91	6.9	.19	<.10	.06	.05	<.05	<.05
08/06/91	08/13/91	37.6	<.15	<.10	--	--	--	--
08/27/91	09/03/91	27.2	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	7.4	<.15	<.10	--	--	--	--
09/10/91	09/17/91	3.8	<.15	<.10	--	--	--	--
KY35 Clark State Fish								
02/27/90	03/06/90	6.4	<.15	<.10	--	--	--	--
03/06/90	03/13/90	1.5	<.15	<.10	--	--	--	--
03/13/90	03/20/90	24.1	<.15	<.10	<.05	<.05	<.05	<.05
03/20/90	03/27/90	8.9	<.15	<.10	--	--	--	--
03/27/90	04/03/90	15.5	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Woods, KY—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.14	nd	4
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
Hatchery, KY									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chior	Atra- zine	Cyana- zine	DEA
KY35 Clark State Fish								
04/03/90	04/10/90	7.6	<0.15	<0.10	--	--	--	--
04/10/90	04/17/90	30.7	<.15	<.10	--	--	--	--
04/17/90	04/24/90	37.1	.16	<.10	--	--	--	--
04/24/90	05/01/90	8.9	<.15	.11	<0.05	<0.05	<0.05	<0.05
05/01/90	05/08/90	45.7	.24	.19	--	--	--	--
05/08/90	05/15/90	23.4	<.15	<.10	--	--	--	--
05/15/90	05/22/90	46.0	<.15	<.10	<.05	<.05	<.05	<.05
05/22/90	05/29/90	66.3	<.15	.10	--	--	--	--
05/29/90	06/05/90	40.1	<.15	<.10	--	--	--	--
06/05/90	06/12/90	15.2	<.15	.13	<.05	.05	<.05	.05
06/12/90	06/19/90	37.3	<.15	<.10	--	--	--	--
06/19/90	06/26/90	15.2	<.15	.29	<.05	<.05	<.05	<.05
06/26/90	07/03/90	29.0	<.15	<.10	<.05	.06	<.05	<.05
07/03/90	07/10/90	40.6	<.15	<.10	--	--	--	--
07/10/90	07/17/90	62.5	<.15	<.10	--	--	--	--
07/17/90	07/24/90	14.0	<.15	<.10	--	--	--	--
07/24/90	07/31/90	1.3	<.15	<.10	--	--	--	--
07/31/90	08/07/90	29.2	<.15	<.10	--	--	--	--
08/07/90	08/14/90	18.0	<.15	<.10	--	--	--	--
08/14/90	08/21/90	3.6	<.15	<.10	--	--	--	--
08/21/90	08/28/90	14.0	<.15	<.10	--	--	--	--
08/28/90	09/04/90	17.1	<.15	<.10	--	--	--	--
09/04/90	09/11/90	41.2	<.15	<.10	--	--	--	--
09/11/90	09/18/90	2.5	<.32	<.10	--	--	--	--
09/18/90	09/25/90	22.9	<.32	.40	<.05	.87	<.05	.05
09/25/90	10/02/90	2.3	<.32	.24	<.05	<.05	<.05	<.05
10/02/90	10/09/90	20.8	<.32	<.10	--	--	--	--
10/09/90	10/16/90	13.5	<.32	<.10	--	--	--	--
10/16/90	10/23/90	58.4	<.32	<.10	<.05	<.05	<.05	<.05
10/23/90	10/30/90	.80	<.32	<.10	--	--	--	--
10/30/90	11/06/90	10.2	<.32	<.10	--	--	--	--
11/06/90	11/13/90	36.8	<.32	<.10	--	--	--	--
11/13/90	11/20/90	5.3	<.32	<.10	--	--	--	--
11/20/90	11/27/90	9.7	<.32	<.10	--	--	--	--
11/27/90	12/04/90	35.1	<.32	<.10	<.05	<.05	<.05	<.05

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
KY35 Clark State Fish								
12/11/90	12/19/90	93.2	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
12/19/90	12/25/90	63.0	<.32	<.10	--	--	--	--
12/25/90	01/01/91	86.9	<.32	<.10	<.05	<.05	<.05	<.05
01/01/91	01/08/91	32.8	<.32	<.22	<.05	<.05	<.05	<.05
01/08/91	01/15/91	11.7	<.32	.20	<.05	.08	<.05	<.05
01/15/91	01/22/91	5.1	<.32	<.10	--	--	--	--
01/22/91	01/29/91	4.8	<.32	<.10	<.05	<.05	<.05	<.05
01/29/91	02/05/91	5.3	<.32	<.10	<.05	<.05	<.05	<.05
02/05/91	02/12/91	27.9	<.32	<.10	--	--	--	--
02/12/91	02/19/91	49.3	<.32	<.10	--	--	--	--
02/19/91	02/26/91	6.9	<.32	<.10	--	--	--	--
02/26/91	03/05/91	17.8	<.32	<.10	<.05	<.05	<.05	<.05
03/05/91	03/12/91	9.9	<.32	.81	<.05	.77	<.05	.11
03/12/91	03/19/91	35.3	<.32	<.10	--	--	--	--
03/19/91	03/26/91	71.6	<.32	<.10	--	--	--	--
03/26/91	04/02/91	31.0	<.15	<.10	--	--	--	--
04/02/91	04/09/91	19.3	<.15	.38	<.05	.35	<.05	<.05
04/09/91	04/16/91	42.9	<.15	<.10	--	--	--	--
04/16/91	04/23/91	11.2	<.15	<.10	<.05	<.05	<.05	<.05
04/23/91	04/30/91	27.7	<.15	<.10	--	--	--	--
04/30/91	05/07/91	9.9	<.15	.10	--	--	--	--
05/14/91	05/21/91	13.5	<.15	<.10	<.05	.08	<.05	.05
05/21/91	05/28/91	21.1	<.15	.29	<.05	.31	.05	.05
05/28/91	06/04/91	24.6	<.15	.12	--	--	--	--
06/11/91	06/18/91	6.4	<.15	<.10	--	--	--	--
06/18/91	06/25/91	26.2	<.15	<.10	<.05	.10	<.05	<.05
06/25/91	07/02/91	27.9	<.15	.13	<.05	<.05	<.05	<.05
07/02/91	07/09/91	52.8	<.15	.14	<.05	<.05	<.05	<.05
07/09/91	07/16/91	82.3	<.15	<.10	--	--	--	--
07/16/91	07/23/91	3.3	<.15	<.10	--	--	--	--
07/23/91	07/30/91	13.0	<.15	.26	<.05	<.05	<.05	<.05
08/06/91	08/13/91	54.6	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	19.8	<.15	<.10	--	--	--	--
09/10/91	09/17/91	24.6	<.15	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Hatchery, KY—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	.07	<.05	.77	nd	8
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.35	nd	7
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.08	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	1
<.05	.10	<.05	<.05	<.05	<.05	<.05	.31	nd	7
--	--	--	--	--	--	<.05	.09	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.07	<.05	<.05	<.05	<.05	<.05	.10	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
KY38 Land Between								
02/27/90	03/06/90	15.8	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
03/06/90	03/13/90	3.1	<.15	<.10	--	--	--	--
03/13/90	03/20/90	41.2	<.15	<.10	--	--	--	--
03/20/90	03/27/90	19.8	<.15	<.10	<.05	.08	<.05	.07
03/27/90	04/03/90	27.2	<.15	<.10	--	--	--	--
04/03/90	04/10/90	10.2	<.15	<.10	--	--	--	--
04/10/90	04/17/90	27.9	.23	<.10	--	--	--	--
04/17/90	04/24/90	18.3	<.15	.11	--	--	--	--
04/24/90	05/01/90	37.6	.20	.20	.10	.12	<.05	.06
05/01/90	05/08/90	24.4	<.15	.18	--	--	--	--
05/08/90	05/15/90	12.2	.19	.10	--	--	--	--
05/15/90	05/22/90	47.0	<.15	<.10	--	--	--	--
05/22/90	05/29/90	32.5	<.15	.17	--	--	--	--
05/29/90	06/05/90	3.1	<.15	.83	--	--	--	--
06/05/90	06/12/90	7.9	.52	.64	--	--	--	--
06/12/90	06/19/90	27.9	<.15	.51	--	--	--	--
06/19/90	06/26/90	9.7	<.15	16	.09	10.9	<.05	.20
07/03/90	07/10/90	73.7	<.15	<.10	--	--	--	--
07/10/90	07/17/90	50.8	<.15	<.10	--	--	--	--
07/17/90	07/24/90	6.9	<.15	<.10	--	--	--	--
07/31/90	08/07/90	31.5	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	13.2	<.15	<.10	--	--	--	--
08/28/90	09/04/90	4.6	<.15	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	3.8	<.32	.15	.05	<.05	<.05	<.05
09/11/90	09/18/90	8.9	<.32	.12	<.05	<.05	<.05	<.05
09/18/90	09/25/90	113.8	<.32	<.10	--	--	--	--
09/25/90	10/02/90	5.6	<.32	<.10	--	--	--	--
10/02/90	10/09/90	80.8	<.32	<.10	--	--	--	--
10/09/90	10/16/90	19.3	<.32	.11	<.05	<.05	<.05	<.05
10/16/90	10/23/90	41.9	<.32	<.10	--	--	--	--
10/30/90	11/06/90	18.0	<.32	<.10	--	--	--	--
11/06/90	11/13/90	24.9	<.32	<.10	--	--	--	--
11/13/90	11/20/90	1.0	<.32	<.10	--	--	--	--
11/20/90	11/27/90	17.3	<.32	<.10	--	--	--	--
11/27/90	12/04/90	62.0	<.32	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
the Lakes, KY									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.05	<.05	<.05	<.05	<.05	<.05	.08	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.14	<.05	4	nd
--	--	--	--	--	--	<.05	.06	nd	1
<.05	.08	<.05	<.05	<.05	<.05	.10	.12	4	5
--	--	--	--	--	--	<.05	.11	nd	3
--	--	--	--	--	--	.12	.06	1	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.10	nd	3
--	--	--	--	--	--	<.05	.56	nd	2
--	--	--	--	--	--	.33	.43	3	3
--	--	--	--	--	--	<.05	.34	nd	9
<.05	.08	<.05	<.05	.12	.08	.09	11	1	105
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
KY38 Land Between								
12/11/90	12/19/90	151.9	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
12/19/90	12/26/90	78.8	<.32	<.10	--	--	--	--
12/26/90	01/02/91	83.8	<.32	<.22	<.05	<.05	<.05	<.05
01/02/91	01/08/91	47.8	<.32	<.22	<.05	<.05	<.05	<.05
01/08/91	01/15/91	16.5	<.32	<.10	--	--	--	--
01/15/91	01/22/91	8.9	<.32	<.10	<.05	<.05	<.05	<.05
01/22/91	01/29/91	8.1	<.32	<.10	<.05	<.05	<.05	<.05
01/29/91	02/05/91	16.5	<.32	<.10	--	--	--	--
02/05/91	02/12/91	61.5	.40	<.10	<.05	<.05	<.05	<.05
02/12/91	02/19/91	87.1	<.32	.38	--	--	--	--
02/19/91	02/26/91	17.5	<.32	<.10	--	--	--	--
02/26/91	03/05/91	21.6	<.32	<.10	--	--	--	--
03/11/91	03/19/91	19.1	<.32	.17	--	--	--	--
03/19/91	03/26/91	42.4	<.32	<.10	--	--	--	--
03/26/91	04/02/91	12.7	<.15	.12	--	--	--	--
04/02/91	04/09/91	6.1	<.15	.18	<.05	.16	<.05	<.05
04/09/91	04/16/91	83.1	<.15	<.10	--	--	--	--
04/16/91	04/23/91	2.8	<.15	.16	--	--	--	--
04/23/91	04/30/91	25.7	<.15	<.10	--	--	--	--
05/07/91	05/14/91	74.4	<.15	.24	.07	.19	<.05	.06
05/21/91	05/28/91	9.7	<.15	<.10	<.05	.07	<.05	<.05
05/28/91	06/04/91	17.8	<.15	.57	--	--	--	--
06/11/91	06/18/91	15.5	<.15	<.10	--	--	--	--
06/18/91	06/25/91	27.7	<.15	.17	--	--	--	--
07/02/91	07/09/91	62.0	<.15	.29	.05	.06	<.05	<.05
07/09/91	07/16/91	9.7	<.15	.20	<.05	.11	<.05	<.05
07/30/91	08/06/91	7.6	<.15	<.10	--	--	--	--
08/06/91	08/13/91	5.6	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/03/91	12.5	<.15	<.10	--	--	--	--
09/03/91	09/10/91	4.6	<.15	<.10	<.05	<.05	<.05	<.05
MA01 North Atlantic Coastal								
02/27/90	03/06/90	1.0	<.15	<.10	--	--	--	--
03/06/90	03/13/90	8.1	<.15	<.10	--	--	--	--
03/13/90	03/20/90	17.0	<.15	<.10	--	--	--	--
03/20/90	03/27/90	12.7	<.15	<.10	--	--	--	--
03/27/90	04/03/90	21.3	<.15	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metolachlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
the Lakes, KY—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.31	nd	27
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.14	nd	3
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.09	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<0.05	.16	nd	1
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.13	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.07	.19	5	14
<.05	<.05	<.05	<.05	<.05	<.05	<0.05	.07	nd	1
--	--	--	--	--	--	<0.05	.47	nd	8
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.14	nd	4
<.05	<.05	<.05	<.05	<.05	<.05	.05	.06	3	4
<.05	<.05	<.05	<.05	<.05	<.05	<0.05	.11	nd	1
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<0.05	<0.05	nd	nd
Lab, MA									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MA01 North Atlantic Coastal								
04/03/90	04/10/90	49.0	0.26	<0.10	--	--	--	--
04/10/90	04/17/90	13.2	<.15	<.10	--	--	--	--
04/17/90	04/24/90	29.7	<.15	<.10	--	--	--	--
04/24/90	05/01/90	3.3	<.15	<.10	--	--	--	--
05/01/90	05/08/90	17.0	<.15	<.10	--	--	--	--
05/08/90	05/15/90	50.6	<.15	<.10	--	--	--	--
05/15/90	05/22/90	42.7	<.15	<.10	<0.05	<0.05	<0.05	<0.05
05/22/90	05/29/90	3.3	<.15	<.10	--	--	--	--
05/29/90	06/05/90	35.6	<.15	<.10	--	--	--	--
06/05/90	06/12/90	6.9	<.15	<.10	--	--	--	--
06/19/90	06/26/90	16.3	<.15	<.10	--	--	--	--
06/26/90	07/03/90	2.3	<.15	<.10	--	--	--	--
07/03/90	07/10/90	2.0	<.15	<.10	--	--	--	--
07/10/90	07/17/90	39.6	<.15	<.10	--	--	--	--
07/17/90	07/24/90	1.8	<.15	<.10	--	--	--	--
07/24/90	07/31/90	54.1	<.15	<.10	--	--	--	--
08/07/90	08/14/90	5.6	<.15	<.10	--	--	--	--
08/14/90	08/21/90	3.8	<.15	<.10	--	--	--	--
08/21/90	08/28/90	47.8	<.15	<.10	<.05	<.05	<.05	<.05
08/28/90	09/04/90	.50	<.15	<.10	--	--	--	--
09/04/90	09/11/90	2.8	<.32	.17	<.05	<.05	<.05	<.05
09/11/90	09/18/90	3.1	<.32	.15	<.05	<.05	<.05	<.05
09/18/90	09/25/90	41.4	<.32	<.10	<.05	<.05	<.05	<.05
10/02/90	10/09/90	6.4	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	33.3	<.32	<.10	--	--	--	--
10/23/90	10/30/90	54.1	<.32	<.10	--	--	--	--
10/30/90	11/06/90	19.8	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	12.5	<.32	<.10	<.05	<.05	<.05	<.05
11/13/90	11/20/90	13.2	<.32	<.10	--	--	--	--
11/20/90	11/27/90	2.5	<.32	<.10	--	--	--	--
11/27/90	12/04/90	38.1	<.32	<.10	--	--	--	--
12/04/90	12/11/90	21.6	<.32	<.10	--	--	--	--
12/11/90	12/18/90	12.7	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/24/90	11.4	<.32	<.10	--	--	--	--
12/24/90	01/01/91	20.6	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Lab, MA—Continued									
--	--	--	--	--	--	0.16	<0.05	8	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MA01 North Atlantic Coastal								
01/01/91	01/08/91	3.3	<0.32	<0.22	--	--	--	--
01/08/91	01/15/91	43.2	<.32	<.22	<0.05	<0.05	<0.05	<0.05
01/15/91	01/22/91	14.2	<.32	<.10	--	--	--	--
01/22/91	01/29/91	2.8	<.32	<.10	--	--	--	--
01/29/91	02/05/91	8.4	<.32	<.10	--	--	--	--
02/05/91	02/12/91	11.9	<.32	<.10	<.05	<.05	<.05	<.05
02/12/91	02/19/91	26.7	<.32	<.10	--	--	--	--
02/19/91	02/26/91	7.9	<.32	<.10	--	--	--	--
02/26/91	03/05/91	54.4	<.32	<.10	--	--	--	--
03/05/91	03/12/91	16.8	<.32	<.10	--	--	--	--
03/12/91	03/19/91	54.6	<.32	<.10	<.05	<.05	<.05	<.05
03/19/91	03/26/91	28.2	<.32	<.10	<.05	<.05	<.05	<.05
03/26/91	04/02/91	13.2	<.15	<.10	--	--	--	--
04/09/91	04/16/91	10.7	<.15	<.10	--	--	--	--
04/16/91	04/23/91	72.1	<.15	<.10	--	--	--	--
04/23/91	04/30/91	15.2	<.15	<.10	<.05	<.05	<.05	<.05
04/30/91	05/07/91	18.3	<.15	<.10	<.05	<.05	<.05	<.05
05/14/91	05/21/91	6.9	<.15	<.10	--	--	--	--
05/21/91	05/28/91	4.6	<.15	<.10	<.05	<.05	<.05	<.05
05/28/91	06/04/91	16.0	<.15	<.10	<.05	<.05	<.05	.05
06/04/91	06/11/91	16.3	<.15	<.10	<.05	<.05	<.05	<.05
06/11/91	06/18/91	11.2	<.15	<.10	--	--	--	--
06/18/91	06/25/91	7.4	<.15	<.10	<.05	<.05	<.05	<.05
06/25/91	07/02/91	10.4	<.15	.13	.05	<.05	<.05	<.05
07/09/91	07/16/91	6.4	<.15	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	10.2	<.15	<.10	--	--	--	--
07/23/91	07/30/91	24.6	<.15	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	6.9	<.15	<.10	--	--	--	--
08/06/91	08/13/91	29.2	<.15	<.10	--	--	--	--
08/30/91	08/27/91	19.8	<.15	<.10	--	--	--	--
08/27/91	09/03/91	1.8	<.15	<.10	--	--	--	--
MA08 Quabbin								
02/27/90	03/06/90	5.3	<.15	<.10	<.05	<.05	<.05	<.05
03/06/90	03/13/90	14.7	<.15	<.10	--	--	--	--
03/13/90	03/20/90	40.9	<.15	<.10	--	--	--	--
03/20/90	03/27/90	7.4	<.15	<.10	--	--	--	--
03/27/90	04/03/90	13.2	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Lab, MA—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.05	<.05	1	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
Reservoir, MA									
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- iide herbicides	Tri- azines herbicides	Aia- chlor	Atra- zine	Cyana- zine	DEA
MA08 Quabbin								
04/03/90	04/10/90	41.7	<0.15	<0.10	--	--	--	--
04/10/90	04/17/90	34.8	.20	<.10	--	--	--	--
04/17/90	04/24/90	18.8	.25	<.10	--	--	--	--
04/24/90	05/01/90	11.9	<.15	<.10	--	--	--	--
05/01/90	05/08/90	23.9	<.15	<.10	--	--	--	--
05/08/90	05/15/90	72.6	<.15	<.10	--	--	--	--
05/15/90	05/22/90	57.2	<.15	<.10	--	--	--	--
05/22/90	05/29/90	8.9	<.15	<.10	--	--	--	--
05/29/90	06/05/90	31.5	<.15	<.10	--	--	--	--
06/05/90	06/12/90	5.8	<.15	.25	--	--	--	--
06/19/90	06/26/90	15.8	<.15	.10	<0.05	<0.05	<0.05	<0.05
07/03/90	07/10/90	2.3	<.15	<.10	--	--	--	--
07/10/90	07/17/90	22.4	<.15	<.10	--	--	--	--
07/17/90	07/24/90	18.0	<.15	<.10	--	--	--	--
07/24/90	07/31/90	2.3	<.15	.10	--	--	--	--
07/31/90	08/07/90	46.7	.15	<.10	<.05	.08	<.05	<.05
08/07/90	08/14/90	133.9	<.15	<.10	--	--	--	--
08/14/90	08/21/90	18.5	<.15	<.10	--	--	--	--
08/21/90	08/28/90	37.6	<.15	.11	<.05	<.05	<.05	<.05
08/28/90	09/04/90	3.3	<.15	<.10	--	--	--	--
09/04/90	09/11/90	3.1	<.32	<.10	--	--	--	--
09/11/90	09/18/90	17.0	<.32	<.10	--	--	--	--
09/18/90	09/25/90	13.7	<.32	<.10	--	--	--	--
09/25/90	10/02/90	5.3	.44	<.10	--	--	--	--
10/02/90	10/09/90	22.4	<.32	<.10	--	--	--	--
10/09/90	10/16/90	83.6	<.32	.12	<.05	<.05	<.05	<.05
10/16/90	10/23/90	38.4	<.32	<.10	--	--	--	--
10/23/90	10/30/90	60.5	<.32	<.10	--	--	--	--
10/30/90	11/06/90	16.9	<.32	<.10	--	--	--	--
11/06/90	11/13/90	45.5	<.32	<.10	<.05	<.05	<.05	<.05
11/13/90	11/20/90	5.3	<.32	<.10	--	--	--	--
11/20/90	11/27/90	11.9	<.32	<.10	<.05	<.05	<.05	<.05
11/27/90	12/04/90	31.8	<.32	<.10	<.05	<.05	<.05	<.05
12/04/90	12/11/90	22.1	<.32	<.10	<.05	<.05	<.05	<.05
12/11/90	12/18/90	25.9	<.32	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DiA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Reservoir, MA—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	.12	<.05	4	nd
--	--	--	--	--	--	.16	<.05	3	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.16	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	4
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.28	<.05	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MA08 Quabbin								
12/18/90	12/24/90	56.1	<0.32	<0.10	--	--	--	--
12/24/90	12/31/90	27.4	.39	<.22	<0.05	<0.05	<0.05	<0.05
01/08/91	01/15/91	39.6	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	14.5	<.32	<.10	<.05	<.05	<.05	<.05
01/22/91	01/29/91	5.8	.38	<.10	<.05	<.05	<.05	<.05
01/29/91	02/05/91	18.0	<.32	<.10	--	--	--	--
02/05/91	02/12/91	15.8	<.32	<.10	--	--	--	--
02/12/91	02/20/91	38.6	<.32	<.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	59.2	<.32	<.10	<.05	<.05	<.05	<.05
03/05/91	03/12/91	14.5	<.32	<.10	--	--	--	--
03/12/91	03/19/91	32.8	<.32	.12	<.05	<.05	<.05	<.05
03/19/91	03/26/91	32.0	<.32	<.10	--	--	--	--
03/26/91	04/02/91	3.8	<.15	<.10	--	--	--	--
04/02/91	04/09/91	.80	<.15	<.10	--	--	--	--
04/09/91	04/16/91	4.3	<.15	<.10	--	--	--	--
04/16/91	04/23/91	59.7	<.15	<.10	--	--	--	--
04/23/91	04/30/91	8.1	<.15	<.10	<.05	<.05	<.05	<.05
04/30/91	05/07/91	78.2	<.15	<.10	<.05	<.05	<.05	<.05
05/07/91	05/14/91	6.9	<.15	<.10	<.05	<.05	<.05	<.05
05/21/91	05/28/91	26.7	<.15	.10	<.05	.08	<.05	.05
05/28/91	06/04/91	27.4	<.15	.12	--	--	--	--
06/04/91	06/11/91	5.3	<.15	<.10	--	--	--	--
06/11/91	06/18/91	44.5	<.15	<.10	--	--	--	--
06/18/91	06/25/91	3.8	<.15	<.10	--	--	--	--
06/25/91	07/02/91	13.0	<.15	<.10	<.05	<.05	<.05	<.05
07/02/91	07/09/91	2.3	<.15	<.10	--	--	--	--
07/09/91	07/16/91	12.7	<.15	<.10	--	--	--	--
07/16/91	07/23/91	13.0	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/30/91	30.5	<.15	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	19.6	<.15	<.10	--	--	--	--
08/06/91	08/13/91	44.7	<.15	<.10	--	--	--	--
08/27/91	09/03/91	3.8	<.15	<.10	--	--	--	--
09/03/91	09/10/91	13.7	<.15	<.10	--	--	--	--
09/10/91	09/17/91	14.0	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Reservoir, MA—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	2
--	--	--	--	--	--	<.05	.09	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MA13 East								
02/27/90	03/07/90	6.1	<0.15	<0.10	--	--	--	--
03/07/90	03/13/90	5.6	<.15	<.10	--	--	--	--
03/13/90	03/20/90	18.1	<.15	<.10	--	--	--	--
03/20/90	03/27/90	7.1	<.15	<.10	<0.05	<0.05	<0.05	<0.05
03/27/90	04/03/90	11.5	<.15	<.10	--	--	--	--
04/03/90	04/10/90	60.1	<.15	<.10	<.05	<.05	<.05	<.05
04/10/90	04/17/90	40.4	<.15	<.10	--	--	--	--
04/17/90	04/24/90	15.0	.18	.12	--	--	--	--
04/24/90	05/01/90	7.6	<.15	<.10	<.05	<.05	<.05	<.05
05/01/90	05/08/90	16.5	<.15	<.10	<.05	<.05	<.05	<.05
05/08/90	05/15/90	42.6	<.15	<.10	<.05	<.05	<.05	<.05
05/15/90	05/22/90	48.0	<.15	<.10	--	--	--	--
05/22/90	05/29/90	11.9	<.15	.62	<.05	.13	<.05	.06
05/29/90	06/05/90	47.0	<.15	<.10	--	--	--	--
06/05/90	06/12/90	8.4	<.15	.12	<.05	.06	<.05	<.05
06/19/90	06/26/90	1.5	<.15	.20	--	--	--	--
06/26/90	07/03/90	22.6	<.15	<.10	--	--	--	--
07/10/90	07/17/90	19.8	.39	<.10	<.05	<.05	<.05	<.05
07/17/90	07/24/90	21.3	<.15	<.10	--	--	--	--
07/24/90	07/31/90	96.5	<.15	<.10	--	--	--	--
07/31/90	08/07/90	4.7	.16	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	154.5	.22	.11	<.05	<.05	<.05	<.05
08/14/90	08/21/90	8.9	<.15	<.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	29.2	<.15	<.10	--	--	--	--
08/28/90	09/04/90	1.0	<.15	<.10	--	--	--	--
09/04/90	09/11/90	10.2	<.32	<.10	--	--	--	--
09/11/90	09/18/90	19.6	<.32	<.10	--	--	--	--
09/18/90	09/25/90	15.2	<.32	<.10	--	--	--	--
09/25/90	10/02/90	6.6	<.32	<.10	--	--	--	--
10/02/90	10/09/90	21.6	<.32	<.10	--	--	--	--
10/09/90	10/16/90	143.5	<.32	<.10	--	--	--	--
10/16/90	10/23/90	24.0	<.32	<.10	<.05	<.05	<.05	<.05
10/23/90	10/30/90	49.1	<.32	<.10	<.05	<.05	<.05	<.05
10/30/90	11/06/90	15.5	<.32	<.10	--	--	--	--
11/06/90	11/13/90	26.3	<.32	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MA									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.11	.07	2	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.13	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	1
--	--	--	--	--	--	<.05	.13	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MA13 East,								
11/13/90	11/20/90	0.80	<0.32	<0.10	--	--	--	--
11/20/90	11/27/90	4.8	<.32	<.10	--	--	--	--
11/27/90	12/05/90	33.0	<.32	<.10	<0.05	<0.05	<0.05	<0.05
12/11/90	12/18/90	19.6	<.32	.17	--	--	--	--
12/18/90	12/26/90	19.0	<.32	<.10	--	--	--	--
12/26/90	01/02/91	20.3	<.32	<.10	<.05	<.05	<.05	<.05
01/08/91	01/15/91	12.0	<.32	<.10	<.05	<.05	<.05	<.05
01/15/91	01/22/91	28.2	<.32	<.10	--	--	--	--
01/22/91	01/29/91	1.3	<.32	<.10	--	--	--	--
01/29/91	02/05/91	10.8	<.32	<.10	--	--	--	--
02/05/91	02/12/91	14.7	<.32	.12	--	--	--	--
02/12/91	02/19/91	28.3	<.32	<.10	--	--	--	--
02/26/91	03/05/91	33.7	<.32	<.10	--	--	--	--
03/05/91	03/12/91	8.9	<.32	<.10	<.05	<.05	<.05	<.05
03/12/91	03/19/91	1.1	<.32	.10	--	--	--	--
03/19/91	03/26/91	31.0	<.32	.11	<.05	<.05	<.05	<.05
03/26/91	04/02/91	8.4	<.15	<.10	--	--	--	--
04/02/91	04/09/91	3.8	<.15	<.10	--	--	--	--
04/09/91	04/16/91	7.4	<.15	<.10	--	--	--	--
04/16/91	04/23/91	74.9	<.15	<.10	--	--	--	--
04/23/91	05/01/91	32.5	<.15	<.10	<.05	<.05	<.05	<.05
05/14/91	05/21/91	20.1	<.15	<.10	<.05	.07	<.05	<.05
05/21/91	05/28/91	20.3	<.15	<.10	<.05	.08	<.05	<.05
05/28/91	06/04/91	5.6	<.15	.13	--	--	--	--
06/04/91	06/11/91	2.0	<.15	<.10	--	--	--	--
06/11/91	06/18/91	32.5	<.15	<.10	<.05	.08	.05	<.05
06/18/91	06/25/91	3.3	<.15	<.10	--	--	--	--
06/25/91	07/02/91	19.1	<.15	<.10	--	--	--	--
07/02/91	07/09/91	2.0	<.15	<.10	--	--	--	--
07/09/91	07/16/91	13.5	<.15	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	4.3	<.15	<.10	--	--	--	--
07/23/91	07/30/91	24.1	<.15	<.10	--	--	--	--
07/30/91	08/06/91	7.1	<.15	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	15.2	<.15	<.10	--	--	--	--
08/27/91	09/03/91	6.4	<.15	<.10	--	--	--	--
09/03/91	09/10/91	30.2	<.15	<.10	--	--	--	--
09/10/91	09/17/91	5.1	<.15	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MA—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.10	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	.09	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.08	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	2
--	--	--	--	--	--	<.05	.10	nd	1
--	--	--	--	--	--	<.05	.07	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyana-zine	DEA
MD03 White Rock,								
03/06/90	03/13/90	5.1	<0.15	<0.10	--	--	--	--
03/13/90	03/20/90	35.8	<.15	<.10	--	--	--	--
03/20/90	03/27/90	7.9	<.15	<.10	--	--	--	--
03/27/90	04/03/90	46.5	<.15	<.10	<0.05	<0.05	<0.05	<0.05
04/03/90	04/10/90	18.3	<.15	<.10	--	--	--	--
04/10/90	04/17/90	18.0	<.15	<.10	.09	.06	<.05	.06
04/17/90	04/24/90	6.4	.21	.13	<.05	<.05	<.05	<.05
04/24/90	05/01/90	31.8	.42	<.10	--	--	--	--
05/01/90	05/08/90	22.6	<.15	<.10	.06	.09	<.05	.07
05/08/90	05/15/90	41.4	.36	<.10	--	--	--	--
05/15/90	05/22/90	8.9	1.0	.61	--	--	--	--
05/22/90	05/29/90	67.6	<.15	.11	--	--	--	--
05/29/90	06/05/90	4.8	<.15	.15	.12	.10	.08	<.05
06/05/90	06/12/90	11.9	.19	.36	.12	.25	<.05	.11
06/12/90	06/19/90	25.2	<.15	.24	<.05	.10	<.05	<.05
06/19/90	06/26/90	6.1	.23	.19	--	--	--	--
06/26/90	07/03/90	2.3	<.15	.21	--	--	--	--
07/03/90	07/10/90	1.8	<.15	.30	--	--	--	--
07/10/90	07/17/90	83.6	<.15	<.10	--	--	--	--
07/17/90	07/24/90	23.4	<.15	<.10	<.05	<.05	<.05	<.05
07/31/90	08/07/90	20.1	<.15	<.10	--	--	--	--
08/07/90	08/14/90	48.5	<.15	<.10	--	--	--	--
08/14/90	08/21/90	24.1	<.15	<.10	--	--	--	--
08/21/90	08/28/90	18.8	<.15	.11	<.05	<.05	<.05	<.05
08/28/90	09/04/90	.80	<.15	.12	<.05	<.05	<.05	<.05
09/11/90	09/18/90	9.4	<.32	<.10	--	--	--	--
09/18/90	09/25/90	16.3	<.32	<.10	--	--	--	--
09/25/90	10/02/90	3.6	<.32	<.10	<.05	<.05	<.05	<.05
10/02/90	10/09/90	36.8	<.32	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	21.1	.41	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	73.9	<.32	<.10	--	--	--	--
10/23/90	10/30/90	41.4	<.32	.16	<.05	<.05	<.05	<.05
10/30/90	11/06/90	4.8	<.32	<.10	--	--	--	--
11/06/90	11/13/90	54.9	<.32	<.10	--	--	--	--
11/13/90	11/20/90	2.5	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MD									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.06	<.05	<.05	<.05	<.05	.09	.06	2	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.27	<.05	8	nd
<.05	.10	<.05	<.05	<.05	<.05	.06	.09	1	2
--	--	--	--	--	--	.23	<.05	9	nd
--	--	--	--	--	--	.64	.41	6	4
--	--	--	--	--	--	<.05	.06	nd	4
<.05	.16	<.05	<.05	<.05	<.05	.12	.10	1	nd
<.05	.22	<.05	<.05	<.05	<.05	.12	.25	1	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.10	nd	3
--	--	--	--	--	--	.14	.12	1	1
--	--	--	--	--	--	<.05	.13	nd	nd
--	--	--	--	--	--	<.05	.19	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyana-zine	DEA
MD03 White Rock,								
11/20/90	11/27/90	5.1	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
11/27/90	12/04/90	34.0	<.32	<.10	<.05	<.05	<.05	<.05
12/11/90	12/18/90	25.7	<.32	<.10	--	--	--	--
12/18/90	12/26/90	35.6	<.32	<.10	<.05	<.05	<.05	<.05
12/26/90	01/02/91	32.5	<.32	<.10	--	--	--	--
01/02/91	01/08/91	26.7	<.32	<.22	<.05	<.05	<.05	<.05
01/08/91	01/15/91	33.0	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	20.6	<.32	<.10	--	--	--	--
01/29/91	02/05/91	6.4	<.32	.13	<.05	<.05	<.05	<.05
02/05/91	02/12/91	8.9	<.32	.12	<.05	<.05	<.05	<.05
02/12/91	02/19/91	19.1	<.32	<.10	--	--	--	--
02/19/91	02/26/91	3.8	<.32	<.10	--	--	--	--
02/26/91	03/05/91	13.5	<.32	<.10	--	--	--	--
03/05/91	03/12/91	7.4	<.32	<.10	--	--	--	--
03/12/91	03/19/91	31.2	<.32	<.10	--	--	--	--
03/19/91	03/26/91	36.6	<.32	<.10	--	--	--	--
03/26/91	04/02/91	18.0	<.15	.10	<.05	<.05	<.05	<.05
04/02/91	04/09/91	1.0	<.15	<.10	--	--	--	--
04/09/91	04/16/91	30.5	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	17.0	<.15	<.10	--	--	--	--
04/23/91	04/30/91	3.6	<.15	.26	--	--	--	--
04/30/91	05/07/91	20.3	.17	.52	.19	.55	.12	.17
05/07/91	05/14/91	4.6	.16	1.7	.13	.84	<.05	.34
05/14/91	05/21/91	11.4	.48	.44	.38	1.3	<.05	.25
05/21/91	05/28/91	1.3	.18	1.1	--	--	--	--
05/28/91	06/04/91	6.6	.32	.80	.20	.86	.15	.39
06/11/91	06/18/91	77.7	<.15	<.10	--	--	--	--
06/18/91	06/25/91	2.3	<.15	<.10	--	--	--	--
07/02/91	07/09/91	6.6	<.15	<.10	--	--	--	--
07/09/91	07/16/91	2.3	.34	<.10	--	--	--	--
07/23/91	07/30/91	11.7	<.15	<.10	--	--	--	--
08/06/91	08/13/91	17.8	<.15	<.10	<.05	<.05	<.05	<.05
09/10/91	09/17/91	.50	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MD—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	2
--	--	--	--	--	--	<.05	.07	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.21	nd	1
.15	.41	<.05	<.05	<.05	<.05	.19	.55	4	11
<.05	.65	<.05	<.05	<.05	<.05	.13	.84	1	4
<.05	.84	<.05	<.05	<.05	<.05	.38	1.3	4	14
--	--	--	--	--	--	.15	.89	nd	1
.31	.44	<.05	<.05	<.05	.07	.20	.86	1	6
--	--	--	--	--	--	<.05	.05	nd	4
--	--	--	--	--	--	<.05	.07	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.29	.07	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MD13 Wye,								
02/27/90	03/06/90	4.1	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
03/20/90	03/20/90	38.6	<.15	<.10	<.05	<.05	<.05	<.05
03/20/90	03/27/90	9.7	<.15	<.10	--	--	--	--
03/27/90	04/03/90	43.2	<.15	<.10	--	--	--	--
04/03/90	04/10/90	19.9	<.15	<.10	--	--	--	--
04/10/90	04/17/90	23.4	.23	<.10	.13	<.05	<.05	<.05
04/17/90	04/24/90	8.6	<.15	.11	<.05	<.05	<.05	<.05
04/24/90	05/01/90	33.3	<.15	.24	.06	.14	<.05	.05
05/01/90	05/08/90	17.8	.22	.24	--	--	--	--
05/08/90	05/15/90	57.7	<.15	<.10	--	--	--	--
05/15/90	05/22/90	9.9	<.15	.19	.13	.25	<.05	<.05
05/22/90	05/29/90	91.4	<.15	<.10	--	--	--	--
05/29/90	06/05/90	44.5	<.15	<.10	<.05	<.05	<.05	<.05
06/05/90	06/12/90	7.9	.58	.44	--	--	--	--
06/12/90	06/19/90	22.1	.15	<.10	.06	.08	<.05	<.05
06/19/90	06/26/90	9.9	<.15	.17	--	--	--	--
06/26/90	07/03/90	20.8	<.15	<.10	--	--	--	--
07/03/90	07/10/90	22.1	<.15	<.10	--	--	--	--
07/10/90	07/17/90	44.7	<.15	<.10	--	--	--	--
07/17/90	07/24/90	3.1	<.15	.11	.12	.10	<.05	.07
07/31/90	08/07/90	11.9	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	66.3	<.15	<.10	--	--	--	--
08/14/90	08/21/90	2.8	<.15	<.10	--	--	--	--
08/21/90	08/28/90	38.1	<.15	<.10	--	--	--	--
08/28/90	09/04/90	2.0	<.15	<.10	--	--	--	--
09/11/90	09/18/90	31.8	<.32	<.10	--	--	--	--
09/18/90	09/25/90	8.9	<.32	<.10	--	--	--	--
09/25/90	10/02/90	.80	<.32	<.10	--	--	--	--
10/02/90	10/09/90	2.3	<.32	<.10	--	--	--	--
10/09/90	10/16/90	32.3	<.32	<.10	--	--	--	--
10/16/90	10/23/90	39.6	<.32	.11	<.05	<.05	<.05	<.05
10/23/90	10/30/90	11.7	<.32	<.10	--	--	--	--
11/06/90	11/13/90	21.6	<.32	<.10	--	--	--	--
11/13/90	11/20/90	1.0	<.32	<.10	--	--	--	--
11/20/90	11/27/90	3.6	<.32	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MD									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.07	<.05	<.05	<.05	<.05	.13	<.05	3	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.13	<.05	<.05	<.05	<.05	.06	.14	2	5
--	--	--	--	--	--	.14	.15	2	3
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.44	<.05	<.05	<.05	.09	.13	.25	1	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.37	.29	3	2
<.05	.19	<.05	<.05	<.05	<.05	.06	.08	1	2
--	--	--	--	--	--	<.05	.10	nd	1
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.10	<.05	<.05	<.05	<.05	.12	.10	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipita- tion (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- liide herbicides	Tri- azines herbicides	Aia- chior	Atra- zine	Cyana- zine	DEA
MD13 Wye,								
11/27/90	12/04/90	30.5	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
12/11/90	12/18/90	26.7	<.32	<.10	--	--	--	--
12/18/90	12/25/90	19.6	<.32	<.10	<.05	<.05	<.05	<.05
12/25/90	01/01/91	31.0	.36	<.22	<.05	<.05	<.05	<.05
01/01/91	01/08/91	16.8	<.32	<.22	<.05	<.05	<.05	<.05
01/08/91	01/15/91	66.3	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	13.5	<.32	<.10	--	--	--	--
02/05/91	02/12/91	12.5	<.32	<.10	<.05	<.05	<.05	<.05
02/12/91	02/19/91	11.7	<.32	<.10	--	--	--	--
02/19/91	02/26/91	5.3	<.32	<.10	--	--	--	--
02/26/91	03/05/91	20.3	<.32	<.10	--	--	--	--
03/05/91	03/12/91	1.8	<.32	.10	--	--	--	--
03/12/91	03/19/91	43.2	<.32	.49	<.05	<.05	<.05	<.05
03/19/91	03/26/91	25.7	<.32	<.10	<.05	<.05	<.05	<.05
03/26/91	04/02/91	36.3	<.15	<.10	--	--	--	--
04/02/91	04/09/91	2.0	<.15	<.10	--	--	--	--
04/09/91	04/16/91	21.1	<.15	<.10	--	--	--	--
04/16/91	04/23/91	31.5	<.15	<.10	.05	.05	<.05	<.05
04/23/91	04/30/91	10.9	.20	.22	.17	.20	<.05	<.05
05/14/91	05/21/91	6.6	.20	.18	.15	.49	<.05	.09
05/21/91	05/28/91	1.5	<.15	.76	--	--	--	--
05/28/91	06/04/91	23.1	.20	.24	.15	.22	<.05	.19
06/04/91	06/11/91	1.5	<.15	.31	--	--	--	--
06/11/91	06/18/91	24.1	.25	<.10	.23	<.05	<.05	<.05
06/18/91	06/25/91	8.6	<.15	<.10	--	--	--	--
07/02/91	07/09/91	32.8	<.15	<.10	.11	<.05	<.05	<.05
07/16/91	07/23/91	16.0	<.15	<.10	--	--	--	--
07/23/91	07/30/91	81.0	<.15	<.10	--	--	--	--
07/30/91	08/06/91	2.0	<.15	<.10	--	--	--	--
08/06/91	08/13/91	69.9	<.15	<.10	--	--	--	--
09/03/91	09/10/91	21.6	<.15	<.10	<.05	<.05	<.05	<.05
ME00 Caribou,								
02/27/90	03/06/90	4.3	<.15	<.10	--	--	--	--
03/13/90	03/20/90	13.0	<.15	<.10	--	--	--	--
03/20/90	03/27/90	12.5	<.15	<.10	--	--	--	--
03/27/90	04/03/90	3.6	<.15	<.10	--	--	--	--
04/03/90	04/10/90	17.8	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MD—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.16	<.05	<.05	<.05	<.05	.05	.05	2	2
<.05	.24	<.05	<.05	<.05	<.05	.17	.20	2	2
<.05	.11	<.05	<.05	<.05	<.05	.15	.49	1	3
--	--	--	--	--	--	<.05	.62	nd	1
<.05	.30	<.05	<.05	<.05	<.05	.15	.22	3	5
--	--	--	--	--	--	<.05	.25	nd	nd
<.05	.76	<.05	<.05	<.05	<.05	.23	<.05	6	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.15	<.05	<.05	<.05	<.05	.11	<.05	4	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
ME									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
								ME00 Caribou,
04/10/90	04/17/90	26.4	<0.15	<0.10	--	--	--	--
04/17/90	04/24/90	13.7	.17	<.10	<0.05	<0.05	<0.05	<0.05
05/01/90	05/08/90	9.4	<.15	<.10	--	--	--	--
05/08/90	05/15/90	14.5	<.15	<.10	--	--	--	--
05/15/90	05/23/90	62.4	<.15	<.10	<.05	<.05	<.05	<.05
05/29/90	06/05/90	9.7	<.15	.19	--	--	--	--
06/05/90	06/12/90	18.3	<.15	<.10	--	--	--	--
06/12/90	06/19/90	19.1	<.15	<.10	<.05	<.05	<.05	<.05
06/19/90	06/26/90	67.1	<.15	<.10	<.05	<.05	<.05	<.05
06/26/90	07/03/90	2.3	<.15	.30	.08	.27	<.05	<.05
07/03/90	07/10/90	15.5	<.15	<.10	--	--	--	--
07/17/90	07/24/90	54.9	<.15	<.10	<.05	<.05	<.05	<.05
07/24/90	07/31/90	33.8	<.15	<.10	<.05	<.05	<.05	<.05
07/31/90	08/07/90	7.9	<.15	<.10	--	--	--	--
08/07/90	08/14/90	54.9	<.15	<.10	<.05	<.05	<.05	<.05
08/14/90	08/21/90	5.3	<.15	<.10	--	--	--	--
08/21/90	08/28/90	4.6	<.15	<.10	--	--	--	--
08/28/90	09/04/90	9.9	<.32	<.10	--	--	--	--
09/04/90	09/11/90	18.8	<.32	<.10	--	--	--	--
09/11/90	09/18/90	12.5	<.32	<.10	--	--	--	--
09/18/90	09/25/90	53.9	<.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	19.6	<.32	<.10	--	--	--	--
10/02/90	10/09/90	17.3	<.32	<.10	--	--	--	--
10/09/90	10/16/90	77.0	<.32	.16	<.05	<.05	<.05	<.05
10/16/90	10/23/90	33.3	<.32	.10	--	--	--	--
10/23/90	10/30/90	86.6	<.32	<.10	--	--	--	--
10/30/90	11/06/90	16.3	<.32	<.10	--	--	--	--
11/06/90	11/13/90	52.3	<.32	<.10	--	--	--	--
11/13/90	11/20/90	18.5	<.32	<.10	<.05	<.05	.12	<.05
11/20/90	11/27/90	19.1	<.32	<.10	--	--	--	--
11/27/90	12/04/90	22.9	<.32	<.10	--	--	--	--
12/04/90	12/11/90	35.1	<.32	<.10	--	--	--	--
12/11/90	12/18/90	8.4	<.32	<.10	--	--	--	--
12/18/90	12/25/90	61.0	<.32	<.10	--	--	--	--
12/25/90	01/01/91	20.1	.33	<.22	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
ME—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.12	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.08	.27	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.28	<.05	6	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
ME00 Caribou,								
01/08/91	01/15/91	16.0	<0.32	<0.10	--	--	--	--
01/15/91	01/22/91	20.3	<.32	<.10	<0.05	<0.05	<0.05	<0.05
01/22/91	01/29/91	3.1	<.32	<.10	--	--	--	--
01/29/91	02/05/91	11.9	<.32	<.10	<.05	<.05	<.05	<.05
02/12/91	02/19/91	17.3	<.32	<.10	<.05	<.05	<.05	<.05
02/19/91	02/26/91	10.7	<.32	.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	37.9	<.32	<.10	<.05	<.05	<.05	<.05
03/12/91	03/19/91	10.2	<.32	<.10	--	--	--	--
03/19/91	03/26/91	23.9	<.32	<.10	<.05	<.05	<.05	<.05
03/26/91	04/03/91	20.1	<.15	<.10	<.05	<.05	<.05	<.05
04/03/91	04/09/91	20.8	<.15	<.10	<.05	<.05	<.05	<.05
04/09/91	04/16/91	24.4	<.15	<.10	--	--	--	--
04/16/91	04/23/91	20.8	<.15	<.10	--	--	--	--
05/07/91	05/14/91	1.3	<.15	<.10	--	--	--	--
05/14/91	05/21/91	9.4	<.15	<.10	--	--	--	--
05/21/91	05/28/91	40.6	<.15	<.10	<.05	<.05	<.05	<.05
05/28/91	06/04/91	1.8	<.15	<.10	--	--	--	--
06/04/91	06/11/91	.80	<.15	<.10	--	--	--	--
06/11/91	06/18/91	10.4	<.15	<.10	--	--	--	--
06/18/91	06/25/91	6.6	<.15	.21	<.05	.24	<.05	.10
06/25/91	07/02/91	32.0	<.15	<.10	--	--	--	--
07/02/91	07/09/91	3.1	<.15	<.10	--	--	--	--
07/09/91	07/16/91	4.6	<.15	<.10	--	--	--	--
07/16/91	07/23/91	7.6	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/30/91	9.1	.32	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	6.1	<.15	<.10	--	--	--	--
08/06/91	08/13/91	47.2	<.15	<.10	--	--	--	--
08/13/91	08/20/91	83.8	<.15	<.10	--	--	--	--
08/20/91	08/27/91	13.5	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/03/91	20.3	<.15	<.10	--	--	--	--
ME02 Bridgton,								
02/27/90	03/06/90	.80	<.15	<.10	--	--	--	--
03/06/90	03/13/90	1.0	<.15	<.10	--	--	--	--
03/13/90	03/20/90	9.7	<.15	<.10	--	--	--	--
03/20/90	03/27/90	10.2	<.15	<.10	--	--	--	--
03/27/90	04/03/90	13.2	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

[illegible]

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
ME02 Bridgton,								
04/03/90	04/10/90	36.6	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
04/10/90	04/17/90	34.3	<.15	<.10	<.05	<.05	<.05	<.05
04/17/90	04/24/90	13.7	<.15	<.10	<.05	<.05	<.05	<.05
04/24/90	05/01/90	4.3	<.15	.11	<.05	.05	<.05	<.05
05/01/90	05/08/90	24.1	<.15	<.10	<.05	<.05	<.05	<.05
05/08/90	05/15/90	63.3	<.15	<.10	--	--	--	--
05/15/90	05/22/90	21.6	<.15	<.10	--	--	--	--
05/29/90	06/05/90	26.2	<.15	<.10	--	--	--	--
06/05/90	06/12/90	25.7	<.15	<.10	--	--	--	--
06/19/90	06/26/90	33.5	<.15	<.10	--	--	--	--
06/26/90	07/03/90	15.2	<.15	<.10	--	--	--	--
07/03/90	07/10/90	19.3	<.15	<.10	--	--	--	--
07/17/90	07/24/90	43.7	<.15	<.10	--	--	--	--
07/24/90	07/31/90	10.4	<.15	<.10	--	--	--	--
07/31/90	08/07/90	11.7	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	93.7	<.15	<.10	--	--	--	--
08/14/90	08/21/90	.10	<.15	<.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	27.0	<.15	<.10	--	--	--	--
09/04/90	09/11/90	4.3	<.32	<.10	--	--	--	--
09/11/90	09/18/90	16.5	<.32	<.10	<.05	<.05	<.05	<.05
09/18/90	09/25/90	17.0	<.32	<.10	--	--	--	--
09/25/90	10/02/90	13.2	<.32	<.10	--	--	--	--
10/02/90	10/09/90	6.4	<.32	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	55.6	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	20.1	<.32	<.10	<.05	<.05	<.05	<.05
10/23/90	10/30/90	80.3	<.32	<.10	--	--	--	--
10/30/90	11/06/90	21.8	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	33.8	<.32	<.10	--	--	--	--
11/13/90	11/20/90	7.4	<.32	<.10	--	--	--	--
11/20/90	11/27/90	4.1	<.32	<.10	--	--	--	--
11/27/90	12/04/90	59.4	<.32	<.10	<.05	<.05	<.05	<.05
12/11/90	12/18/90	26.2	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/26/90	55.9	<.32	<.10	--	--	--	--
12/26/90	01/01/91	8.6	.40	<.10	--	--	--	--
01/01/91	01/08/91	3.1	<.32	<.22	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
ME—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.34	<.05	3	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
ME02 Bridgton,								
01/08/91	01/15/91	22.9	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
01/15/91	01/22/91	15.2	<.32	<.10	--	--	--	--
01/22/91	01/29/91	2.0	.32	<.10	--	--	--	--
01/29/91	02/05/91	10.2	<.32	<.10	--	--	--	--
02/05/91	02/12/91	3.1	<.32	<.10	--	--	--	--
02/12/91	02/19/91	13.5	<.32	<.10	--	--	--	--
02/19/91	02/26/91	1.8	<.32	<.10	--	--	--	--
02/26/91	03/05/91	27.7	<.32	<.10	<.05	<.05	<.05	<.05
03/05/91	03/12/91	34.3	<.32	.21	<.05	<.05	<.05	<.05
03/12/91	03/19/91	26.2	<.32	.11	--	--	--	--
03/19/91	03/26/91	21.3	<.32	<.10	--	--	--	--
03/26/91	04/02/91	12.2	<.15	<.10	--	--	--	--
04/02/91	04/09/91	5.1	<.15	<.10	--	--	--	--
04/09/91	04/16/91	18.8	<.15	<.10	--	--	--	--
04/16/91	04/23/91	65.3	<.15	<.10	--	--	--	--
05/14/91	05/21/91	15.5	<.15	<.10	--	--	--	--
05/21/91	05/28/91	4.8	<.15	<.10	--	--	--	--
05/28/91	06/04/91	32.5	<.15	<.10	<.05	<.05	<.05	<.05
06/04/91	06/11/91	1.0	<.15	<.10	--	--	--	--
06/11/91	06/18/91	10.9	<.15	<.10	<.05	<.05	<.05	<.05
06/25/91	07/02/91	2.0	<.15	.21	--	--	--	--
07/02/91	07/09/91	22.9	<.15	<.10	--	--	--	--
07/09/91	07/16/91	13.2	<.15	<.10	--	--	--	--
07/16/91	07/23/91	6.1	<.15	<.10	--	--	--	--
07/23/91	07/30/91	6.4	<.15	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	31.3	.26	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	68.1	<.15	<.10	--	--	--	--
08/27/91	09/03/91	28.7	<.15	<.10	--	--	--	--
09/03/91	09/10/91	2.8	<.15	<.10	--	--	--	--
09/10/91	09/17/91	19.1	<.15	<.10	--	--	--	--
ME09 Greenville Station,								
02/27/90	03/06/90	--	<.15	<.10	--	--	--	--
03/13/90	03/20/90	18.5	<.15	<.10	--	--	--	--
03/20/90	03/27/90	18.8	<.15	<.10	--	--	--	--
03/27/90	04/03/90	8.1	<.15	<.10	--	--	--	--
04/03/90	04/10/90	22.1	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
ME—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.27	<.05	1	nd
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.17	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
ME									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
ME09 Greenville Station,								
04/10/90	04/17/90	49.0	0.15	<0.10	<0.05	<0.05	<0.05	<0.05
04/17/90	04/24/90	18.5	<.15	.11	--	--	--	--
04/24/90	05/01/90	1.8	.18	.71	--	--	--	--
05/01/90	05/08/90	21.1	<.15	<.10	--	--	--	--
05/08/90	05/15/90	43.7	<.15	<.10	--	--	--	--
05/15/90	05/22/90	35.8	<.15	<.10	<.05	<.05	<.05	<.05
05/22/90	05/29/90	.80	<.15	1.2	--	--	--	--
05/29/90	06/05/90	27.7	<.15	<.10	--	--	--	--
06/05/90	06/12/90	45.7	<.15	.12	<.05	.06	<.05	<.05
06/12/90	06/19/90	22.6	<.15	<.10	<.05	<.05	<.05	<.05
06/19/90	06/26/90	38.9	<.15	<.10	--	--	--	--
06/26/90	07/03/90	33.3	<.15	<.10	<.05	<.05	<.05	<.05
07/03/90	07/10/90	5.8	<.15	<.10	<.05	<.05	<.05	<.05
07/17/90	07/24/90	39.4	<.15	<.10	--	--	--	--
07/24/90	07/31/90	5.1	<.15	<.10	--	--	--	--
07/31/90	08/07/90	23.9	.19	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	52.8	<.15	.17	<.05	<.05	<.05	<.05
08/14/90	08/21/90	1.8	<.15	<.10	--	--	--	--
08/21/90	08/28/90	20.8	<.15	<.10	<.05	<.05	<.05	<.05
08/28/90	09/04/90	8.9	<.15	<.10	--	--	--	--
09/04/90	09/11/90	9.9	<.32	<.10	--	--	--	--
09/11/90	09/18/90	14.7	<.32	.11	<.05	<.05	<.05	<.05
09/18/90	09/25/90	56.1	<.32	<.10	--	--	--	--
09/25/90	10/02/90	37.3	<.32	<.10	--	--	--	--
10/02/90	10/09/90	13.7	<.32	<.10	--	--	--	--
10/09/90	10/16/90	62.2	<.32	.12	<.05	<.05	<.05	<.05
10/16/90	10/23/90	35.1	<.32	.11	<.05	<.05	<.05	<.05
10/23/90	10/30/90	100.3	<.32	<.10	--	--	--	--
10/30/90	11/06/90	2.8	<.32	<.10	--	--	--	--
11/06/90	11/13/90	62.0	<.32	<.10	<.05	<.05	<.05	<.05
11/13/90	11/20/90	19.3	<.32	<.10	--	--	--	--
11/20/90	11/27/90	6.4	<.32	<.10	--	--	--	--
11/27/90	12/04/90	21.1	.35	<.10	<.05	<.05	<.05	<.05
12/04/90	12/11/90	31.8	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/25/90	38.1	<.32	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
ME—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	.11	.47	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.78	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
ME09 Greenville Station,								
12/25/90	01/01/91	13.5	<0.32	<0.10	--	--	--	--
01/01/91	01/08/91	1.8	<.32	<.22	--	--	--	--
01/08/91	01/12/91	26.9	<.32	<.22	<0.05	<0.05	<0.05	<0.05
01/12/91	01/15/91	3.1	<.32	<.22	--	--	--	--
01/15/91	01/22/91	15.0	<.32	<.10	--	--	--	--
01/22/91	01/29/91	3.1	<.32	<.10	--	--	--	--
01/29/91	02/05/91	13.2	<.32	<.10	<.05	<.05	<.05	<.05
02/05/91	02/12/91	3.1	<.32	<.10	--	--	--	--
02/12/91	02/19/91	16.3	<.32	<.10	<.05	<.05	<.05	<.05
02/19/91	02/26/91	8.4	<.32	<.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	38.1	<.32	<.10	<.05	<.05	<.05	<.05
03/05/91	03/12/91	22.6	<.32	<.10	.05	<.05	<.05	<.05
03/12/91	03/19/91	11.7	<.32	.20	--	--	--	--
03/19/91	03/26/91	46.7	<.32	<.10	--	--	--	--
03/26/91	04/02/91	17.5	<.15	<.10	<.05	<.05	<.05	<.05
04/02/91	04/09/91	25.2	<.15	<.10	--	--	--	--
04/09/91	04/16/91	30.7	<.15	<.10	--	--	--	--
04/16/91	04/23/91	37.9	<.15	<.10	--	--	--	--
05/14/91	05/21/91	16.5	<.15	<.10	--	--	--	--
05/21/91	05/28/91	33.5	<.15	<.10	--	--	--	--
05/28/91	06/04/91	12.7	<.15	<.10	<.05	<.05	<.05	<.05
06/04/91	06/11/91	3.6	<.15	<.10	--	--	--	--
06/11/91	06/18/91	52.1	<.15	<.10	<.05	<.05	<.05	<.05
06/25/91	07/02/91	9.7	<.15	<.10	<.05	.10	<.05	<.05
07/02/91	07/09/91	7.4	<.15	<.10	--	--	--	--
07/09/91	07/16/91	2.0	<.15	<.10	--	--	--	--
07/16/91	07/23/91	6.4	<.15	<.10	--	--	--	--
07/23/91	07/30/91	10.7	<.15	<.10	--	--	--	--
07/30/91	08/06/91	56.4	.16	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	52.6	<.15	<.10	--	--	--	--
08/27/91	09/03/91	42.2	<.15	<.10	--	--	--	--
09/10/91	09/17/91	14.5	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
ME—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.05	<.05	1	nd
--	--	--	--	--	--	<.05	.16	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.10	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	1
--	--	--	--	--	--	<.05	.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
							ME98 Acadia National Park-	
02/27/90	03/06/90	0.50	<0.15	<0.10	--	--	--	--
03/13/90	03/20/90	13.2	<.15	<.10	--	--	--	--
03/20/90	03/27/90	39.9	<.15	<.10	--	--	--	--
03/27/90	04/03/90	16.8	<.15	<.10	--	--	--	--
04/03/90	04/10/90	27.4	<.15	<.10	--	--	--	--
04/10/90	04/17/90	66.6	<.15	<.10	--	--	--	--
04/17/90	04/24/90	23.1	<.15	<.10	--	--	--	--
04/24/90	05/01/90	1.0	<.15	.97	--	--	--	--
05/01/90	05/08/90	24.1	<.15	<.10	<0.05	<0.05	<0.05	<0.05
05/08/90	05/15/90	99.6	<.15	<.10	<.05	<.05	<.05	<.05
05/15/90	05/22/90	37.3	<.15	<.10	--	--	--	--
05/22/90	05/29/90	4.6	<.15	<.10	--	--	--	--
05/29/90	06/05/90	53.6	<.15	<.10	--	--	--	--
06/05/90	06/12/90	61.5	<.15	<.10	<.05	<.05	<.05	<.05
06/19/90	06/26/90	48.3	<.15	<.10	--	--	--	--
06/26/90	07/03/90	12.5	<.15	<.10	<.05	<.05	<.05	<.05
07/03/90	07/10/90	7.9	<.15	.13	--	--	--	--
07/17/90	07/24/90	45.0	<.15	<.10	--	--	--	--
07/24/90	07/31/90	38.1	<.15	<.10	--	--	--	--
07/31/90	08/07/90	18.8	.18	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	37.6	<.15	<.10	--	--	--	--
08/14/90	08/21/90	1.5	<.15	<.10	--	--	--	--
08/21/90	08/28/90	9.4	<.15	<.10	--	--	--	--
--	09/11/90	10.2	<.32	<.10	--	--	--	--
09/11/90	09/18/90	7.6	<.32	<.10	<.05	<.05	<.05	<.05
09/18/90	09/25/90	69.9	<.32	<.10	--	--	--	--
09/25/90	10/02/90	3.6	<.32	<.10	--	--	--	--
10/02/90	10/09/90	16.8	<.32	<.10	--	--	--	--
10/09/90	10/16/90	30.7	<.32	.14	<.05	<.05	<.05	<.05
10/16/90	10/23/90	14.0	<.32	<.10	<.05	<.05	<.05	<.05
10/23/90	10/30/90	82.0	<.32	<.10	<.05	<.05	<.05	<.05
10/30/90	11/06/90	81.3	<.32	<.10	--	--	--	--
11/06/90	11/13/90	51.6	<.32	<.10	--	--	--	--
11/13/90	11/20/90	22.4	<.32	<.10	<.05	<.05	<.05	<.05
11/20/90	11/27/90	14.0	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
McFarland Hill, ME									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.08	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyanazine	DEA
ME98 Acadia National Park-								
11/27/90	12/04/90	59.9	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
12/04/90	12/11/90	32.5	<.32	<.10	<.05	<.05	<.05	<.05
12/11/90	12/18/90	53.9	<.32	<.10	--	--	--	--
12/18/90	12/26/90	51.6	<.32	<.10	<.05	<.05	<.05	<.05
12/26/90	01/01/91	17.8	<.32	<.10	--	--	--	--
01/01/91	01/08/91	1.8	<.32	<.22	--	--	--	--
01/08/91	01/15/91	54.1	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	39.4	<.32	<.10	--	--	--	--
01/22/91	01/29/91	8.9	<.32	<.10	<.05	<.05	<.05	<.05
01/29/91	02/05/91	18.5	<.32	<.10	--	--	--	--
02/05/91	02/12/91	4.6	<.32	<.10	--	--	--	--
02/12/91	02/19/91	38.1	<.32	<.10	--	--	--	--
02/19/91	02/26/91	7.6	<.32	<.10	--	--	--	--
02/26/91	03/05/91	51.1	<.32	<.10	--	--	--	--
03/05/91	03/12/91	47.2	<.32	<.10	--	--	--	--
03/12/91	03/19/91	52.6	<.32	<.10	<.05	<.05	<.05	<.05
03/19/91	03/26/91	52.8	<.32	<.10	--	--	--	--
03/26/91	04/02/91	13.5	1.2	<.10	--	--	--	--
04/02/91	04/09/91	5.3	<.15	<.10	<.05	<.05	<.05	<.05
04/09/91	04/16/91	22.9	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	70.6	<.15	<.10	--	--	--	--
04/30/91	05/07/91	48.5	<.15	<.10	<.05	<.05	<.05	<.05
05/14/91	05/21/91	22.1	<.15	<.10	--	--	--	--
05/21/91	05/28/91	32.3	<.15	<.10	--	--	--	--
05/28/91	06/04/91	7.1	<.15	<.10	--	--	--	--
06/11/91	06/18/91	28.2	<.15	<.10	--	--	--	--
07/09/91	07/16/91	21.6	<.15	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	24.4	<.15	<.10	--	--	--	--
07/23/91	07/30/91	29.5	<.15	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	38.6	<.15	<.10	--	--	--	--
08/06/91	08/13/91	78.2	<.15	<.10	--	--	--	--
08/27/91	09/03/91	15.5	<.15	<.10	<.05	<.05	<.05	<.05
09/10/91	09/17/91	21.8	<.15	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
McFarland Hill, ME—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	4
--	--	--	--	--	--	1.0	<.05	14	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MI09 Douglas Lake,								
03/06/90	03/13/90	35.3	<0.15	<0.10	--	--	--	--
03/13/90	03/20/90	14.5	<.15	<.10	--	--	--	--
03/20/90	03/27/90	2.5	<.15	<.10	--	--	--	--
03/27/90	04/03/90	17.5	<.15	<.10	--	--	--	--
04/03/90	04/10/90	4.1	<.15	<.10	<0.05	<0.05	<0.05	<0.05
04/10/90	04/17/90	15.2	.34	<.10	--	--	--	--
04/17/90	04/24/90	.30	<.15	.58	--	--	--	--
05/08/90	05/15/90	58.5	<.15	.12	<.05	.09	<.05	.05
05/15/90	05/23/90	31.9	<.15	<.10	--	--	--	--
05/22/90	05/29/90	.30	<.15	<.10	--	--	--	--
05/29/90	06/05/90	12.7	1.1	1.0	--	--	--	--
06/05/90	06/12/90	3.1	<.15	.55	--	--	--	--
06/12/90	06/19/90	45.2	<.15	.21	--	--	--	--
06/19/90	06/26/90	113.3	<.15	.12	<.05	.10	<.05	.07
06/26/90	07/04/90	17.3	<.15	<.10	--	--	--	--
07/04/90	07/10/90	47.8	<.15	<.10	--	--	--	--
07/10/90	07/17/90	25.9	<.15	<.10	--	--	--	--
07/17/90	07/24/90	4.8	<.15	<.10	--	--	--	--
07/24/90	07/31/90	30.0	<.15	<.10	--	--	--	--
07/31/90	08/07/90	4.3	<.15	<.10	--	--	--	--
08/07/90	08/14/90	1.0	<.15	<.10	<.05	<.05	<.05	<.05
08/14/90	08/21/90	7.6	<.15	<.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	35.3	<.15	<.10	<.05	<.05	<.05	<.05
08/28/90	09/04/90	6.4	<.15	<.10	--	--	--	--
09/04/90	09/11/90	4.8	<.32	<.10	--	--	--	--
09/11/90	09/18/90	25.7	<.32	.11	<.05	<.05	<.05	<.05
09/18/90	09/25/90	22.4	<.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	13.7	<.32	<.10	--	--	--	--
10/02/90	10/09/90	6.6	<.32	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	29.5	<.32	<.10	--	--	--	--
10/16/90	10/23/90	17.5	<.32	<.10	--	--	--	--
10/23/90	10/30/90	1.5	<.32	<.10	--	--	--	--
10/30/90	11/06/90	32.5	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	9.4	<.32	<.10	--	--	--	--
11/13/90	11/20/90	.80	<.32	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MI									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.21	<.05	3	nd
--	--	--	--	--	--	<.05	.39	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	nd	5
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.69	.69	9	9
--	--	--	--	--	--	<.05	.36	nd	1
--	--	--	--	--	--	<.05	.13	nd	6
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.10	nd	11
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipita- tion (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chior	Atra- zine	Cyana- zine	DEA
MI09 Douglas Lake,								
11/20/90	11/27/90	25.2	<0.32	<0.10	--	--	--	--
11/27/90	12/04/90	10.4	<.32	<.10	<0.05	<0.05	<0.05	<0.05
12/04/90	12/11/90	1.0	<.32	<.10	--	--	--	--
12/11/90	12/18/90	19.8	<.32	<.10	<.05	<.05	<.05	<.05
01/01/91	01/08/91	2.3	<.32	<.22	--	--	--	--
01/08/91	01/15/91	9.1	<.32	<.10	--	--	--	--
01/15/91	01/22/91	2.5	<.32	.12	--	--	--	--
01/22/91	01/29/91	12.5	<.32	<.10	--	--	--	--
01/29/91	02/05/91	1.5	<.32	<.10	--	--	--	--
02/12/91	02/19/91	10.7	<.32	<.10	--	--	--	--
02/19/91	02/26/91	11.4	<.32	<.10	--	--	--	--
02/26/91	03/05/91	40.4	<.32	<.10	--	--	--	--
03/05/91	03/12/91	16.8	<.32	<.10	--	--	--	--
03/19/91	03/26/91	27.4	<.32	<.10	--	--	--	--
03/26/91	04/02/91	37.1	<.15	<.10	--	--	--	--
04/02/91	04/09/91	2.0	<.15	<.10	--	--	--	--
04/09/91	04/16/91	43.7	<.15	<.10	--	--	--	--
04/16/91	04/23/91	.50	<.15	.10	--	--	--	--
04/23/91	04/30/91	2.3	.23	.22	--	--	--	--
05/07/91	05/14/91	6.6	<.15	.37	<.05	.21	.24	.12
05/14/91	05/21/91	30.2	<.15	<.10	<.05	.05	<.05	<.05
05/21/91	05/28/91	17.5	<.15	.30	.07	.23	.11	.13
05/28/91	06/04/91	14.0	<.15	<.10	<.05	.06	<.05	.08
06/11/91	06/18/91	7.1	<.15	.23	<.05	.19	<.05	<.05
06/18/91	06/25/91	3.6	<.15	<.10	--	--	--	--
06/25/91	07/02/91	19.6	<.15	<.10	--	--	--	--
07/02/91	07/09/91	10.7	<.15	<.10	--	--	--	--
07/09/91	07/15/91	.80	<.15	<.10	--	--	--	--
07/15/91	07/23/91	62.2	<.15	<.10	--	--	--	--
07/23/91	07/30/91	6.1	<.15	<.10	--	--	--	--
07/30/91	08/06/91	1.0	<.15	<.10	--	--	--	--
08/13/91	08/20/91	5.3	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/03/91	3.1	<.15	<.10	--	--	--	--
09/03/91	09/10/91	22.4	<.15	<.10	--	--	--	--
09/10/91	09/17/91	8.6	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MI—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.08	nd	nd
--	--	--	--	--	--	.20	.18	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.21	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	.07	.23	1	4
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.19	nd	1
--	--	--	--	--	--	<.05	.07	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
							MI26 Kellogg Biological	
03/06/90	03/13/90	35.6	<0.15	<0.10	--	--	--	--
03/13/90	03/20/90	3.3	<.15	<.10	--	--	--	--
03/20/90	03/27/90	19.6	<.15	<.10	<.05	<.05	<.05	<.05
03/27/90	04/03/90	44.2	<.15	<.10	<.05	<.05	<.05	.06
04/03/90	04/10/90	17.0	<.15	<.10	--	--	--	--
04/10/90	04/17/90	29.2	.38	.10	--	--	--	--
04/17/90	04/24/90	18.3	<.15	<.10	<.05	<.05	<.05	<.05
05/01/90	05/09/90	34.0	<.15	.26	.11	.06	<.05	<.05
05/09/90	05/15/90	26.0	1.4	.50	--	--	--	--
05/15/90	05/22/90	55.9	1.3	.30	--	--	--	--
05/22/90	05/29/90	9.4	<.15	1.3	.71	.74	.19	.12
06/05/90	06/12/90	3.8	1.1	.80	.45	.71	<.05	.70
06/12/90	06/19/90	.50	<.15	.15	--	--	--	--
06/19/90	06/26/90	56.4	.24	.22	.24	.20	<.05	.16
06/29/90	07/03/90	68.6	.22	<.10	.05	.11	<.05	.14
07/10/90	07/17/90	12.2	<.15	.21	--	--	--	--
07/17/90	07/24/90	54.6	.17	<.10	<.05	<.05	<.05	<.05
07/31/90	08/07/90	29.2	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	11.2	<.15	<.10	<.05	<.05	<.05	<.05
08/14/90	08/22/90	50.6	<.15	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	30.5	<.32	<.10	--	--	--	--
09/11/90	09/18/90	35.6	<.32	<.10	--	--	--	--
09/24/90	10/02/90	.50	.37	.16	--	--	--	--
10/02/90	10/10/90	134.1	<.32	<.10	--	--	--	--
10/10/90	10/16/90	9.4	<.32	<.10	<.05	.06	<.05	<.05
10/16/90	10/23/90	16.0	<.32	.11	<.05	<.05	<.05	<.05
11/06/90	11/13/90	1.8	<.32	<.10	--	--	--	--
11/20/90	11/28/90	93.2	<.32	<.10	<.05	.05	.14	<.05
11/28/90	12/04/90	10.2	.32	<.10	<.05	<.05	<.05	<.05
12/11/90	12/18/90	12.2	<.32	.14	--	--	--	--
12/18/90	12/26/90	15.2	<.32	<.10	--	--	--	--
12/26/90	01/02/91	36.8	<.32	.18	--	--	--	--
01/02/91	01/08/91	5.1	<.32	<.22	--	--	--	--
01/08/91	01/22/91	20.8	<.32	<.10	<.05	<.05	<.05	<.05
01/29/91	02/05/91	.10	.34	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
Station, MI									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.24	.06	7	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.11	.06	4	2
--	--	--	--	--	--	.86	.33	22	9
--	--	--	--	--	--	.82	.19	46	11
<.05	.52	<.05	<.05	<.05	<.05	.71	.74	7	7
<.05	.22	<.05	<.05	<.05	<.05	.45	.71	2	3
--	--	--	--	--	--	<.05	.09	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.24	.20	14	11
<.05	<.05	<.05	<.05	<.05	<.05	.05	.11	3	8
--	--	--	--	--	--	<.05	.13	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.23	.10	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	5
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.08	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.14	nd	5
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.29	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
							MI26 Kellogg Biological	
02/12/91	02/19/91	10.2	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
02/26/91	03/05/91	26.7	<.32	<.10	<.05	<.05	<.05	<.05
03/12/91	03/19/91	14.2	<.32	.29	--	--	--	--
03/19/91	03/26/91	35.6	<.32	.29	--	--	--	--
03/26/91	04/02/91	52.6	<.32	.16	<.05	<.05	<.05	<.05
04/02/91	04/09/91	40.5	<.15	<.10	--	--	--	--
04/09/91	04/16/91	30.1	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	23.1	<.15	<.10	<.05	<.05	<.05	<.05
04/23/91	04/30/91	18.8	<.15	<.10	.06	.08	.06	<.05
04/30/91	05/07/91	10.9	.23	.13	.30	.19	.06	<.05
05/14/91	05/21/91	17.0	1.4	1.2	1.5	1.2	.14	.50
05/21/91	05/28/91	33.0	.63	.71	.63	.63	.06	.54
05/28/91	06/04/91	31.0	.31	.42	.22	.30	<.05	.41
06/04/91	06/11/91	21.6	<.15	<.10	.06	.06	<.05	.05
06/11/91	06/18/91	17.8	<.15	.38	<.05	.38	<.05	.18
06/18/91	06/25/91	16.5	<.15	<.10	<.05	.06	<.05	<.05
06/25/91	07/02/91	50.8	<.15	<.10	<.05	.05	<.05	<.05
07/02/91	07/09/91	24.1	<.15	<.10	.06	.13	<.05	.05
07/16/91	07/23/91	41.2	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/30/91	10.2	<.15	<.10	<.05	<.05	.05	<.05
07/30/91	08/06/91	14.2	<.15	<.10	--	--	--	--
08/06/91	08/14/91	34.3	<.15	<.10	<.05	<.05	<.05	<.05
08/14/91	08/20/91	72.4	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/03/91	1.8	<.15	<.10	--	--	--	--
09/03/91	09/10/91	20.3	<.15	<.10	<.05	<.05	<.05	<.05
09/10/91	09/17/91	15.2	<.15	<.10	<.05	<.05	<.05	<.05
							MI53 Wellston,	
02/27/90	03/06/90	3.6	<.15	<.10	--	--	--	--
03/06/90	03/13/90	27.4	<.15	<.10	<.05	<.05	<.05	<.05
03/13/90	03/20/90	20.1	<.15	<.10	--	--	--	--
03/20/90	03/27/90	18.5	<.15	<.10	--	--	--	--
03/27/90	04/03/90	19.8	<.15	<.10	--	--	--	--
04/03/90	04/10/90	17.8	<.15	<.10	--	--	--	--
04/10/90	04/17/90	20.1	<.15	<.10	--	--	--	--
04/17/90	04/24/90	14.2	.23	<.10	<.05	.07	<.05	<.05
05/01/90	05/08/90	6.1	<.15	2.9	--	--	--	--
05/08/90	05/15/90	68.9	<.15	.25	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
Station, MI—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.23	nd	3
--	--	--	--	--	--	<.05	.23	nd	8
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	.08	1	2
.06	.06	<.05	<.05	<.05	<.05	.30	.19	3	2
<.05	.71	<.05	<.05	<.05	<.05	1.5	1.2	26	20
<.05	.26	<.05	<.05	<.05	<.05	.63	.63	21	21
.20	.09	<.05	<.05	<.05	<.05	.22	.30	7	9
<.05	<.05	<.05	<.05	<.05	<.05	.06	.06	1	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.38	nd	7
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	.06	.13	1	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
MI									
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	1
--	--	--	--	--	--	<.05	2.0	nd	12
--	--	--	--	--	--	<.05	.16	nd	11

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MI53 Wellston,								
05/15/90	05/22/90	46.5	<0.15	<0.10	--	--	--	--
05/29/90	06/05/90	23.1	1.3	1.2	--	--	--	--
06/05/90	06/12/90	7.9	.26	.38	--	--	--	--
06/12/90	06/19/90	49.3	<.15	<.10	0.07	0.11	<0.05	0.15
06/19/90	06/26/90	100.6	<.15	<.10	<.05	<.05	<.05	<.05
06/26/90	07/03/90	63.0	<.15	.12	--	--	--	--
07/03/90	07/10/90	2.3	<.15	.37	--	--	--	--
07/10/90	07/17/90	7.1	<.15	.11	--	--	--	--
07/17/90	07/24/90	33.0	<.15	<.10	<.05	.09	<.05	.07
07/24/90	07/31/90	19.3	.24	<.10	<.05	<.05	<.05	<.05
07/31/90	08/07/90	20.6	<.15	<.10	<.05	.05	<.05	<.05
08/07/90	08/14/90	3.3	1.7	3.7	1.3	3.3	.17	.12
08/14/90	08/21/90	35.1	<.15	<.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	25.4	<.15	<.10	--	--	--	--
09/04/90	09/11/90	52.6	<.32	<.10	--	--	--	--
09/11/90	09/18/90	45.2	<.32	<.10	--	--	--	--
09/18/90	09/25/90	19.8	<.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	28.5	<.32	<.10	<.05	<.05	<.05	<.05
10/02/90	10/09/90	30.2	<.32	<.10	--	--	--	--
10/09/90	10/16/90	42.3	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	21.6	<.32	<.10	<.05	<.05	<.05	<.05
10/23/90	10/30/90	2.0	<.32	.14	--	--	--	--
10/30/90	11/06/90	37.9	<.32	<.10	--	--	--	--
11/06/90	11/13/90	7.4	<.32	<.10	--	--	--	--
11/20/90	11/27/90	30.7	<.32	<.10	--	--	--	--
11/27/90	12/04/90	36.8	<.32	<.10	<.05	<.05	<.05	<.05
--	12/18/90	20.6	<.32	<.10	--	--	--	--
12/18/90	12/26/90	23.1	<.32	<.10	<.05	<.05	<.05	<.05
12/26/90	01/02/91	18.0	<.32	<.10	--	--	--	--
01/02/91	01/08/91	10.4	<.32	<.22	<.05	<.05	<.05	<.05
01/08/91	01/15/91	18.8	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	12.7	<.32	<.10	<.05	<.05	<.05	<.05
01/22/91	01/29/91	20.8	.33	<.10	<.05	<.05	<.05	<.05
01/29/91	02/05/91	6.6	<.32	<.23	--	--	--	--
02/12/91	02/19/91	25.4	<.32	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MI—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	.84	.82	19	19
--	--	--	--	--	--	.16	.25	1	2
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.07	.11	3	5
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	4
--	--	--	--	--	--	<.05	.24	nd	1
--	--	--	--	--	--	<.05	.06	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	1
<.05	.47	<.05	<.05	<.05	<.05	1.3	3.3	4	11
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.08	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chior	Atra- zine	Cyana- zine	DEA
MI53 Wellston,								
02/19/91	02/26/91	8.9	<0.32	<0.10	--	--	--	--
02/26/91	03/05/91	30.7	<.32	<.10	--	--	--	--
03/05/91	03/12/91	13.0	<.32	<.10	--	--	--	--
03/12/91	03/19/91	2.8	<.32	<.10	--	--	--	--
03/19/91	03/26/91	21.8	<.32	<.10	<0.05	<0.05	<0.05	<0.05
03/26/91	04/02/91	28.2	<.15	<.10	--	--	--	--
04/02/91	04/09/91	47.0	<.15	<.10	--	--	--	--
04/09/91	04/16/91	59.4	<.15	<.10	--	--	--	--
04/16/91	04/23/91	1.3	<.15	<.10	--	--	--	--
04/23/91	04/30/91	15.0	.15	.10	.16	<.05	<.05	.07
04/30/91	05/07/91	10.4	<.15	<.10	<.05	<.05	<.05	<.05
05/14/91	05/21/91	4.6	<.15	<.10	<.05	.30	.10	.12
05/21/91	05/28/91	16.5	.27	.68	.22	.59	.05	.42
05/28/91	06/04/91	12.2	<.15	.38	<.05	.32	<.10	.18
06/04/91	06/11/91	2.3	<.15	.83	--	--	--	--
06/11/91	06/18/91	14.2	<.15	<.10	--	--	--	--
06/18/91	06/25/91	8.9	<.15	<.10	--	--	--	--
06/25/91	07/02/91	32.0	<.15	<.10	<.05	.09	<.05	.06
07/02/91	07/09/91	5.1	<.15	.10	.05	.12	<.05	.07
07/09/91	07/16/91	9.4	.15	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	45.7	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/30/91	54.6	<.15	<.10	--	--	--	--
07/30/91	08/06/91	12.7	<.15	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	13.5	<.15	<.10	--	--	--	--
--	08/20/91	21.3	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/04/91	25.9	<.15	<.10	<.05	<.05	<.05	<.05
09/04/91	09/10/91	14.0	<.15	<.10	--	--	--	--
09/10/91	09/17/91	22.6	<.15	<.10	--	--	--	--
MI97 Isle Royale National Park-								
05/31/90	06/05/90	20.1	.41	.74	--	--	--	--
06/05/90	06/12/90	32.0	<.15	.43	<.05	.40	<.05	.15
06/12/90	06/19/90	15.5	<.15	.10	--	--	--	--
06/19/90	06/26/90	15.2	<.15	.13	--	--	--	--
06/26/90	07/03/90	21.1	<.15	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MI—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.07	<.05	<.05	<.05	<.05	.16	<.05	2	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.05	<.05	<.05	<.05	<.05	<.05	.30	nd	1
<.05	.14	<.05	<.05	<.05	<.05	.22	.59	4	10
.20	<.05	<.05	<.05	<.05	.08	<.05	.32	nd	4
--	--	--	--	--	--	<.05	.68	nd	2
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	.05	.12	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
Wallace Lake, MI									
--	--	--	--	--	--	.26	.49	5	10
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.40	nd	13
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	.08	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MI97 Isle Royale National Park-								
07/03/90	07/10/90	42.9	<0.15	<0.10	--	--	--	--
07/10/90	07/17/90	.80	<.15	<.10	<0.05	<0.05	<0.05	<0.05
07/17/90	07/24/90	5.1	<.15	<.10	<.05	<.05	<.05	<.05
07/24/90	07/31/90	1.0	<.15	.11	<.05	<.05	<.05	<.05
08/07/90	08/14/90	4.8	<.15	.11	<.05	<.05	<.05	<.05
08/14/90	08/21/90	1.3	<.15	<.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	18.3	<.32	<.10	--	--	--	--
08/28/90	09/04/90	.80	<.15	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	5.1	<.32	<.10	--	--	--	--
09/11/90	09/18/90	46.7	<.32	.11	<.05	<.05	<.05	<.05
05/21/91	05/28/91	47.5	<.15	<.10	<.05	<.05	<.05	<.05
05/28/91	06/04/91	3.6	<.15	<.10	--	--	--	--
06/04/91	06/11/91	1.0	<.15	.84	--	--	--	--
06/11/91	06/18/91	13.2	<.15	<.10	<.05	.08	<.05	.07
06/18/91	06/25/91	.50	<.15	<.10	--	--	--	--
06/25/91	07/02/91	103.9	<.15	<.10	<.05	<.05	<.05	<.05
07/02/91	07/09/91	21.1	<.15	<.10	--	--	--	--
07/09/91	07/16/91	2.5	.22	<.10	--	--	--	--
07/15/91	07/23/91	17.8	<.15	<.10	--	--	--	--
07/23/91	07/30/91	1.8	<.15	<.10	--	--	--	--
08/27/91	09/03/91	11.7	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	19.8	<.15	<.10	--	--	--	--
MI98 Raco,								
02/27/90	03/06/90	2.5	<.15	<.10	<.05	<.05	<.05	<.05
03/06/90	03/13/90	19.1	<.15	<.10	--	--	--	--
03/13/90	03/20/90	29.7	<.15	<.10	<.05	<.05	<.05	<.05
03/20/90	03/27/90	6.4	<.15	<.10	--	--	--	--
03/27/90	04/03/90	6.7	<.15	<.10	--	--	--	--
04/03/90	04/10/90	22.9	<.15	<.10	<.05	<.05	<.05	<.05
04/10/90	04/17/90	18.0	<.15	<.10	<.05	<.05	<.05	<.05
04/24/90	05/01/90	4.3	.15	.38	.05	.25	<.05	.18
05/01/90	05/08/90	1.8	.35	<.10	--	--	--	--
05/08/90	05/15/90	37.1	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Wallace Lake, MI—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.69	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.19	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
MI									
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.05	.25	nd	1
--	--	--	--	--	--	.22	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Aia-chlor	Atrazine	Cyana-zine	DEA
MI98 Racó,								
05/15/90	05/22/90	38.6	<0.15	<0.10	--	--	--	--
05/29/90	06/05/90	8.1	1.1	1.1	0.70	0.89	<0.05	0.16
06/05/90	06/12/90	6.9	<.15	.63	<.05	.40	.10	.16
06/12/90	06/19/90	30.5	<.15	.69	<.05	.26	.06	.12
06/19/90	06/26/90	61.0	<.15	.18	<.05	.08	<.05	.06
--	07/03/90	22.1	<.15	.16	<.05	.07	<.05	<.05
07/02/90	07/10/90	12.6	<.15	<.10	--	--	--	--
07/10/90	07/17/90	9.3	<.15	.14	--	--	--	--
07/17/90	07/24/90	3.8	<.15	<.10	--	--	--	--
07/24/90	07/31/90	19.6	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	58.4	<.15	<.10	--	--	--	--
08/14/90	08/21/90	2.8	<.15	<.10	--	--	--	--
08/21/90	08/28/90	5.1	<.15	<.10	--	--	--	--
08/28/90	09/04/90	63.3	<.15	<.10	--	--	--	--
09/04/90	09/11/90	48.5	<.32	<.10	--	--	--	--
09/11/90	09/18/90	58.7	<.32	<.10	--	--	--	--
09/18/90	09/25/90	33.3	<.32	<.10	--	--	--	--
09/25/90	10/02/90	8.1	<.32	<.10	<.05	<.05	<.05	<.05
10/02/90	10/09/90	20.1	<.32	<.10	--	--	--	--
10/09/90	10/16/90	34.3	<.32	<.10	--	--	--	--
10/16/90	10/23/90	31.5	<.32	<.10	<.05	<.05	<.05	<.05
10/23/90	10/30/90	2.5	<.32	<.10	--	--	--	--
10/30/90	11/06/90	2.0	<.32	.14	--	--	--	--
11/06/90	11/13/90	11.2	<.32	<.10	--	--	--	--
11/13/90	11/20/90	6.9	<.32	<.10	<.05	<.05	<.05	<.05
11/20/90	11/27/90	42.0	<.32	<.10	.13	.21	.20	.22
11/27/90	12/04/90	3.7	<.32	<.10	<.05	<.05	<.05	<.05
12/04/90	12/11/90	3.8	<.32	<.10	--	--	--	--
12/11/90	12/19/90	21.1	<.32	<.10	--	--	--	--
12/24/90	12/31/90	12.5	<.32	<.10	--	--	--	--
12/31/90	01/08/91	4.3	<.32	<.22	<.05	<.05	<.05	<.05
01/08/91	01/15/91	9.7	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	.80	<.32	<.10	--	--	--	--
01/22/91	01/29/91	22.6	.33	<.10	<.05	<.05	<.05	<.05
01/29/91	02/05/91	2.8	<.32	<.23	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metolachlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
MI—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	0.17	<0.05	<0.05	<0.05	0.12	.70	.89	6	7
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.40	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.26	nd	8
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	5
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.08	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.08	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
.20	.15	.20	.21	.19	.21	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chior	Atra- zine	Cyana- zine	DEA
MI98 Raco,								
02/05/91	02/12/91	6.1	<0.32	<0.23	--	--	--	--
02/12/91	02/19/91	7.4	<.32	<.10	--	--	--	--
02/19/91	03/05/91	26.9	<.32	<.10	<0.05	<0.05	<0.05	<0.05
03/05/91	03/12/91	8.9	<.32	<.10	--	--	--	--
03/19/91	03/26/91	36.3	<.32	.61	--	--	--	--
03/26/91	04/02/91	16.8	<.15	<.10	<.05	<.05	<.05	<.05
04/02/91	04/09/91	17.6	<.15	<.10	<.05	<.05	<.05	<.05
04/09/91	04/16/91	54.0	<.15	<.10	--	--	--	--
04/16/91	04/23/91	2.0	<.15	<.10	--	--	--	--
04/23/91	04/30/91	10.9	<.15	.12	.08	.12	<.05	.08
05/07/91	05/14/91	24.1	<.15	.20	<.05	.08	.10	<.05
05/14/91	05/21/91	10.7	<.15	<.10	--	--	--	--
05/21/91	05/28/91	15.5	5.0	<.10	--	--	--	--
05/28/91	06/04/91	3.1	<.15	<.10	--	--	--	--
06/11/91	06/18/91	11.2	<.15	<.10	<.05	.07	<.05	.07
06/18/91	06/25/91	2.5	<.15	<.10	--	--	--	--
06/25/91	07/02/91	15.5	<.15	<.10	--	--	--	--
07/02/91	07/09/91	38.4	<.15	<.10	<.05	<.05	<.05	<.05
07/09/91	07/16/91	5.1	.15	<.10	--	--	--	--
07/16/91	07/23/91	35.6	<.15	<.10	--	--	--	--
07/30/91	08/06/91	3.3	<.15	<.10	--	--	--	--
08/27/91	09/03/91	4.6	<.15	<.10	--	--	--	--
09/03/91	09/10/91	27.4	<.15	<.10	--	--	--	--
09/10/91	09/17/91	39.9	<.15	<.10	<.05	<.05	<.05	<.05
MI99 Chassell,								
03/06/90	03/13/90	27.4	<.15	<.10	--	--	--	--
03/13/90	03/20/90	28.5	<.15	<.10	--	--	--	--
03/27/90	04/03/90	11.2	<.15	<.10	--	--	--	--
04/03/90	04/10/90	16.0	<.15	<.10	--	--	--	--
04/10/90	04/17/90	6.4	<.15	<.10	--	--	--	--
04/17/90	04/24/90	5.3	.22	<.10	--	--	--	--
04/24/90	05/01/90	25.4	.26	.12	--	--	--	--
05/01/90	05/08/90	2.5	.82	1.1	--	--	--	--
05/08/90	05/15/90	8.6	.24	.10	--	--	--	--
05/15/90	05/22/90	41.4	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MI—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.50	nd	18
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.08	.12	1	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	4.2	.07	65	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.13	<.05	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
MI									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.14	<.05	1	nd
--	--	--	--	--	--	.16	.07	4	2
--	--	--	--	--	--	.52	.71	1	2
--	--	--	--	--	--	.15	.06	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chior	Atra- zine	Cyana- zine	DEA
MI99 Chassell,								
05/29/90	06/05/90	31.8	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
06/05/90	06/12/90	48.3	<.15	.47	--	--	--	--
06/12/90	06/19/90	28.5	<.15	<.10	--	--	--	--
06/19/90	06/26/90	19.3	<.15	.20	--	--	--	--
06/26/90	07/03/90	17.0	<.15	<.10	--	--	--	--
07/03/90	07/10/90	23.6	<.15	<.10	--	--	--	--
07/17/90	07/24/90	20.3	<.15	<.10	--	--	--	--
07/24/90	07/31/90	12.5	<.15	<.10	--	--	--	--
07/31/90	08/07/90	2.3	.24	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	13.0	<.15	<.10	--	--	--	--
08/21/90	08/28/90	5.6	<.15	<.10	.06	<.05	<.05	<.05
08/28/90	09/04/90	3.1	<.15	<.10	--	--	--	--
09/04/90	09/11/90	.50	<.32	<.10	--	--	--	--
09/11/90	09/18/90	71.1	<.32	<.10	--	--	--	--
09/18/90	09/25/90	36.1	<.32	<.10	--	--	--	--
09/25/90	10/02/90	9.7	<.32	<.10	--	--	--	--
10/02/90	10/09/90	4.3	<.32	.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	25.7	<.32	<.10	--	--	--	--
10/16/90	10/23/90	76.5	<.32	<.10	--	--	--	--
10/23/90	10/30/90	13.7	<.32	<.10	--	--	--	--
10/30/90	11/06/90	1.8	<.32	<.10	--	--	--	--
11/06/90	11/13/90	1.3	<.32	<.10	--	--	--	--
11/23/90	11/27/90	24.9	<.32	<.10	--	--	--	--
11/27/90	12/04/90	23.4	.35	<.10	<.05	<.05	<.05	<.05
12/04/90	12/11/90	2.5	<.32	<.10	--	--	--	--
12/11/90	12/18/90	5.8	<.32	<.10	--	--	--	--
12/18/90	12/25/90	17.0	<.32	<.10	<.05	<.05	<.05	<.05
12/25/90	01/01/91	22.1	<.32	<.10	--	--	--	--
01/01/91	01/08/91	13.5	<.32	<.10	<.05	<.05	<.05	<.05
01/08/91	01/15/91	14.0	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	7.6	<.32	<.10	--	--	--	--
01/22/91	01/29/91	28.7	<.32	<.10	<.05	<.05	<.05	<.05
01/29/91	02/05/91	3.1	<.32	<.23	--	--	--	--
02/12/91	02/19/91	10.2	<.32	<.10	--	--	--	--
02/19/91	02/26/91	14.5	<.32	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MI—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	.31	nd	15
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.13	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MI99 Chassell,								
03/05/91	03/12/91	5.3	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
03/19/91	03/26/91	45.5	<.32	<.10	--	--	--	--
03/26/91	04/02/91	20.1	<.15	<.10	--	--	--	--
04/02/91	04/09/91	6.1	<.15	.11	<.05	.11	<.05	<.05
04/09/91	04/16/91	20.3	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	7.1	<.15	<.10	--	--	--	--
04/23/91	04/30/91	16.8	<.15	.10	<.05	.10	.06	.05
04/30/91	05/07/91	46.3	<.15	<.10	--	--	--	--
05/14/91	05/21/91	3.3	<.15	<.10	--	--	--	--
05/21/91	05/28/91	66.0	<.15	<.10	--	--	--	--
05/28/91	06/04/91	18.8	<.15	.12	.07	.17	<.05	.15
06/11/91	06/18/91	1.6	<.15	.20	--	--	--	--
06/18/91	06/25/91	2.3	<.15	<.10	--	--	--	--
06/25/91	07/02/91	69.9	<.15	<.10	--	--	--	--
07/02/91	07/09/91	16.5	<.15	<.10	--	--	--	--
07/09/91	07/16/91	7.6	<.15	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	14.0	<.15	<.10	--	--	--	--
07/23/91	07/30/91	21.1	<.15	<.10	<.05	<.05	<.05	<.05
08/13/91	08/20/91	26.7	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/03/91	14.0	<.15	<.10	--	--	--	--
09/03/91	09/10/91	22.6	<.15	<.10	--	--	--	--
09/10/91	09/17/91	13.2	<.15	<.10	--	--	--	--
MN16 Marcell Experimental								
02/27/90	03/06/90	4.3	<.15	<.10	--	--	--	--
03/06/90	03/13/90	13.2	<.15	<.10	--	--	--	--
03/13/90	03/20/90	30.0	<.15	<.10	<.05	<.05	<.05	<.05
03/27/90	04/03/90	6.1	<.15	<.10	--	--	--	--
04/03/90	04/10/90	6.1	<.15	<.10	--	--	--	--
04/10/90	04/17/90	2.5	.40	<.10	--	--	--	--
04/24/90	05/01/90	40.9	<.15	<.10	<.05	<.05	<.05	<.05
05/01/90	05/08/90	.50	<.15	.40	--	--	--	--
05/08/90	05/15/90	2.3	<.15	<.10	--	--	--	--
05/15/90	05/22/90	9.7	<.15	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MI—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.11	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.10	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.07	.17	1	3
--	--	--	--	--	--	<.05	.16	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
Forest, MN									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.25	<.05	1	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.26	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MN16 Marcell Experimental								
05/22/90	05/29/90	11.4	<0.15	<0.10	--	--	--	--
05/29/90	06/05/90	43.7	<.15	.27	<0.05	0.19	0.27	0.05
06/05/90	06/12/90	14.2	<.15	.28	--	--	--	--
06/12/90	06/19/90	16.5	<.15	<.10	--	--	--	--
06/19/90	06/26/90	43.9	<.15	<.10	<.05	<.05	<.05	<.05
07/03/90	07/10/90	8.4	<.15	.35	<.05	.17	<.05	<.05
07/10/90	07/17/90	6.4	<.15	<.10	.05	<.05	<.05	<.05
07/17/90	07/24/90	5.8	<.15	<.10	--	--	--	--
07/24/90	07/31/90	25.4	<.15	<.10	<.05	<.05	<.05	<.05
07/31/90	08/07/90	6.9	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	1.8	<.15	<.10	--	--	--	--
08/21/90	08/28/90	16.8	<.15	<.10	--	--	--	--
08/28/90	09/04/90	.80	<.15	<.10	--	--	--	--
09/04/90	09/11/90	6.1	<.32	<.10	--	--	--	--
09/11/90	09/18/90	18.0	<.32	<.10	--	--	--	--
09/18/90	09/25/90	9.4	<.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	2.3	<.32	.12	--	--	--	--
10/02/90	10/09/90	41.2	<.32	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	9.9	<.32	<.10	--	--	--	--
10/16/90	10/23/90	49.2	<.32	<.10	<.05	<.05	<.05	<.05
11/13/90	11/20/90	1.8	<.32	<.10	--	--	--	--
11/20/90	11/27/90	7.1	<.32	.14	<.05	<.05	<.05	<.05
11/27/90	12/04/90	3.8	<.32	.10	<.05	<.05	<.05	<.05
12/11/90	12/18/90	3.6	<.32	<.10	--	--	--	--
12/18/90	12/26/90	21.8	<.32	<.10	--	--	--	--
01/02/91	01/08/91	2.0	<.32	<.10	--	--	--	--
01/08/91	01/15/91	12.7	<.32	<.22	--	--	--	--
01/15/91	01/22/91	3.8	<.32	<.10	--	--	--	--
02/12/91	02/19/91	17.8	<.32	<.10	--	--	--	--
02/19/91	02/26/91	7.1	<.32	<.10	--	--	--	--
02/26/91	03/05/91	4.6	<.32	<.10	--	--	--	--
03/05/91	03/12/91	5.6	<.32	.25	--	--	--	--
03/19/91	03/26/91	24.4	<.32	<.10	--	--	--	--
04/09/91	04/16/91	32.8	<.15	<.10	--	--	--	--
04/16/91	04/23/91	5.6	<.15	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Forest, MN—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.19	nd	8
--	--	--	--	--	--	<0.05	.18	nd	3
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.17	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.20	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MN16 Marcell Experimental								
04/23/91	04/30/91	27.4	<0.15	<0.10	<0.05	0.09	<0.05	<0.05
05/21/91	05/28/91	29.5	.40	.18	.47	.19	.25	.09
05/28/91	06/04/91	5.1	<.15	<.10	--	--	--	--
06/11/91	06/18/91	32.8	<.15	.18	.06	.22	<.05	.09
06/18/91	06/25/91	19.8	<.15	<.10	--	--	--	--
06/25/91	07/02/91	43.7	<.15	.10	<.05	.09	<.05	<.05
07/02/91	07/09/91	34.0	<.15	<.10	--	--	--	--
07/09/91	07/16/91	11.2	<.15	<.10	--	--	--	--
07/16/91	07/23/91	14.2	<.15	<.10	<.05	.06	<.05	<.05
07/23/91	07/30/91	8.4	<.15	<.10	--	--	--	--
07/30/91	08/06/91	8.1	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/03/91	16.5	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	36.8	<.15	<.10	--	--	--	--
09/10/91	09/17/91	12.2	<.15	<.10	<.05	<.05	<.05	<.05
MN18 Fernberg,								
03/06/90	03/13/90	21.6	<.15	<.10	<.05	<.05	<.05	<.05
03/13/90	03/20/90	13.7	<.15	<.10	--	--	--	--
03/20/90	03/27/90	1.3	<.15	<.10	--	--	--	--
03/27/90	04/03/90	12.7	<.15	<.10	--	--	--	--
04/03/90	04/10/90	8.4	<.15	<.10	<.05	<.05	<.05	<.05
04/10/90	04/17/90	1.8	.28	<.10	--	--	--	--
04/17/90	04/24/90	17.3	.51	.56	--	--	--	--
04/24/90	05/01/90	81.3	<.15	<.10	--	--	--	--
05/08/90	05/15/90	12.5	<.15	<.10	--	--	--	--
05/15/90	05/22/90	14.0	<.15	<.10	<.05	<.05	<.05	<.05
05/29/90	06/05/90	21.6	.46	1.6	.35	.77	.53	.24
06/05/90	06/12/90	22.1	<.15	.13	<.05	.19	.10	.06
06/12/90	06/19/90	26.7	<.15	<.10	--	--	--	--
06/19/90	06/26/90	44.5	<.15	.10	--	--	--	--
06/26/90	07/03/90	17.0	<.15	<.10	<.05	.09	<.05	.05
07/03/90	07/10/90	40.6	<.15	<.10	--	--	--	--
07/10/90	07/17/90	7.6	<.15	<.10	<.05	<.05	<.05	<.05
07/17/90	07/24/90	30.5	<.15	<.10	--	--	--	--
07/24/90	07/31/90	2.8	<.15	.12	<.05	<.05	<.05	<.05
07/31/90	08/07/90	6.6	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metolachlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
Forest, MN—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	nd	2
<.05	.13	<.05	<.05	<.05	<.05	.47	.19	14	6
--	--	--	--	--	--	<.05	.06	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	.22	2	7
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	nd	4
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
MN									
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.18	<.05	nd	nd
--	--	--	--	--	--	.32	.37	6	6
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.10	<.05	<.05	<.05	.05	.35	.77	8	17
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.19	nd	4
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MN18 Fernberg,								
08/07/90	08/14/90	8.6	<0.15	<0.10	--	--	--	--
08/14/90	08/21/90	1.0	<.15	<.10	<0.05	<0.05	<0.05	<0.05
08/21/90	08/28/90	15.2	<.15	<.10	--	--	--	--
08/28/90	09/04/90	1.8	<.15	<.10	--	--	--	--
09/04/90	09/11/90	1.0	<.32	<.10	--	--	--	--
09/11/90	09/18/90	35.3	<.32	<.10	<.05	<.05	<.05	<.05
09/18/90	09/25/90	13.7	<.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	12.5	<.32	.15	<.05	<.05	<.05	<.05
10/02/90	10/09/90	31.8	<.32	<.10	--	--	--	--
10/09/90	10/16/90	5.1	<.32	<.10	--	--	--	--
10/16/90	10/23/90	33.0	<.32	<.10	--	--	--	--
10/23/90	10/30/90	2.3	<.32	<.10	--	--	--	--
11/06/90	11/13/90	2.0	<.32	.12	--	--	--	--
11/13/90	11/20/90	1.0	<.32	<.10	--	--	--	--
11/20/90	11/27/90	18.3	<.32	<.10	--	--	--	--
12/04/90	12/11/90	1.0	<.32	.12	--	--	--	--
12/11/90	12/18/90	7.6	.37	<.10	--	--	--	--
12/18/90	12/26/90	22.6	<.32	<.10	--	--	--	--
12/26/90	01/02/91	2.0	<.32	<.10	--	--	--	--
01/02/91	01/08/91	4.6	<.32	<.22	--	--	--	--
01/08/91	01/15/91	8.4	<.32	<.10	<.05	<.05	<.05	<.05
01/15/91	01/22/91	4.1	<.32	<.10	--	--	--	--
01/22/91	01/29/91	2.5	.40	<.10	--	--	--	--
02/12/91	02/19/91	10.2	<.32	<.10	--	--	--	--
02/19/91	02/26/91	8.4	<.32	<.10	--	--	--	--
02/26/91	03/05/91	2.5	<.32	.11	--	--	--	--
03/05/91	03/12/91	12.2	<.32	<.10	--	--	--	--
03/19/91	03/26/91	20.1	<.32	<.10	<.05	<.05	<.05	<.05
04/02/91	04/09/91	5.1	<.15	<.10	--	--	--	--
04/09/91	04/16/91	3.6	<.15	<.10	--	--	--	--
04/16/91	04/23/91	1.3	<.15	<.10	--	--	--	--
04/23/91	04/30/91	15.0	<.15	.12	<.05	.12	.10	.06
05/07/91	05/14/91	7.6	<.15	.52	.06	.44	.11	<.05
05/14/91	05/21/91	2.5	<.15	<.10	--	--	--	--
05/21/91	05/28/91	20.1	<.15	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MN—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.34	<.05	1	nd
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	.08	<.05	<.05	<.05	.06	.44	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	1

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chior	Atra- zine	Cyana- zine	DEA
MN18 Fernberg,								
05/28/91	06/04/91	39.4	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
06/04/91	06/11/91	25.4	<.15	<.10	<.05	.05	<.05	<.05
06/11/91	06/18/91	40.6	<.15	<.10	<.05	<.05	<.05	<.05
06/18/91	06/25/91	2.5	<.15	<.10	--	--	--	--
06/25/91	07/02/91	57.2	<.15	<.10	<.05	.07	<.05	.06
07/02/91	07/09/91	24.6	<.15	<.10	--	--	--	--
07/09/91	07/16/91	13.2	.20	<.10	--	--	--	--
07/16/91	07/23/91	19.6	<.15	<.10	--	--	--	--
07/23/91	07/30/91	34.8	<.15	<.10	--	--	--	--
07/30/91	08/06/91	1.8	.19	.12	--	--	--	--
08/13/91	08/20/91	7.6	<.15	<.10	<.05	<.05	<.05	<.05
08/20/91	08/27/91	8.1	<.15	<.10	--	--	--	--
08/27/91	09/03/91	11.4	<.15	<.10	--	--	--	--
09/03/91	09/10/91	43.2	<.15	<.10	--	--	--	--
09/10/91	09/17/91	14.2	<.15	<.10	<.05	<.05	<.05	<.05
MN23 Camp Ripley,								
03/06/90	03/13/90	50.8	<.15	<.10	--	--	--	--
03/13/90	03/20/90	33.0	<.15	<.10	--	--	--	--
03/27/90	04/03/90	10.7	<.15	<.10	--	--	--	--
04/03/90	04/10/90	1.5	<.15	.25	--	--	--	--
04/10/90	04/17/90	2.5	.15	<.10	--	--	--	--
04/17/90	04/24/90	19.6	.45	.77	--	--	--	--
04/24/90	05/01/90	59.7	.18	.30	.06	.08	<.05	<.05
05/08/90	05/15/90	7.9	.35	<.10	--	--	--	--
05/15/90	05/22/90	10.5	<.15	<.10	--	--	--	--
05/22/90	05/29/90	21.6	<.15	.20	--	--	--	--
05/29/90	06/05/90	61.0	.41	.70	--	--	--	--
06/05/90	06/12/90	58.4	<.15	.19	.10	.22	.05	.07
06/12/90	06/19/90	26.4	<.15	<.10	--	--	--	--
06/19/90	06/26/90	6.6	<.15	.87	--	--	--	--
06/26/90	07/03/90	5.3	<.15	.16	--	--	--	--
07/03/90	07/10/90	11.4	.56	.28	.17	.26	<.05	.17
07/10/90	07/17/90	24.1	<.15	.14	<.05	<.05	<.05	<.05
07/17/90	07/24/90	2.8	<.15	.21	.05	.15	<.05	.20
07/24/90	07/31/90	10.2	<.15	<.10	<.05	<.05	<.05	<.05
07/31/90	08/07/90	6.9	.18	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MN—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	4
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.17	<.05	2	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.16	.09	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
MN									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.16	nd	nd
--	--	--	--	--	--	.09	<.05	nd	nd
--	--	--	--	--	--	.29	.51	6	10
<.05	<.05	<.05	<.05	<.05	<.05	.06	.08	4	5
--	--	--	--	--	--	.22	<.05	2	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.13	nd	3
--	--	--	--	--	--	.26	.47	16	28
<.05	<.05	<.05	<.05	<.05	<.05	.10	.22	6	13
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.58	nd	4
--	--	--	--	--	--	<.05	.10	nd	1
<.05	.09	<.05	<.05	<.05	<.05	.17	.26	2	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.05	.15	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
							MN23	Camp Ripley,
08/07/90	08/14/90	2.0	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
08/14/90	08/21/90	10.2	<.15	<.10	--	--	--	--
08/21/90	08/28/90	30.0	<.15	<.10	--	--	--	--
08/28/90	09/04/90	15.8	<.32	.19	<.05	<.05	<.05	<.05
09/04/90	09/11/90	11.4	<.32	<.10	--	--	--	--
09/18/90	09/25/90	16.1	<.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	3.8	<.32	.14	<.05	<.05	<.05	<.05
10/02/90	10/09/90	49.5	<.32	<.10	--	--	--	--
10/16/90	10/23/90	40.1	<.32	<.10	<.05	<.05	<.05	<.05
11/13/90	11/20/90	.80	<.32	<.10	--	--	--	--
11/20/90	11/27/90	5.1	<.32	.12	--	--	--	--
11/27/90	12/04/90	7.6	.34	<.10	<.05	<.05	<.05	<.05
12/18/90	12/25/90	19.1	<.32	<.10	<.05	<.05	<.05	<.05
01/08/91	01/15/91	6.1	<.32	<.22	--	--	--	--
01/15/91	01/22/91	2.8	<.32	<.10	--	--	--	--
01/22/91	01/29/91	3.8	<.32	<.10	--	--	--	--
02/12/91	02/19/91	14.7	<.32	<.10	--	--	--	--
02/19/91	02/26/91	10.2	<.32	<.10	--	--	--	--
03/19/91	03/26/91	49.3	<.32	<.10	--	--	--	--
03/26/91	04/02/91	.80	<.15	<.10	--	--	--	--
04/02/91	04/09/91	6.4	<.15	<.10	--	--	--	--
04/09/91	04/16/91	56.4	<.15	<.10	--	--	--	--
04/16/91	04/23/91	1.5	<.15	<.10	--	--	--	--
04/23/91	04/30/91	50.0	<.15	.18	.06	.17	.14	<.05
05/14/91	05/21/91	2.5	.18	.18	--	--	--	--
05/21/91	05/28/91	24.1	.86	.62	.79	.59	.73	.09
05/28/91	06/04/91	26.4	.28	.20	.34	.21	.07	.22
06/11/91	06/18/91	60.2	.22	.17	.17	.19	<.05	.12
06/18/91	06/25/91	41.9	<.15	.11	.08	.13	<.05	.08
06/25/91	07/02/91	129.0	<.15	.23	.07	.21	<.05	.05
07/02/91	07/09/91	3.6	<.15	.16	--	--	--	--
07/09/91	07/16/91	15.2	<.15	<.10	<.05	.06	<.05	<.05
07/16/91	07/23/91	10.7	<.15	<.10	--	--	--	--
07/23/91	07/30/91	11.4	<.15	<.10	--	--	--	--
07/30/91	08/06/91	7.6	<.15	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MN—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	.17	3	9
--	--	--	--	--	--	.15	.14	nd	nd
<.05	.15	<.05	<.05	<.05	<.05	.79	.59	19	14
.08	.12	<.05	<.05	<.05	<.05	.34	.21	9	6
<.05	<.05	<.05	<.05	<.05	<.05	.17	.19	1	11
<.05	<.05	<.05	<.05	<.05	<.05	.08	.13	3	5
<.05	<.05	<.05	<.05	<.05	<.05	.07	.21	9	27
--	--	--	--	--	--	<.05	.13	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	1
--	--	--	--	--	--	<.05	.07	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chlor	Atra- zine	Cyana- zine	DEA
MN23 Camp Ripley,								
08/13/91	08/20/91	4.6	<0.15	<0.10	--	--	--	--
08/20/91	08/27/91	25.2	<.15	<.10	--	--	--	--
08/27/91	09/03/91	35.3	<.15	<.10	<0.05	<0.05	<0.05	<0.05
09/03/91	09/10/91	26.7	<.15	<.10	--	--	--	--
09/10/91	09/17/91	6.6	<.15	<.10	--	--	--	--
MN27 Lamberton,								
03/06/90	03/13/90	21.8	<.15	<.10	--	--	--	--
--	03/20/90	26.7	<.15	<.10	--	--	--	--
03/20/90	03/27/90	6.4	<.15	<.10	--	--	--	--
03/27/90	04/03/90	1.0	<.15	<.10	--	--	--	--
04/03/90	04/10/90	3.3	<.15	<.10	--	--	--	--
04/10/90	04/17/90	6.4	<.15	<.10	--	--	--	--
04/17/90	04/24/90	.80	.26	2.0	--	--	--	--
04/24/90	05/01/90	35.6	.40	.19	--	--	--	--
05/01/90	05/08/90	3.6	2.1	1.3	--	--	--	--
05/08/90	05/15/90	24.6	1.5	<.10	--	--	--	--
05/15/90	05/22/90	55.9	.29	<.10	.51	.10	.25	.05
05/22/90	05/29/90	31.8	.75	<.10	--	--	--	--
05/29/90	06/05/90	14.7	1.4	1.7	--	--	--	--
06/05/90	06/12/90	2.8	.18	.51	--	--	--	--
06/12/90	06/19/90	73.2	.21	.31	<.05	.17	<.05	.12
06/19/90	06/26/90	2.0	<.15	.10	--	--	--	--
06/26/90	07/03/90	5.6	<.15	.29	--	--	--	--
07/03/90	07/10/90	17.0	<.15	.15	<.05	.18	<.05	.12
07/10/90	07/17/90	5.8	<.15	.22	--	--	--	--
07/17/90	07/24/90	50.0	<.15	<.10	--	--	--	--
07/24/90	07/31/90	5.1	.18	<.10	.08	<.05	<.05	.06
08/14/90	08/21/90	96.5	<.15	<.10	--	--	--	--
08/21/90	08/28/90	22.4	<.15	.12	<.05	<.05	<.05	<.05
08/28/90	09/04/90	1.3	.33	.33	<.05	<.05	<.05	<.05
09/04/90	09/11/90	1.3	<.32	<.10	--	--	--	--
09/11/90	09/18/90	18.3	<.32	<.10	--	--	--	--
09/18/90	09/25/90	6.1	<.32	<.10	--	--	--	--
10/02/90	10/09/90	33.0	<.32	.11	<.05	<.05	<.05	<.05
10/09/90	10/16/90	.50	.43	<.10	--	--	--	--
10/16/90	10/23/90	17.0	<.32	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990-91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metolachlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
MN—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
MN									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.16	1.3	nd	1
--	--	--	--	--	--	.25	.12	9	4
--	--	--	--	--	--	1.4	.88	5	3
--	--	--	--	--	--	.98	<.05	24	nd
<.05	.10	<.05	<.05	<.05	<.05	.51	.10	28	6
--	--	--	--	--	--	.48	<.05	15	nd
--	--	--	--	--	--	.90	1.2	13	17
--	--	--	--	--	--	.11	.34	nd	1
<.05	.05	<.05	<.05	<.05	<.05	<.05	.17	nd	12
--	--	--	--	--	--	<.05	.06	nd	nd
--	--	--	--	--	--	<.05	.19	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.18	nd	3
--	--	--	--	--	--	<.05	.14	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.06	<.05	<.05	<.05	<.05	.08	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.27	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MN27 Lamberton,								
10/30/90	11/06/90	6.4	<0.32	<0.10	--	--	--	--
11/27/90	12/04/90	3.3	<.32	<.10	--	--	--	--
12/11/90	12/18/90	8.9	.47	<.10	--	--	--	--
01/08/91	01/15/91	2.3	<.32	<.10	--	--	--	--
02/12/91	02/19/91	7.1	<.32	<.10	--	--	--	--
03/05/91	03/12/91	2.5	<.32	<.10	--	--	--	--
03/12/91	03/19/91	5.1	<.32	.12	--	--	--	--
03/19/91	03/26/91	60.5	<.32	<.10	--	--	--	--
03/26/91	04/02/91	3.1	<.15	<.10	--	--	--	--
04/09/91	04/16/91	63.5	<.15	<.10	<0.05	<0.05	<0.05	<0.05
04/16/91	04/23/91	2.5	<.15	<.10	--	--	--	--
04/23/91	04/30/91	39.9	.24	.12	.20	.10	.05	<.05
05/07/91	05/14/91	7.1	1.3	2.0	.84	1.3	2.0	.53
05/14/91	05/21/91	29.7	.84	.81	--	--	--	--
05/21/91	05/28/91	22.9	1.2	.42	1.3	.46	.66	.15
05/28/91	06/04/91	41.7	.73	.61	.94	.64	.29	.23
06/04/91	06/11/91	27.2	<.15	.16	.06	.18	.08	.05
06/11/91	06/18/91	9.4	.21	.17	.28	.20	.07	.10
06/18/91	06/25/91	71.1	.19	.37	.10	.31	<.05	.10
06/25/91	07/02/91	28.5	<.15	.18	.06	.26	<.05	.11
07/02/91	07/09/91	3.8	<.15	<.10	--	--	--	--
07/09/91	07/16/91	4.3	.23	.27	--	--	--	--
07/16/91	07/23/91	10.9	<.15	<.10	--	--	--	--
07/23/91	07/30/91	5.1	<.15	.12	<.05	.08	<.05	<.05
07/30/91	08/06/91	5.6	<.15	<.10	--	--	--	--
08/06/91	08/13/91	45.7	<.15	<.10	--	--	--	--
08/27/91	09/03/91	1.5	<.15	<.10	--	--	--	--
09/03/91	09/10/91	21.1	<.15	<.10	--	--	--	--
09/10/91	09/17/91	86.4	<.15	<.10	--	--	--	--
MO03 Ashland Wildlife								
02/27/90	03/06/90	8.6	<.15	<.10	<.05	<.05	<.05	<.05
03/06/90	03/13/90	34.8	<.15	<.10	--	--	--	--
03/13/90	03/20/90	106.7	<.15	<.10	<.05	<.05	<.05	<.05
03/20/90	03/27/90	25.9	<.15	<.10	--	--	--	--
03/27/90	04/03/90	18.3	<.15	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

[illegible]

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chior	Atra- zine	Cyana- zine	DEA
MO03 Ashland Wildlife								
04/03/90	04/10/90	9.7	<0.15	<0.10	--	--	--	--
04/10/90	04/17/90	51.3	<.15	<.10	<0.05	<0.05	<0.05	<0.05
04/17/90	04/24/90	10.4	<.15	<.10	<.05	<.05	<.05	<.05
04/24/90	05/01/90	11.9	<.15	<.10	--	--	--	--
05/01/90	05/08/90	50.0	<.15	<.10	.06	.08	<.05	<.05
05/08/90	05/15/90	72.6	<.15	<.10	<.05	<.05	<.05	<.05
05/15/90	05/22/90	144.8	<.15	<.10	<.05	<.05	<.05	<.05
05/22/90	05/29/90	13.0	<.15	.14	<.05	.09	<.05	.06
05/29/90	06/05/90	4.6	<.15	.38	--	--	--	--
06/05/90	06/13/90	81.8	<.15	<.10	.09	.06	<.05	.05
06/13/90	06/19/90	41.7	<.15	<.10	--	--	--	--
06/19/90	06/25/90	17.5	<.15	.11	--	--	--	--
07/03/90	07/10/90	7.1	<.15	.10	.08	.11	<.05	<.05
07/10/90	07/17/90	14.7	<.15	.18	--	--	--	--
07/17/90	07/24/90	51.3	<.15	<.10	<.05	<.05	<.05	<.05
07/24/90	07/31/90	22.4	.22	<.10	<.05	<.05	<.05	<.05
07/31/90	08/21/90	129.2	<.15	<.10	<.05	<.05	<.05	<.05
08/28/90	09/04/90	2.5	<.32	<.10	<.05	<.05	<.05	<.05
09/11/90	09/18/90	10.7	<.32	<.10	--	--	--	--
09/18/90	09/25/90	10.2	<.32	<.10	--	--	--	--
10/01/90	10/09/90	63.3	<.32	.13	<.05	<.05	<.05	<.05
10/09/90	10/16/90	10.2	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	2.5	<.32	<.10	--	--	--	--
10/29/90	11/06/90	24.1	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	1.0	<.32	<.10	--	--	--	--
11/13/90	11/20/90	.80	<.32	<.10	--	--	--	--
11/20/90	11/27/90	42.7	<.32	<.10	<.05	<.05	<.05	<.05
11/27/90	12/04/90	57.9	.35	<.10	<.05	<.05	<.05	<.05
12/11/90	12/18/90	16.5	<.32	<.10	--	--	--	--
12/26/90	01/01/91	41.2	<.32	<.10	--	--	--	--
01/01/91	01/08/91	9.9	<.32	.10	<.05	<.05	<.05	<.05
01/08/91	01/15/91	10.4	<.32	<.22	--	--	--	--
01/15/91	01/22/91	4.6	<.32	<.10	<.05	<.05	<.05	<.05
01/22/91	01/29/91	8.6	.32	<.10	<.05	<.05	<.05	<.05
01/29/91	02/05/91	6.1	<.32	<.23	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Area, MO—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	.08	3	4
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	nd	1
--	--	--	--	--	--	<.05	.25	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	.09	.06	7	5
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	.08	.11	1	1
--	--	--	--	--	--	<.05	.11	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MO03 Ashland Wildlife								
02/12/91	02/19/91	1.5	<0.32	<0.10	--	--	--	--
02/26/91	03/04/91	5.8	<.32	.29	<0.05	<0.05	<0.05	<0.05
03/04/91	03/12/91	.50	<.32	.14	--	--	--	--
03/12/91	03/19/91	46.2	<.32	.26	--	--	--	--
03/19/91	03/27/91	4.3	<.32	.10	<.05	<.05	<.05	<.05
04/02/91	04/08/91	6.1	<.15	<.10	<.05	<.05	<.05	<.05
04/08/91	04/16/91	53.3	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	23.1	.16	.16	.26	.19	.07	.16
04/23/91	04/30/91	24.9	<.15	<.10	<.05	.07	<.05	<.05
04/30/91	05/07/91	51.8	<.15	.12	<.05	<.05	<.05	<.05
05/14/91	05/21/91	12.5	<.15	<.10	--	--	--	--
05/21/91	05/28/91	28.7	<.15	<.10	--	--	--	--
06/11/91	06/17/91	26.7	.16	<.10	--	--	--	--
06/17/91	06/25/91	1.5	<.15	<.10	--	--	--	--
06/25/91	07/02/91	5.3	<.15	<.10	--	--	--	--
07/02/91	07/09/91	12.7	<.15	<.10	--	--	--	--
07/09/91	07/16/91	58.7	<.15	<.10	--	--	--	--
07/16/91	07/23/91	7.6	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/31/91	3.8	<.15	<.10	--	--	--	--
07/31/91	08/06/91	8.6	<.15	<.10	<.05	<.05	.06	<.05
08/06/91	08/13/91	23.6	<.15	<.10	--	--	--	--
08/13/91	08/20/91	18.5	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/03/91	53.9	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	23.6	<.15	<.10	--	--	--	--
09/10/91	09/17/91	47.0	<.15	<.10	<.05	<.05	<.05	<.05
MO05 University Forest,								
02/27/90	03/06/90	12.7	<.15	<.10	--	--	--	--
03/06/90	03/13/90	17.3	<.15	<.10	--	--	--	--
03/13/90	03/20/90	15.2	.25	<.10	<.05	<.05	<.05	<.05
03/20/90	03/27/90	16.0	<.15	<.10	--	--	--	--
03/27/90	04/03/90	42.2	<.15	<.10	--	--	--	--
04/03/90	04/10/90	54.6	<.15	<.10	--	--	--	--
04/10/90	04/17/90	20.6	<.15	<.10	--	--	--	--
04/17/90	04/24/90	9.4	<.15	.12	<.05	<.05	<.05	<.05
04/24/90	05/01/90	54.9	<.15	.19	--	--	--	--
05/01/90	05/08/90	24.4	<.15	.18	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Area, MO—Continued									
--	--	--	--	--	--	<0.05	0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.11	nd	nd
--	--	--	--	--	--	<.05	.21	nd	10
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.15	<.05	<.05	<.05	<.05	.26	.19	6	4
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.14	<.05	4	nd
--	--	--	--	--	--	<.05	.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
MO									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.12	nd	6
--	--	--	--	--	--	<.05	.11	nd	3

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MO05 University Forest,								
05/08/90	05/15/90	37.1	<0.15	0.22	<0.05	0.07	<0.05	<0.05
05/15/90	05/22/90	61.7	<.15	<.10	<.05	<.05	<.05	<.05
05/22/90	05/29/90	37.6	<.15	<.10	<.05	<.05	<.05	<.05
05/29/90	06/05/90	16.0	<.15	.21	--	--	--	--
06/05/90	06/12/90	2.3	<.32	<.10	--	--	--	--
06/12/90	06/19/90	2.3	<.15	<.10	--	--	--	--
06/19/90	06/26/90	33.8	.16	.18	.24	.13	<.05	.05
07/10/90	07/17/90	17.3	<.15	<.10	--	--	--	--
07/17/90	07/24/90	67.8	<.15	<.10	--	--	--	--
07/31/90	08/07/90	64.8	<.15	<.10	--	--	--	--
08/07/90	08/14/90	23.1	<.15	.11	<.05	<.05	<.05	<.05
08/14/90	08/21/90	105.2	<.15	<.10	--	--	--	--
09/04/90	09/11/90	30.7	<.32	<.10	--	--	--	--
09/18/90	09/25/90	35.8	<.32	<.10	--	--	--	--
09/25/90	10/02/90	11.4	<.32	<.10	--	--	--	--
10/02/90	10/09/90	110.7	<.32	<.10	--	--	--	--
10/09/90	10/16/90	5.8	<.32	<.10	--	--	--	--
10/16/90	10/23/90	11.9	<.32	<.10	<.05	<.05	<.05	<.05
10/30/90	11/06/90	24.1	<.32	<.10	--	--	--	--
11/06/90	11/13/90	6.1	<.32	<.10	--	--	--	--
11/13/90	11/20/90	.50	<.32	<.10	--	--	--	--
11/20/90	11/27/90	55.4	<.32	<.10	<.05	<.05	<.05	<.05
11/27/90	12/04/90	59.9	<.32	.13	<.05	<.05	<.05	<.05
12/11/90	12/18/90	63.0	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/26/90	85.1	<.32	<.10	--	--	--	--
12/26/90	01/02/91	66.3	<.32	<.10	--	--	--	--
01/02/91	01/08/91	36.6	<.32	<.10	<.05	<.05	<.05	<.05
01/08/91	01/15/91	33.0	<.32	<.22	--	--	--	--
01/15/91	01/22/91	6.6	<.32	.13	--	--	--	--
01/22/91	01/29/91	5.8	<.32	<.22	<.05	<.05	<.05	<.05
01/29/91	02/05/91	16.5	<.32	<.23	<.05	<.05	<.05	<.05
02/05/91	02/12/91	10.2	<.32	<.23	<.05	<.05	<.05	<.05
02/12/91	02/19/91	24.1	<.32	<.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	16.5	<.32	.12	<.05	<.05	<.05	<.05
03/12/91	03/19/91	10.4	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MO—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.13	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.24	.13	8	4
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.10	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MO05 University Forest,								
03/19/91	03/26/91	41.2	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
03/26/91	04/02/91	.50	<.32	.47	--	--	--	--
04/02/91	04/09/91	38.1	<.15	<.10	--	--	--	--
04/09/91	04/16/91	144.8	<.15	<.10	--	--	--	--
04/16/91	04/23/91	22.9	<.15	<.10	<.05	<.05	<.05	<.05
04/24/91	04/30/91	53.1	<.15	<.10	.06	<.05	<.05	<.05
04/30/91	05/07/91	10.7	<.15	.19	--	--	--	--
05/14/91	05/21/91	67.8	.18	.16	.11	.43	<.05	.16
05/21/91	05/28/91	35.6	<.15	<.10	--	--	--	--
05/28/91	06/04/91	14.7	<.15	.11	<.05	.18	<.05	<.05
06/04/91	06/11/91	27.9	<.15	<.10	<.05	<.05	<.05	<.05
06/11/91	06/18/91	10.2	<.15	.12	.06	.11	<.05	<.05
06/18/91	06/25/91	49.5	.27	.20	.26	.21	<.05	<.05
07/02/91	07/09/91	5.8	<.15	<.10	--	--	--	--
07/09/91	07/16/91	10.7	.18	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	2.8	<.15	<.10	--	--	--	--
07/23/91	07/30/91	14.0	<.15	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	31.8	<.15	<.10	--	--	--	--
08/13/91	08/20/91	13.0	<.15	<.10	--	--	--	--
08/27/91	09/03/91	17.8	<.15	<.10	--	--	--	--
09/03/91	09/10/91	76.7	<.15	<.10	--	--	--	--
MT05 Glacier National Park-Fire								
03/06/90	03/13/90	29.5	<.15	<.10	<.05	<.05	<.05	<.05
03/13/90	03/20/90	5.1	<.15	<.10	--	--	--	--
03/20/90	03/27/90	10.4	<.15	<.10	--	--	--	--
04/03/90	04/10/90	8.4	<.15	<.10	--	--	--	--
04/17/90	04/24/90	7.6	<.15	<.10	<.05	<.05	<.05	<.05
04/24/90	05/01/90	40.9	<.15	<.10	--	--	--	--
05/01/90	05/08/90	4.4	<.15	<.10	<.05	<.05	<.05	<.05
05/08/90	05/15/90	27.9	<.15	<.10	--	--	--	--
05/15/90	05/22/90	25.9	<.15	<.10	--	--	--	--
05/22/90	05/29/90	37.1	<.15	<.10	<.05	<.05	<.05	<.05
05/29/90	06/05/90	44.7	<.15	<.10	--	--	--	--
06/05/90	06/12/90	31.0	<.15	<.10	--	--	--	--
06/12/90	06/19/90	13.7	<.15	<.10	--	--	--	--
06/19/90	06/26/90	3.8	<.15	.10	--	--	--	--
06/26/90	07/03/90	29.0	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MO—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	.38	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	<.05	3	nd
--	--	--	--	--	--	<.05	.15	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	.11	.43	7	29
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.18	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	.11	1	1
<.05	<.05	<.05	<.05	<.05	<.05	.26	.21	13	10
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
Weather Station, MT									
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MT05 Glacier National Park-Fire								
07/03/90	07/10/90	11.4	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
07/17/90	07/24/90	1.5	.17	<.10	<.05	<.05	<.05	<.05
07/24/90	07/31/90	32.0	<.15	<.10	--	--	--	--
07/31/90	08/07/90	4.1	<.15	<.10	--	--	--	--
08/14/90	08/21/90	11.9	<.15	<.10	--	--	--	--
08/21/90	08/28/90	20.6	<.15	<.10	--	--	--	--
08/28/90	09/04/90	5.6	<.32	<.10	<.05	<.05	<.05	<.05
09/11/90	09/18/90	1.5	<.32	.22	<.05	<.05	<.05	<.05
09/18/90	09/25/90	1.3	<.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	2.8	<.32	.11	<.05	<.05	<.05	<.05
10/02/90	10/09/90	30.5	<.32	<.10	--	--	--	--
10/09/90	10/16/90	28.8	<.32	<.10	--	--	--	--
10/16/90	10/23/90	49.8	<.32	<.10	--	--	--	--
10/23/90	10/30/90	3.6	<.32	<.10	--	--	--	--
10/30/90	11/06/90	25.9	<.32	.16	<.05	<.05	<.05	<.05
11/06/90	11/13/90	60.2	<.32	<.10	--	--	--	--
11/13/90	11/20/90	8.9	<.32	<.10	--	--	--	--
11/20/90	11/27/90	90.4	<.32	.12	<.05	<.05	<.05	<.05
11/27/90	12/04/90	17.3	<.32	.11	<.05	<.05	<.05	<.05
12/04/90	12/11/90	52.1	<.32	<.10	<.05	<.05	<.05	<.05
12/11/90	12/18/90	37.9	<.32	<.10	--	--	--	--
12/18/90	12/25/90	1.4	<.32	.10	--	--	--	--
12/25/90	01/02/91	77.0	<.32	.13	<.05	<.05	<.05	<.05
01/08/91	01/08/91	26.9	<.32	.11	<.05	<.05	<.05	<.05
01/08/91	01/15/91	45.5	<.32	<.10	<.05	<.05	<.05	<.05
01/15/91	01/22/91	15.8	<.32	.11	<.05	<.05	<.05	<.05
01/29/91	02/05/91	5.8	<.32	<.23	--	--	--	--
02/05/91	02/12/91	3.1	<.32	<.23	--	--	--	--
02/12/91	02/19/91	10.4	<.32	<.10	--	--	--	--
02/19/91	02/26/91	17.8	<.32	.18	<.05	<.05	<.05	<.05
02/26/91	03/05/91	36.3	<.32	<.10	<.05	<.05	<.05	<.05
03/05/91	03/12/91	12.7	<.32	<.10	--	--	--	--
03/12/91	03/19/91	3.8	<.32	.18	--	--	--	--
03/19/91	03/26/91	8.1	<.32	.12	--	--	--	--
03/26/91	04/02/91	1.3	<.15	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
Weather Station, MT—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.14	nd	1
--	--	--	--	--	--	<.05	.09	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chlor	Atra- zine	Cyana- zine	DEA
MT05 Glacier National Park-Fire								
04/02/91	04/09/91	20.6	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
04/09/91	04/16/91	17.5	<.15	<.10	--	--	--	--
04/23/91	04/30/91	11.7	<.15	<.10	--	--	--	--
05/07/91	05/14/91	51.1	<.15	<.10	<.05	<.05	<.05	<.05
05/14/91	05/21/91	15.2	<.15	<.10	<.05	<.05	<.05	<.05
05/21/91	05/28/91	12.7	<.15	<.10	<.05	<.05	<.05	<.05
05/28/91	06/04/91	1.0	<.15	<.10	--	--	--	--
06/04/91	06/11/91	33.3	<.15	<.10	<.05	<.05	<.05	<.05
06/11/91	06/18/91	24.6	<.15	<.10	<.05	<.05	<.05	<.05
06/18/91	06/25/91	48.5	<.15	<.10	--	--	--	--
06/25/91	07/02/91	12.5	<.15	<.10	--	--	--	--
07/02/91	07/09/91	.50	<.15	.13	--	--	--	--
07/09/91	07/16/91	4.1	.20	<.10	--	--	--	--
07/16/91	07/23/91	2.8	<.15	<.10	--	--	--	--
07/23/91	07/30/91	1.3	<.15	<.10	--	--	--	--
07/30/91	08/06/91	15.5	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	9.4	<.15	<.10	--	--	--	--
09/10/91	09/17/91	11.7	<.15	<.10	<.05	<.05	<.05	<.05
MT07 Clancy,								
02/27/90	03/06/90	14.5	<.15	<.10	--	--	--	--
03/06/90	03/13/90	8.4	<.15	<.10	--	--	--	--
03/13/90	03/20/90	1.5	<.15	<.10	--	--	--	--
03/20/90	03/27/90	12.5	.25	<.10	--	--	--	--
04/03/90	04/10/90	3.6	<.15	<.10	--	--	--	--
04/10/90	04/17/90	2.0	.17	<.10	--	--	--	--
04/17/90	04/24/90	6.1	<.15	<.10	--	--	--	--
04/24/90	05/01/90	8.9	<.15	<.10	--	--	--	--
05/01/90	05/08/90	5.8	<.15	<.10	--	--	--	--
05/08/90	05/15/90	12.2	<.15	<.10	--	--	--	--
05/15/90	05/22/90	13.2	<.15	<.10	<.05	<.05	<.05	<.05
05/22/90	05/29/90	11.7	<.15	<.10	--	--	--	--
05/29/90	06/05/90	12.2	<.15	<.10	--	--	--	--
06/05/90	06/12/90	3.3	.22	<.10	--	--	--	--
06/12/90	06/19/90	10.2	<.15	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Weather Station, MT—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.17	<.05	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
MT									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.16	<.05	2	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.11	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.14	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipita- tion (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MT07 Clancy,								
06/26/90	07/03/90	3.8	<0.15	<0.10	--	--	--	--
07/17/90	07/24/90	1.5	.24	<.10	<0.05	<0.05	<0.05	<0.05
07/24/90	07/31/90	21.3	<.15	<.10	--	--	--	--
08/07/90	08/14/90	3.3	<.15	<.10	<.05	<.05	<.05	<.05
08/14/90	08/21/90	66.6	<.15	<.10	--	--	--	--
08/21/90	08/28/90	26.7	<.15	<.10	<.05	<.05	<.05	<.05
08/28/90	09/04/90	1.5	<.32	<.10	--	--	--	--
09/04/90	09/11/90	5.8	<.32	.10	.06	<.05	<.05	<.05
09/25/90	10/02/90	.80	<.32	.18	--	--	--	--
10/02/90	10/09/90	.70	<.32	.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	4.5	<.32	<.10	--	--	--	--
10/30/90	11/06/90	6.4	<.32	<.10	--	--	--	--
11/13/90	11/20/90	.50	<.32	<.10	--	--	--	--
11/20/90	11/27/90	2.5	<.32	.17	--	--	--	--
11/27/90	12/04/90	3.1	<.32	<.23	--	--	--	--
12/04/90	12/11/90	1.5	<.32	.10	--	--	--	--
12/11/90	12/18/90	1.3	.46	<.10	--	--	--	--
12/18/90	12/26/90	10.7	<.32	<.10	<.05	<.05	<.05	<.05
12/26/90	01/02/91	6.6	<.32	<.22	--	--	--	--
01/15/91	01/22/91	22.1	<.32	<.10	<.05	<.05	<.05	<.05
01/22/91	01/29/91	11.7	<.32	<.22	<.05	<.05	<.05	<.05
02/12/91	02/19/91	.50	<.32	<.10	--	--	--	--
02/19/91	02/26/91	4.6	<.32	<.10	--	--	--	--
02/26/91	03/05/91	6.1	<.32	.10	<.05	<.05	<.05	<.05
03/12/91	03/19/91	10.2	<.32	.30	<.05	<.05	<.05	<.05
03/19/91	03/26/91	12.5	<.32	<.10	--	--	--	--
04/02/91	04/09/91	2.8	<.15	<.10	--	--	--	--
04/09/91	04/16/91	23.6	<.15	<.10	--	--	--	--
04/16/91	04/23/91	6.6	<.15	<.10	--	--	--	--
04/23/91	04/30/91	4.6	<.15	<.10	--	--	--	--
04/30/91	05/07/91	4.3	<.15	<.10	--	--	--	--
05/07/91	05/14/91	26.2	<.15	.13	<.05	<.05	<.05	<.05
05/14/91	05/21/91	34.5	<.15	<.10	--	--	--	--
05/21/91	05/28/91	5.6	<.15	<.10	--	--	--	--
05/28/91	06/04/91	13.2	<.15	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
MT—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	<.05	nd	nd
--	--	--	--	--	--	<.05	.11	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.10	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
--	--	--	--	--	--	.29	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
MT07 Clancy,								
06/04/91	06/11/91	25.2	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
06/18/91	06/25/91	40.9	<.15	<.10	<.05	<.05	<.05	<.05
06/25/91	07/02/91	9.7	<.15	<.10	<.05	<.05	<.05	<.05
07/09/91	07/16/91	4.6	<.15	<.10	--	--	--	--
07/16/91	07/23/91	.50	.24	<.10	--	--	--	--
07/23/91	07/30/91	9.7	<.15	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	1.3	<.15	<.10	--	--	--	--
08/27/91	09/03/91	14.5	<.15	<.10	--	--	--	--
09/03/91	09/10/91	12.7	<.15	<.10	--	--	--	--
ND07 Theodore Roosevelt National								
03/13/90	03/20/90	11.4	<.15	<.10	--	--	--	--
04/03/90	04/10/90	2.5	<.15	<.10	--	--	--	--
04/10/90	04/17/90	3.1	<.15	<.10	--	--	--	--
04/24/90	05/01/90	24.1	<.15	<.10	--	--	--	--
05/01/90	05/08/90	1.5	<.15	.13	--	--	--	--
05/08/90	05/15/90	1.8	<.15	<.10	--	--	--	--
05/15/90	05/22/90	12.2	<.15	<.10	--	--	--	--
05/22/90	05/29/90	50.0	<.15	<.10	<.05	<.05	<.05	<.05
06/12/90	06/19/90	35.3	<.15	<.10	--	--	--	--
06/19/90	06/26/90	8.9	.39	.21	.06	.23	.06	<.05
06/26/90	07/03/90	28.2	<.15	<.10	--	--	--	--
07/10/90	07/17/90	1.5	<.32	<.10	--	--	--	--
07/31/90	08/08/90	4.3	.17	<.10	.07	.08	<.05	<.05
08/08/90	08/15/90	2.3	<.15	<.10	--	--	--	--
08/15/90	08/21/90	20.8	<.15	<.10	<.05	<.05	<.05	<.05
08/21/90	08/31/90	3.1	<.15	<.10	--	--	--	--
09/19/90	09/25/90	2.8	<.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	4.6	<.32	<.10	--	--	--	--
10/09/90	10/16/90	1.8	<.32	<.10	--	--	--	--
10/16/90	10/23/90	7.8	<.32	<.10	<.05	<.05	<.05	<.05
11/13/90	11/20/90	.80	<.32	<.10	--	--	--	--
11/20/90	11/27/90	1.3	<.32	.10	--	--	--	--
12/04/90	12/11/90	1.9	<.32	<.10	--	--	--	--
12/18/90	12/25/90	8.9	<.32	<.10	--	--	--	--
01/08/91	01/15/91	1.3	<.32	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
MT—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.20	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
Park, ND									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.08	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.17	<.05	<.05	<.05	<.05	.06	.23	1	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.06	<.05	<.05	<.05	<.05	.07	.08	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyanazine	DEA
ND07 Theodore Roosevelt National								
01/22/91	01/29/91	1.5	<0.32	<0.22	--	--	--	--
02/12/91	02/19/91	1.5	<.32	<.10	--	--	--	--
02/19/91	02/26/91	2.3	<.32	<.10	--	--	--	--
02/26/91	03/05/91	1.8	<.32	<.10	--	--	--	--
03/19/91	03/26/91	5.3	<.15	<.10	--	--	--	--
03/26/91	04/02/91	2.0	<.15	<.10	--	--	--	--
04/09/91	04/16/91	19.3	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	.50	<.15	.11	<.05	<.05	<.05	<.05
04/23/91	04/30/91	33.2	<.15	<.10	--	--	--	--
04/30/91	05/07/91	3.3	<.15	.11	--	--	--	--
05/07/91	05/14/91	15.2	<.15	.31	.06	.17	<.05	.09
05/14/91	05/21/91	5.6	<.15	.22	<.05	.22	<.05	<.05
05/21/91	05/29/91	14.5	<.15	<.10	--	--	--	--
05/28/91	06/04/91	4.3	<.15	<.10	<.05	<.05	<.05	<.05
06/04/91	06/11/91	8.9	<.15	<.10	<.05	<.05	<.05	<.05
06/11/91	06/18/91	11.7	<.15	<.10	--	--	--	--
06/18/91	06/25/91	22.6	<.15	<.10	--	--	--	--
06/25/91	07/02/91	10.7	<.15	<.10	--	--	--	--
07/02/91	07/09/91	4.6	<.15	<.10	--	--	--	--
07/09/91	07/16/91	13.2	<.15	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	5.3	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/30/91	3.3	<.15	<.10	--	--	--	--
07/30/91	08/06/91	28.7	<.15	<.10	--	--	--	--
09/03/91	09/10/91	21.6	<.15	<.10	--	--	--	--
ND08 Icelandic State								
03/06/90	03/13/90	8.6	<.15	<.10	--	--	--	--
--	03/20/90	26.7	<.15	<.10	--	--	--	--
03/27/90	04/03/90	6.4	<.15	<.10	--	--	--	--
04/03/90	04/10/90	2.5	<.15	<.10	--	--	--	--
04/17/90	04/24/90	1.3	.28	.80	--	--	--	--
04/24/90	05/01/90	11.4	<.15	<.10	--	--	--	--
05/01/90	05/08/90	8.9	<.15	.42	--	--	--	--
05/08/90	05/15/90	7.6	<.15	<.10	<.05	<.05	<.05	<.05
05/15/90	05/22/90	14.0	<.15	<.10	<.05	<.05	<.05	<.05
05/29/90	06/05/90	56.6	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Park, ND—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	0.13	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	.17	1	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.22	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
Park, ND									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.18	.54	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.28	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chior	Atra- zine	Cyana- zine	DEA
ND08 Icelandic State								
06/05/90	06/12/90	16.0	<0.15	<0.10	--	--	--	--
06/12/90	06/19/90	12.2	<.15	.21	--	--	--	--
06/19/90	06/26/90	17.3	<.15	<.10	<0.05	<0.05	<0.05	<0.05
06/26/90	07/03/90	6.9	<.15	<.10	<.05	.08	<.05	<.05
07/03/90	07/10/90	13.5	<.15	<.10	<.05	.05	<.05	<.05
07/10/90	07/17/90	5.1	<.15	<.10	--	--	--	--
07/17/90	07/24/90	.80	<.15	<.10	<.05	<.05	<.05	<.05
07/24/90	07/30/90	5.1	.30	.22	.10	.13	<.05	.06
07/30/90	08/07/90	19.6	.18	<.10	--	--	--	--
08/07/90	08/14/90	11.4	<.15	<.10	--	--	--	--
08/21/90	08/28/90	46.2	.17	<.10	--	--	--	--
09/04/90	09/11/90	7.4	<.32	.14	<.05	<.05	<.05	<.05
09/11/90	09/18/90	14.0	<.32	<.10	--	--	--	--
09/18/90	09/25/90	1.3	<.32	<.10	--	--	--	--
10/02/90	10/09/90	1.8	<.32	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	1.0	<.32	<.10	--	--	--	--
10/23/90	10/30/90	3.8	<.32	<.10	--	--	--	--
11/20/90	11/27/90	4.8	<.32	<.10	<.05	<.05	<.05	<.05
11/27/90	12/04/90	3.8	<.32	<.23	--	--	--	--
12/04/90	12/11/90	1.3	.47	<.10	--	--	--	--
12/11/90	12/18/90	2.5	<.32	<.10	--	--	--	--
12/24/90	01/02/91	.60	<.32	.32	--	--	--	--
02/12/91	02/19/91	9.4	<.32	<.10	--	--	--	--
02/19/91	02/26/91	4.1	<.32	<.10	--	--	--	--
03/05/91	03/12/91	2.5	<.32	<.10	--	--	--	--
03/12/91	03/19/91	3.6	<.32	.28	--	--	--	--
04/09/91	04/16/91	22.6	<.15	<.10	--	--	--	--
04/16/91	04/23/91	6.8	<.15	<.10	--	--	--	--
04/23/91	04/30/91	27.9	<.15	.12	<.05	.09	.06	<.05
05/07/91	05/14/91	7.6	<.15	.18	--	--	--	--
05/14/91	05/21/91	4.3	.33	.86	.13	.42	.85	.14
05/21/91	05/28/91	31.2	.16	.18	--	--	--	--
05/28/91	06/04/91	1.5	<.15	<.10	--	--	--	--
06/04/91	06/11/91	41.2	<.15	<.10	<.05	.09	<.05	<.05
06/11/91	06/18/91	13.2	<.15	<.10	<.05	.06	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Park, ND—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	.13	nd	2
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.06	<.05	<.05	<.05	<.05	.10	.13	1	1
--	--	--	--	--	--	.11	<.05	2	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.11	<.05	5	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.30	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.26	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.23	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	nd	3
--	--	--	--	--	--	<.05	.14	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.13	.42	nd	2
--	--	--	--	--	--	.14		4	4
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	nd	4
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	1

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
ND08 Icelandic State								
06/18/91	06/25/91	14.7	<0.15	<0.10	--	--	--	--
06/25/91	07/02/91	48.0	<.15	<.10	<0.05	<0.05	<0.05	<0.05
07/02/91	07/09/91	33.5	<.15	<.10	--	--	--	--
07/09/91	07/16/91	22.1	<.15	<.10	--	--	--	--
07/16/91	07/23/91	12.5	<.15	<.10	--	--	--	--
07/23/91	07/30/91	1.3	<.15	<.10	--	--	--	--
07/30/91	08/06/91	27.9	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	20.8	<.15	<.10	--	--	--	--
09/10/91	09/17/91	20.3	<.15	<.10	<.05	<.05	<.05	<.05
ND11 Woodworth,								
03/06/90	03/13/90	6.6	<.15	<.10	--	--	--	--
03/13/90	03/20/90	5.1	<.15	<.10	--	--	--	--
03/27/90	04/03/90	2.0	<.15	<.10	--	--	--	--
04/10/90	04/17/90	1.3	.31	.15	--	--	--	--
04/17/90	04/24/90	.50	<.15	.97	--	--	--	--
--	05/01/90	11.9	<.15	.18	--	--	--	--
05/08/90	05/15/90	1.0	<.15	<.10	--	--	--	--
05/15/90	05/22/90	7.1	<.15	<.10	.15	<.05	<.05	<.05
05/22/90	05/29/90	9.3	<.15	<.10	--	--	--	--
05/29/90	06/05/90	56.4	<.15	<.10	<.05	<.05	<.05	<.05
06/05/90	06/12/90	11.4	<.15	.28	--	--	--	--
06/12/90	06/19/90	58.1	<.15	<.10	--	--	--	--
06/26/90	07/03/90	43.2	<.15	<.10	<.05	<.05	<.05	<.05
07/03/90	07/10/90	.50	<.15	<.10	--	--	--	--
07/24/90	07/31/90	18.5	.28	.43	<.05	.47	<.05	<.05
08/07/90	08/14/90	1.2	<.15	<.10	--	--	--	--
08/14/90	08/21/90	4.3	<.15	<.10	--	--	--	--
08/21/90	08/28/90	10.2	<.32	<.10	--	--	--	--
08/28/90	09/04/90	3.8	<.32	.35	<.05	<.05	<.05	<.05
09/04/90	09/11/90	16.3	<.32	.11	<.05	<.05	<.05	<.05
09/11/90	09/18/90	9.8	<.32	<.10	--	--	--	--
09/18/90	09/25/90	3.1	<.32	<.10	--	--	--	--
09/25/90	10/02/90	8.4	<.32	.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	.10	<.32	<.10	--	--	--	--
10/16/90	10/23/90	8.9	<.32	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
Park, ND—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
ND									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.20	.09	nd	nd
--	--	--	--	--	--	<.05	.65	nd	nd
--	--	--	--	--	--	<.05	.11	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.15	<.05	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.18	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.47	nd	9
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	.06	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chlor	Atra- zine	Cyana- zine	DEA
ND11 Woodworth,								
02/05/91	02/12/91	1.3	<0.32	<0.23	--	--	--	--
03/12/91	03/19/91	1.8	<.32	.15	--	--	--	--
04/09/91	04/16/91	10.9	<.15	<.10	<0.05	0.07	<0.05	<0.05
04/23/91	04/30/91	29.2	<.15	<.10	--	--	--	--
04/30/91	05/07/91	9.4	<.15	<.10	--	--	--	--
05/14/91	05/21/91	24.4	<.15	.25	.07	.34	.38	.08
05/21/91	05/28/91	13.5	<.15	.18	<.05	.21	<.05	<.05
05/28/91	06/04/91	3.1	.15	.33	--	--	--	--
06/04/91	06/11/91	8.4	<.15	.21	.08	.19	.05	<.05
06/11/91	06/18/91	41.2	<.15	<.10	<.05	<.05	<.05	<.05
06/18/91	06/25/91	11.4	<.15	<.10	--	--	--	--
06/25/91	07/02/91	40.5	<.15	<.10	--	--	--	--
07/02/91	07/09/91	2.5	<.15	<.10	--	--	--	--
07/09/91	07/16/91	6.1	<.15	<.10	--	--	--	--
07/16/91	07/23/91	14.2	<.15	<.10	--	--	--	--
07/23/91	07/30/91	6.1	<.15	<.10	<.05	<.05	<.05	<.05
08/13/91	08/20/91	12.7	<.15	<.10	<.05	<.05	<.05	<.05
08/20/91	08/27/91	7.9	<.15	<.10	--	--	--	--
09/03/91	09/10/91	33.0	<.15	<.10	--	--	--	--
09/10/91	09/17/91	25.4	<.15	<.10	--	--	--	--
NE15 Mead,								
03/06/90	03/13/90	27.9	<.15	<.10	--	--	--	--
--	03/20/90	20.3	<.15	<.10	--	--	--	--
03/20/90	03/27/90	1.8	<.15	.20	--	--	--	--
03/29/90	04/03/90	21.8	<.15	<.10	--	--	--	--
04/03/90	04/10/90	.50	<.15	.10	--	--	--	--
04/10/90	04/17/90	6.9	.18	.25	<.05	.19	<.05	<.05
05/01/90	05/08/90	18.3	.58	1.1	--	--	--	--
05/08/90	05/15/90	51.3	1.1	1.6	--	--	--	--
05/15/90	05/22/90	8.9	<.15	.10	--	--	--	--
05/22/90	05/29/90	32.0	1.3	.44	--	--	--	--
05/29/90	06/05/90	3.3	1.8	.96	--	--	--	--
06/05/90	06/12/90	34.3	.24	.11	--	--	--	--
06/12/90	06/19/90	41.2	<.15	.90	--	--	--	--
06/19/90	06/26/90	26.7	<.15	.15	--	--	--	--
07/03/90	07/10/90	24.6	<.15	.20	<.05	.13	<.05	.09

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
ND—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	.12	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	.07	nd	1
--	--	--	--	--	--	<.05	.07	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.07	.34	2	8
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.21	nd	3
--	--	--	--	--	--	.13	.27	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	.08	.19	1	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
NE									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.13	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.19	nd	1
--	--	--	--	--	--	.37	.74	7	14
--	--	--	--	--	--	.68	1.1	35	54
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	.81	.29	26	9
--	--	--	--	--	--	1.2	.64	4	2
--	--	--	--	--	--	.15	.06	5	2
--	--	--	--	--	--	<.05	.60	nd	25
--	--	--	--	--	--	<.05	.09	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.13	nd	3

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NE15 Mead,								
07/10/90	07/17/90	3.1	<0.15	<0.10	--	--	--	--
07/17/90	07/24/90	19.1	<.15	<.10	--	--	--	--
07/24/90	07/31/90	149.9	.25	<.10	<0.05	<0.05	<0.05	<0.05
07/31/90	08/07/90	5.1	<.15	<.10	--	--	--	--
08/07/90	08/14/90	8.9	<.15	.15	<.05	<.05	<.05	<.05
08/14/90	08/21/90	2.5	<.15	<.10	--	--	--	--
08/21/90	08/28/90	2.5	<.15	.11	<.05	.05	<.05	<.05
08/28/90	09/04/90	.80	.54	.78	<.05	.19	<.05	<.05
09/11/90	09/18/90	12.7	<.32	<.10	<.05	<.05	<.05	<.05
09/18/90	09/25/90	.80	<.32	<.10	--	--	--	--
09/25/90	10/02/90	1.3	<.32	.17	--	--	--	--
10/02/90	10/09/90	39.1	<.32	<.10	--	--	--	--
10/16/90	10/23/90	6.4	<.32	<.10	<.05	<.05	<.05	<.05
10/30/90	11/06/90	15.2	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	6.4	<.32	<.10	<.05	<.05	<.05	<.05
11/20/90	11/27/90	4.1	<.32	.11	<.05	<.05	<.05	<.05
11/27/90	12/04/90	6.4	<.32	<.23	--	--	--	--
12/11/90	12/18/90	9.4	<.32	<.10	--	--	--	--
01/01/91	01/08/91	10.2	<.32	.12	<.05	<.05	<.05	<.05
01/08/91	01/15/91	3.8	<.32	<.22	<.05	<.05	<.05	<.05
01/22/91	01/29/91	5.1	<.32	<.22	--	--	--	--
02/12/91	02/19/91	6.4	<.32	.11	<.05	<.05	<.05	<.05
02/26/91	03/05/91	22.4	<.32	.14	<.05	<.05	<.05	<.05
03/12/91	03/19/91	26.2	<.32	.25	<.05	<.05	<.05	<.05
03/19/91	03/26/91	6.6	<.32	.12	<.05	<.05	.05	<.05
03/26/91	04/02/91	15.2	<.15	<.10	<.05	.06	<.05	<.05
04/02/91	04/09/91	1.3	<.15	.83	--	--	--	--
04/09/91	04/16/91	52.1	<.15	.19	--	--	--	--
04/16/91	04/23/91	1.8	<.15	.50	--	--	--	--
04/23/91	04/30/91	8.9	.48	.71	.28	.81	.22	.07
05/07/91	05/14/91	3.2	.94	4.1	--	--	--	--
05/21/91	05/28/91	2.5	.40	1.3	--	--	--	--
05/28/91	06/04/91	63.5	.40	.59	--	--	--	--
06/04/91	06/11/91	96.0	.18	.25	.19	.28	<.05	.09
06/11/91	06/18/91	88.9	<.15	.23	.09	.25	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
NE—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.19	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.10	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	.07	<.05	<.05	<.05	.06	nd	1
--	--	--	--	--	--	<.05	.68	nd	1
--	--	--	--	--	--	<.05	.15	nd	8
--	--	--	--	--	--	<.05	.41	nd	1
<.05	.23	<.05	<.05	<.05	<.05	.28	.81	2	7
--	--	--	--	--	--	.79	3.4	3	11
--	--	--	--	--	--	.34	1.0	1	3
--	--	--	--	--	--	.34	.48	21	31
<.05	.06	<.05	<.05	<.05	<.05	.19	.28	18	27
<.05	<.05	<.05	<.05	<.05	<.05	.09	.25	8	22

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NE15 Mead,								
06/18/91	06/25/91	20.3	<0.15	0.14	<0.05	0.15	<0.05	<0.05
06/25/91	07/02/91	3.8	<.15	.13	--	--	--	--
07/02/91	07/09/91	69.3	<.15	<.10	<.05	<.05	<.05	<.05
07/09/91	07/16/91	1.3	<.15	.16	--	--	--	--
07/16/91	07/23/91	1.3	<.15	.38	--	--	--	--
07/23/91	07/30/91	2.5	<.15	.19	--	--	--	--
07/30/91	08/06/91	15.2	<.15	<.10	--	--	--	--
08/06/91	08/13/91	8.9	<.15	.30	<.05	.27	<.05	.16
08/13/91	08/20/91	11.7	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/03/91	1.3	<.15	<.10	--	--	--	--
09/03/91	09/10/91	15.2	<.15	<.10	--	--	--	--
NE99 North Platte Agricultural								
02/27/90	03/06/90	7.4	<.15	<.10	--	--	--	--
03/06/90	03/13/90	35.1	<.15	<.10	--	--	--	--
03/13/90	03/20/90	.50	<.15	<.10	--	--	--	--
03/20/90	03/27/90	7.4	<.15	.13	--	--	--	--
04/03/90	04/10/90	3.8	<.15	<.10	--	--	--	--
04/10/90	04/17/90	2.5	.16	<.10	--	--	--	--
04/24/90	05/01/90	36.1	.28	.31	--	--	--	--
05/01/90	05/08/90	10.2	.32	2.3	--	--	--	--
05/08/90	05/15/90	26.4	<.15	.51	--	--	--	--
05/15/90	05/22/90	21.6	.44	.70	--	--	--	--
05/22/90	05/29/90	6.4	<.15	1.6	--	--	--	--
05/29/90	06/05/90	42.9	<.15	.61	--	--	--	--
06/05/90	06/12/90	.50	.23	1.2	--	--	--	--
06/12/90	06/19/90	14.2	<.15	.47	--	--	--	--
06/19/90	06/26/90	2.5	<.15	.38	--	--	--	--
07/03/90	07/10/90	2.8	<.15	.32	.06	.58	<.05	.49
07/10/90	07/17/90	3.3	<.15	.11	--	--	--	--
07/17/90	07/24/90	48.0	<.15	.16	<.05	.15	<.05	.09
07/24/90	07/31/90	1.5	.18	.51	<.05	--	<.05	<.05
07/31/90	08/07/90	1.0	<.15	.22	<.05	.75	<.05	<.05
08/07/90	08/14/90	26.7	<.15	.52	<.05	.40	<.05	.15
08/21/90	08/28/90	5.8	<.15	.54	.05	.65	<.05	.15
09/04/90	09/11/90	5.3	<.32	.32	<.05	.25	<.05	<.05
09/11/90	09/18/90	4.3	<.32	.28	<.05	.26	<.05	<.05
09/18/90	09/25/90	1.0	<.32	.31	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
NE—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.15	nd	3.
--	--	--	--	--	--	<.05	.10	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.13	nd	nd
--	--	--	--	--	--	<.05	.31	nd	nd
--	--	--	--	--	--	<.05	.15	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.27	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
Experimental Station, NE									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.08	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.10	<.05	nd	nd
--	--	--	--	--	--	.18	.20	6	7
--	--	--	--	--	--	.20	1.6	2	16
--	--	--	--	--	--	<.05	.34	nd	9
--	--	--	--	--	--	.28	.47	6	10
--	--	--	--	--	--	<.05	1.1	nd	7
--	--	--	--	--	--	<.05	.41	nd	17
--	--	--	--	--	--	.14	.81	nd	nd
--	--	--	--	--	--	<.05	.31	nd	4
--	--	--	--	--	--	<.05	.25	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	.06	.58	nd	2
--	--	--	--	--	--	<.05	.06	nd	nd
.05	<.05	<.05	<.05	<.05	<.05	<.05	.15	nd	7
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.34	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.75	nd	1
.10	<.05	<.05	<.05	<.05	<.05	<.05	.40	nd	11
<.05	.05	<.05	<.05	<.05	<.05	.05	.65	nd	4
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.25	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.26	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NE99 North Platte Agricultural								
10/02/90	10/09/90	38.3	<0.32	<0.10	--	--	--	--
10/16/90	10/23/90	7.6	<.32	<.10	--	--	--	--
10/23/90	10/30/90	1.3	<.32	<.10	--	--	--	--
10/30/90	11/06/90	28.2	<.32	<.10	--	--	--	--
11/20/90	11/27/90	7.4	<.32	.18	--	--	--	--
12/31/90	01/08/91	3.3	<.32	<.10	--	--	--	--
02/12/91	02/19/91	3.6	<.32	<.10	--	--	--	--
02/19/91	02/26/91	5.8	<.32	<.10	--	--	--	--
03/12/91	03/19/91	8.4	<.32	<.10	<0.05	<0.05	<0.05	<0.05
03/19/91	03/26/91	15.5	<.32	<.10	<.05	<.05	<.05	<.05
03/26/91	04/02/91	7.4	<.15	<.10	--	--	--	--
04/09/91	04/16/91	12.7	<.15	.70	<.05	.58	<.05	<.05
04/16/91	04/23/91	22.9	<.15	<.10	--	--	--	--
04/23/91	04/30/91	66.0	<.15	<.10	.07	<.05	<.05	<.05
04/30/91	05/07/91	47.0	.19	.44	.18	.35	<.05	<.05
05/14/91	05/21/91	30.2	.21	.31	.26	.30	<.05	.06
05/21/91	05/28/91	29.7	<.15	.33	--	--	--	--
05/28/91	06/04/91	47.2	.26	.68	<.05	<.05	<.05	<.05
06/04/91	06/11/91	21.3	<.15	.37	<.05	.39	<.05	<.05
06/11/91	06/18/91	9.1	<.15	.26	<.05	.28	.07	<.05
06/18/91	06/25/91	57.9	<.15	<.10	--	--	--	--
07/09/91	07/16/91	6.1	<.15	.12	--	--	--	--
07/16/91	07/23/91	14.0	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/30/91	12.2	<.15	<.10	--	--	--	--
08/06/91	08/13/91	11.9	<.15	.22	<.05	.21	<.05	<.05
09/03/91	09/10/91	2.5	<.15	.98	--	--	--	--
NH02 Hubbard Brook,								
02/27/90	03/06/90	1.8	<.15	.13	--	--	--	--
03/06/90	03/13/90	5.8	<.15	<.10	--	--	--	--
03/13/90	03/20/90	29.2	<.15	<.10	--	--	--	--
03/20/90	03/27/90	14.0	<.15	<.10	--	--	--	--
03/27/90	04/03/90	15.8	<.15	<.10	<.05	<.05	<.05	<.05
04/03/90	04/10/90	23.9	<.15	<.10	<.05	<.05	<.05	<.05
04/10/90	04/17/90	48.0	<.15	<.10	--	--	--	--
04/17/90	04/24/90	15.2	<.15	<.10	--	--	--	--
04/24/90	05/01/90	3.1	<.15	<.10	--	--	--	--
05/01/90	05/08/90	15.7	<.15	.18	<.05	.23	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Experimental Station, NE—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.11	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.05	<.05	<.05	<.05	<.05	<.05	.58	nd	7
--	--	--	--	--	--	<.05	.05	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	.07	<.05	5	nd
<.05	.15	<.05	<.05	<.05	<.05	.18	.35	8	16
<.05	.31	<.05	<.05	<.05	<.05	.26	.30	8	9
--	--	--	--	--	--	<.05	.27	nd	8
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.39	nd	8
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.28	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.21	nd	3
--	--	--	--	--	--	<.05	.80	nd	2
NH									
--	--	--	--	--	--	<.05	.08	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.23	nd	4

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NH02 Hubbard Brook,								
05/08/90	05/15/90	88.4	<0.15	<0.10	--	--	--	--
05/15/90	05/22/90	27.2	<.15	<.10	--	--	--	--
05/29/90	06/05/90	19.3	<.15	.16	<0.05	0.08	<0.05	<0.05
06/06/90	06/12/90	54.4	.16	<.10	--	--	--	--
06/19/90	06/26/90	84.8	<.15	<.10	<.05	<.05	<.05	<.05
06/26/90	07/03/90	32.5	<.15	<.10	<.05	<.05	<.05	<.05
07/03/90	07/10/90	26.4	<.15	.29	<.05	.12	<.05	.06
07/17/90	07/24/90	20.1	.18	<.10	<.05	<.05	<.05	<.05
07/24/90	07/31/90	3.1	<.15	<.10	<.05	.08	<.05	<.05
07/31/90	08/07/90	102.4	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	166.9	<.15	<.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	3.3	<.15	<.10	.27	<.05	<.05	<.05
08/28/90	09/04/90	2.3	<.32	<.10	--	--	--	--
09/04/90	09/11/90	19.8	<.32	<.10	--	--	--	--
09/11/90	09/18/90	23.9	<.32	<.10	<.05	<.05	<.05	<.05
09/18/90	09/25/90	35.1	<.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	24.4	<.32	<.10	<.05	<.05	<.05	<.05
10/02/90	10/09/90	16.5	<.32	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	82.6	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	27.4	<.32	<.10	<.05	<.05	<.05	<.05
10/23/90	10/30/90	48.5	<.32	<.10	<.05	<.05	<.05	<.05
10/30/90	11/06/90	19.1	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	52.8	<.32	<.10	<.05	<.05	<.05	<.05
11/13/90	11/20/90	5.1	<.32	<.10	--	--	--	--
11/20/90	11/27/90	5.1	<.32	.15	<.05	<.05	<.05	<.05
11/27/90	12/04/90	50.6	<.32	<.23	<.05	<.05	<.05	<.05
12/04/90	12/11/90	1.5	<.32	.30	--	--	--	--
12/11/90	12/18/90	27.9	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/25/90	65.5	<.32	<.22	<.05	<.05	<.05	<.05
12/25/90	01/01/91	17.8	<.32	<.10	<.05	<.05	<.05	<.05
01/08/91	01/15/91	33.5	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	20.1	<.32	<.22	<.05	<.05	<.05	<.05
01/22/91	01/29/91	3.8	<.32	<.23	--	--	--	--
01/29/91	02/05/91	14.0	<.32	<.23	--	--	--	--
02/05/91	02/12/91	11.2	<.32	<.23	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

[illegible]

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NH02 Hubbard Brook,								
02/12/91	02/19/91	16.5	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
02/19/91	02/26/91	9.7	<.32	<.10	--	--	--	--
02/26/91	03/05/91	38.9	<.32	<.10	<.05	<.05	<.05	<.05
03/05/91	03/12/91	19.1	<.32	<.10	--	--	--	--
03/12/91	03/19/91	9.4	<.32	<.10	--	--	--	--
03/19/91	03/26/91	25.7	<.32	.12	<.05	<.05	<.05	<.05
03/26/91	04/02/91	14.2	<.15	<.10	<.05	<.05	<.05	<.05
04/02/91	04/09/91	7.6	<.15	<.10	<.05	<.05	<.05	<.05
04/09/91	04/16/91	16.0	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	33.8	<.15	<.10	<.05	<.05	<.05	<.05
04/30/91	05/07/91	46.5	<.15	.17	<.05	<.05	<.05	<.05
05/14/91	05/21/91	11.7	<.15	<.10	<.05	<.05	<.05	<.05
05/21/91	05/28/91	16.3	<.15	.10	<.05	.07	<.05	.13
05/28/91	06/04/91	19.8	<.15	<.10	<.05	<.05	<.05	<.05
06/04/91	06/11/91	1.3	<.15	<.10	--	--	--	--
06/11/91	06/18/91	36.6	<.15	<.10	<.05	<.05	<.05	<.05
06/25/91	07/02/91	2.5	<.15	.25	--	--	--	--
07/02/91	07/09/91	55.1	<.15	<.10	<.05	<.05	<.05	<.05
07/09/91	07/16/91	26.7	<.15	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	17.8	<.15	<.10	--	--	--	--
07/23/91	07/30/91	8.1	<.15	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	70.4	<.15	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	64.5	<.15	<.10	<.05	<.05	<.05	<.05
08/20/91	08/27/91	16.8	<.15	<.10	.05	<.05	<.05	<.05
08/27/91	09/03/91	13.5	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	3.1	<.15	<.10	--	--	--	--
NJ99 Washington Crossing,								
02/27/90	03/06/90	1.5	<.15	.10	--	--	--	--
03/06/90	03/13/90	1.5	<.15	.10	--	--	--	--
03/13/90	03/20/90	40.6	<.15	<.10	<.05	<.05	<.05	<.05
03/27/90	04/03/90	24.4	<.15	<.10	<.05	<.05	<.05	<.05
04/03/90	04/10/90	13.5	<.15	<.10	<.05	<.05	<.05	<.05
04/10/90	04/17/90	32.0	.24	<.10	--	--	--	--
04/17/90	04/24/90	8.4	.18	<.10	--	--	--	--
04/24/90	05/01/90	14.5	<.15	<.10	--	--	--	--
05/01/90	05/08/90	26.2	<.15	.18	.09	.05	<.05	<.05
05/08/90	05/15/90	74.2	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metolachlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
NH—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.20	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.05	<.05	1	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
NJ									
--	--	--	--	--	--	<.05	.06	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.15	<.05	5	nd
--	--	--	--	--	--	.11	<.05	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.09	.05	2	1
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zline	Cyana- zline	DEA
NJ99 Washington Crossing,								
05/15/90	05/22/90	48.5	<0.15	<0.10	0.07	<0.05	<0.05	<0.05
05/22/90	05/30/90	61.0	<.15	<.10	--	--	--	--
06/05/90	06/12/90	30.0	<.15	<.10	--	--	--	--
06/12/90	06/19/90	32.8	<.15	.15	<.05	<.05	<.05	.05
06/19/90	06/26/90	3.8	<.15	<.10	--	--	--	--
06/26/90	07/03/90	10.9	<.15	<.10	<.05	.06	<.05	<.05
07/03/90	07/10/90	31.8	<.15	<.10	--	--	--	--
07/10/90	07/17/90	45.5	<.15	.11	<.05	<.05	<.05	<.05
07/17/90	07/24/90	10.2	<.15	<.10	--	--	--	--
07/31/90	08/07/90	67.8	<.15	<.10	--	--	--	--
08/07/90	08/14/90	57.7	<.15	<.10	<.05	<.05	<.05	<.05
08/14/90	08/21/90	7.9	<.15	<.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	10.7	<.15	<.10	--	--	--	--
08/28/90	09/04/90	5.1	<.32	<.10	--	--	--	--
09/11/90	09/18/90	20.8	<.32	<.10	<.05	<.05	<.05	<.05
09/18/90	09/25/90	23.4	.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	10.2	<.32	.13	<.05	<.05	<.05	<.05
10/02/90	10/09/90	14.0	<.32	<.10	--	--	--	--
10/09/90	10/16/90	30.0	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/24/90	36.8	<.32	<.10	<.05	<.05	<.05	<.05
--	11/13/90	48.3	<.32	<.10	--	--	--	--
11/13/90	11/20/90	4.1	<.32	<.10	--	--	--	--
11/20/90	11/27/90	15.2	<.32	<.10	--	--	--	--
11/27/90	12/04/90	46.2	<.32	<.23	<.05	<.05	<.05	<.05
12/11/90	12/18/90	32.3	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/26/90	33.0	<.32	<.10	<.05	<.05	<.05	<.05
12/26/90	01/02/91	29.7	<.32	<.10	<.05	<.05	<.05	<.05
01/02/91	01/08/91	4.8	<.32	<.10	--	--	--	--
01/08/91	01/15/91	58.2	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	24.6	<.32	<.10	--	--	--	--
01/29/91	02/05/91	8.4	<.32	<.23	<.05	<.05	<.05	<.05
02/05/91	02/11/91	10.2	<.32	<.23	--	--	--	--
02/11/91	02/19/91	13.2	<.32	<.10	<.05	<.05	<.05	<.05
02/19/91	02/26/91	2.0	.44	<.10	--	--	--	--
02/26/91	03/05/91	39.6	<.32	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
NJ—Continued									
<0.05	0.07	<0.05	<0.05	<0.05	<0.05	0.07	<0.05	3	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.37	<.05	1	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NJ99 Washington Crossing,								
03/05/91	03/12/91	11.4	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
03/12/91	03/19/91	26.9	<.32	<.10	<.05	<.05	<.05	<.05
03/19/91	03/26/91	13.7	<.32	.24	<.05	<.05	<.05	<.05
03/26/91	04/02/91	19.8	<.15	<.10	<.05	<.05	<.05	<.05
04/09/91	04/16/91	12.5	<.15	<.10	--	--	--	--
04/16/91	04/23/91	45.5	<.15	<.10	<.05	<.05	<.05	<.05
04/23/91	04/30/91	15.0	<.15	<.10	<.05	<.05	<.05	<.05
05/14/91	05/21/91	2.5	<.15	.28	--	--	--	--
05/21/91	05/28/91	9.1	<.15	.18	<.05	.19	<.05	.07
05/28/91	06/03/91	23.1	<.15	.28	.46	.58	<.05	.19
06/03/91	06/11/91	6.6	<.15	.44	<.05	.23	<.05	<.05
06/11/91	06/19/91	64.5	<.15	<.10	--	--	--	--
06/19/91	06/25/91	5.3	<.15	<.10	--	--	--	--
07/02/91	07/09/91	18.8	<.15	<.10	--	--	--	--
07/09/91	07/16/91	46.2	<.15	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	5.1	<.15	<.10	--	--	--	--
07/23/91	07/30/91	38.4	<.15	<.10	--	--	--	--
08/06/91	08/13/91	67.6	<.15	<.10	--	--	--	--
08/20/91	08/27/91	48.0	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	4.3	.17	.12	--	--	--	--
09/10/91	09/17/91	2.0	<.15	<.10	--	--	--	--
NY08 Aurora Research								
02/27/90	03/06/90	.80	<.15	.25	--	--	--	--
03/06/90	03/13/90	6.1	<.15	<.10	--	--	--	--
--	03/20/90	31.8	<.15	<.10	--	--	--	--
03/20/90	03/27/90	4.3	<.15	<.10	--	--	--	--
03/27/90	04/03/90	20.8	<.15	<.10	--	--	--	--
04/03/90	04/10/90	40.1	<.15	<.10	--	--	--	--
04/10/90	04/17/90	22.6	.18	<.10	--	--	--	--
04/17/90	04/24/90	16.0	.22	<.10	--	--	--	--
04/24/90	05/01/90	6.6	.18	.24	.08	.26	<.05	.12
05/01/90	05/08/90	20.6	<.15	.39	.06	.19	<.05	.06
05/08/90	05/15/90	35.1	<.15	<.10	--	--	--	--
05/15/90	05/22/90	64.0	<.15	<.10	--	--	--	--
05/22/90	05/29/90	2.0	<.15	.41	--	--	--	--
05/29/90	06/05/90	18.3	<.15	.24	--	--	--	--
06/05/90	06/12/90	9.4	.19	.24	.09	.06	.12	.09

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
NJ—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.23	nd	1
<.05	.08	<.05	<.05	<.05	<.05	<.05	.19	nd	2
<.05	.16	<.05	<.05	<.05	<.05	.46	.58	11	13
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.23	nd	2
--	--	--	--	--	--	<.05	.06	nd	4
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.15	.09	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
Farm, NY									
--	--	--	--	--	--	<.05	.16	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.11	<.05	3	nd
--	--	--	--	--	--	.14	<.05	2	nd
<.05	.65	<.05	<.05	<.05	<.05	.08	.26	1	2
<.05	.17	<.05	<.05	<.05	<.05	.06	.19	1	4
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.27	nd	1
--	--	--	--	--	--	<.05	.15	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	.09	.06	1	1

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NY08 Aurora Research								
06/12/90	06/19/90	31.6	<0.15	1.3	--	--	--	--
06/19/90	06/26/90	12.5	<.15	.65	--	--	--	--
06/26/90	07/03/90	11.9	<.15	.38	0.09	0.30	<0.05	0.17
07/03/90	07/10/90	19.6	<.15	.40	<.05	.46	<.05	.11
07/10/90	07/17/90	9.4	<.15	.26	.05	.15	<.05	<.05
07/17/90	07/24/90	29.5	.25	<.10	<.05	.07	<.05	<.05
07/24/90	07/31/90	13.2	.25	<.10	<.05	.05	<.05	<.05
07/30/90	08/07/90	14.0	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	13.0	<.15	<.10	--	--	--	--
08/14/90	08/21/90	2.8	<.15	.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	2.3	<.15	.39	<.05	.10	<.05	<.05
08/28/90	09/04/90	8.1	<.32	<.10	--	--	--	--
09/04/90	09/11/90	56.1	<.32	.11	<.05	<.05	<.05	<.05
09/11/90	09/18/90	24.4	<.32	<.10	--	--	--	--
09/18/90	09/25/90	9.1	<.32	<.10	--	--	--	--
09/25/90	10/02/90	17.8	<.32	.17	<.05	<.05	<.05	<.05
10/02/90	10/09/90	11.7	<.32	<.10	--	--	--	--
10/09/90	10/16/90	74.2	<.32	<.10	--	--	--	--
10/16/90	10/23/90	17.0	<.32	<.10	--	--	--	--
10/23/90	10/30/90	26.5	<.32	<.10	--	--	--	--
10/30/90	11/06/90	7.1	<.32	.10	--	--	--	--
11/06/90	11/13/90	40.1	<.32	<.10	--	--	--	--
11/13/90	11/20/90	4.8	<.32	<.10	--	--	--	--
11/20/90	11/27/90	15.8	<.32	<.10	<.05	<.05	<.05	<.05
11/27/90	12/04/90	19.1	<.32	<.10	--	--	--	--
12/11/90	12/18/90	17.8	<.32	<.10	--	--	--	--
12/18/90	12/25/90	50.6	<.32	<.10	--	--	--	--
12/25/90	01/01/91	22.1	<.32	<.10	--	--	--	--
01/01/91	01/08/91	.80	<.32	<.10	--	--	--	--
01/08/91	01/15/91	13.0	<.32	<.22	--	--	--	--
01/15/91	01/22/91	10.9	<.32	<.10	<.05	<.05	<.05	<.05
01/29/91	02/05/91	.80	<.32	<.23	--	--	--	--
02/05/91	02/12/91	3.8	<.32	<.23	<.05	<.05	<.05	<.05
02/12/91	02/19/91	11.9	<.32	<.10	--	--	--	--
02/19/91	02/26/91	3.6	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Farm, NY—Continued									
--	--	--	--	--	--	<0.05	0.88	nd	28
--	--	--	--	--	--	<.05	.43	nd	5
<0.05	0.17	<0.05	<0.05	<0.05	<0.05	.09	.30	1	4
<.05	.18	<.05	<.05	<.05	<.05	<.05	.46	nd	9
<.05	.10	<.05	<.05	<.05	<.05	.05	.15	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.10	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan-llide herbicides	Tri-azines herbicides	Ala-chlor	Atra-zine	Cyana-zine	DEA
NY08 Aurora Research								
02/26/91	03/05/91	29.5	0.42	<0.10	--	--	--	--
03/12/91	03/19/91	7.4	<.32	.16	<0.05	<0.05	<0.05	<0.05
03/19/91	03/26/91	13.0	<.32	.14	--	--	--	--
03/26/91	04/02/91	13.2	<.32	.35	<.05	<.05	<.05	<.05
04/02/91	04/09/91	8.4	<.15	.22	<.05	.19	.22	<.05
04/09/91	04/16/91	21.3	<.15	<.10	--	--	--	--
04/16/91	04/23/91	58.9	<.15	<.10	<.05	<.05	<.05	<.05
04/23/91	04/30/91	4.3	<.15	<.10	--	--	--	--
04/30/91	05/07/91	18.8	<.15	<.10	--	--	--	--
05/14/91	05/21/91	4.8	<.15	.27	--	--	--	--
05/21/91	05/28/91	2.8	.19	1.1	--	--	--	--
05/28/91	06/04/91	12.7	<.15	.58	.33	.74	.15	.11
06/11/91	06/18/91	12.5	<.15	.27	.06	.35	.11	<.05
07/02/91	07/09/91	37.6	<.15	<.10	--	--	--	--
07/09/91	07/16/91	18.5	<.15	.10	--	--	--	--
07/16/91	07/23/91	7.9	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/30/91	5.3	<.15	.19	<.05	.09	<.05	<.05
07/30/91	08/06/91	17.0	<.15	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	53.6	<.15	<.10	--	--	--	--
08/13/91	08/20/91	4.6	<.15	<.10	--	--	--	--
09/03/91	09/10/91	11.4	<.15	<.10	--	--	--	--
09/10/91	09/17/91	15.2	<.15	<.10	<.05	<.05	<.05	<.05
NY10 Chautauqua,								
02/28/90	03/06/90	.80	<.15	<.10	--	--	--	--
03/06/90	03/13/90	13.5	<.15	<.10	<.05	<.05	<.05	<.05
--	03/20/90	14.7	<.15	<.10	--	--	--	--
--	03/27/90	3.3	<.15	<.10	--	--	--	--
03/27/90	04/03/90	21.6	<.15	<.10	<.05	<.05	<.05	<.05
04/03/90	04/10/90	17.8	<.15	<.10	--	--	--	--
04/10/90	04/17/90	37.8	<.15	<.10	<.05	<.05	<.05	<.05
04/17/90	04/24/90	20.8	<.15	<.10	--	--	--	--
05/01/90	05/08/90	30.2	<.15	<.10	--	--	--	--
05/08/90	05/15/90	40.6	.20	<.10	--	--	--	--
05/15/90	05/22/90	39.4	<.15	<.10	--	--	--	--
05/22/90	05/29/90	7.6	<.15	<.10	<.05	<.05	<.05	<.05
05/29/90	06/05/90	22.4	.26	.58	--	--	--	--
06/05/90	06/12/90	3.8	<.15	.13	--	--	--	--
06/12/90	06/19/90	21.1	.28	.82	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Farm, NY—Continued									
--	--	--	--	--	--	0.35	<0.05	10	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.11	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.19	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.22	nd	1
--	--	--	--	--	--	.16	.91	nd	3
<.05	.20	<.05	<.05	<.05	<.05	.33	.74	4	9
<.05	.23	<.05	<.05	<.05	<.05	.06	.35	1	4
--	--	--	--	--	--	<.05	.07	nd	3
--	--	--	--	--	--	<.05	.08	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
NY									
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.12	<.05	5	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.06	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.16	.39	4	9
--	--	--	--	--	--	<.05	.08	nd	nd
--	--	--	--	--	--	.18	.55	4	12

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NY10 Chautauqua,								
06/19/90	06/26/90	20.3	<0.15	0.10	<0.05	0.07	<0.05	0.07
06/26/90	07/03/90	3.8	<.15	.19	<.05	.11	<.05	.11
07/03/90	07/10/90	18.5	<.15	<.10	--	--	--	--
07/10/90	07/17/90	52.1	<.15	<.10	<.05	<.05	<.05	<.05
07/17/90	07/24/90	18.5	<.15	<.10	--	--	--	--
07/24/90	07/31/90	9.4	.24	<.10	.06	<.05	<.05	<.05
--	08/07/90	27.9	<.15	<.10	--	--	--	--
08/07/90	08/14/90	33.8	<.15	<.10	--	--	--	--
08/14/90	08/21/90	9.1	<.15	<.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	23.6	<.15	<.10	<.05	<.05	<.05	<.05
08/28/90	09/04/90	5.8	<.32	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	67.6	<.32	<.10	--	--	--	--
09/11/90	09/18/90	40.9	<.32	<.10	--	--	--	--
09/18/90	09/25/90	59.7	<.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	20.8	<.32	<.10	--	--	--	--
10/02/90	10/09/90	30.5	<.32	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	44.7	<.32	<.10	--	--	--	--
10/16/90	10/23/90	23.2	<.32	<.10	<.05	<.05	<.05	<.05
10/23/90	10/30/90	20.8	.58	<.10	--	--	--	--
10/30/90	11/06/90	14.0	<.32	.10	--	--	--	--
11/06/90	11/13/90	27.9	<.32	<.10	<.05	<.05	<.05	<.05
11/13/90	11/20/90	11.4	<.32	.11	<.05	<.05	<.05	<.05
11/20/90	11/27/90	17.5	<.32	.16	<.05	<.05	<.05	<.05
11/27/90	12/04/90	32.0	<.32	<.23	<.05	<.05	<.05	<.05
12/11/90	12/18/90	18.8	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	01/01/91	94.4	.37	<.10	<.05	<.05	<.05	<.05
01/01/91	01/08/91	3.3	<.32	<.10	<.05	<.05	<.05	<.05
01/15/91	01/22/91	18.0	.47	<.22	<.05	<.05	<.05	<.05
01/22/91	01/29/91	2.8	.49	<.23	--	--	--	--
01/29/91	02/05/91	11.4	<.32	<.23	<.05	<.05	<.05	<.05
02/05/91	02/12/91	5.6	<.32	<.10	--	--	--	--
02/12/91	02/19/91	19.1	<.32	<.10	--	--	--	--
02/19/91	02/26/91	6.9	<.32	<.10	--	--	--	--
02/26/91	03/05/91	54.6	<.32	<.10	--	--	--	--
03/05/91	03/12/91	11.4	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

[illegible]

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NY10 Chautauqua,								
03/12/91	03/19/91	7.6	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
03/19/91	03/26/91	19.3	<.32	.40	--	--	--	--
03/26/91	04/02/91	23.1	<.15	<.10	--	--	--	--
04/02/91	04/09/91	3.8	<.15	.16	<.05	.10	.13	<.05
04/09/91	04/16/91	38.9	<.15	<.10	--	--	--	--
04/16/91	04/23/91	71.9	<.15	<.10	<.05	<.05	<.05	<.05
04/23/91	04/30/91	5.1	<.15	<.10	--	--	--	--
05/14/91	05/21/91	2.5	.23	.23	--	--	--	--
05/21/91	05/28/91	11.2	<.15	.34	.09	.27	.06	.28
05/28/91	06/04/91	3.8	<.15	.15	--	--	--	--
06/04/91	06/11/91	5.6	<.15	.35	.08	.31	<.05	<.05
06/11/91	06/18/91	4.6	<.15	.17	<.05	.18	<.05	<.05
06/18/91	06/25/91	3.3	<.15	<.10	--	--	--	--
06/25/91	07/02/91	21.6	<.15	<.10	<.05	<.05	<.05	<.05
07/02/91	07/09/91	55.6	<.15	<.10	--	--	--	--
07/09/91	07/16/91	21.6	<.15	<.10	--	--	--	--
07/16/91	07/23/91	5.8	<.15	<.10	--	--	--	--
07/30/91	08/09/91	15.2	<.15	<.10	--	--	--	--
08/09/91	08/13/91	10.4	<.15	<.10	<.05	<.05	<.05	<.05
08/13/91	08/20/91	25.9	<.15	<.10	--	--	--	--
08/27/91	09/03/91	1.0	<.15	<.10	--	--	--	--
09/03/91	09/11/91	21.1	<.15	<.10	--	--	--	--
09/11/91	09/17/91	12.7	<.15	<.10	--	--	--	--
NY20 Huntington Wildlife,								
02/27/90	03/06/90	.80	<.15	<.10	--	--	--	--
03/06/90	03/13/90	17.0	<.15	<.10	--	--	--	--
03/20/90	03/27/90	24.4	<.15	<.10	--	--	--	--
03/27/90	04/03/90	40.1	<.15	<.10	<.05	<.05	<.05	<.05
04/03/90	04/10/90	40.9	<.15	<.10	<.05	<.05	<.05	<.05
04/10/90	04/17/90	34.8	.20	<.10	--	--	--	--
04/17/90	04/24/90	12.7	<.15	<.10	--	--	--	--
04/24/90	05/01/90	29.2	<.15	<.10	--	--	--	--
05/01/90	05/08/90	29.7	<.15	<.10	--	--	--	--
05/08/90	05/15/90	56.9	<.15	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
NY—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	.33	nd	6
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	.06	<.05	.10	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.20	.19	nd	nd
<.05	.11	<.05	<.05	<.05	<.05	.09	.27	1	3
--	--	--	--	--	--	<.05	.12	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.08	.31	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.18	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
NY									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	.70	<.05	<.05	nd	nd
--	--	--	--	--	--	.12	<.05	4	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyanazine	DEA
NY20 Huntington Wildlife,								
05/15/90	05/22/90	78.0	<0.15	<0.10	--	--	--	--
05/22/90	05/29/90	15.8	<.15	.20	--	--	--	--
05/29/90	06/05/90	21.1	<.15	.21	--	--	--	--
06/05/90	06/12/90	8.4	<.15	.12	--	--	--	--
06/12/90	06/19/90	26.9	<.15	.12	<0.05	0.06	<0.05	0.06
06/19/90	06/26/90	20.6	<.15	<.10	--	--	--	--
06/26/90	07/03/90	5.6	<.15	<.10	--	--	--	--
07/03/90	07/10/90	2.3	<.15	<.10	--	--	--	--
07/10/90	07/17/90	6.9	<.15	<.10	<.05	<.05	<.05	<.05
07/17/90	07/24/90	58.9	<.15	<.10	--	--	--	--
07/24/90	07/31/90	25.9	.15	<.10	--	--	--	--
07/31/90	08/07/90	32.3	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	56.4	<.15	.13	<.05	<.05	<.05	<.05
08/14/90	08/21/90	2.8	<.15	<.10	--	--	--	--
08/28/90	09/04/90	3.8	<.32	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	10.9	.32	.14	<.05	<.05	<.05	<.05
09/11/90	09/18/90	18.3	<.32	<.10	--	--	--	--
09/18/90	09/25/90	13.0	<.32	<.10	--	--	--	--
09/25/90	10/02/90	25.9	<.32	<.10	--	--	--	--
10/02/90	10/09/90	21.3	<.32	<.10	--	--	--	--
10/09/90	10/16/90	64.8	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/24/90	68.8	<.32	<.10	<.05	<.05	<.05	<.05
10/24/90	10/30/90	4.6	<.32	<.10	--	--	--	--
10/30/90	11/06/90	7.6	<.32	<.10	--	--	--	--
11/06/90	11/13/90	49.8	<.32	<.10	--	--	--	--
11/13/90	11/20/90	7.1	<.32	<.10	--	--	--	--
11/20/90	11/27/90	15.0	<.32	<.10	--	--	--	--
11/27/90	12/04/90	49.8	<.32	<.23	<.05	<.05	<.05	<.05
12/05/90	12/11/90	1.8	<.32	.16	--	--	--	--
12/11/90	12/18/90	25.7	<.32	<.10	--	--	--	--
12/18/90	12/25/90	50.8	<.32	<.10	<.05	<.05	<.05	<.05
12/25/90	01/01/91	43.2	<.32	<.10	--	--	--	--
01/01/91	01/08/91	2.5	<.32	.18	--	--	--	--
01/08/91	01/15/91	36.6	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	34.0	<.32	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
NY—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	.13	nd	2
--	--	--	--	--	--	<.05	.13	nd	3
--	--	--	--	--	--	<.05	.07	nd	1
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	.06	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.09	<.05	2	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.10	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.14	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- iilide herbicides	Tri- azines herbicides	Aia- chlor	Atra- zine	Cyana- zine	DEA
NY20 Huntington Wildlife,								
01/22/91	01/29/91	6.1	<0.32	<0.22	--	--	--	--
01/29/91	02/05/91	9.7	<.32	<.23	<0.05	<0.05	<0.05	<0.05
02/05/91	02/12/91	6.4	<.32	<.23	<.05	<.05	<.05	<.05
02/12/91	02/19/91	16.8	<.32	<.10	--	--	--	--
02/19/91	02/26/91	15.5	<.32	<.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	50.0	<.32	<.10	<.05	<.05	<.05	<.05
03/05/91	03/12/91	6.4	<.32	.33	--	--	--	--
03/12/91	03/19/91	7.4	<.32	<.10	--	--	--	--
03/19/91	03/26/91	44.5	<.32	.15	--	--	--	--
03/26/91	04/02/91	10.4	<.15	<.10	--	--	--	--
04/02/91	04/09/91	12.7	<.15	<.10	--	--	--	--
04/09/91	04/16/91	21.3	<.15	<.10	--	--	--	--
04/16/91	04/23/91	35.3	<.15	<.10	<.05	<.05	<.05	<.05
04/23/91	04/30/91	8.4	<.15	<.10	--	--	--	--
05/14/91	05/21/91	13.2	<.15	<.10	--	--	--	--
05/21/91	05/28/91	33.3	<.15	<.10	--	--	--	--
05/28/91	06/04/91	17.8	<.15	<.10	--	--	--	--
06/04/91	06/11/91	2.3	<.15	.12	--	--	--	--
06/11/91	06/18/91	43.4	<.15	.10	--	--	--	--
06/25/91	07/02/91	7.6	<.15	<.10	<.05	<.05	<.05	<.05
07/02/91	07/09/91	52.9	<.15	<.10	--	--	--	--
07/09/91	07/16/91	9.3	<.15	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	10.2	<.15	.19	.09	.15	<.05	<.05
07/30/91	08/06/91	15.8	<.15	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	27.2	<.15	<.10	<.05	<.05	<.05	<.05
08/13/91	08/20/91	6.6	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/03/91	20.8	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	1.8	<.15	<.10	--	--	--	--
09/10/91	09/17/91	47.0	<.15	<.10	<.05	<.05	<.05	<.05
NY52 Bennett Bridge,								
02/27/90	03/06/90	1.8	<.15	<.10	--	--	--	--
03/06/90	03/13/90	30.0	<.15	<.10	--	--	--	--
03/13/90	03/20/90	31.2	<.15	<.10	--	--	--	--
--	03/27/90	5.6	<.15	<.10	<.05	<.05	<.05	<.05
03/27/90	04/03/90	26.4	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
NY—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.27	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.12	nd	5
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	.07	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	nd
--	--	--	--	--	--	<.05	.08	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.05	<.05	<.05	<.05	<.05	.09	.15	1	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
NY									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NY52 Bennett Bridge,								
04/03/90	04/10/90	41.2	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
04/10/90	04/17/90	34.5	<.15	<.10	--	--	--	--
04/17/90	04/24/90	14.5	<.15	<.10	<.05	<.05	<.05	<.05
04/24/90	05/02/90	21.6	<.15	<.10	<.05	<.05	<.05	<.05
05/01/90	05/08/90	38.9	<.15	<.10	--	--	--	--
05/08/90	05/15/90	49.5	<.15	<.10	--	--	--	--
05/15/90	05/22/90	82.0	<.15	<.10	--	--	--	--
05/22/90	05/29/90	3.6	<.15	<.10	--	--	--	--
05/29/90	06/05/90	22.4	.37	.20	.08	.28	.06	.14
06/05/90	06/12/90	8.1	.25	.63	--	--	--	--
06/12/90	06/19/90	21.6	<.15	.78	--	--	--	--
06/19/90	06/26/90	29.7	<.15	.21	.05	.21	<.05	.11
06/26/90	07/03/90	33.3	<.15	<.10	--	--	--	--
07/03/90	07/10/90	11.2	<.15	.12	<.05	.16	<.05	.09
07/10/90	07/17/90	25.2	<.15	<.10	<.05	.05	<.05	.06
07/17/90	07/24/90	35.1	<.15	<.10	--	--	--	--
07/24/90	07/31/90	9.7	.18	<.10	--	--	--	--
07/31/90	08/07/90	19.8	.23	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	7.9	<.15	.11	<.05	<.05	<.05	<.05
08/14/90	08/21/90	1.8	.17	.39	<.05	.11	<.05	<.05
08/21/90	08/28/90	14.5	<.15	<.10	--	--	--	--
08/28/90	09/04/90	13.0	<.32	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	39.4	<.32	<.10	--	--	--	--
09/11/90	09/18/90	27.4	<.32	<.10	--	--	--	--
09/18/90	09/25/90	21.6	<.32	<.10	--	--	--	--
09/25/90	10/02/90	52.6	<.32	.15	--	--	--	--
10/02/90	10/09/90	30.7	<.32	<.10	--	--	--	--
10/09/90	10/16/90	65.5	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/24/90	60.7	<.32	<.10	--	--	--	--
10/23/90	10/31/90	27.4	<.32	<.10	--	--	--	--
10/30/90	11/07/90	30.2	<.32	<.10	--	--	--	--
11/06/90	11/14/90	44.5	<.32	<.10	--	--	--	--
11/13/90	11/20/90	9.7	<.32	<.10	<.05	<.05	<.05	<.05
11/20/90	11/28/90	33.3	<.32	<.10	<.05	<.05	<.05	<.05
11/27/90	12/05/90	39.6	<.32	<.23	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
NY—Continued									
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.14	<.05	<.05	<.05	.05	.08	.28	2	6
--	--	--	--	--	--	.16	.42	1	3
--	--	--	--	--	--	<.05	.52	nd	11
<.05	.08	<.05	<.05	<.05	<.05	.05	.21	1	6
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.16	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.11	<.05	1	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.28	<.05	<.05	<.05	<.05	<.05	.11	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	5
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NY52 Bennett Bridge,								
12/04/90	12/11/90	4.1	<0.32	<0.10	--	--	--	--
12/11/90	12/18/90	22.9	<.32	.15	--	--	--	--
12/18/90	12/25/90	66.8	<.32	<.10	<0.05	<0.05	<0.05	<0.05
12/25/90	01/01/91	68.6	<.32	.11	--	--	--	--
01/01/91	01/08/91	6.1	<.32	.36	<.05	<.05	<.05	<.05
01/08/91	01/15/91	25.2	<.32	<.10	--	--	--	--
01/15/91	01/22/91	27.9	<.32	<.10	<.05	<.05	<.05	<.05
01/22/91	01/29/91	12.7	<.32	<.22	<.05	<.05	<.05	<.05
01/29/91	02/05/91	22.9	<.32	<.23	<.05	<.05	<.05	<.05
02/05/91	02/12/91	7.6	<.32	<.23	<.05	<.05	<.05	<.05
02/12/91	02/19/91	41.2	<.32	<.10	<.05	<.05	<.05	<.05
02/19/91	02/26/91	10.2	.36	<.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	97.0	<.32	<.10	--	--	--	--
03/05/91	03/12/91	17.5	<.32	<.10	<.05	<.05	<.05	<.05
03/12/91	03/19/91	6.4	<.32	<.10	--	--	--	--
03/19/91	03/26/91	43.2	<.32	<.10	--	--	--	--
03/26/91	04/02/91	21.6	<.15	<.10	<.05	<.05	<.05	<.05
04/02/91	04/09/91	18.8	<.15	<.10	--	--	--	--
04/09/91	04/16/91	24.4	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	31.5	<.15	<.10	--	--	--	--
04/23/91	04/30/91	4.1	<.15	<.10	<.05	.06	<.05	.07
04/30/91	05/07/91	17.5	<.15	.16	<.05	.14	<.05	<.05
05/14/91	05/21/91	11.4	<.15	.11	<.05	.11	<.05	.05
05/21/91	05/28/91	70.0	<.15	.17	.05	.19	<.05	.15
05/28/91	06/04/91	18.5	<.15	.11	--	--	--	--
06/11/91	06/18/91	20.3	<.15	.14	<.05	.15	<.05	.10
06/25/91	07/02/91	22.6	<.15	<.10	--	--	--	--
07/02/91	07/09/91	28.5	<.15	<.10	--	--	--	--
07/09/91	07/16/91	4.3	<.15	<.10	--	--	--	--
07/16/91	07/23/91	8.7	<.15	<.10	--	--	--	--
07/30/91	08/06/91	30.5	<.15	<.10	--	--	--	--
08/06/91	08/13/91	32.0	<.15	<.10	--	--	--	--
08/13/91	08/20/91	4.6	<.15	<.10	--	--	--	--
08/27/91	09/03/91	12.7	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	14.0	<.15	<.10	--	--	--	--
09/10/91	09/17/91	43.1	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
NY—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	2
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	6
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.14	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.11	nd	1
<.05	.16	<.05	<.05	<.05	<.05	.05	.19	4	13
--	--	--	--	--	--	<.05	.09	nd	2
<.05	.05	<.05	<.05	<.05	<.05	<.05	.15	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NY65 Jasper,								
03/06/90	03/13/90	3.6	<0.15	<0.10	--	--	--	--
03/13/90	03/20/90	16.3	<.15	<.10	--	--	--	--
03/27/90	04/03/90	16.8	<.15	<.10	--	--	--	--
04/03/90	04/10/90	14.0	<.15	<.10	<0.05	<0.05	<0.05	<0.05
04/10/90	04/17/90	28.7	<.15	<.10	--	--	--	--
04/17/90	04/24/90	5.1	<.15	<.10	<.05	<.05	<.05	<.05
04/24/90	05/01/90	11.7	<.15	.17	.07	.17	<.05	.10
05/01/90	05/08/90	26.2	<.15	<.10	<.05	<.05	<.05	<.05
05/08/90	05/15/90	11.8	<.15	<.10	<.05	<.05	<.05	<.05
05/15/90	05/22/90	60.2	<.15	.11	--	--	--	--
05/22/90	05/29/90	6.9	.18	.52	--	--	--	--
05/29/90	06/05/90	14.7	<.15	.11	--	--	--	--
06/05/90	06/12/90	4.1	.28	.36	--	--	--	--
06/12/90	06/19/90	15.2	<.15	.66	<.05	.18	<.05	.16
06/19/90	06/26/90	10.2	<.15	.22	--	--	--	--
06/26/90	07/03/90	50.3	<.15	<.10	--	--	--	--
07/03/90	07/10/90	13.0	<.15	.10	--	--	--	--
07/10/90	07/17/90	50.0	<.15	.16	<.05	<.05	<.05	<.05
07/17/90	07/24/90	15.0	<.15	<.10	--	--	--	--
07/31/90	08/07/90	16.0	.21	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	12.7	<.15	<.10	--	--	--	--
08/14/90	08/21/90	20.3	<.15	<.10	--	--	--	--
08/21/90	08/28/90	33.5	<.15	<.10	--	--	--	--
08/28/90	09/04/90	4.1	<.32	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	37.1	<.32	<.10	--	--	--	--
09/11/90	09/18/90	34.0	<.32	<.10	--	--	--	--
09/25/90	10/02/90	13.7	<.32	.10	--	--	--	--
10/02/90	10/09/90	11.7	<.32	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	84.1	<.32	<.10	--	--	--	--
10/16/90	10/23/90	33.5	<.32	<.10	<.05	<.05	<.05	<.05
10/23/90	10/30/90	28.2	<.32	<.10	--	--	--	--
10/30/90	11/06/90	6.6	<.32	<.10	--	--	--	--
11/06/90	11/13/90	26.7	<.32	.14	<.05	<.05	<.05	<.05
11/13/90	11/20/90	1.5	<.32	<.10	--	--	--	--
11/20/90	11/27/90	4.6	<.32	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metolachlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
NY									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.07	.17	1	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	4
--	--	--	--	--	--	.11	.34	1	2
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	.18	.23	1	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.18	nd	3
--	--	--	--	--	--	<.05	.14	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NY65 Jasper,								
11/27/90	12/04/90	22.4	<0.32	<0.23	<0.05	<0.05	<0.05	<0.05
12/11/90	12/18/90	15.2	<.32	<.10	--	--	--	--
12/18/90	12/25/90	38.6	<.32	<.10	--	--	--	--
12/25/90	01/01/91	32.3	<.32	<.10	--	--	--	--
01/08/91	01/15/91	15.0	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	6.6	<.32	<.10	--	--	--	--
01/29/91	02/05/91	5.8	<.32	<.23	--	--	--	--
02/05/91	02/12/91	6.4	<.32	<.23	<.05	<.05	<.05	<.05
02/12/91	02/19/91	11.2	<.32	<.10	--	--	--	--
02/19/91	02/26/91	2.8	<.32	<.10	--	--	--	--
02/26/91	03/05/91	42.9	<.32	<.10	--	--	--	--
03/05/91	03/12/91	1.8	<.32	<.10	--	--	--	--
03/12/91	03/19/91	3.8	<.32	<.10	--	--	--	--
03/19/91	03/26/91	9.9	<.32	<.10	--	--	--	--
03/26/91	04/02/91	3.3	<.15	<.10	--	--	--	--
04/02/91	04/09/91	4.1	<.15	<.10	--	--	--	--
04/09/91	04/16/91	14.5	<.15	.17	<.05	<.05	<.05	<.05
04/16/91	04/23/91	23.9	<.15	<.10	--	--	--	--
04/23/91	04/30/91	39.1	<.15	<.10	--	--	--	--
04/30/91	05/07/91	9.4	<.15	.10	<.05	<.05	<.05	<.05
05/14/91	05/21/91	2.0	<.15	.10	--	--	--	--
05/21/91	05/28/91	.80	<.15	.16	--	--	--	--
05/28/91	06/04/91	8.1	<.15	.26	--	--	--	--
06/11/91	06/18/91	15.8	<.15	.14	.05	.08	<.05	<.05
06/25/91	07/02/91	1.3	<.15	<.10	--	--	--	--
07/02/91	07/09/91	41.7	<.15	<.10	<.05	<.05	<.05	<.05
07/09/91	07/16/91	7.9	<.15	<.10	--	--	--	--
07/16/91	07/23/91	9.9	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/30/91	4.8	<.15	<.10	--	--	--	--
07/30/91	08/06/91	8.6	<.15	<.10	--	--	--	--
08/06/91	08/13/91	24.1	<.15	<.10	--	--	--	--
08/13/91	08/20/91	7.9	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	14.2	<.15	<.10	<.05	<.05	<.05	<.05
09/10/91	09/17/91	15.8	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
NY—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.08	nd	nd
--	--	--	--	--	--	<.05	.13	nd	nd
--	--	--	--	--	--	<.05	.21	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	.05	.08	1	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NY68 Biscuit Brook,								
02/27/90	03/06/90	5.3	<0.15	<0.10	--	--	--	--
03/06/90	03/13/90	12.5	<.15	<.10	--	--	--	--
03/13/90	03/20/90	34.8	<.15	<.10	<0.05	<0.05	<0.05	<0.05
03/20/90	03/27/90	17.5	<.15	<.10	<.05	<.05	<.05	<.05
03/27/90	04/03/90	24.9	<.15	<.10	--	--	--	--
04/03/90	04/10/90	9.4	<.15	<.10	<.05	<.05	<.05	<.05
04/10/90	04/17/90	56.4	.27	<.10	<.05	<.05	<.05	<.05
04/17/90	04/24/90	13.0	<.15	<.10	--	--	--	--
04/24/90	05/01/90	34.8	<.15	<.10	--	--	--	--
05/01/90	05/08/90	25.4	<.15	<.10	--	--	--	--
05/08/90	05/15/90	107.7	<.15	<.10	<.05	<.05	<.05	<.05
05/15/90	05/22/90	46.0	<.15	<.10	<.05	<.05	<.05	<.05
05/22/90	05/29/90	25.7	<.15	<.10	<.05	<.05	<.05	<.05
05/29/90	06/05/90	21.6	<.15	<.10	<.05	<.05	<.05	<.05
06/05/90	06/12/90	15.8	<.15	<.10	--	--	--	--
06/12/90	06/19/90	7.9	<.15	.20	--	--	--	--
06/19/90	06/26/90	36.3	<.15	.10	--	--	--	--
06/26/90	07/03/90	24.4	<.15	<.10	--	--	--	--
07/03/90	07/10/90	10.9	<.15	<.10	--	--	--	--
07/10/90	07/17/90	44.2	<.15	<.10	--	--	--	--
07/17/90	07/24/90	15.3	<.15	<.10	<.05	<.05	<.05	<.05
07/31/90	08/07/90	114.1	<.15	<.10	--	--	--	--
08/07/90	08/14/90	28.5	<.15	<.10	--	--	--	--
08/14/90	08/21/90	10.2	<.15	<.10	--	--	--	--
08/21/90	08/28/90	53.6	<.15	<.10	--	--	--	--
08/28/90	09/04/90	7.9	<.32	<.10	--	--	--	--
09/04/90	09/11/90	16.8	<.32	.13	<.05	<.05	<.05	<.05
09/11/90	09/18/90	19.3	<.32	<.10	--	--	--	--
09/18/90	09/25/90	12.7	<.32	<.10	--	--	--	--
09/25/90	10/02/90	5.6	<.32	<.10	--	--	--	--
10/02/90	10/09/90	19.8	<.32	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	65.3	<.32	<.10	--	--	--	--
10/16/90	10/24/90	100.8	<.32	<.10	<.05	<.05	<.05	<.05
10/30/90	11/06/90	25.4	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	88.7	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
NY									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	1.5	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.13	nd	1
--	--	--	--	--	--	<.05	.06	nd	2
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by Immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NY68 Biscuit Brook,								
11/13/90	11/20/90	6.4	<0.32	<0.10	--	--	--	--
11/20/90	11/27/90	8.4	<.32	<.10	--	--	--	--
11/27/90	12/04/90	57.4	<.32	<.23	<0.05	<0.05	<0.05	<0.05
12/11/90	12/11/90	1.8	<.32	<.10	--	--	--	--
12/11/90	12/18/90	34.3	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/25/90	68.6	<.32	<.10	--	--	--	--
12/25/90	01/03/91	50.3	<.32	<.10	--	--	--	--
01/03/91	01/08/91	1.0	<.32	<.10	--	--	--	--
01/08/91	01/15/91	34.0	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	23.4	<.32	<.22	<.05	<.05	<.05	<.05
01/22/91	01/29/91	7.4	<.32	<.23	<.05	<.05	<.05	<.05
01/29/91	02/05/91	17.5	<.32	<.23	<.05	<.05	<.05	<.05
02/05/91	02/12/91	13.0	<.32	<.10	--	--	--	--
02/12/91	02/19/91	37.3	<.32	<.10	--	--	--	--
02/19/91	02/26/91	10.9	<.32	.15	<.05	<.05	<.05	<.05
02/26/91	03/05/91	47.2	<.32	<.10	--	--	--	--
03/05/91	03/12/91	16.8	<.32	<.10	<.05	<.05	<.05	<.05
03/12/91	03/19/91	27.9	<.32	<.10	--	--	--	--
03/19/91	03/26/91	41.2	<.15	<.10	--	--	--	--
03/26/91	04/02/91	13.5	<.15	<.10	<.05	<.05	<.05	<.05
04/02/91	04/09/91	3.6	<.15	.10	<.05	.16	<.05	<.05
04/09/91	04/16/91	16.3	<.15	<.10	--	--	--	--
04/16/91	04/23/91	42.4	<.15	.12	--	--	--	--
05/07/91	05/14/91	8.1	<.15	.14	--	--	--	--
05/14/91	05/21/91	12.7	<.15	.14	<.05	.11	<.05	.06
05/21/91	05/28/91	4.6	<.15	.26	--	--	--	--
05/28/91	06/04/91	9.4	<.15	<.10	<.05	.11	<.05	<.05
06/04/91	06/11/91	5.1	<.15	.17	--	--	--	--
06/11/91	06/18/91	16.0	<.15	<.10	<.05	.05	<.05	<.05
06/18/91	06/25/91	2.8	<.15	.13	--	--	--	--
06/25/91	07/02/91	2.8	<.15	<.10	--	--	--	--
07/02/91	07/09/91	7.4	<.15	<.10	--	--	--	--
07/09/91	07/16/91	10.7	<.15	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	31.5	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/30/91	10.2	<.15	<.10	--	--	--	--
07/30/91	08/06/91	5.1	<.15	<.10	--	--	--	--
08/06/91	08/13/91	49.5	<.15	<.10	--	--	--	--
09/03/91	09/10/91	8.1	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

[illegible]

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Ala-chlor	Atrazine	Cyanazine	DEA
NY98 Whiteface Mountain,								
02/27/90	03/06/90	3.1	<0.15	<0.10	--	--	--	--
03/06/90	03/13/90	8.1	<.15	<.10	--	--	--	--
03/13/90	03/20/90	19.3	<.15	<.10	--	--	--	--
03/20/90	03/27/90	33.5	<.15	<.10	<0.05	<0.05	<0.05	<0.05
03/27/90	04/03/90	28.7	<.15	<.10	--	--	--	--
04/03/90	04/10/90	50.8	<.15	<.10	--	--	--	--
04/10/90	04/17/90	45.2	.21	<.10	<.05	<.05	<.05	<.05
04/17/90	04/24/90	9.7	<.15	<.10	<.05	<.05	<.05	<.05
04/24/90	05/01/90	9.4	<.15	<.10	<.05	.05	<.05	<.05
05/01/90	05/09/90	39.1	<.15	<.10	<.05	<.05	<.05	<.05
05/15/90	05/22/90	62.2	<.15	<.10	--	--	--	--
05/22/90	05/29/90	4.6	<.15	.23	--	--	--	--
05/29/90	06/05/90	31.2	<.15	<.10	--	--	--	--
06/05/90	06/12/90	16.5	<.15	.18	--	--	--	--
06/12/90	06/20/90	8.4	<.15	.36	--	--	--	--
06/20/90	06/26/90	18.3	<.15	.10	--	--	--	--
06/26/90	07/03/90	20.8	<.15	<.10	--	--	--	--
07/03/90	07/10/90	5.8	<.15	.47	.28	.59	<.05	.16
07/10/90	07/17/90	1.5	<.15	<.10	--	--	--	--
07/17/90	07/24/90	67.3	<.15	<.10	--	--	--	--
07/24/90	07/31/90	1.8	<.15	<.10	--	--	--	--
07/31/90	08/07/90	56.6	<.15	<.10	--	--	--	--
08/07/90	08/14/90	36.1	.18	<.10	--	--	--	--
08/14/90	08/21/90	20.3	<.15	<.10	--	--	--	--
08/21/90	08/28/90	2.5	<.15	<.10	<.05	<.05	<.05	<.05
08/28/90	09/04/90	8.9	<.32	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	15.2	<.32	<.10	--	--	--	--
09/11/90	09/18/90	12.2	<.32	<.10	<.05	<.05	<.05	<.05
09/18/90	09/25/90	16.5	<.32	.11	--	--	--	--
09/25/90	10/02/90	39.1	<.32	<.10	--	--	--	--
10/02/90	10/09/90	23.9	<.32	<.10	--	--	--	--
10/09/90	10/16/90	45.2	<.32	<.10	--	--	--	--
10/16/90	10/23/90	35.3	<.32	<.10	--	--	--	--
10/23/90	10/30/90	52.8	.48	<.10	<.05	<.05	<.05	<.05
10/30/90	11/06/90	8.6	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
NY									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.15	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.11	nd	2
--	--	--	--	--	--	<.05	.23	nd	2
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.28	.59	2	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.11	<.05	4	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NY98 Whiteface Mountain,								
11/06/90	11/13/90	38.7	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
11/13/90	11/20/90	5.6	<.32	<.10	--	--	--	--
11/20/90	11/27/90	14.5	<.32	<.23	<.05	<.05	<.05	<.05
11/27/90	12/04/90	31.5	<.32	<.10	<.05	<.05	<.05	<.05
12/04/90	12/11/90	4.3	<.32	<.10	--	--	--	--
12/11/90	12/18/90	11.2	<.32	<.10	--	--	--	--
12/18/90	12/26/90	46.7	<.32	<.10	<.05	<.05	<.05	<.05
12/26/90	01/02/91	32.8	<.32	<.22	<.05	<.05	<.05	<.05
01/02/91	01/08/91	5.6	<.32	<.22	<.05	<.05	<.05	<.05
01/08/91	01/15/91	21.1	<.32	.12	<.05	<.05	<.05	<.05
01/15/91	01/22/91	23.1	<.32	<.22	<.05	<.05	<.05	<.05
01/22/91	01/29/91	2.8	<.32	<.22	--	--	--	--
01/29/91	02/05/91	7.1	<.32	<.23	<.05	<.05	<.05	<.05
02/05/91	02/12/91	4.8	<.32	<.23	<.05	<.05	<.05	<.05
02/12/91	02/19/91	11.2	<.32	<.10	--	--	--	--
02/19/91	02/26/91	25.2	<.32	<.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	31.2	<.32	<.10	--	--	--	--
03/05/91	03/12/91	3.8	<.32	<.10	--	--	--	--
03/12/91	03/19/91	3.1	<.32	.10	<.05	<.05	<.05	<.05
03/19/91	03/26/91	32.8	<.32	<.10	--	--	--	--
03/26/91	04/02/91	14.2	<.15	<.10	--	--	--	--
04/02/91	04/09/91	32.0	<.15	<.10	--	--	--	--
04/09/91	04/16/91	25.7	<.15	<.10	--	--	--	--
04/16/91	04/23/91	63.5	<.15	<.10	<.05	<.05	<.05	<.05
04/23/91	04/30/91	3.1	<.15	<.10	--	--	--	--
05/07/91	05/14/91	3.1	<.15	.42	--	--	--	--
05/14/91	05/21/91	17.8	<.15	<.10	<.05	<.05	<.05	<.05
05/21/91	05/28/91	19.6	<.15	<.10	<.05	<.05	<.05	.06
05/28/91	06/04/91	5.3	<.15	<.10	<.05	.11	.06	<.05
06/11/91	06/18/91	21.6	<.15	.13	<.05	.13	<.05	<.05
06/25/91	07/02/91	3.6	<.15	<.10	--	--	--	--
07/02/91	07/09/91	39.1	<.15	<.10	<.05	<.05	<.05	<.05
07/09/91	07/16/91	7.1	<.15	<.10	--	--	--	--
07/16/91	07/23/91	13.7	<.15	<.10	--	--	--	--
07/30/91	08/06/91	30.2	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
NY—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.34	nd	1
<.05	<.05	<.05	<.05	<.05	.11	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.11	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.13	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NY98 Whiteface Mountain,								
08/06/91	08/13/91	34.8	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
08/20/91	08/27/91	10.9	<.15	<.10	--	--	--	--
08/27/91	09/03/91	14.7	<.15	<.10	--	--	--	--
09/03/91	09/10/91	.80	<.15	<.10	--	--	--	--
NY99 West Point,								
02/27/90	03/06/90	7.6	<.15	<.10	--	--	--	--
03/06/90	03/13/90	3.6	.25	1.1	.14	1.1	<.05	<.05
03/13/90	03/20/90	33.3	<.15	<.10	--	--	--	--
03/20/90	03/27/90	23.1	<.15	<.10	<.05	<.05	<.05	<.05
03/27/90	04/03/90	33.5	<.15	<.10	--	--	--	--
04/03/90	04/10/90	11.2	<.15	<.10	--	--	--	--
04/10/90	04/17/90	13.0	.19	<.10	--	--	--	--
04/17/90	04/24/90	13.5	<.15	<.10	<.05	<.05	<.05	<.05
04/24/90	05/01/90	24.4	<.15	<.10	--	--	--	--
05/01/90	05/08/90	31.0	<.15	<.10	--	--	--	--
05/08/90	05/15/90	45.0	<.15	<.10	--	--	--	--
05/15/90	05/22/90	39.6	<.15	<.10	--	--	--	--
05/22/90	05/29/90	19.3	<.15	<.10	<.05	<.05	<.05	<.05
05/29/90	06/05/90	30.2	<.15	<.10	--	--	--	--
06/05/90	06/12/90	19.1	<.15	<.10	--	--	--	--
06/12/90	06/19/90	38.1	<.15	.15	<.05	<.05	<.05	<.05
06/19/90	06/26/90	21.8	<.15	.13	<.05	.10	<.05	.06
06/26/90	07/03/90	29.0	<.15	<.10	--	--	--	--
07/10/90	07/17/90	54.6	<.15	.10	--	--	--	--
07/17/90	07/24/90	43.2	<.15	<.10	--	--	--	--
07/31/90	08/07/90	126.0	<.15	<.10	--	--	--	--
08/07/90	08/14/90	49.3	<.15	<.10	--	--	--	--
08/14/90	08/21/90	22.9	<.15	<.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	40.6	<.15	<.10	--	--	--	--
08/28/90	09/04/90	6.9	<.32	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	1.0	<.32	.12	<.05	<.05	<.05	<.05
09/11/90	09/18/90	26.4	<.32	<.10	--	--	--	--
09/25/90	10/02/90	2.5	<.32	<.10	--	--	--	--
10/02/90	10/09/90	12.2	<.32	<.10	--	--	--	--
10/09/90	10/16/90	39.1	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
NY—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
NY									
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.14	1.1	nd	4
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.12	<.05	2	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.10	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipita- tion (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
NY99 West Point,								
10/16/90	10/23/90	30.2	<0.32	<0.10	--	--	--	--
10/23/90	10/30/90	81.8	<.32	.13	<0.05	<0.05	<0.05	<0.05
10/30/90	11/06/90	10.2	<.32	<.10	--	--	--	--
11/06/90	11/13/90	75.5	<.32	<.10	--	--	--	--
11/13/90	11/20/90	7.4	<.32	<.10	--	--	--	--
11/20/90	11/27/90	9.4	<.32	<.10	--	--	--	--
11/27/90	12/04/90	84.6	<.32	<.23	<.05	<.05	<.05	<.05
12/04/90	12/11/90	2.0	<.32	<.10	--	--	--	--
12/11/90	12/18/90	37.9	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/26/90	36.1	<.32	<.10	--	--	--	--
12/26/90	01/02/91	26.4	<.32	<.10	--	--	--	--
01/08/91	01/15/91	25.9	<.32	<.22	<.05	<.05	<.05	<.05
01/22/91	01/29/91	1.0	<.32	<.22	--	--	--	--
01/29/91	02/05/91	7.4	<.32	<.23	--	--	--	--
02/05/91	02/12/91	12.7	<.32	<.23	--	--	--	--
02/12/91	02/19/91	25.9	<.32	<.10	<.05	<.05	<.05	<.05
02/19/90	02/26/91	1.3	<.32	<.10	--	--	--	--
02/26/91	03/05/91	79.5	<.15	<.10	--	--	--	--
03/05/91	03/19/91	27.4	<.32	<.10	--	--	--	--
03/19/91	03/26/91	18.0	<.32	<.10	--	--	--	--
03/26/91	04/02/91	6.9	<.15	<.10	<.05	<.05	<.05	<.05
04/09/91	04/16/91	21.8	<.15	<.10	--	--	--	--
04/16/91	04/23/91	55.6	.15	<.10	<.05	<.05	<.05	<.05
04/23/91	04/30/91	11.4	<.15	<.10	--	--	--	--
05/07/91	05/14/91	1.8	<.15	.53	--	--	--	--
05/14/91	05/21/91	5.3	<.15	.45	.10	.51	<.05	.19
05/21/91	05/28/91	5.6	<.15	.27	<.05	.22	<.05	.20
05/28/91	06/04/91	66.3	<.15	.12	--	--	--	--
06/04/91	06/11/91	6.4	<.15	<.10	<.05	<.05	<.05	<.05
06/11/91	06/18/91	47.5	<.15	<.10	--	--	--	--
06/18/91	06/25/91	34.0	<.15	<.10	--	--	--	--
06/25/91	07/02/91	1.3	<.15	.32	--	--	--	--
07/02/91	07/09/91	5.3	<.15	<.10	--	--	--	--
07/09/91	07/16/91	5.6	<.15	<.10	--	--	--	--
07/16/91	07/23/91	6.4	<.15	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metolachlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
NY—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	4
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.43	nd	1
<.05	.61	<.05	<.05	<.05	<.05	.10	.51	1	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.22	nd	1
--	--	--	--	--	--	<.05	.09	nd	6
<.05	<.05	<.05	<.05	<.05	<.05	.05	.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.26	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyanazine	DEA
NY99 West Point,								
07/23/91	07/30/91	114.3	<0.15	<0.10	--	--	--	--
07/30/91	08/06/91	3.8	<.15	<.10	--	--	--	--
08/06/91	08/13/91	34.0	<.15	<.10	--	--	--	--
09/03/91	09/10/91	5.6	<.15	<.10	--	--	--	--
09/10/91	09/17/91	5.3	<.15	<.10	<0.05	<0.05	<0.05	<0.05
OH09 Oxford,								
03/06/90	03/13/90	67.8	<.15	<.10	<.05	<.05	<.05	<.05
03/13/90	03/20/90	19.3	.30	<.10	--	--	--	--
03/20/90	03/27/90	6.1	<.15	<.10	--	--	--	--
03/27/90	04/03/90	32.5	<.15	<.10	--	--	--	--
04/03/90	04/11/90	37.6	<.15	<.10	--	--	--	--
04/11/90	04/17/90	2.8	<.15	.30	<.05	.46	<.05	<.05
04/17/90	04/24/90	14.2	<.15	<.10	<.05	.07	<.05	<.05
04/24/90	05/01/90	25.4	.39	.22	.28	.33	<.05	<.05
05/01/90	05/08/90	65.0	<.15	<.10	--	--	--	--
05/08/90	05/15/90	41.2	<.15	.12	--	--	--	--
05/15/90	05/22/90	64.8	<.15	<.10	--	--	--	--
05/22/90	05/29/90	31.0	.91	.10	--	--	--	--
05/29/90	06/05/90	6.4	.97	.20	--	--	--	--
06/05/90	06/12/90	8.9	1.1	.42	.41	.57	<.05	.16
06/12/90	06/19/90	7.4	1.1	.98	.95	.78	.21	.15
06/19/90	06/26/90	44.7	.18	.16	--	--	--	--
06/26/90	07/03/90	8.4	.22	.23	.30	.22	<.05	.14
07/03/90	07/10/90	12.5	<.15	.13	.08	.10	<.05	.06
07/10/90	07/17/90	87.9	<.15	.12	.08	<.05	<.05	<.05
07/17/90	07/24/90	22.1	<.15	<.10	--	--	--	--
07/31/90	08/07/90	18.0	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	1.8	<.15	.13	<.05	<.05	<.05	<.05
08/14/90	08/21/90	49.0	<.15	<.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	21.3	<.15	<.10	--	--	--	--
08/28/90	09/04/90	51.8	<.32	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	41.2	<.32	<.10	--	--	--	--
09/11/90	09/18/90	17.8	<.32	<.10	--	--	--	--
09/18/90	09/25/90	19.8	<.32	<.10	<.05	<.05	<.05	<.05
10/02/90	10/09/90	47.0	<.32	.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	54.6	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metolachlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
NY—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
OH									
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.19	<.05	4	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.46	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	1
<.05	.14	<.05	<.05	<.05	<.05	.28	.33	7	8
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.58	.06	18	2
--	--	--	--	--	--	.62	.13	4	1
<.05	.20	<.05	<.05	<.05	<.05	.41	.57	4	5
<.05	.39	<.05	<.05	<.05	<.05	.95	.78	7	6
--	--	--	--	--	--	.11	.10	5	4
<.05	.10	<.05	<.05	<.05	<.05	.30	.22	3	2
<.05	<.05	<.05	<.05	<.05	<.05	.08	.10	1	1
<.05	<.05	<.05	<.05	<.05	<.05	.08	<.05	7	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Aia-chlor	Atra-zine	Cyana-zine	DEA
								OH09 Oxford,
10/16/90	10/23/90	44.7	<0.32	<0.10	--	--	--	--
10/30/90	11/06/90	7.9	<.32	<.10	--	--	--	--
11/06/90	11/13/90	13.0	<.32	.10	--	--	--	--
11/13/90	11/20/90	1.5	<.32	<.10	--	--	--	--
11/20/90	11/27/90	17.5	<.32	.12	<0.05	<0.05	<0.05	<0.05
11/27/90	12/04/90	44.2	<.32	<.23	<.05	<.05	<.05	<.05
12/11/90	12/19/90	71.4	<.32	<.10	<.05	<.05	<.05	<.05
12/19/90	12/26/90	35.6	<.32	<.10	<.05	<.05	<.05	<.05
12/26/90	01/02/91	64.8	<.32	<.10	--	--	--	--
01/02/91	01/08/91	9.9	<.32	<.10	--	--	--	--
01/08/91	01/15/91	18.5	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	6.9	<.32	.17	--	--	--	--
01/22/91	01/29/91	5.8	<.32	<.22	--	--	--	--
01/29/91	02/05/91	14.7	<.32	<.23	<.05	<.05	<.05	<.05
02/05/91	02/12/91	36.3	<.32	<.23	--	--	--	--
02/12/91	02/19/91	35.8	<.32	<.10	--	--	--	--
02/26/91	03/05/91	7.1	<.32	<.10	--	--	--	--
03/05/91	03/12/91	8.6	<.32	.12	<.05	<.05	<.05	<.05
03/12/91	03/20/91	69.9	<.32	<.10	--	--	--	--
03/20/91	03/26/91	42.4	<.32	<.10	--	--	--	--
03/26/91	04/02/91	8.1	.46	.21	<.05	<.05	<.05	<.05
04/02/91	04/09/91	7.4	<.15	<.10	--	--	--	--
04/09/91	04/16/91	68.1	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	11.9	<.15	<.10	--	--	--	--
04/23/91	04/30/91	7.4	<.15	<.10	--	--	--	--
04/30/91	05/07/91	10.9	.24	.29	.26	.45	.14	.09
05/21/91	05/28/91	5.1	.51	.39	.58	.31	<.05	.08
05/28/91	06/04/91	2.8	<.15	.22	--	--	--	--
06/11/91	06/18/91	13.5	.39	.31	.40	.29	<.05	.12
06/18/91	06/25/91	52.1	<.15	<.10	--	--	--	--
07/02/91	07/09/91	38.4	<.15	<.10	--	--	--	--
07/09/91	07/16/91	29.7	<.15	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	5.6	<.15	<.10	--	--	--	--
08/06/91	08/13/91	18.0	<.15	<.10	<.05	<.05	<.05	<.05
08/13/91	08/20/91	25.2	<.15	<.10	--	--	--	--
08/27/91	09/03/91	27.9	<.15	<.10	--	--	--	--
09/03/91	09/10/91	18.8	<.15	<.10	--	--	--	--
09/10/91	09/17/91	3.1	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
OH—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.14	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
<.05	.20	<.05	<.05	<.05	<.05	.26	.45	3	5
<.05	.53	<.05	<.05	<.05	<.05	.58	.31	3	2
--	--	--	--	--	--	<.05	.18	nd	nd
<.05	.18	<.05	<.05	<.05	<.05	.40	.29	5	4
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by Immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
OH17 Delaware,								
03/06/90	03/13/90	12.7	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
03/13/90	03/20/90	10.2	<.15	<.10	--	--	--	--
03/20/90	03/27/90	1.3	.30	.15	--	--	--	--
03/27/90	04/03/90	29.7	<.15	.15	<.05	<.05	<.05	<.05
04/03/90	04/11/90	28.5	<.15	<.10	--	--	--	--
04/11/90	04/17/90	2.5	.16	<.10	--	--	--	--
04/17/90	04/24/90	22.9	.15	<.10	--	--	--	--
04/24/90	05/01/90	1.3	1.0	.80	--	--	--	--
05/01/90	05/09/90	40.6	.21	<.10	.28	.11	<.05	<.05
05/09/90	05/15/90	44.5	<.15	<.10	--	--	--	--
05/15/90	05/22/90	23.4	<.15	<.10	--	--	--	--
05/22/90	05/29/90	38.1	.38	<.10	--	--	--	--
05/29/90	06/05/90	6.6	<.15	.42	.14	.43	<.05	.17
06/05/90	06/12/90	81.8	.65	.17	.24	.27	<.05	.24
06/12/90	06/19/90	2.3	.50	1.7	--	--	--	--
06/19/90	06/26/90	5.6	.53	.50	.46	.45	<.05	<.05
06/26/90	07/03/90	14.2	<.15	.18	.20	.23	<.05	.33
07/03/90	07/10/90	11.4	<.15	<.10	--	--	--	--
07/10/90	07/17/90	117.6	<.15	<.10	--	--	--	--
07/17/90	07/24/90	86.4	<.15	<.10	--	--	--	--
07/24/90	07/31/90	18.3	<.15	<.10	--	--	--	--
07/31/90	08/07/90	22.9	<.15	<.10	--	--	--	--
08/07/90	08/14/90	10.2	<.15	.13	<.05	<.05	<.05	<.05
08/14/90	08/21/90	23.8	<.15	<.10	--	--	--	--
08/21/90	08/28/90	10.7	<.15	<.10	--	--	--	--
08/28/90	09/04/90	10.4	<.32	.14	<.05	<.05	<.05	<.05
09/04/90	09/11/90	25.7	<.32	<.10	--	--	--	--
09/11/90	09/18/90	12.2	<.32	<.10	--	--	--	--
09/18/90	09/25/90	14.2	<.32	<.10	--	--	--	--
09/25/90	10/02/90	1.8	<.32	.14	--	--	--	--
10/02/90	10/09/90	61.2	<.32	<.10	--	--	--	--
10/09/90	10/16/90	25.2	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	23.9	<.32	<.10	<.05	<.05	<.05	<.05
10/30/90	11/06/90	11.2	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	9.4	<.32	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
OH									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.19	.09	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.10	<.05	nd	nd
--	--	--	--	--	--	.09	<.05	2	nd
--	--	--	--	--	--	.66	.54	1	1
<.05	.20	<.05	<.05	<.05	<.05	.28	.11	11	4
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.24	<.05	9	nd
<.05	.10	<.05	<.05	<.05	<.05	.14	.43	1	3
<.05	.10	<.05	<.05	<.05	<.05	.24	.27	20	22
--	--	--	--	--	--	.32	1.2	1	3
<.05	.27	<.05	<.05	<.05	<.05	.46	.45	3	3
<.05	.07	<.05	<.05	<.05	<.05	.20	.23	3	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	.08	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chior	Atra- zine	Cyana- zine	DEA
OH17 Delaware,								
11/13/90	11/20/90	3.1	<0.32	0.17	--	--	--	--
11/20/90	11/27/90	16.0	<.32	<.10	<0.05	<0.05	<0.05	<0.05
11/27/90	12/04/90	52.3	<.32	<.23	<.05	<.05	<.05	<.05
12/11/90	12/19/90	69.7	<.32	.22	<.05	<.05	<.05	<.05
12/19/90	12/26/90	38.1	<.32	.13	--	--	--	--
12/26/90	01/02/91	57.2	<.32	<.10	<.05	<.05	<.05	<.05
01/02/91	01/08/91	3.6	<.32	<.10	--	--	--	--
01/08/91	01/15/91	13.5	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	10.4	.33	<.10	<.05	<.05	<.05	<.05
01/22/91	01/29/91	2.5	<.32	<.22	--	--	--	--
01/29/91	02/05/91	15.7	<.32	<.23	--	--	--	--
02/05/91	02/12/91	12.2	<.32	<.23	--	--	--	--
02/12/91	02/19/91	21.8	<.32	<.10	--	--	--	--
02/26/91	03/05/91	7.1	<.32	<.10	--	--	--	--
03/05/91	03/12/91	14.5	.35	<.10	--	--	--	--
03/12/91	03/19/91	21.8	<.32	<.10	--	--	--	--
03/19/91	03/26/91	29.7	<.32	<.10	<.05	<.05	<.05	<.05
03/26/91	04/02/91	4.3	<.15	<.10	--	--	--	--
04/02/91	04/09/91	14.7	<.15	<.10	<.05	<.05	<.05	<.05
04/09/91	04/16/91	44.7	<.15	<.10	--	--	--	--
04/16/91	04/23/91	5.1	<.15	.12	<.05	.05	<.05	<.05
04/23/91	04/30/91	9.1	<.15	.12	.08	.17	.06	.05
05/14/91	05/22/91	22.6	.63	.42	.62	.45	.19	.31
05/22/91	05/28/91	25.9	.51	.24	.78	.30	<.05	.09
05/28/91	06/04/91	20.8	.63	.50	.50	.54	<.05	.57
06/11/91	06/18/91	23.6	.18	.20	--	--	--	--
06/18/91	06/25/91	7.6	<.15	<.10	.05	.07	<.05	.05
06/25/91	07/02/91	39.9	.29	<.10	.41	<.05	<.05	<.05
07/02/91	07/09/91	15.5	<.15	<.10	<.05	.07	<.05	<.05
07/09/91	07/16/91	2.3	<.15	<.10	--	--	--	--
07/30/91	08/06/91	1.8	<.15	<.10	--	--	--	--
08/06/91	08/13/91	3.8	<.15	<.10	--	--	--	--
09/03/91	09/10/91	23.9	<.15	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
OH—Continued									
--	--	--	--	--	--	<0.05	0.10	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.08	nd	3
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	.30	<0.05	4	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	.10	<0.05	<0.05	<0.05	<0.05	<0.05	.05	nd	1
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	.05	<0.05	.05	nd	nd
<0.05	.13	<0.05	<0.05	<0.05	<0.05	.08	.17	1	2
<0.05	.41	<0.05	<0.05	<0.05	<0.05	.62	.45	14	10
<0.05	.38	<0.05	<0.05	<0.05	<0.05	.78	.30	20	8
<0.05	.39	<0.05	<0.05	<0.05	<0.05	.50	.54	10	11
--	--	--	--	--	--	.15	.16	4	4
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.05	.07	nd	1
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.41	<0.05	16	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.07	nd	1
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipita- tion (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
OH49 Caldwell,								
03/06/90	03/13/90	4.3	<0.15	<0.10	--	--	--	--
03/13/90	03/20/90	25.4	<.15	<.10	--	--	--	--
03/20/90	03/27/90	3.8	<.15	<.10	--	--	--	--
03/27/90	04/03/90	15.0	<.15	<.10	<0.05	<0.05	<0.05	<0.05
04/03/90	04/10/90	4.1	<.15	.75	<.05	<.05	<.05	<.05
04/10/90	04/17/90	28.7	<.15	<.10	<.05	<.05	<.05	<.05
04/17/90	04/24/90	4.8	<.15	<.10	--	--	--	--
04/24/90	05/01/90	3.1	<.15	.28	--	--	--	--
05/01/90	05/08/90	58.7	<.15	<.10	--	--	--	--
05/08/90	05/15/90	19.8	<.15	<.10	--	--	--	--
05/15/90	05/22/90	35.6	<.15	<.10	<.05	<.05	<.05	<.05
05/22/90	05/29/90	51.8	<.15	<.10	--	--	--	--
05/29/90	06/05/90	2.8	.29	.20	--	--	--	--
06/05/90	06/12/90	37.9	<.15	<.10	.09	.14	<.05	.23
06/12/90	06/19/90	11.4	<.15	.12	--	--	--	--
06/19/90	06/26/90	20.3	<.15	.12	.05	.06	<.05	.05
06/26/90	07/03/90	11.2	<.15	.34	.07	.20	<.05	.16
07/03/90	07/10/90	12.7	<.15	<.10	--	--	--	--
07/10/90	07/17/90	69.9	<.15	<.10	--	--	--	--
07/17/90	07/24/90	9.7	<.15	<.10	--	--	--	--
07/24/90	07/31/90	24.6	<.15	<.10	--	--	--	--
07/31/90	08/07/90	14.5	<.15	<.10	--	--	--	--
08/07/90	08/14/90	13.0	<.15	<.10	--	--	--	--
08/14/90	08/21/90	24.1	<.15	<.10	--	--	--	--
08/28/90	09/04/90	37.1	<.32	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	19.8	<.32	<.10	--	--	--	--
09/11/90	09/18/90	23.4	<.32	<.10	--	--	--	--
09/18/90	09/25/90	22.9	<.32	<.10	--	--	--	--
09/25/90	10/02/90	27.2	<.32	.14	--	--	--	--
10/02/90	10/09/90	12.7	<.32	<.10	--	--	--	--
10/09/90	10/16/90	38.4	<.32	<.10	--	--	--	--
10/16/90	10/23/90	40.4	<.32	<.10	<.05	<.05	<.05	<.05
10/30/90	11/06/90	12.7	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	22.9	<.32	<.10	--	--	--	--
11/13/90	11/20/90	3.8	<.32	.11	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
OH									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.18	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.18	.13	1	nd
<.05	<.05	<.05	<.05	<.05	<.05	.09	.14	3	5
--	--	--	--	--	--	<.05	.07	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	.05	.06	1	1
<.05	<.05	<.05	<.05	<.05	<.05	.07	.20	1	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.08	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
OH49 Caldwell,								
11/20/90	11/27/90	15.2	<0.32	<0.10	--	--	--	--
11/27/90	12/04/90	39.4	<.32	<.23	<0.05	<0.05	<0.05	<0.05
12/11/90	12/18/90	52.1	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/26/90	48.8	<.32	<.10	--	--	--	--
12/26/90	01/02/91	42.7	<.32	<.10	--	--	--	--
01/02/91	01/08/91	10.9	<.32	<.10	<.05	<.05	<.05	<.05
01/15/91	01/22/91	10.2	<.32	<.10	--	--	--	--
01/22/91	01/29/91	7.6	<.32	<.22	<.05	<.05	<.05	<.05
01/29/91	02/05/91	12.7	<.32	<.23	<.05	<.05	<.05	<.05
02/05/91	02/12/91	16.5	<.32	<.23	--	--	--	--
02/12/91	02/19/91	24.9	<.32	<.10	--	--	--	--
02/19/91	02/26/91	3.6	<.32	<.10	--	--	--	--
02/26/91	03/05/91	15.0	<.32	<.10	<.05	<.05	<.05	<.05
03/05/91	03/12/91	22.6	<.32	<.10	<.05	<.05	<.05	<.05
03/12/91	03/19/91	17.0	<.32	<.10	--	--	--	--
03/19/91	03/26/91	14.7	<.32	.10	--	--	--	--
03/26/91	04/02/91	10.7	<.15	<.10	<.05	<.05	<.05	<.05
04/02/91	04/09/91	20.8	<.15	<.10	--	--	--	--
04/09/91	04/16/91	61.0	<.15	<.10	--	--	--	--
04/16/91	04/23/91	4.8	<.15	<.10	--	--	--	--
04/23/91	04/30/91	7.9	.16	.36	--	--	--	--
04/30/91	05/07/91	11.9	<.15	.34	<.05	.09	<.05	<.05
05/21/91	05/28/91	11.4	<.15	<.10	<.05	.06	<.05	<.05
05/28/91	06/04/91	49.3	<.15	<.10	<.05	.08	<.05	.09
06/11/91	06/18/91	20.3	<.15	.13	<.05	.13	<.05	.07
06/18/91	06/25/91	30.4	<.15	<.10	--	--	--	--
06/25/91	07/02/91	14.5	<.15	<.10	--	--	--	--
07/02/91	07/09/91	4.6	<.15	<.10	--	--	--	--
07/09/91	07/16/91	5.1	<.15	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	0.5	<.15	<.10	--	--	--	--
07/23/91	07/30/91	5.3	<.15	<.10	--	--	--	--
07/30/91	08/06/91	5.6	<.15	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	30.5	<.15	<.10	--	--	--	--
08/13/91	08/20/91	19.9	.29	<.10	--	--	--	--
08/27/91	09/03/91	.10	<.15	<.10	--	--	--	--
09/03/91	09/10/91	2.8	<.15	<.10	--	--	--	--
01/08/91	01/15/91	--	<.32	<.22	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
OH—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.08	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.14	.29	1	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	nd	1
<.05	.05	<.05	<.05	<.05	<.05	<.05	.06	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	4
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.13	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.25	<.05	5	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
OH71 Wooster,								
03/06/90	03/13/90	5.1	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
03/13/90	03/20/90	4.8	<.15	<.10	--	--	--	--
03/27/90	04/03/90	19.8	<.15	.20	--	--	--	--
04/03/90	04/10/90	7.4	<.15	<.10	<.05	<.05	<.05	<.05
04/10/90	04/17/90	24.9	.18	<.10	--	--	--	--
04/17/90	04/24/90	24.9	<.15	<.10	--	--	--	--
05/01/90	05/08/90	25.4	<.15	.21	.13	.12	<.05	<.05
05/08/90	05/15/90	27.4	.23	.11	--	--	--	--
05/15/90	05/22/90	30.2	.35	.48	--	--	--	--
05/22/90	05/29/90	43.7	<.15	<.10	.07	.09	<.05	<.05
05/29/90	06/05/90	2.8	<.15	.66	--	--	--	--
06/05/90	06/12/90	34.8	<.15	.17	.15	.17	<.05	.13
06/12/90	06/19/90	3.1	.47	2.6	--	--	--	--
06/19/90	06/26/90	10.4	<.15	.29	--	--	--	--
06/26/90	07/03/90	12.5	.18	.38	--	--	--	--
07/10/90	07/17/90	96.0	<.15	<.10	--	--	--	--
07/17/90	07/24/90	66.6	<.15	<.10	--	--	--	--
07/24/90	07/31/90	11.9	.22	<.10	<.05	.45	<.05	<.05
07/31/90	08/07/90	18.5	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	20.3	<.15	<.10	--	--	--	--
08/14/90	08/21/90	67.8	<.15	<.10	--	--	--	--
08/28/90	09/04/90	13.2	<.32	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	50.8	<.32	<.10	--	--	--	--
09/11/90	09/18/90	36.6	<.32	<.10	--	--	--	--
09/18/90	09/25/90	24.4	<.32	<.10	--	--	--	--
09/25/90	10/02/90	4.3	<.32	.13	<.05	<.05	<.05	<.05
10/02/90	10/09/90	27.7	<.32	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	59.4	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	29.0	<.32	<.10	<.05	<.05	<.05	<.05
10/30/90	11/06/90	9.7	<.32	<.10	--	--	--	--
11/06/90	11/13/90	11.2	<.32	.31	--	--	--	--
11/13/90	11/20/90	4.3	<.32	<.10	<.05	<.05	<.05	<.05
11/20/90	11/27/90	11.7	<.32	<.10	--	--	--	--
11/27/90	12/04/90	32.0	<.32	<.23	<.05	<.05	<.05	<.05
12/11/90	12/18/90	48.8	<.32	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
OH—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.13	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.11	<.05	3	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.16	<.05	<.05	<.05	<.05	.13	.12	3	3
--	--	--	--	--	--	.14	.06	4	2
--	--	--	--	--	--	.22	.32	7	10
<.05	.23	<.05	<.05	<.05	<.05	.07	.09	3	4
--	--	--	--	--	--	<.05	.44	nd	1
<.05	.16	<.05	<.05	<.05	<.05	.15	.17	5	6
--	--	--	--	--	--	.30	1.8	1	5
--	--	--	--	--	--	<.05	.19	nd	2
--	--	--	--	--	--	.11	.25	1	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.45	nd	5
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.20	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyana-zine	DEA
OH71 Wooster,								
12/18/90	12/26/90	31.8	<0.32	<0.10	--	--	--	--
12/26/90	01/02/91	50.6	<.32	<.10	--	--	--	--
01/02/91	01/08/91	2.8	<.32	<.10	--	--	--	--
01/08/91	01/15/91	12.2	.52	<.22	<0.05	<0.05	<0.05	<0.05
01/15/91	01/22/91	13.5	<.32	<.10	--	--	--	--
01/22/91	01/29/91	2.0	<.32	<.22	--	--	--	--
01/29/91	02/05/91	9.7	<.32	<.23	<.05	<.05	<.05	<.05
02/05/91	02/12/91	6.9	<.32	<.23	--	--	--	--
02/12/91	02/19/91	16.0	<.32	<.10	--	--	--	--
02/26/91	03/05/91	20.8	<.32	<.10	<.05	<.05	<.05	<.05
03/05/91	03/12/91	16.5	<.32	<.10	<.05	<.05	<.05	<.05
03/12/91	03/19/91	6.4	<.32	<.10	--	--	--	--
03/19/91	03/26/91	11.4	<.32	.17	<.05	<.05	<.05	<.05
03/26/91	04/02/91	2.3	<.15	<.10	--	--	--	--
04/02/91	04/09/91	8.4	<.15	<.10	--	--	--	--
04/09/91	04/16/91	48.3	<.15	<.10	--	--	--	--
04/16/91	04/23/91	14.5	<.15	<.10	--	--	--	--
04/23/91	04/30/91	6.1	<.15	<.10	--	--	--	--
04/30/91	05/07/91	15.2	<.15	.73	.08	.21	<.05	<.05
05/14/91	05/21/91	2.0	.23	.59	--	--	--	--
05/21/91	05/28/91	22.1	.20	.67	.22	.62	.05	.21
05/28/91	06/04/91	41.4	.19	.65	--	--	--	--
06/04/91	06/11/91	1.5	<.15	.59	--	--	--	--
06/11/91	06/18/91	5.6	.25	.30	.14	.36	<.05	.11
06/18/91	06/25/91	3.1	<.15	.13	--	--	--	--
06/25/91	07/02/91	28.7	<.15	<.10	--	--	--	--
07/02/91	07/08/91	1.0	<.15	.19	--	--	--	--
07/08/91	07/16/91	4.6	<.15	<.10	--	--	--	--
07/16/91	07/23/91	1.5	<.15	<.10	--	--	--	--
07/23/91	07/30/91	13.5	<.15	.16	<.05	<.05	<.05	<.05
07/30/91	08/05/91	3.8	<.15	<.10	--	--	--	--
08/05/91	08/14/91	21.6	<.15	<.10	--	--	--	--
08/14/91	08/19/91	17.0	<.15	<.10	--	--	--	--
08/27/91	09/03/91	24.4	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	48.3	<.15	<.10	--	--	--	--
09/10/91	09/17/91	3.8	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
OH								—Continued	
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.14	<.05	<.05	<.05	.46	.08	.21	1	3
--	--	--	--	--	--	.20	.48	nd	1
<.05	.32	<.05	<.05	<.05	.05	.22	.62	5	14
--	--	--	--	--	--	.16	.53	7	22
--	--	--	--	--	--	<.05	.48	nd	1
<.05	.16	<.05	<.05	<.05	<.05	.14	.36	1	2
--	--	--	--	--	--	<.05	.10	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.15	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- iide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
PA15 Penn State,								
02/27/90	03/06/90	1.0	<0.15	0.15	--	--	--	--
03/06/90	03/13/90	7.6	<.15	<.10	--	--	--	--
03/13/90	03/20/90	18.3	<.15	<.10	<0.05	<0.05	<0.05	<0.05
03/20/90	03/27/90	.50	<.15	<.10	--	--	--	--
03/27/90	04/03/90	21.8	<.15	.20	--	--	--	--
04/03/90	04/10/90	11.2	<.15	<.10	--	--	--	--
04/10/90	04/17/90	15.2	.23	<.10	<.05	.06	<.05	<.05
04/17/90	04/24/90	10.9	<.15	<.10	--	--	--	--
04/24/90	05/01/90	11.4	<.15	<.10	--	--	--	--
05/01/90	05/08/90	28.7	<.15	<.10	--	--	--	--
05/08/90	05/15/90	35.6	<.15	<.10	.06	.06	<.05	<.05
05/15/90	05/22/90	36.8	<.15	.13	<.05	.06	<.05	.05
05/22/90	05/29/90	19.8	<.15	<.10	--	--	--	--
05/29/90	06/05/90	39.6	<.15	<.10	--	--	--	--
06/05/90	06/12/90	41.2	<.15	<.10	<.05	.06	<.05	.05
06/12/90	06/19/90	20.3	<.15	.29	<.05	.12	<.05	.07
06/19/90	06/26/90	13.5	<.15	<.10	--	--	--	--
06/26/90	07/03/90	25.4	<.15	.14	--	--	--	--
07/03/90	07/10/90	11.4	<.15	<.10	--	--	--	--
07/10/90	07/17/90	81.8	<.15	<.10	--	--	--	--
07/17/90	07/24/90	11.9	<.15	<.10	--	--	--	--
07/31/90	08/07/90	57.2	<.15	<.10	--	--	--	--
08/07/90	08/14/90	7.6	<.15	.10	<.05	<.05	<.05	<.05
08/14/90	08/21/90	34.8	<.15	<.10	--	--	--	--
08/21/90	08/28/90	40.1	<.15	<.10	<.05	<.05	<.05	<.05
08/28/90	09/04/90	8.9	<.32	<.10	--	--	--	--
09/04/90	09/11/90	35.1	<.32	<.10	--	--	--	--
09/11/90	09/18/90	32.8	<.32	<.10	--	--	--	--
09/18/90	09/25/90	19.6	<.32	<.10	--	--	--	--
10/02/90	10/09/90	16.0	<.32	<.10	--	--	--	--
10/09/90	10/16/90	79.5	<.32	<.10	--	--	--	--
10/16/90	10/23/90	41.9	<.32	<.10	<.05	<.05	<.05	<.05
10/23/90	10/30/90	25.9	<.32	<.10	<.05	<.05	<.05	<.05
10/30/90	11/06/90	12.7	<.32	<.10	--	--	--	--
11/06/90	11/13/90	28.5	<.32	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
PA									
--	--	--	--	--	--	<0.05	0.09	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.13	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.15	<.05	<.05	<.05	<.05	.06	.06	2	2
<.05	.10	<.05	<.05	<.05	<.05	<.05	.06	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.12	nd	2
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	.08	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyana-zine	DEA
PA15 Penn State,								
11/13/90	11/20/90	0.50	<0.32	<0.10	--	--	--	--
11/20/90	11/27/90	7.6	<.32	<.10	<0.05	<0.05	<0.05	<0.05
11/27/90	12/04/90	52.6	<.32	<.23	<.05	<.05	<.05	<.05
12/11/90	12/18/90	27.9	<.32	<.10	--	--	--	--
12/18/90	12/26/90	45.7	<.32	<.10	--	--	--	--
12/26/90	01/02/91	40.6	<.32	<.10	<.05	<.05	<.05	<.05
01/02/91	01/08/91	2.5	<.32	.12	--	--	--	--
01/08/91	01/15/91	15.3	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	22.1	<.32	<.10	<.05	<.05	<.05	<.05
01/22/91	01/29/91	1.0	<.32	<.22	--	--	--	--
01/29/91	02/05/91	5.8	.44	<.23	<.05	<.05	<.05	<.05
02/05/91	02/12/91	18.3	.43	<.23	--	--	--	--
02/12/91	02/19/91	18.5	<.32	<.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	41.4	<.32	<.10	<.05	<.05	<.05	<.05
03/05/91	03/12/91	8.6	<.32	<.10	--	--	--	--
03/12/91	03/19/91	28.4	<.32	<.10	--	--	--	--
03/19/91	03/26/91	16.5	<.32	.16	--	--	--	--
03/26/91	04/02/91	16.0	<.32	.11	<.05	<.05	<.05	<.05
04/02/91	04/09/91	9.7	<.15	<.10	--	--	--	--
04/09/91	04/16/91	24.9	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	35.6	<.15	<.10	--	--	--	--
04/23/91	04/30/91	10.9	<.15	<.10	<.05	.05	<.05	<.05
04/30/91	05/07/91	21.8	<.15	.28	.05	.05	<.05	<.05
05/14/91	05/21/91	3.1	.22	.38	--	--	--	--
05/28/91	06/04/91	6.9	<.15	.11	--	--	--	--
06/11/91	06/18/91	15.2	<.15	<.10	<.05	.09	<.05	<.05
06/18/91	06/25/91	17.8	<.15	<.10	.06	.05	<.05	<.05
06/25/91	07/02/91	21.6	<.15	<.10	--	--	--	--
07/02/91	07/09/91	50.3	<.15	.14	<.05	<.05	<.05	<.05
07/09/91	07/16/91	8.7	<.15	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	10.7	<.15	<.10	--	--	--	--
07/23/91	07/30/91	11.2	<.15	.15	<.05	<.05	<.05	<.05
07/30/91	08/06/91	2.3	<.15	<.10	--	--	--	--
08/06/91	08/13/91	10.2	<.15	<.10	--	--	--	--
08/13/91	08/20/91	24.6	<.15	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Aiachlor	Atrazine	Aiachlor	Atrazine
PA—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.36	<.05	7	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.13	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.06	<.05	<.05	<.05	<.05	<.05	.05	nd	1
<.05	.07	<.05	<.05	<.05	<.05	.05	.05	1	1
--	--	--	--	--	--	.19	.31	1	1
--	--	--	--	--	--	<.05	.09	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.09	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	.06	.05	1	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
PA15 Penn State,								
08/27/91	09/03/91	4.1	<0.15	<0.10	--	--	--	--
09/03/91	09/10/91	17.5	<.15	<.10	--	--	--	--
09/10/91	09/17/91	16.6	<.15	<.10	--	--	--	--
PA29 Kane Experimental								
02/27/90	03/06/90	5.3	<.15	<.10	--	--	--	--
03/06/90	03/13/90	25.7	<.15	<.10	--	--	--	--
03/13/90	03/20/90	44.2	<.15	<.10	--	--	--	--
03/20/90	03/27/90	1.4	<.15	<.10	--	--	--	--
03/27/90	04/03/90	35.6	<.15	<.10	--	--	--	--
04/03/90	04/10/90	21.1	<.15	<.10	--	--	--	--
04/10/90	04/17/90	56.4	<.15	<.10	--	--	--	--
04/17/90	04/24/90	12.2	<.15	<.10	<0.05	<0.05	<0.05	<0.05
04/24/90	05/01/90	11.9	<.15	<.10	.07	.17	<.05	.11
05/01/90	05/08/90	20.1	<.15	<.10	--	--	--	--
05/08/90	05/15/90	47.7	<.15	<.10	--	--	--	--
05/15/90	05/22/90	42.7	<.15	<.10	--	--	--	--
05/22/90	05/29/90	8.4	<.15	<.10	--	--	--	--
05/29/90	06/05/90	19.1	<.15	.11	--	--	--	--
06/05/90	06/12/90	10.9	3.8	.30	--	--	--	--
06/12/90	06/19/90	23.6	<.15	<.10	--	--	--	--
06/19/90	06/26/90	21.6	<.15	<.10	--	--	--	--
06/26/90	07/03/90	25.4	<.15	<.10	<.05	.05	<.05	.05
07/03/90	07/10/90	12.7	<.15	.15	--	--	--	--
07/10/90	07/17/90	80.7	<.15	<.10	<.05	<.05	<.05	<.05
07/17/90	07/24/90	64.8	<.15	<.10	--	--	--	--
07/24/90	07/31/90	5.8	<.15	<.10	--	--	--	--
07/31/90	08/07/90	41.2	<.15	<.10	--	--	--	--
08/07/90	08/14/90	15.2	<.15	.11	<.05	<.05	<.05	<.05
08/14/90	08/21/90	2.3	<.15	<.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	24.1	<.32	<.10	--	--	--	--
08/28/90	09/04/90	25.4	<.32	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	63.5	<.32	<.10	--	--	--	--
09/11/90	09/18/90	52.1	<.32	<.10	--	--	--	--
09/18/90	09/25/90	38.9	<.32	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
PA—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
Forest, PA									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.07	.17	1	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	2.4	.19	26	2
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	1
--	--	--	--	--	--	<.05	.09	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chlor	Atra- zine	Cyana- zine	DEA
PA29 Kane Experimental								
09/25/90	10/02/90	22.9	<0.32	0.14	--	--	--	--
10/02/90	10/09/90	20.8	<.32	<.10	--	--	--	--
10/09/90	10/16/90	53.3	<.32	<.10	--	--	--	--
10/16/90	10/23/90	29.9	<.32	<.10	--	--	--	--
10/23/90	10/30/90	9.1	.49	.13	<0.05	<0.05	<0.05	<0.05
10/30/90	11/06/90	11.0	<.32	<.10	--	--	--	--
11/06/90	11/13/90	51.3	<.32	<.10	<.05	<.05	<.05	<.05
11/13/90	11/20/90	8.1	<.32	<.10	--	--	--	--
11/20/90	11/27/90	39.4	<.32	.11	<.05	<.05	<.05	<.05
11/27/90	12/04/90	69.9	<.32	<.23	<.05	<.05	<.05	<.05
12/11/90	12/18/90	87.6	<.32	<.10	--	--	--	--
12/18/90	12/26/90	92.7	<.32	<.10	--	--	--	--
12/26/90	01/02/91	52.2	<.32	.13	<.05	<.05	<.05	<.05
01/02/91	01/08/91	10.2	<.32	<.10	--	--	--	--
01/08/91	01/15/91	35.3	.41	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	30.5	<.32	<.10	<.05	<.05	<.05	<.05
01/22/91	01/29/91	15.2	<.32	<.22	<.05	<.05	<.05	<.05
01/29/91	02/05/91	16.5	<.32	<.23	<.05	<.05	<.05	<.05
02/05/91	02/12/91	9.4	<.32	<.23	<.05	<.05	<.05	<.05
02/12/91	02/19/91	39.1	<.32	<.10	--	--	--	--
02/19/91	02/26/91	7.4	<.32	<.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	57.4	<.32	<.10	--	--	--	--
03/05/91	03/12/91	13.7	<.32	<.10	--	--	--	--
03/12/91	03/19/91	10.2	<.32	<.10	--	--	--	--
03/19/91	03/26/91	23.4	<.32	.11	<.05	<.05	<.05	<.05
03/26/91	04/02/91	12.7	<.15	<.10	<.05	<.05	<.05	<.05
04/02/91	04/09/91	13.0	<.15	<.10	--	--	--	--
04/09/91	04/16/91	30.5	<.15	<.10	--	--	--	--
04/16/91	04/23/91	24.6	<.15	<.10	--	--	--	--
04/23/91	04/30/91	62.2	<.15	<.10	--	--	--	--
04/30/91	05/07/91	17.4	<.15	.29	.05	.10	<.05	.06
05/14/91	05/21/91	19.1	<.15	<.10	--	--	--	--
05/21/91	05/28/91	31.8	<.15	.11	.07	.10	<.05	.12
05/28/91	06/04/91	22.4	<.15	<.10	<.05	.07	<.05	.14
06/11/91	06/18/91	7.6	<.15	.16	<.05	.15	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Forest, PA—Continued									
--	--	--	--	--	--	<0.05	0.08	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	4
<.05	.10	<.05	<.05	<.05	<.05	.05	.10	1	2
--	--	--	--	--	--	<.05	.07	nd	1
<.05	.06	<.05	<.05	<.05	<.05	.07	.10	2	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.15	nd	1

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
PA29 Kane Experimental								
06/18/91	06/25/91	20.3	<0.15	<0.10	--	--	--	--
06/25/91	07/02/91	8.4	<.15	<.10	--	--	--	--
07/02/91	07/09/91	43.9	<.15	<.10	--	--	--	--
07/09/91	07/16/91	15.2	<.15	<.10	--	--	--	--
07/23/91	07/30/91	21.6	<.15	.12	<0.05	<0.05	<0.05	<0.05
07/30/91	08/06/91	9.4	<.15	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	12.7	<.15	<.10	--	--	--	--
09/03/91	09/10/91	31.8	<.15	<.10	--	--	--	--
PA42 Leading Ridge,								
02/27/90	03/06/90	.50	<.15	<.10	--	--	--	--
03/06/90	03/13/90	10.9	<.15	<.10	--	--	--	--
03/13/90	03/20/90	23.1	<.15	<.10	--	--	--	--
03/27/90	04/03/90	34.0	<.15	.15	<.05	<.05	<.05	<.05
04/03/90	04/10/90	12.7	<.15	<.10	--	--	--	--
04/10/90	04/17/90	18.8	<.15	<.10	--	--	--	--
04/17/90	04/24/90	18.8	<.15	<.10	<.05	<.05	<.05	<.05
04/24/90	05/01/90	17.3	<.15	<.10	--	--	--	--
05/01/90	05/08/90	32.5	<.15	<.10	<.05	.09	<.05	.08
05/08/90	05/15/90	29.7	<.15	<.10	--	--	--	--
05/15/90	05/22/90	38.1	<.15	<.10	--	--	--	--
05/22/90	05/29/90	35.1	<.15	<.10	--	--	--	--
05/29/90	06/05/90	30.0	<.15	.10	--	--	--	--
06/05/90	06/12/90	56.4	<.15	<.10	--	--	--	--
06/12/90	06/19/90	35.1	<.15	.11	--	--	--	--
06/19/90	06/26/90	8.4	<.15	<.10	--	--	--	--
06/26/90	07/03/90	8.1	<.15	.16	.05	.13	<.05	<.05
07/03/90	07/10/90	8.6	<.15	<.10	--	--	--	--
07/10/90	07/17/90	80.3	<.15	<.10	--	--	--	--
07/31/90	08/07/90	44.7	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	2.8	.18	.22	<.05	<.05	<.05	<.05
08/14/90	08/21/90	--	<.15	<.10	--	--	--	--
08/21/90	08/28/90	31.5	<.15	<.10	--	--	--	--
08/28/90	09/04/90	7.6	<.32	<.10	--	--	--	--
09/04/90	09/11/90	44.5	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Forest, PA—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
PA									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.12	<.05	<.05	<.05	<.05	<.05	.09	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.05	.13	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyanazine	DEA
PA42 Leading Ridge,								
09/11/90	09/18/90	46.2	<0.32	0.12	<0.05	<0.05	<0.05	<0.05
09/18/90	09/25/90	20.8	<.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	1.3	<.32	.19	--	--	--	--
10/02/90	10/09/90	15.2	<.32	<.10	--	--	--	--
10/09/90	10/16/90	70.6	<.32	<.10	--	--	--	--
10/16/90	10/23/90	61.7	<.32	<.10	--	--	--	--
10/23/90	10/30/90	3.1	<.32	.11	<.05	<.05	<.05	<.05
10/30/90	11/06/90	11.4	<.32	.10	--	--	--	--
11/06/90	11/13/90	27.4	<.32	<.10	<.05	<.05	<.05	<.05
11/13/90	11/20/90	2.0	<.32	.20	--	--	--	--
11/20/90	11/27/90	8.1	<.32	<.10	<.05	<.05	<.05	<.05
11/27/90	12/04/90	42.2	<.32	<.23	<.05	<.05	<.05	<.05
12/11/90	12/18/90	38.1	.44	<.10	--	--	--	--
12/18/90	12/26/90	43.7	<.32	.17	<.05	<.05	<.05	<.05
12/26/90	01/01/91	34.5	<.32	<.10	<.05	<.05	<.05	<.05
01/01/91	01/08/91	2.8	.39	<.10	--	--	--	--
01/08/91	01/15/91	14.0	.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	25.2	<.32	<.10	<.05	<.05	<.05	<.05
01/22/91	01/29/91	2.0	.33	<.22	--	--	--	--
01/29/91	02/05/91	5.3	<.32	<.23	--	--	--	--
02/05/91	02/12/91	19.6	<.32	<.23	--	--	--	--
02/12/91	02/19/91	18.8	<.32	<.10	--	--	--	--
02/19/91	02/26/91	1.3	<.32	.21	--	--	--	--
02/26/91	03/05/91	32.3	<.32	<.10	--	--	--	--
03/05/91	03/12/91	12.5	<.32	<.10	<.05	<.05	<.05	<.05
03/12/91	03/19/91	32.3	<.32	.11	--	--	--	--
03/19/91	03/26/91	21.8	<.32	<.10	<.05	<.05	<.05	<.05
03/26/91	04/02/91	22.1	<.15	<.10	--	--	--	--
04/02/91	04/09/91	10.7	<.15	<.10	--	--	--	--
04/09/91	04/16/91	30.5	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	50.6	<.15	<.10	--	--	--	--
04/23/91	04/30/91	9.4	<.15	<.10	<.05	<.05	<.05	<.05
05/07/91	05/14/91	26.9	<.15	.61	.06	.21	.12	.11
05/14/91	05/21/91	4.8	<.15	.29	.16	.36	.09	.17
05/21/91	05/28/91	4.1	<.15	.39	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Aiachlor	Atrazine	Aiachlor	Atrazine
PA—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.12	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.13	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.28	<.05	11	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.33	<.05	1	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.28	<.05	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.07	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	.21	2	6
<.05	.45	<.05	<.05	<.05	<.05	.16	.36	1	2
--	--	--	--	--	--	<.05	.32	nd	1

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
PA42 Leading Ridge,								
06/11/91	06/18/91	11.2	<0.15	<0.10	--	--	--	--
06/18/91	06/25/91	14.0	<.15	<.10	--	--	--	--
06/25/91	07/02/91	10.7	<.15	<.10	--	--	--	--
07/02/91	07/09/91	67.8	<.15	<.10	--	--	--	--
07/09/91	07/16/91	2.3	<.15	<.10	--	--	--	--
07/16/91	07/23/91	.80	<.15	<.10	--	--	--	--
07/23/91	07/30/91	5.8	<.15	.10	<0.05	<0.05	<0.05	<0.05
07/30/91	08/06/91	2.3	<.15	<.10	--	--	--	--
08/06/91	08/13/91	9.4	<.15	<.10	--	--	--	--
09/03/91	09/10/91	11.4	<.15	<.10	.10	<.05	<.05	<.05
09/10/91	09/17/91	25.9	<.15	<.10	<.05	<.05	<.05	<.05
PA72 Milford,								
02/27/90	03/07/90	7.4	<.15	.10	<.05	<.05	<.05	<.05
03/07/90	03/13/90	3.1	.20	<.10	--	--	--	--
03/13/90	03/20/90	47.0	.45	<.10	<.05	<.05	<.05	<.05
03/20/90	03/27/90	10.4	<.15	<.10	--	--	--	--
03/27/90	04/03/90	35.6	<.15	.15	<.05	<.05	<.05	<.05
04/03/90	04/10/90	9.9	<.15	<.10	<.05	<.05	<.05	<.05
04/10/90	04/17/90	19.1	.17	<.10	.09	.08	<.05	<.05
04/17/90	04/24/90	7.9	<.15	<.10	<.05	<.05	<.05	<.05
04/24/90	05/01/90	11.9	<.15	<.10	<.05	.06	<.05	.06
05/01/90	05/08/90	28.5	<.15	<.10	<.05	<.05	<.05	<.05
05/08/90	05/15/90	70.9	.17	<.10	<.05	<.05	<.05	<.05
05/15/90	05/22/90	38.4	<.15	<.10	--	--	--	--
05/22/90	05/29/90	26.4	<.15	<.10	--	--	--	--
05/29/90	06/05/90	22.4	<.15	<.10	--	--	--	--
06/05/90	06/12/90	20.1	<.15	<.10	<.05	.15	<.05	.07
06/12/90	06/19/90	27.4	<.15	.34	<.05	.12	<.05	<.05
06/19/90	06/26/90	1.3	<.15	.20	--	--	--	--
06/26/90	07/03/90	25.7	<.15	.15	.08	.07	<.05	.05
07/17/90	07/17/90	73.2	<.15	<.10	<.05	<.05	<.05	<.05
07/17/90	07/24/90	8.6	<.15	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
PA—Continued									
--	--	--	--	--	--	<0.05	0.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.10	<.05	1	nd
<.05	<.05	<.05	.05	<.05	<.05	<.05	<.05	nd	nd
PA									
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.12	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.05	<.05	<.05	<.05	<.05	.09	.08	2	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.07	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.15	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.12	nd	3
--	--	--	--	--	--	<.05	.13	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.08	.07	2	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
PA72 Milford,								
07/31/90	08/07/90	97.8	<0.15	<0.10	--	--	--	--
08/07/90	08/14/90	45.7	.16	.10	<0.05	<0.05	<0.05	<0.05
08/14/90	08/21/90	15.5	<.15	<.10	--	--	--	--
08/21/90	08/28/90	47.2	<.15	<.10	--	--	--	--
08/28/90	09/04/90	19.1	<.32	<.10	--	--	--	--
09/04/90	09/11/90	2.5	<.32	.11	<.05	<.05	<.05	<.05
09/11/90	09/18/90	37.1	<.32	.11	<.05	<.05	<.05	<.05
09/18/90	09/25/90	13.2	<.32	<.10	--	--	--	--
09/25/90	10/02/90	3.6	<.32	.20	<.05	<.05	<.05	<.05
10/09/90	10/16/90	27.9	<.32	<.10	--	--	--	--
10/16/90	10/23/90	51.1	<.32	<.10	<.05	<.05	<.05	<.05
10/23/90	10/30/90	19.1	<.32	<.10	--	--	--	--
10/30/90	11/06/90	18.5	<.32	<.10	--	--	--	--
11/06/90	11/13/90	69.3	<.32	.11	<.05	<.05	<.05	<.05
11/13/90	11/20/90	5.6	<.32	<.10	--	--	--	--
11/20/90	11/27/90	7.6	<.32	.11	<.05	<.05	<.05	<.05
11/27/90	12/04/90	74.9	<.32	<.23	<.05	<.05	<.05	<.05
12/04/90	12/11/90	2.5	<.32	<.10	--	--	--	--
12/11/90	12/18/90	25.4	.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/25/90	44.7	<.32	.13	--	--	--	--
12/25/90	01/01/91	24.1	<.32	<.10	<.05	<.05	<.05	<.05
01/01/91	01/08/91	1.0	<.32	<.10	--	--	--	--
01/08/91	01/15/91	30.5	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	25.4	<.32	<.10	<.05	<.05	<.05	<.05
01/22/91	01/29/91	1.3	<.32	<.22	--	--	--	--
01/29/91	02/05/91	7.6	<.32	<.23	<.05	<.05	<.05	<.05
02/05/91	02/12/91	14.0	.45	<.23	<.05	<.05	<.05	<.05
02/12/91	02/19/91	21.6	<.32	<.10	--	--	--	--
02/26/91	03/05/91	52.8	<.32	<.10	--	--	--	--
03/05/91	03/12/91	10.9	<.32	<.10	<.05	<.05	<.05	<.05
03/12/91	03/19/91	25.4	<.32	<.10	--	--	--	--
03/19/91	03/26/91	23.9	<.32	.12	--	--	--	--
03/26/91	04/02/91	9.9	<.15	<.10	--	--	--	--
04/09/91	04/16/91	15.5	<.15	<.10	--	--	--	--
04/16/91	04/23/91	61.5	<.15	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

[illegible]

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
PA72 Milford,								
04/23/91	04/30/91	13.2	<0.15	<0.10	--	--	--	--
05/07/91	05/14/91	.80	<.15	.28	--	--	--	--
05/14/91	05/21/91	1.5	<.15	.45	--	--	--	--
05/21/91	05/28/91	1.3	<.15	.38	--	--	--	--
05/28/91	06/04/91	17.0	<.15	.12	<0.05	0.18	<0.05	0.18
06/04/91	06/11/91	6.9	<.15	.21	--	--	--	--
06/11/91	06/18/91	15.2	<.15	<.10	--	--	--	--
06/18/91	06/25/91	53.3	<.15	<.10	<.05	<.05	<.05	<.05
07/02/91	07/09/91	9.1	<.15	<.10	<.05	<.05	<.05	<.05
07/09/91	07/16/91	2.5	<.15	<.10	--	--	--	--
07/16/91	07/23/91	7.4	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/30/91	35.1	.21	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	1.0	<.15	<.10	--	--	--	--
08/06/91	08/13/91	20.8	<.15	<.10	--	--	--	--
09/03/91	09/10/91	18.3	<.15	<.10	<.05	<.05	<.05	<.05
09/10/91	09/17/91	1.8	<.15	<.10	--	--	--	--
SD08 Cottonwood,								
03/06/90	03/13/90	15.2	<.15	<.10	--	--	--	--
03/13/90	03/20/90	3.8	.25	<.10	--	--	--	--
03/20/90	03/27/90	5.6	<.15	<.10	--	--	--	--
04/24/90	05/01/90	10.2	<.15	<.10	--	--	--	--
05/01/90	05/08/90	2.5	<.15	<.10	--	--	--	--
05/08/90	05/15/90	19.1	<.15	<.10	--	--	--	--
05/15/90	05/22/90	44.5	.16	.10	--	--	--	--
05/22/90	05/29/90	3.8	<.15	<.10	--	--	--	--
05/29/90	06/05/90	6.4	<.15	<.10	--	--	--	--
06/05/90	06/12/90	10.2	<.15	.15	--	--	--	--
06/12/90	06/19/90	20.3	<.15	<.10	--	--	--	--
06/19/90	06/26/90	3.8	<.15	<.10	--	--	--	--
07/03/90	07/10/90	17.8	<.15	<.10	--	--	--	--
07/10/90	07/17/90	1.3	<.15	.18	--	--	--	--
07/17/90	07/24/90	58.9	<.15	<.10	--	--	--	--
07/24/90	07/31/90	1.0	<.15	<.10	<.05	<.05	<.05	<.05
07/31/90	08/07/90	3.1	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	1.3	.20	.12	<.05	<.05	<.05	<.05
08/21/90	08/28/90	22.9	<.15	<.10	--	--	--	--
08/28/90	09/04/90	2.3	<.32	.22	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metolachlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
PA—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	.23	nd	nd
--	--	--	--	--	--	<.05	.37	nd	1
--	--	--	--	--	--	<.05	.31	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	.18	nd	3
--	--	--	--	--	--	<.05	.17	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
SD									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.16	<.05	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.10	.06	4	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.11	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
SD08 Cottonwood,								
09/04/90	09/11/90	1.0	<0.32	0.72	<0.05	0.90	<0.05	<0.05
09/11/90	09/18/90	1.8	<.32	<.10	<.05	<.05	<.05	<.05
09/18/90	09/25/90	5.1	<.32	<.10	--	--	--	--
10/02/90	10/09/90	3.7	<.32	<.10	--	--	--	--
10/09/90	10/16/90	.80	<.32	<.10	--	--	--	--
10/15/90	10/23/90	3.1	<.32	<.10	--	--	--	--
10/30/90	11/06/90	13.7	<.32	<.10	--	--	--	--
02/12/91	02/19/91	20.3	<.32	<.10	--	--	--	--
03/19/91	03/26/91	8.9	<.32	.13	<.05	<.05	<.05	<.05
04/02/91	04/09/91	14.0	<.15	<.10	--	--	--	--
04/09/91	04/16/91	25.2	<.15	.14	<.05	.12	.05	<.05
04/16/91	04/23/91	9.6	<.15	<.10	--	--	--	--
04/23/91	04/30/91	2.5	<.15	.32	--	--	--	--
05/07/91	05/14/91	1.5	.19	1.2	--	--	--	--
05/14/91	05/21/91	102.1	.17	.12	.14	.11	<.05	.09
05/21/91	05/28/91	65.8	<.15	<.10	<.05	.08	<.05	<.05
05/28/91	06/04/91	90.2	<.15	<.10	<.05	<.05	<.05	<.05
06/04/91	06/11/91	32.5	<.15	<.10	<.05	<.05	<.05	<.05
06/11/91	06/18/91	42.4	<.15	<.10	<.05	<.05	<.05	<.05
06/18/91	06/25/91	2.5	<.15	<.10	--	--	--	--
06/25/91	07/02/91	64.5	<.15	<.10	<.05	.08	<.05	<.05
07/02/91	07/09/91	.80	<.15	.21	--	--	--	--
07/09/91	07/16/91	5.1	<.15	<.10	--	--	--	--
07/30/91	08/06/91	4.6	<.15	<.10	--	--	--	--
08/06/91	08/13/91	40.4	<.15	<.10	--	--	--	--
08/27/91	09/03/91	1.8	<.15	<.10	--	--	--	--
SD99 Huron Well Field,								
03/06/90	03/13/90	9.0	<.15	<.10	--	--	--	--
03/13/90	03/20/90	14.2	<.15	<.10	<.05	<.05	<.05	<.05
03/20/90	03/27/90	7.6	<.15	<.10	--	--	--	--
03/27/90	04/03/90	1.3	<.15	.30	--	--	--	--
04/24/90	05/01/90	41.4	<.15	.14	--	--	--	--
05/01/90	05/08/90	2.3	<.15	.12	--	--	--	--
05/08/90	05/15/90	29.7	<.15	<.10	--	--	--	--
05/15/90	05/22/90	74.2	.31	<.10	--	--	--	--
05/22/90	05/29/90	34.0	<.15	<.10	.43	.12	.13	.09
05/29/90	06/05/90	26.9	<.15	.87	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
SD—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.90	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.12	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.26	nd	1
--	--	--	--	--	--	.16	.98	nd	1
<.05	.08	<.05	<.05	<.05	<.05	.14	.11	14	11
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	5
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	5
--	--	--	--	--	--	<.05	.17	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
SD									
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.19	nd	nd
--	--	--	--	--	--	<.05	.08	nd	3
--	--	--	--	--	--	<.05	.07	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.20	<.05	14	nd
<.05	.12	<.05	<.05	<.05	<.05	.43	.12	15	4
--	--	--	--	--	--	<.05	.58	nd	16

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
SD99 Huron Well Field,								
06/05/90	06/12/90	5.8	<0.15	0.25	0.06	0.59	0.72	0.11
06/12/90	06/19/90	73.2	<.15	.23	<.05	.10	<.05	<.05
06/26/90	07/03/90	31.8	<.15	.16	<.05	.24	<.05	.09
07/03/90	07/10/90	--	<.15	.12	--	--	--	--
08/07/90	08/14/90	2.8	.20	.30	.10	.10	<.05	<.05
08/14/90	08/21/90	23.4	<.15	<.10	--	--	--	--
08/21/90	08/28/90	6.6	<.15	.12	.06	<.05	<.05	<.05
08/28/90	09/04/90	10.7	<.32	.10	<.05	.14	<.05	<.05
09/04/90	09/11/90	2.0	<.32	<.10	--	--	--	--
09/11/90	09/18/90	8.4	<.32	<.10	<.05	<.05	<.05	<.05
10/02/90	10/09/90	15.8	<.32	<.10	--	--	--	--
10/16/90	10/23/90	9.7	<.32	<.10	<.05	<.05	<.05	<.05
12/11/90	12/18/90	4.1	.33	<.10	--	--	--	--
01/22/91	01/29/91	.25	<.32	<.22	--	--	--	--
02/12/91	02/19/91	14.7	<.32	<.10	--	--	--	--
03/05/91	03/12/91	2.5	<.32	<.10	--	--	--	--
03/12/91	03/19/91	8.9	<.32	<.10	--	--	--	--
03/19/91	03/26/91	4.6	<.32	.22	<.05	<.05	<.05	<.05
04/09/91	04/16/91	77.6	<.15	<.10	--	--	--	--
04/23/91	04/30/91	47.5	.28	1.4	.10	1.0	.28	.05
05/14/91	05/21/91	24.1	1.1	.15	1.0	.18	.37	.07
05/21/91	05/28/91	30.5	.23	.22	.35	.21	.19	.08
05/28/91	06/04/91	152.8	.19	.27	.19	.33	.08	.12
06/04/91	06/11/91	26.2	<.15	.16	.06	.14	<.05	<.05
06/11/91	06/18/91	1.0	<.15	.13	--	--	--	--
06/18/91	07/02/91	27.2	<.15	.24	<.05	.27	<.05	.09
07/02/91	07/09/91	2.3	<.15	<.10	--	--	--	--
07/09/91	07/16/91	7.4	<.15	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	3.8	<.15	<.10	--	--	--	--
07/23/91	07/30/91	33.3	<.15	<.10	<.05	<.05	.06	<.05
07/30/91	08/06/91	13.0	<.15	<.10	<.05	.05	<.05	<.05
08/06/91	08/13/91	29.2	<.15	.20	<.05	.11	<.05	<.05
08/27/91	09/03/91	3.8	<.15	.28	--	--	--	--
09/03/91	09/10/91	2.5	<.15	<.10	--	--	--	--
09/10/91	09/17/91	19.1	<.15	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
SD—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	0.59	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.10	nd	7
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.24	nd	8
--	--	--	--	--	--	<.05	.07	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.10	.10	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.14	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.21	<.05	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.16	<.05	<.05	<.05	<.05	.10	1.0	5	48
<.05	.33	<.05	<.05	<.05	<.05	1.0	.18	25	4
<.05	.07	<.05	<.05	<.05	<.05	.35	.21	11	6
<.05	.05	<.05	<.05	<.05	<.05	.19	.33	29	50
<.05	<.05	<.05	<.05	<.05	<.05	.06	.14	2	4
--	--	--	--	--	--	<.05	.10	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.27	nd	7
--	--	--	--	--	--	<.05	.06	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	1
.20	<.05	<.05	<.05	<.05	<.05	<.05	.11	nd	3
--	--	--	--	--	--	<.05	.23	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
VA00 Charlottesville,								
02/13/90	02/20/90	--	<0.15	<0.10	--	--	--	--
02/27/90	03/06/90	--	<.15	<.10	--	--	--	--
03/06/90	03/13/90	0.80	<.15	<.10	--	--	--	--
--	03/20/90	45.2	<.15	<.10	--	--	--	--
03/20/90	03/27/90	4.8	<.15	<.10	--	--	--	--
03/27/90	04/03/90	30.5	<.15	.20	<0.05	<0.05	<0.05	<0.05
04/03/90	04/10/90	22.4	<.15	<.10	--	--	--	--
04/10/90	04/17/90	38.1	.38	.14	--	--	--	--
04/17/90	04/24/90	10.2	<.15	<.10	<.05	<.05	<.05	<.05
04/24/90	05/01/90	11.7	<.15	<.10	--	--	--	--
05/01/90	05/08/90	26.4	<.15	<.10	--	--	--	--
05/08/90	05/15/90	88.7	<.15	<.10	<.05	<.05	<.05	<.05
05/15/90	05/22/90	26.9	.20	<.10	--	--	--	--
05/22/90	05/29/90	106.9	<.15	<.10	<.05	<.05	<.05	<.05
05/29/90	06/05/90	11.7	<.15	<.10	--	--	--	--
06/05/90	06/12/90	.80	<.15	<.10	--	--	--	--
06/19/90	06/26/90	17.3	<.15	<.10	--	--	--	--
06/26/90	07/03/90	4.3	<.15	<.10	--	--	--	--
07/10/90	07/17/90	71.4	<.15	<.10	--	--	--	--
07/17/90	07/24/90	13.0	<.15	<.10	--	--	--	--
07/31/90	08/07/90	7.9	<.15	<.10	--	--	--	--
08/07/90	08/14/90	31.8	.17	.14	<.05	<.05	<.05	<.05
08/14/90	08/21/90	26.7	<.15	<.10	--	--	--	--
08/21/90	08/28/90	38.1	<.15	<.10	--	--	--	--
09/04/90	09/11/90	6.9	<.32	<.10	--	--	--	--
09/11/90	09/18/90	37.1	<.32	<.10	--	--	--	--
09/18/90	09/25/90	6.9	<.32	<.10	--	--	--	--
09/25/90	10/02/90	3.3	<.32	<.10	--	--	--	--
10/02/90	10/09/90	7.6	<.32	<.10	--	--	--	--
10/09/90	10/16/90	144.5	<.32	<.10	--	--	--	--
10/16/90	10/23/90	122.2	<.32	<.10	<.05	<.05	<.05	<.05
10/30/90	11/06/90	.80	<.32	.10	--	--	--	--
11/06/90	11/13/90	49.3	<.32	<.10	--	--	--	--
11/27/90	12/04/90	46.7	<.32	<.23	<.05	<.05	<.05	<.05
12/11/90	12/18/90	16.5	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
VA									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.24	.08	9	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.12	<.05	3	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyanazine	DEA
VA00 Charlottesville,								
12/18/90	12/26/90	23.6	<0.32	<0.10	--	--	--	--
11/06/90	01/03/91	45.5	<.32	.11	<0.05	<0.05	<0.05	<0.05
01/03/91	01/09/91	29.5	<.32	<.22	<.05	<.05	<.05	<.05
01/09/91	01/15/91	63.0	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	20.6	<.32	<.10	--	--	--	--
02/05/91	02/12/91	6.9	<.32	<.10	<.05	<.05	<.05	<.05
02/12/91	02/19/91	9.9	<.32	<.10	--	--	--	--
02/19/91	02/26/91	13.7	<.32	<.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	42.9	<.32	<.10	--	--	--	--
03/12/91	03/19/91	25.4	<.32	<.10	--	--	--	--
03/19/91	03/26/91	23.9	<.15	<.10	<.05	<.05	<.05	<.05
03/26/91	04/02/91	49.8	<.15	<.10	<.05	<.05	<.05	<.05
04/02/91	04/09/91	5.1	<.15	<.10	<.05	<.05	<.05	<.05
04/09/91	04/16/91	20.3	<.15	<.10	--	--	--	--
04/16/91	04/23/91	18.8	.15	<.10	--	--	--	--
04/23/91	04/30/91	12.2	.16	.31	.12	.17	<.05	<.05
04/30/91	05/08/91	3.6	<.15	.20	--	--	--	--
05/07/91	05/15/91	10.2	<.15	<.10	.05	.10	<.05	<.05
05/14/91	05/21/91	48.0	<.15	.15	--	--	--	--
05/21/91	05/29/91	1.8	<.15	<.10	--	--	--	--
05/28/91	06/05/91	16.8	<.15	<.10	<.05	<.05	<.05	<.05
06/11/91	06/18/91	17.8	<.15	<.10	<.05	.05	<.05	<.05
06/18/91	06/25/91	41.2	<.15	<.10	<.05	<.05	<.05	<.05
06/25/91	07/02/91	48.8	<.15	<.10	--	--	--	--
07/02/91	07/09/91	111.5	<.15	<.10	<.05	<.05	<.05	<.05
07/09/91	07/16/91	29.7	<.15	<.10	--	--	--	--
07/23/91	07/30/91	89.2	<.15	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	39.4	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/03/91	1.0	<.15	<.10	--	--	--	--
09/03/91	09/10/91	1.3	<.15	<.10	--	--	--	--
09/10/91	09/17/91	1.5	<.15	<.10	--	--	--	--
VA13 Horton's Station,								
02/27/90	03/06/90	17.8	<.15	<.10	<.05	<.05	<.05	<.05
03/06/90	03/13/90	3.1	<.15	<.10	--	--	--	--
03/13/90	03/20/90	32.0	<.15	<.10	--	--	--	--
03/20/90	03/27/90	17.8	<.15	<.10	<.05	<.05	<.05	<.05
03/27/90	04/03/90	8.4	<.15	.25	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
VA—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.13	.06	2	1
<.05	.09	<.05	<.05	<.05	<.05	.12	.17	1	2
--	--	--	--	--	--	<.05	.16	nd	1
.05	<.05	<.05	<.05	<.05	<.05	.05	.10	1	1
--	--	--	--	--	--	<.05	.12	nd	6
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
VA									
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	.07	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
VA13 Horton's Station,								
04/03/90	04/10/90	14.7	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
04/10/90	04/17/90	7.6	<.15	<.10	<.05	<.05	<.05	<.05
04/17/90	04/24/90	7.8	<.15	<.10	<.05	<.05	<.05	<.05
04/24/90	05/01/90	20.8	<.15	<.10	<.05	.07	<.05	<.05
05/01/90	05/08/90	27.9	<.15	<.10	--	--	--	--
05/08/90	05/15/90	10.2	<.15	<.10	--	--	--	--
05/15/90	05/22/90	51.3	<.15	<.10	--	--	--	--
05/22/90	05/29/90	59.7	<.15	<.10	--	--	--	--
05/29/90	06/05/90	6.4	<.15	<.10	--	--	--	--
06/05/90	06/12/90	.50	<.15	<.10	--	--	--	--
06/12/90	06/19/90	8.9	.17	<.10	<.05	<.05	<.05	<.05
06/19/90	06/26/90	35.3	<.15	<.10	--	--	--	--
06/26/90	07/03/90	1.3	<.15	<.10	--	--	--	--
07/10/90	07/17/90	72.6	<.15	.10	<.05	<.05	<.05	<.05
07/17/90	07/24/90	7.1	<.15	<.10	--	--	--	--
07/31/90	08/07/90	24.1	<.15	<.10	--	--	--	--
08/07/90	08/14/90	22.9	<.15	.10	--	--	--	--
08/21/90	08/28/90	45.7	<.15	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	29.2	<.32	<.10	--	--	--	--
09/11/90	09/18/90	6.4	<.32	.14	<.05	<.05	<.05	<.05
09/18/90	09/25/90	20.3	<.32	<.10	--	--	--	--
10/02/90	10/09/90	10.2	<.32	<.10	--	--	--	--
10/09/90	10/16/90	79.3	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	92.0	<.32	<.10	--	--	--	--
10/30/90	11/06/90	5.1	<.32	<.10	--	--	--	--
11/06/90	11/13/90	25.4	<.32	<.10	<.05	<.05	<.05	<.05
11/20/90	11/27/90	1.3	<.32	<.10	--	--	--	--
11/27/90	12/04/90	14.0	<.32	<.23	--	--	--	--
12/11/90	12/18/90	22.4	<.32	<.10	--	--	--	--
12/18/90	12/26/90	40.6	<.32	<.10	<.05	<.05	<.05	<.05
12/26/90	01/02/91	26.7	<.32	<.10	<.05	<.05	<.05	<.05
01/02/91	01/08/91	14.0	<.32	<.10	<.05	<.05	<.05	<.05
01/08/91	01/15/91	40.6	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	21.6	<.32	<.10	<.05	<.05	<.05	<.05
02/05/91	02/12/91	12.2	<.32	<.23	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
VA—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.07	nd	1
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.06	nd	1
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chlor	Atra- zine	Cyana- zine	DEA
VA13 Horton's Station,								
02/12/91	02/19/91	36.1	<0.32	<0.10	--	--	--	--
02/19/91	02/26/91	4.3	<.32	.31	<0.05	<0.05	<0.05	<0.05
02/26/91	03/05/91	33.8	<.32	.22	<.05	<.05	<.05	<.05
03/05/91	03/12/91	6.6	<.32	<.10	--	--	--	--
03/12/91	03/19/91	33.5	<.32	<.10	--	--	--	--
03/19/91	03/26/91	23.4	.42	.34	<.05	<.05	<.05	<.05
03/26/91	04/02/91	51.3	<.15	<.10	<.05	<.05	<.05	<.05
04/02/91	04/09/91	19.8	<.15	<.10	<.05	<.05	<.05	<.05
04/09/91	04/16/91	20.1	<.15	<.10	--	--	--	--
04/16/91	04/23/91	14.0	<.15	<.10	.05	.05	<.05	.06
04/23/91	04/30/91	8.6	<.15	.13	--	--	--	--
04/30/91	05/07/91	8.1	<.15	.24	--	--	--	--
05/14/91	05/21/91	53.3	<.15	.10	<.05	.08	<.05	<.05
05/21/91	05/28/91	49.5	<.15	<.10	<.05	<.05	<.05	<.05
05/28/91	06/04/91	27.4	<.15	<.10	--	--	--	--
06/11/91	06/18/91	1.5	<.15	<.10	--	--	--	--
06/18/91	06/25/91	3.6	<.15	<.10	--	--	--	--
07/09/91	07/16/91	43.2	<.15	<.10	--	--	--	--
07/16/91	07/23/91	.80	<.15	<.10	--	--	--	--
07/23/91	07/30/91	71.1	<.15	<.10	--	--	--	--
07/30/91	08/06/91	4.3	<.15	<.10	--	--	--	--
08/06/91	08/13/91	14.2	<.15	<.10	--	--	--	--
08/13/91	08/20/91	5.8	<.15	<.10	--	--	--	--
08/27/91	09/03/91	4.6	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	6.9	<.15	<.10	--	--	--	--
09/10/91	09/17/91	16.5	<.15	<.10	<.05	<.05	<.05	<.05
VA28 Shenandoah National								
02/27/90	03/06/90	4.1	<.15	<.10	--	--	--	--
03/06/90	03/13/90	2.5	.25	<.10	--	--	--	--
03/13/90	03/20/90	79.0	<.15	<.10	--	--	--	--
03/20/90	03/27/90	12.7	<.15	<.10	<.05	<.05	<.05	<.05
03/27/90	04/03/90	25.7	<.15	.20	<.05	<.05	<.05	<.05
04/03/90	04/10/90	31.2	<.15	<.10	--	--	--	--
04/10/90	04/17/90	15.5	<.15	.12	--	--	--	--
04/17/90	04/24/90	20.3	<.15	<.10	--	--	--	--
04/24/90	05/01/90	19.1	<.15	<.10	--	--	--	--
05/01/90	05/08/90	31.2	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
VA—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.05	.05	1	1
--	--	--	--	--	--	<.05	.10	nd	1
--	--	--	--	--	--	<.05	.19	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	4
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
Park-Big Meadows, VA									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.16	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyanazine	DEA
VA28 Shenandoah National Park-								
05/08/90	05/15/90	47.0	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
05/15/90	05/22/90	16.0	<.15	<.10	--	--	--	--
05/22/90	05/29/90	78.2	<.15	<.10	--	--	--	--
05/29/90	06/05/90	9.9	<.15	.11	--	--	--	--
06/05/90	06/12/90	4.6	<.15	<.10	--	--	--	--
06/12/90	06/19/90	2.3	<.15	.51	--	--	--	--
06/19/90	06/26/90	23.1	<.15	<.10	<.05	<.05	<.05	<.05
06/26/90	07/03/90	12.5	<.15	<.10	--	--	--	--
07/03/90	07/10/90	19.6	<.15	<.10	--	--	--	--
07/10/90	07/17/90	94.7	<.15	<.10	--	--	--	--
07/17/90	07/24/90	30.7	<.15	<.10	--	--	--	--
07/24/90	07/31/90	2.8	<.15	<.10	<.05	<.05	<.05	<.05
07/31/90	08/07/90	18.5	<.15	<.10	--	--	--	--
08/07/90	08/14/90	65.0	.15	<.10	--	--	--	--
08/14/90	08/21/90	2.8	<.15	<.10	--	--	--	--
08/21/90	08/28/90	87.4	<.32	<.10	--	--	--	--
08/28/90	09/04/90	2.0	.92	<.10	.75	<.05	<.05	<.05
09/04/90	09/11/90	1.5	<.32	<.10	--	--	--	--
09/11/90	09/18/90	90.2	<.32	<.10	--	--	--	--
09/18/90	09/25/90	15.2	<.32	.11	--	--	--	--
09/25/90	10/02/90	10.4	<.32	<.10	--	--	--	--
10/02/90	10/09/90	9.9	<.32	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	212.6	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	114.3	<.32	<.10	--	--	--	--
10/30/90	11/06/90	4.6	<.32	<.10	--	--	--	--
11/06/90	11/13/90	25.7	<.32	<.10	<.05	<.05	<.05	<.05
11/13/90	11/20/90	1.3	<.32	.17	--	--	--	--
11/20/90	11/27/90	3.6	<.32	.15	--	--	--	--
11/27/90	12/04/90	39.9	<.32	<.23	<.05	<.05	<.05	<.05
12/11/90	12/18/90	24.4	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/26/90	34.3	<.32	<.10	<.05	<.05	<.05	<.05
01/02/91	01/08/91	22.1	<.32	<.22	<.05	<.05	<.05	<.05
01/08/91	01/15/91	55.1	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	21.3	<.32	.10	<.05	<.05	<.05	<.05
02/05/91	02/12/91	17.8	<.32	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Big Meadows, VA—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.34	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.09	<.05	6	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.75	<.05	2	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.10	nd	nd
--	--	--	--	--	--	<.05	.09	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyanazine	DEA
VA28 Shenandoah National Park-								
02/12/91	02/19/91	15.8	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
02/19/91	02/26/91	10.2	<.32	<.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	68.6	<.32	<.10	--	--	--	--
03/12/91	03/19/91	23.4	<.32	<.10	--	--	--	--
03/19/91	03/26/91	41.9	<.15	<.10	<.05	<.05	<.05	<.05
03/26/91	04/02/91	31.0	<.15	<.10	--	--	--	--
04/02/91	04/09/91	8.1	<.15	<.10	--	--	--	--
04/09/91	04/16/91	30.2	<.15	<.10	--	--	--	--
04/16/91	04/23/91	10.3	<.15	<.10	--	--	--	--
04/23/91	04/30/91	18.8	<.15	.25	.05	.15	<.05	.06
05/07/91	05/14/91	16.8	<.15	.15	<.05	<.05	<.05	<.05
05/14/91	05/21/91	27.4	<.15	.33	--	--	--	--
05/28/91	06/04/91	52.8	<.15	.11	<.05	.14	<.05	.06
06/11/91	06/18/91	11.2	<.15	<.10	<.05	<.05	<.05	<.05
06/18/91	06/25/91	38.6	<.15	<.10	<.05	<.05	<.05	<.05
07/02/91	07/09/91	47.8	<.15	<.10	--	--	--	--
07/09/91	07/16/91	17.5	<.15	<.10	--	--	--	--
07/16/91	07/23/91	1.5	<.15	<.10	--	--	--	--
07/23/91	07/30/91	114.8	<.15	<.10	<.05	<.05	<.05	<.05
07/31/91	08/06/91	1.5	<.15	<.10	--	--	--	--
08/06/91	08/13/91	14.2	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	7.6	<.15	<.10	--	--	--	--
09/10/91	09/17/91	2.8	<.15	<.10	--	--	--	--
VA29 Whitetop Mountain,								
02/27/90	03/06/90	12.5	<.15	<.10	--	--	--	--
03/06/90	03/14/90	--	<.15	<.10	--	--	--	--
03/27/90	04/03/90	14.0	<.15	.20	<.05	<.05	<.05	<.05
04/03/90	04/10/90	19.4	<.15	.20	<.05	<.05	<.05	<.05
04/10/90	04/17/90	17.0	<.15	.18	--	--	--	--
04/17/90	04/24/90	50.8	<.15	<.10	<.05	<.05	<.05	<.05
04/24/90	05/01/90	30.5	<.15	<.10	--	--	--	--
05/01/90	05/08/90	67.6	<.15	<.10	<.05	<.05	<.05	<.05
05/08/90	05/15/90	23.4	<.15	<.10	--	--	--	--
05/15/90	05/23/90	69.3	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
Big Meadows, VA—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.07	<.05	<.05	<.05	<.05	.05	.15	1	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.27	nd	7
<.05	.06	<.05	<.05	<.05	<.05	<.05	.14	nd	7
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
VA									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	.12	<.05	<.05	nd	nd
<.05	<.05	<.05	.20	<.05	.80	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.11	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
VA29 Whitetop Mountain,								
05/23/90	05/29/90	57.7	<0.15	<0.10	--	--	--	--
05/29/90	06/05/90	18.0	<.15	<.10	<0.05	0.07	<0.05	<0.05
06/05/90	06/12/90	19.1	<.15	<.10	--	--	--	--
06/12/90	06/19/90	21.6	<.15	<.10	<.05	<.05	<.05	<.05
06/19/90	06/26/90	52.8	<.15	.26	<.05	.20	<.05	<.05
06/26/90	07/03/90	13.0	<.15	<.10	--	--	--	--
07/03/90	07/10/90	4.8	<.15	.14	<.05	<.05	<.05	<.05
07/10/90	07/17/90	83.6	<.15	.11	--	--	--	--
07/17/90	07/24/90	32.8	<.15	<.10	--	--	--	--
07/31/90	08/07/90	55.9	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/21/90	45.2	<.15	<.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	59.9	<.15	<.10	--	--	--	--
08/28/90	09/04/90	3.1	<.32	<.10	--	--	--	--
09/04/90	09/11/90	44.2	<.32	<.10	--	--	--	--
09/11/90	09/18/90	31.0	<.32	<.10	--	--	--	--
VT01 Bennington,								
02/27/90	03/06/90	2.0	<.15	<.10	--	--	--	--
03/06/90	03/13/90	20.1	<.15	<.10	--	--	--	--
03/13/90	03/20/90	42.9	<.15	<.10	--	--	--	--
03/20/90	03/27/90	21.3	<.15	<.10	--	--	--	--
03/27/90	04/03/90	6.1	<.15	.20	<.05	<.05	<.05	<.05
04/03/90	04/10/90	29.2	<.15	<.10	<.05	<.05	<.05	<.05
04/10/90	04/17/90	45.7	<.15	<.10	--	--	--	--
04/17/90	04/24/90	16.8	<.15	<.10	--	--	--	--
04/24/90	05/01/90	16.3	<.15	<.10	<.05	<.05	<.05	<.05
05/01/90	05/08/90	16.8	<.15	<.10	<.05	<.05	<.05	<.05
05/08/90	05/15/90	62.2	<.15	<.10	--	--	--	--
05/15/90	05/22/90	49.0	<.15	<.10	--	--	--	--
05/22/90	05/29/90	1.8	<.15	.38	--	--	--	--
05/29/90	06/05/90	42.4	.17	.13	--	--	--	--
06/05/90	06/12/90	11.4	<.15	.13	--	--	--	--
06/12/90	06/19/90	13.5	<.15	.10	--	--	--	--
06/19/90	06/26/90	22.1	<.15	.13	--	--	--	--
06/26/90	07/03/90	16.0	<.15	<.10	<.05	.05	<.05	<.05
07/03/90	07/10/90	3.3	<.15	.14	<.05	.14	<.05	.10
07/10/90	07/17/90	12.2	<.15	.15	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
VA—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	.07	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.20	nd	11
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	5
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
VT									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.25	nd	nd
--	--	--	--	--	--	.11	.08	4	3
--	--	--	--	--	--	<.05	.08	nd	1
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	.08	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.14	nd	nd
--	--	--	--	--	--	<.05	.09	nd	1

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
VT01 Bennington,								
07/17/90	07/24/90	46.7	<0.15	<0.10	--	--	--	--
07/31/90	08/07/90	107.7	<.15	<.10	--	--	--	--
08/07/90	08/14/90	32.8	.18	<.10	--	--	--	--
08/14/90	08/21/90	11.2	<.15	<.10	--	--	--	--
08/21/90	08/28/90	11.9	<.15	<.10	--	--	--	--
08/28/90	09/04/90	15.1	.36	<.10	<0.05	<0.05	<0.05	<0.05
09/04/90	09/11/90	27.7	<.32	.14	<.05	<.05	<.05	<.05
09/11/90	09/18/90	17.5	<.32	<.10	--	--	--	--
09/18/90	09/25/90	5.8	<.32	<.10	--	--	--	--
09/25/90	10/02/90	18.3	<.32	.12	--	--	--	--
10/02/90	10/09/90	15.2	<.32	<.10	--	--	--	--
10/09/90	10/16/90	18.0	<.32	<.10	--	--	--	--
10/16/90	10/23/90	19.1	<.32	<.10	<.05	<.05	<.05	<.05
10/23/90	10/30/90	34.8	<.32	<.10	--	--	--	--
10/30/90	11/06/90	11.9	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	50.0	<.32	<.10	--	--	--	--
11/13/90	11/20/90	6.6	<.32	<.10	--	--	--	--
11/20/90	11/27/90	7.4	<.32	<.10	<.05	<.05	<.05	<.05
11/27/90	12/04/90	21.3	<.32	<.23	<.05	<.05	<.05	<.05
12/04/90	12/11/90	4.6	.42	<.10	--	--	--	--
12/11/90	12/18/90	29.5	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/25/90	56.9	<.32	.11	--	--	--	--
12/25/90	01/01/91	28.7	<.32	<.10	<.05	<.05	<.05	<.05
01/01/91	01/08/91	1.0	<.32	<.10	--	--	--	--
01/08/91	01/15/91	21.6	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	17.8	<.32	<.10	<.05	<.05	<.05	<.05
01/22/91	01/29/91	2.3	<.32	<.22	--	--	--	--
01/29/91	02/05/91	15.2	<.32	<.23	<.05	<.05	<.05	<.05
02/05/91	02/12/91	12.5	.44	<.23	--	--	--	--
02/12/91	02/19/91	8.9	<.32	<.10	--	--	--	--
02/19/91	02/26/91	5.1	<.32	.16	<.05	<.05	<.05	<.05
02/26/91	03/05/91	16.3	<.32	.23	<.05	<.05	<.05	<.05
03/05/91	03/12/91	9.4	<.32	.14	<.05	<.05	<.05	<.05
03/12/91	03/19/91	7.6	<.32	<.10	--	--	--	--
03/19/91	03/26/91	38.1	<.32	.33	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
VT—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	.11	<0.05	4	nd
--	--	--	--	--	--	<0.05	.05	nd	1
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.07	nd	1
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	.27	<0.05	1	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.06	nd	4
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	.37	<0.05	5	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
VT01 Bennington,								
03/26/91	04/02/91	12.5	<0.15	<0.10	--	--	--	--
04/02/91	04/09/91	38.9	<.15	<.10	--	--	--	--
04/09/91	04/16/91	15.5	<.15	<.10	<0.05	<0.05	<0.05	<0.05
04/16/91	04/23/91	28.7	<.15	.11	--	--	--	--
04/23/91	04/30/91	7.9	<.15	<.10	<.05	<.05	<.05	<.05
05/14/91	05/21/91	20.1	<.15	.23	.10	.27	.61	<.05
05/21/91	05/28/91	6.9	<.15	.35	--	--	--	--
05/28/91	06/04/91	32.8	<.15	<.10	--	--	--	--
06/04/91	06/11/91	8.9	<.15	.16	<.05	.16	<.05	<.05
06/11/91	06/18/91	88.7	<.15	.12	<.05	.12	<.05	.05
06/18/91	06/25/91	.50	<.15	.10	--	--	--	--
06/25/91	07/02/91	29.2	<.15	<.10	--	--	--	--
07/02/91	07/09/91	6.6	<.15	.24	<.05	<.05	<.05	<.05
07/09/91	07/16/91	16.0	<.15	<.10	--	--	--	--
07/16/91	07/23/91	33.0	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/30/91	16.8	<.15	<.10	--	--	--	--
07/30/91	08/06/91	25.7	<.15	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	18.0	<.15	<.10	--	--	--	--
08/27/91	09/03/91	21.1	<.15	<.10	--	--	--	--
09/03/91	09/10/91	4.6	<.15	<.10	--	--	--	--
09/10/91	09/17/91	17.0	<.15	<.10	--	--	--	--
VT99 Underhill,								
02/27/90	03/06/90	--	<.15	<.10	--	--	--	--
03/06/90	03/13/90	5.3	<.15	<.10	<.05	<.05	<.05	<.05
03/13/90	03/20/90	22.1	.20	<.10	--	--	--	--
03/20/90	03/27/90	45.7	<.15	<.10	<.05	<.05	<.05	<.05
03/27/90	04/03/90	13.5	<.15	.20	<.05	<.05	<.05	<.05
04/03/90	04/10/90	40.1	<.15	<.10	<.05	<.05	<.05	<.05
04/10/90	04/17/90	35.6	<.15	<.10	--	--	--	--
04/17/90	04/24/90	23.6	.26	<.10	--	--	--	--
04/24/90	05/01/90	5.1	<.15	<.10	<.05	<.05	<.05	<.05
--	05/08/90	30.2	<.15	<.10	--	--	--	--
05/08/90	05/15/90	47.2	<.15	<.10	<.05	.07	<.05	<.05
05/15/90	05/22/90	40.9	<.15	<.10	<.05	<.05	<.05	<.05
05/29/90	06/05/90	35.3	<.15	<.10	--	--	--	--
06/05/90	06/12/90	38.4	<.15	.14	<.05	.14	<.05	<.05
06/12/90	06/19/90	7.1	<.15	<.10	<.05	.16	.05	.07

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
VT—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.05	<.05	<.05	<.05	<.05	.10	.27	2	5
--	--	--	--	--	--	<.05	.28	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.16	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.12	nd	11
--	--	--	--	--	--	<.05	.08	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
VT									
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.12	<.05	3	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.16	<.05	4	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.17	<.05	<.05	<.05	<.05	<.05	.14	nd	5
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.16	nd	1

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipita- tion (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
VT99 Underhill,								
06/19/90	06/26/90	25.4	<0.15	0.15	<0.05	0.05	<0.05	0.05
06/26/90	07/03/90	38.1	<.15	<.10	--	--	--	--
07/03/90	07/10/90	94.7	<.15	.14	--	--	--	--
07/10/90	07/17/90	17.0	<.15	<.10	--	--	--	--
07/17/90	07/24/90	93.5	<.15	<.10	--	--	--	--
07/24/90	07/31/90	1.5	<.15	<.10	--	--	--	--
07/31/90	08/07/90	--	<.15	<.10	--	--	--	--
08/07/90	08/14/90	64.5	<.15	<.10	<.05	<.05	<.05	<.05
08/14/90	08/21/90	15.8	.16	.16	<.05	<.05	<.05	<.05
08/21/90	08/28/90	12.5	<.15	<.10	--	--	--	--
08/28/90	09/04/90	47.0	.48	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	22.9	<.32	.13	<.05	<.05	<.05	<.05
09/11/90	09/18/90	17.5	<.32	.18	<.05	<.05	<.05	<.05
09/18/90	09/25/90	23.9	<.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	29.7	<.32	.16	<.05	<.05	<.05	<.05
10/02/90	10/09/90	29.2	<.32	<.10	--	--	--	--
10/09/90	10/16/90	47.0	<.32	<.10	--	--	--	--
10/16/90	10/23/90	47.8	<.32	<.10	--	--	--	--
10/23/90	10/30/90	36.7	<.32	<.10	--	--	--	--
10/30/90	11/06/90	19.3	<.32	.18	<.05	<.05	<.05	<.05
11/06/90	11/13/90	73.2	<.32	.11	<.05	<.05	<.05	<.05
11/13/90	11/20/90	16.0	<.32	<.10	--	--	--	--
11/20/90	11/27/90	16.5	<.32	.10	<.05	<.05	<.05	<.05
11/27/90	12/04/90	26.4	<.32	<.10	<.05	<.05	<.05	<.05
12/04/90	12/11/90	5.3	<.32	<.10	--	--	--	--
12/11/90	12/18/90	11.9	<.32	<.10	--	--	--	--
12/18/90	12/25/90	78.2	<.32	<.10	<.05	<.05	<.05	<.05
12/25/90	01/01/91	31.5	<.32	<.10	<.05	<.05	<.05	<.05
01/01/91	01/08/91	2.8	<.32	<.10	--	--	--	--
01/08/91	01/15/91	12.2	<.32	<.10	--	--	--	--
01/15/91	01/22/91	18.0	<.32	<.23	<.05	<.05	<.05	<.05
01/29/91	02/05/91	15.2	.49	<.23	<.05	<.05	<.05	<.05
02/05/91	02/12/91	4.6	<.32	<.10	--	--	--	--
02/12/91	02/19/91	5.6	<.32	<.10	--	--	--	--
02/19/91	02/26/91	7.1	<.32	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
VT—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.08	nd	8
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by Immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
VT99 Underhill,								
02/26/91	03/05/91	36.8	<0.32	<0.10	--	--	--	--
03/12/91	03/19/91	4.6	<.15	<.10	--	--	--	--
03/19/91	03/27/91	27.9	<.15	<.10	<0.05	<0.05	<0.05	<0.05
03/26/91	04/02/91	8.1	<.15	<.10	--	--	--	--
04/02/91	04/09/91	20.8	<.15	<.10	--	--	--	--
04/09/91	04/16/91	27.8	<.15	<.10	--	--	--	--
05/14/91	05/21/91	16.0	<.15	<.10	--	--	--	--
05/21/91	05/28/91	27.2	<.15	<.10	--	--	--	--
05/28/91	06/04/91	22.4	<.15	.16	<.05	.20	<.05	.06
06/04/91	06/11/91	8.1	<.15	.17	<.05	.17	<.05	<.05
06/11/91	06/18/91	50.3	<.15	.16	.05	.16	<.05	<.05
06/25/91	07/02/91	1.0	<.15	.24	--	--	--	--
07/02/91	07/09/91	18.8	<.15	<.10	--	--	--	--
07/09/91	07/17/91	10.4	<.15	<.10	.07	<.05	<.05	<.05
07/16/91	07/23/91	25.4	<.15	<.10	--	--	--	--
07/23/91	07/30/91	10.9	<.15	<.10	--	--	--	--
07/31/91	08/06/91	51.3	<.15	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	17.0	<.15	<.10	<.05	<.05	<.05	<.05
08/13/91	08/20/91	27.9	<.15	<.10	--	--	--	--
08/20/91	08/27/91	3.8	<.15	<.10	--	--	--	--
08/27/91	09/03/91	51.6	<.15	<.10	--	--	--	--
09/03/91	09/10/91	3.3	<.15	<.10	--	--	--	--
WI09 Popple River,								
03/06/90	03/13/90	21.1	<.15	<.10	<.05	<.05	<.05	<.05
03/13/90	03/20/90	20.6	<.15	<.10	--	--	--	--
03/27/90	04/03/90	8.1	<.15	.30	<.05	<.05	<.05	<.05
04/03/90	04/10/90	5.6	<.15	<.10	<.05	.08	<.05	<.05
04/10/90	04/17/90	6.6	.17	<.10	--	--	--	--
04/24/90	05/01/90	11.2	.15	.80	--	--	--	--
05/08/90	05/15/90	61.9	<.15	<.10	--	--	--	--
05/15/90	05/22/90	39.4	<.15	<.10	<.05	<.05	<.05	<.05
05/22/90	05/29/90	5.8	<.15	<.10	--	--	--	--
05/29/90	06/05/90	33.0	<.15	.30	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metolachlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
VT—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.13	<.05	.09	<.05	<.05	<.05	.20	nd	4
<.05	.16	<.05	<.05	<.05	<.05	<.05	.17	nd	1
<.05	.10	<.05	<.05	<.05	<.05	.05	.16	3	8
--	--	--	--	--	--	<.05	.19	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.07	<.05	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
WI									
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	nd
--	--	--	--	--	--	.11	<.05	1	nd
--	--	--	--	--	--	.09	.54	1	6
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.19	nd	6

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
WI09 Popple River,								
06/05/90	06/12/90	52.1	<0.15	0.18	--	--	--	--
06/12/90	06/19/90	30.5	<.15	.23	<0.05	0.13	<0.05	0.10
06/19/90	06/26/90	20.3	<.15	.13	--	--	--	--
06/26/90	07/03/90	1.3	<.15	<.10	--	--	--	--
07/03/90	07/10/90	29.5	<.15	<.10	.06	.06	<.05	.06
07/10/90	07/17/90	2.5	<.15	.19	--	--	--	--
07/17/90	07/24/90	16.0	<.15	<.10	--	--	--	--
07/24/90	07/31/90	18.8	<.15	<.10	<.05	<.05	<.05	<.05
07/31/90	08/07/90	14.7	<.15	.17	<.05	<.05	<.05	<.05
08/07/90	08/14/90	4.7	<.15	.15	<.05	<.05	<.05	<.05
08/14/90	08/21/90	48.3	<.15	<.10	--	--	--	--
08/21/90	08/28/90	8.6	<.15	<.10	--	--	--	--
08/28/90	09/04/90	4.1	.49	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	32.5	.34	<.10	<.05	<.05	<.05	<.05
09/11/90	09/18/90	48.5	<.32	<.10	--	--	--	--
09/18/90	09/25/90	18.5	<.32	.12	<.05	<.05	<.05	<.05
09/25/90	10/02/90	9.7	<.32	<.10	--	--	--	--
10/02/90	10/09/90	8.6	<.32	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	20.5	<.32	<.10	--	--	--	--
10/10/90	10/23/90	33.4	<.32	<.10	<.05	.14	<.05	<.05
10/30/90	11/06/90	1.8	<.32	<.10	--	--	--	--
11/06/90	11/13/90	1.6	<.32	<.10	--	--	--	--
11/20/90	11/27/90	15.2	<.32	.10	--	--	--	--
11/27/90	12/04/90	11.7	<.32	<.23	<.05	<.05	<.05	<.05
12/11/90	12/18/90	9.0	<.32	<.10	--	--	--	--
12/18/90	12/25/90	2.6	<.32	<.10	--	--	--	--
12/25/90	01/01/91	2.7	<.32	<.10	--	--	--	--
01/08/91	01/15/91	2.5	<.32	<.22	--	--	--	--
02/12/91	02/19/91	4.1	<.32	<.10	--	--	--	--
02/19/91	02/26/91	5.1	<.32	.29	<.05	<.05	<.05	<.05
02/26/91	03/05/91	13.2	<.32	<.10	--	--	--	--
03/05/91	03/12/91	11.4	<.32	<.10	<.05	<.05	<.05	<.05
03/19/91	03/26/91	41.9	<.32	.29	<.05	<.05	<.05	<.05
03/26/91	04/02/91	14.0	<.15	<.10	<.05	<.05	<.05	<.05
04/09/91	04/09/91	29.7	<.15	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
WI—Continued									
--	--	--	--	--	--	<0.05	0.11	nd	6
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.13	nd	4
--	--	--	--	--	--	<0.05	.08	nd	2
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.06	.06	2	2
--	--	--	--	--	--	<0.05	.12	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.14	nd	5
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.06	nd	1
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
WI09 Popple River,								
04/09/91	04/16/91	26.4	<0.15	<0.10	--	--	--	--
04/16/91	04/23/91	10.7	<.15	<.10	<0.05	<0.05	<0.05	<0.05
04/23/91	04/30/91	15.5	.16	.42	.17	.31	.22	.13
04/30/91	05/07/91	20.6	<.15	<.10	--	--	--	--
05/21/91	05/28/91	29.2	<.15	<.10	.09	.11	<.05	.08
05/28/91	06/04/91	93.1	<.15	.10	--	--	--	--
06/04/91	06/11/91	3.8	<.15	.16	--	--	--	--
06/11/91	06/18/91	25.7	<.15	.11	<.05	.12	<.05	<.05
06/18/91	06/25/91	39.4	<.15	<.10	<.05	.05	<.05	<.05
06/25/91	07/02/91	27.4	<.15	.30	<.05	.32	<.05	<.05
07/02/91	07/09/91	14.0	<.15	.24	<.05	.08	<.05	.06
07/16/91	07/23/91	30.2	<.15	<.10	--	--	--	--
07/23/91	07/30/91	66.8	<.15	<.10	--	--	--	--
07/30/91	08/06/91	5.6	<.15	<.10	--	--	--	--
08/13/91	08/20/91	9.7	<.15	<.10	<.05	<.05	<.05	<.05
08/20/91	08/27/91	7.6	<.15	<.10	--	--	--	--
08/27/91	09/03/91	12.2	<.15	<.10	--	--	--	--
09/03/91	09/10/91	44.5	<.15	<.10	--	--	--	--
09/10/91	09/17/91	14.7	<.15	<.10	<.05	<.05	<.05	<.05
WI25 Suring,								
02/27/90	03/06/90	4.6	<.15	<.10	--	--	--	--
03/06/90	03/13/90	30.0	<.15	<.10	--	--	--	--
03/13/90	03/20/90	30.0	<.15	<.10	--	--	--	--
03/20/90	03/27/90	1.3	<.15	<.10	--	--	--	--
03/27/90	04/03/90	5.3	<.15	<.10	--	--	--	--
04/03/90	04/10/90	4.6	<.15	.25	<.05	.06	<.05	<.05
04/10/90	04/17/90	5.8	<.15	<.10	<.05	<.05	<.05	<.05
04/17/90	04/24/90	.80	<.15	.34	--	--	--	--
04/24/90	05/01/90	8.9	.51	.53	--	--	--	--
05/08/90	05/15/90	71.5	<.15	<.10	<.05	<.05	<.05	<.05
05/15/90	05/22/90	57.4	.21	<.10	--	--	--	--
05/22/90	05/29/90	3.3	.31	.38	--	--	--	--
05/29/90	06/05/90	13.0	.34	.97	--	--	--	--
06/05/90	06/12/90	86.9	.18	.53	--	--	--	--
06/12/90	06/19/90	63.5	.37	.63	.18	.35	<.05	.15

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
WI—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
.09	.07	<0.05	<0.05	<0.05	<0.05	.17	.31	3	5
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.09	.11	3	3
--	--	--	--	--	--	<0.05	.08	nd	7
--	--	--	--	--	--	<0.05	.13	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.12	nd	3
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.05	nd	2
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.32	nd	9
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.08	nd	1
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
WI									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.06	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.22	nd	nd
--	--	--	--	--	--	.32	.35	3	3
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	.13	<0.05	8	nd
--	--	--	--	--	--	.20	.25	1	1
--	--	--	--	--	--	.21	.65	3	8
--	--	--	--	--	--	.11	.35	10	30
<0.05	.06	<0.05	<0.05	<0.05	<0.05	.18	.35	11	22

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chlor	Atra- zine	Cyana- zine	DEA
WI25 Suring,								
06/19/90	06/26/90	41.9	<0.15	0.16	<0.05	0.09	<0.05	<0.05
06/26/90	07/03/90	2.0	<.15	.30	--	--	--	--
07/03/90	07/10/90	9.4	<.15	.20	.06	.18	<.05	.10
07/10/90	07/17/90	17.0	<.15	.22	--	--	--	--
07/17/90	07/24/90	15.8	<.15	<.10	--	--	--	--
07/24/90	07/31/90	25.4	<.15	<.10	--	--	--	--
07/31/90	08/07/90	17.8	<.15	<.10	--	--	--	--
08/07/90	08/14/90	--	.15	<.10	<.05	<.05	<.05	<.05
08/14/90	08/21/90	62.7	<.15	.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	30.7	<.15	<.10	--	--	--	--
08/28/90	09/04/90	1.5	1.5	.17	.84	<.05	<.05	<.05
09/04/90	09/11/90	43.7	<.32	<.10	--	--	--	--
09/11/90	09/18/90	61.5	<.32	.12	<.05	<.05	<.05	<.05
09/18/90	09/25/90	15.0	<.32	<.10	--	--	--	--
09/25/90	10/02/90	11.7	<.32	.15	--	--	--	--
10/02/90	10/09/90	6.9	<.32	<.10	--	--	--	--
10/09/90	10/16/90	18.5	<.32	<.10	--	--	--	--
10/10/90	10/23/90	22.9	<.32	<.10	<.05	<.05	<.05	<.05
10/30/90	11/06/90	14.0	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	2.8	<.32	<.10	--	--	--	--
11/20/90	11/27/90	14.5	<.32	<.10	--	--	--	--
11/27/90	12/04/90	26.4	<.32	<.23	<.05	<.05	<.05	<.05
12/11/90	12/18/90	24.4	<.32	<.10	--	--	--	--
12/18/90	12/25/90	2.0	<.32	.18	--	--	--	--
12/25/90	01/01/91	5.6	<.32	.16	--	--	--	--
01/01/91	01/08/91	2.0	<.32	.20	--	--	--	--
01/08/91	01/15/91	8.9	.40	<.22	<.05	<.05	<.05	<.05
02/12/91	02/19/91	9.9	<.32	<.10	<.05	<.05	<.05	<.05
02/19/91	02/26/91	8.1	<.32	.28	<.05	<.05	<.05	<.05
02/26/91	03/05/91	16.3	<.32	.23	<.05	<.05	<.05	<.05
03/05/91	03/12/91	7.1	<.32	<.10	<.05	<.05	<.05	<.05
03/19/91	03/26/91	40.1	<.32	<.10	--	--	--	--
03/26/91	04/02/91	7.4	<.32	.39	<.05	<.05	<.05	<.05
04/02/91	04/09/91	11.9	<.15	.10	--	--	--	--
04/09/91	04/16/91	45.5	<.15	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
WI—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.09	nd	4
--	--	--	--	--	--	<.05	.19	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	.18	1	2
--	--	--	--	--	--	<.05	.14	nd	2
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	.28	.84	<.05	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.09	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.11	nd	nd
--	--	--	--	--	--	<.05	.13	nd	1
--	--	--	--	--	--	<.05	.16	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.08	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan-illide herbicides	Tri-azines herbicides	Ala-chlor	Atra-zine	Cyana-zine	DEA
WI25 Suring,								
04/16/91	04/23/91	18.0	<0.15	0.10	--	--	--	--
04/23/91	04/30/91	12.2	.20	.29	0.20	0.28	0.18	0.11
04/30/91	05/07/91	13.0	<.15	.21	<.05	<.05	<.05	<.05
05/14/91	05/21/91	24.6	<.15	<.10	--	--	--	--
05/21/91	05/28/91	31.8	.24	.33	.37	.36	.16	.21
05/28/91	06/04/91	40.6	<.15	.26	.17	.28	.05	.21
06/11/91	06/18/91	9.1	.24	.28	.21	.28	<.05	<.05
06/18/91	06/25/91	29.7	<.15	<.10	.06	.09	<.05	.05
06/25/91	07/02/91	28.7	<.15	.15	.05	.19	<.05	.09
07/02/91	07/09/91	9.9	<.15	.41	<.05	.15	<.05	.08
07/09/91	07/16/91	11.7	<.15	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	29.0	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/30/91	31.0	<.15	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	25.7	<.15	<.10	--	--	--	--
08/06/91	08/13/91	8.9	<.15	<.10	--	--	--	--
08/13/91	08/20/91	12.7	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/03/91	25.9	<.15	<.10	--	--	--	--
09/03/91	09/10/91	11.2	<.15	<.10	<.05	<.05	<.05	<.05
09/10/91	09/17/91	38.6	<.15	<.10	--	--	--	--
WI28 Lake Dubay,								
03/06/90	03/13/90	24.9	<.15	<.10	--	--	--	--
03/13/90	03/20/90	34.3	<.15	<.10	--	--	--	--
03/20/90	03/27/90	1.8	<.15	<.10	--	--	--	--
03/27/90	04/03/90	9.4	<.15	<.10	--	--	--	--
04/03/90	04/10/90	5.6	<.15	<.10	--	--	--	--
04/10/90	04/17/90	7.6	<.15	<.10	<.05	<.05	<.05	<.05
04/17/90	04/24/90	7.9	.23	.21	.11	.15	<.05	.07
04/24/90	05/01/90	18.6	.34	.20	.28	.44	<.05	.09
05/08/90	05/15/90	39.4	<.15	<.10	--	--	--	--
05/15/90	05/22/90	27.9	<.15	<.10	--	--	--	--
05/22/90	05/29/90	6.0	.41	.55	.52	.55	.29	.21
05/29/90	06/05/90	23.7	.81	.20	--	--	--	--
06/05/90	06/12/90	22.9	<.15	<.10	--	--	--	--
06/12/90	06/19/90	36.8	.41	.19	--	--	--	--
06/19/90	06/26/90	45.7	<.15	.26	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol- achlor	Metri- buzin	Prome- ton	Propa- zine	Sima- zine	Alachlor	Atrazine	Alachlor	Atrazine
WI—Continued									
--	--	--	--	--	--	<0.05	0.08	nd	1
0.08	0.10	<0.05	<0.05	<0.05	<0.05	.20	.28	2	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.09	<.05	<.05	<.05	<.05	.37	.36	12	11
<.05	<.05	<.05	<.05	<.05	<.05	.17	.28	7	11
<.05	<.05	<.05	<.05	<.05	<.05	.21	.28	2	3
<.05	<.05	<.05	<.05	<.05	<.05	.06	.09	2	3
<.05	<.05	<.05	<.05	<.05	<.05	.05	.19	1	5
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.15	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.21	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
WI									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.15	<.05	<.05	<.05	<.05	.11	.15	1	1
<.05	.12	<.05	<.05	<.05	<.05	.28	.44	5	8
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.12	<.05	<.05	<.05	.07	.52	.55	3	3
--	--	--	--	--	--	.52	.13	12	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.26	.12	10	4
--	--	--	--	--	--	<.05	.17	nd	8

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
WI28 Lake Dubay,								
06/26/90	07/03/90	33.5	<0.15	0.26	--	--	--	--
07/03/90	07/10/90	14.5	<.15	<.10	<0.05	0.06	<0.05	<0.05
07/10/90	07/17/90	1.3	<.15	.17	--	--	--	--
07/17/90	07/25/90	6.4	<.15	.15	--	--	--	--
07/25/90	07/31/90	38.1	<.15	<.10	--	--	--	--
07/31/90	08/07/90	27.2	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	6.6	<.15	<.10	--	--	--	--
08/14/90	08/21/90	66.6	<.15	<.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	31.6	<.15	<.10	<.05	<.05	<.05	<.05
09/04/90	09/11/90	21.6	<.32	.25	--	--	--	--
09/11/90	09/18/90	55.9	<.32	.15	<.05	<.05	<.05	<.05
09/18/90	09/25/90	12.5	<.32	<.10	--	--	--	--
09/25/90	10/02/90	13.2	<.32	.17	--	--	--	--
10/02/90	10/09/90	9.4	<.32	.10	--	--	--	--
10/09/90	10/16/90	12.8	<.32	<.10	--	--	--	--
10/16/90	10/23/90	14.9	<.32	<.10	--	--	--	--
10/30/90	11/06/90	9.7	<.32	<.10	--	--	--	--
11/13/90	11/21/90	6.4	<.32	<.10	--	--	--	--
11/21/90	11/27/90	3.8	<.32	<.10	--	--	--	--
11/27/90	12/04/90	9.7	<.32	<.10	--	--	--	--
12/11/90	12/18/90	22.9	<.32	<.10	<.05	<.05	<.05	<.05
01/03/91	01/08/91	3.6	<.32	<.10	--	--	--	--
02/13/91	02/19/91	7.1	<.32	<.10	<.05	<.05	<.05	<.05
02/19/91	02/26/91	4.6	<.32	.17	--	--	--	--
02/26/91	03/05/91	7.6	<.32	.27	<.05	<.05	<.05	<.05
03/05/91	03/12/91	2.3	<.32	<.10	--	--	--	--
03/19/91	03/26/91	22.9	<.32	.18	<.05	<.05	<.05	<.05
03/26/91	04/02/91	6.1	<.15	<.10	--	--	--	--
04/02/91	04/09/91	29.2	<.15	<.10	--	--	--	--
04/09/91	04/16/91	15.8	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	17.5	<.15	<.10	--	--	--	--
04/23/91	04/30/91	18.8	<.15	.21	.09	.25	.16	<.05
04/30/91	05/07/91	8.6	<.15	<.10	<.05	.07	<.05	<.05
05/14/91	05/21/91	11.7	<.15	<.10	.06	<.05	<.05	<.05
05/21/91	05/28/91	47.0	.36	.23	.67	.25	.13	.23

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
WI—Continued									
--	--	--	--	--	--	<0.05	0.17	nd	6
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	.06	nd	1
--	--	--	--	--	--	<.05	.10	nd	nd
--	--	--	--	--	--	<.05	.09	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.16	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.10	nd	1
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.14	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.09	.25	2	5
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.07	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	.06	<.05	1	nd
.13	.19	<.05	<.05	<.05	<.05	.67	.25	31	12

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
WI28 Lake Dubay,								
05/28/91	06/04/91	48.8	<0.15	0.10	--	--	--	--
06/11/91	06/18/91	21.6	.28	.12	0.30	0.13	<0.05	<0.05
06/18/91	06/25/91	9.4	<.15	.39	.05	.37	<.05	<.05
06/25/91	07/02/91	.50	<.15	.26	--	--	--	--
07/02/91	07/09/91	7.8	<.15	.83	.11	.42	<.05	.09
07/09/91	07/16/91	15.8	<.15	<.10	--	--	--	--
07/16/91	07/23/91	50.6	<.15	<.10	--	--	--	--
07/23/91	07/30/91	19.6	<.15	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	42.4	<.15	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	14.5	<.15	<.10	--	--	--	--
08/13/91	08/20/91	8.1	<.15	<.10	<.05	<.05	<.05	<.05
08/28/91	09/03/91	4.8	<.15	<.10	--	--	--	--
09/03/91	09/10/91	51.1	<.15	<.10	<.05	<.05	<.05	<.05
WI36 Trout Lake,								
02/27/90	03/06/90	1.8	<.15	<.10	--	--	--	--
03/06/90	03/13/90	22.6	<.15	<.10	<.05	<.05	<.05	<.05
03/13/90	03/20/90	15.0	<.15	<.10	<.05	<.05	<.05	<.05
03/27/90	04/03/90	7.9	<.15	.20	<.05	<.05	<.05	<.05
04/03/90	04/10/90	6.4	<.15	.15	<.05	.13	<.05	<.05
04/10/90	04/17/90	6.9	<.15	<.10	--	--	--	--
04/17/90	04/24/90	3.1	<.15	<.10	--	--	--	--
04/24/90	05/01/90	35.8	<.15	<.10	<.05	.15	<.05	<.05
05/08/90	05/15/90	37.0	<.15	<.10	--	--	--	--
05/15/90	05/22/90	45.7	<.15	<.10	<.05	<.05	<.05	<.05
05/22/90	05/29/90	16.5	<.15	<.10	--	--	--	--
05/29/90	06/05/90	16.8	<.15	.23	--	--	--	--
06/05/90	06/12/90	24.3	.21	.91	--	--	--	--
06/12/90	06/19/90	26.9	<.15	<.10	--	--	--	--
06/19/90	06/26/90	7.1	<.15	.19	<.05	.15	<.05	.05
06/26/90	07/03/90	29.5	<.15	<.10	<.05	<.05	<.05	<.05
07/03/90	07/10/90	36.1	<.15	<.10	<.05	<.05	<.05	.05
07/10/90	07/17/90	14.7	<.15	.16	<.05	<.05	<.05	<.05
07/17/90	07/24/90	15.5	<.15	<.10	<.05	<.05	<.05	<.05
07/24/90	07/31/90	14.2	<.15	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metolachlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
WI—Continued									
--	--	--	--	--	--	<0.05	0.08	nd	4
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	.30	.13	6.0	3
<.05	<.05	<.05	<.05	<.05	<.05	.05	.37	nd	3
--	--	--	--	--	--	<.05	.21	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.11	.42	1	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
WI									
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.13	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.15	nd	5
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.15	nd	2
--	--	--	--	--	--	.13	.61	3	15
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.15	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipita- tion (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chior	Atra- zine	Cyana- zine	DEA
			WI36 Trout Lake,					
08/07/90	08/14/90	23.6	<0.15	<0.10	<0.05	<0.05	<0.05	<0.05
08/14/90	08/21/90	116.8	<.15	.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	19.3	<.15	<.10	<.05	<.05	<.05	<.05
08/28/90	09/04/90	9.9	<.32	<.10	<.05	<.05	<.05	.06
09/04/90	09/12/90	111.8	<.32	.22	<.05	<.05	<.05	<.05
09/12/90	09/18/90	27.4	<.32	<.10	--	--	--	--
09/18/90	09/25/90	11.9	<.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	9.1	<.32	.11	<.05	<.05	<.05	<.05
10/02/90	10/09/90	17.3	<.32	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	20.3	<.32	<.10	<.05	<.05	<.05	<.05
10/16/90	10/23/90	71.6	<.32	<.10	<.05	<.05	<.05	<.05
10/23/90	10/30/90	3.3	.36	<.10	--	--	--	--
10/30/90	11/06/90	3.6	<.32	<.10	<.05	<.05	<.05	<.05
11/20/90	11/27/90	15.8	<.32	<.10	<.05	<.05	<.05	<.05
11/27/90	12/04/90	15.2	<.32	<.23	<.05	<.05	<.05	<.05
12/11/90	12/18/90	7.1	<.32	<.10	--	--	--	--
12/18/90	01/02/91	7.6	<.32	.13	--	--	--	--
01/08/91	01/16/91	8.9	.79	<.22	<.05	<.05	<.05	<.05
01/16/91	01/22/91	1.5	<.32	<.10	--	--	--	--
01/22/91	01/31/91	5.3	<.32	<.22	<.05	<.05	<.05	<.05
02/12/91	02/19/91	11.9	<.32	<.10	<.05	<.05	<.05	<.05
02/26/91	03/05/91	3.1	<.32	<.10	--	--	--	--
03/05/91	03/12/91	14.0	<.32	<.10	<.05	<.05	<.05	<.05
03/19/91	03/26/91	42.2	<.32	<.10	--	--	--	--
03/26/91	04/02/91	24.4	<.15	<.10	<.05	<.05	<.05	<.05
04/02/91	04/16/91	43.5	<.15	<.10	--	--	--	--
04/16/91	04/23/91	24.4	<.15	<.10	<.05	<.05	<.05	<.05
04/23/91	04/30/91	19.3	<.15	.15	<.05	.08	.05	<.05
05/14/91	05/21/91	22.4	<.15	<.10	<.05	.07	<.05	<.05
05/21/91	05/28/91	36.8	<.15	<.10	<.05	<.05	<.05	<.05
05/28/91	06/05/91	32.5	<.15	<.10	.05	.07	<.05	<.05
06/05/91	06/11/91	.80	.28	.60	--	--	--	--
06/11/91	06/18/91	48.5	<.15	<.10	.07	.07	<.05	<.05
06/18/91	06/25/91	56.6	<.15	<.10	<.05	.05	<.05	<.05
06/25/91	07/02/91	39.9	<.15	.29	<.05	.27	<.05	.13

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry ($\mu\text{g/L}$)						Estimated concentrations ($\mu\text{g/L}$)		Estimated deposition ($\mu\text{g/m}^2$)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
WI—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
.06	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.23	.05	1	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.10	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.05	.07	2	2
--	--	--	--	--	--	.24	.49	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.07	.07	3	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.27	nd	11

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
WI36 Trout Lake,								
07/02/91	07/09/91	22.1	<0.15	0.16	<0.05	<0.05	<0.05	<0.05
07/09/91	07/16/91	20.8	<.15	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	26.4	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/30/91	47.0	<.15	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	4.6	<.15	<.10	<.05	<.05	<.05	<.05
08/13/91	08/20/91	28.6	<.15	<.10	<.05	<.05	<.05	<.05
08/28/91	09/03/91	27.4	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	47.8	<.15	<.10	<.05	<.05	<.05	<.05
09/10/91	09/17/91	15.0	<.15	<.10	<.05	<.05	<.05	<.05
WI37 Spooner,								
03/06/90	03/13/90	25.4	<.15	<.10	--	--	--	--
03/13/90	03/20/90	38.4	<.15	<.10	--	--	--	--
03/27/90	04/03/90	7.6	<.15	.60	<.05	.28	<.05	<.05
04/03/90	04/10/90	1.5	<.15	.60	--	--	--	--
04/10/90	04/17/90	2.5	<.15	<.10	--	--	--	--
04/17/90	04/24/90	5.3	.45	.29	.06	.43	<.05	.22
04/24/90	05/01/90	65.5	<.15	<.10	.07	.09	<.05	<.05
05/08/90	05/15/90	17.5	<.15	<.10	--	--	--	--
05/15/90	05/22/90	22.2	<.15	<.10	--	--	--	--
05/22/90	05/29/90	23.6	<.15	.26	--	--	--	--
05/29/90	06/05/90	21.9	<.15	.17	--	--	--	--
06/05/90	06/12/90	7.6	.17	.69	--	--	--	--
06/12/90	06/19/90	36.3	<.15	<.10	<.05	.06	<.05	.07
06/19/90	06/26/90	47.0	<.15	.28	--	--	--	--
06/26/90	07/03/90	38.9	<.15	.89	--	--	--	--
07/03/90	07/10/90	39.6	<.15	<.10	--	--	--	--
07/10/90	07/17/90	3.1	.21	.20	--	--	--	--
07/17/90	07/24/90	2.3	<.15	<.10	--	--	--	--
07/24/90	07/31/90	9.9	<.15	<.10	<.05	<.05	<.05	<.05
07/31/90	08/07/90	15.0	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	5.8	<.15	.10	<.05	<.05	<.05	<.05
08/14/90	08/21/90	37.3	.17	<.10	--	--	--	--
08/21/90	08/28/90	42.4	<.15	.10	--	--	--	--
08/29/90	09/04/90	14.5	<.32	<.10	<.05	.08	<.05	.09
09/04/90	09/11/90	39.9	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
WI—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
WI									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.28	nd	2
--	--	--	--	--	--	<.05	.40	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.08	<.05	<.05	<.05	<.05	.06	.43	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	.07	.09	5	6
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.17	nd	4
--	--	--	--	--	--	<.05	.10	nd	2
--	--	--	--	--	--	.11	.46	1	4
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.06	nd	2
--	--	--	--	--	--	<.05	.18	nd	8
--	--	--	--	--	--	<.05	.60	nd	23
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.13	.13	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.11	<.05	4	nd
--	--	--	--	--	--	<.05	.06	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.08	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipita- tion (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
WI37 Spooner,								
09/11/90	09/18/90	42.2	<0.32	0.10	<0.05	<0.05	<0.05	<0.05
09/18/90	09/25/90	13.0	<.32	<.10	--	--	--	--
09/25/90	10/02/90	11.4	<.32	<.10	--	--	--	--
10/02/90	10/09/90	24.6	.49	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	10.7	<.32	.12	<.05	<.05	<.05	<.05
10/16/90	10/23/90	46.7	<.32	<.10	<.05	<.05	<.05	<.05
10/30/90	11/06/90	3.3	<.32	<.10	--	--	--	--
11/20/90	11/27/90	5.3	<.32	<.10	<.05	<.05	<.05	<.05
11/27/90	12/04/90	5.3	<.32	<.23	<.05	<.05	<.05	<.05
12/11/90	12/18/90	5.6	.50	<.10	--	--	--	--
12/18/90	12/26/90	5.3	<.32	.11	--	--	--	--
01/08/91	01/15/91	4.8	1.3	<.22	--	--	--	--
01/22/91	01/29/91	9.1	<.32	<.22	<.05	<.05	<.05	<.05
02/12/91	02/19/91	8.9	.38	<.10	<.05	<.05	<.05	<.05
02/19/91	02/26/91	7.1	<.32	.19	<.05	<.05	<.05	<.05
03/06/91	03/12/91	1.5	<.32	.14	--	--	--	--
03/19/91	03/26/91	49.8	<.32	<.10	--	--	--	--
03/26/91	04/02/91	16.0	<.15	<.10	--	--	--	--
04/02/91	04/09/91	32.0	<.15	<.10	--	--	--	--
04/09/91	04/16/91	26.7	<.15	<.10	--	--	--	--
04/16/91	04/23/91	4.6	<.15	<.10	--	--	--	--
04/23/91	04/30/91	33.8	<.15	<.10	<.05	<.05	<.05	.06
04/30/91	05/07/91	45.6	<.15	.15	<.05	<.05	<.05	<.05
05/14/91	05/21/91	34.0	<.15	.20	.11	.22	.06	.05
05/21/91	05/28/91	33.3	<.15	<.10	.10	.05	<.05	<.05
05/28/91	06/04/91	68.6	<.15	.10	--	--	--	--
06/04/91	06/11/91	18.5	<.15	1.6	.12	1.3	.56	.14
06/11/91	06/18/91	54.1	<.15	.64	.11	.59	.08	.19
06/18/91	06/25/91	47.0	<.15	.15	.05	.11	<.05	.07
06/25/91	07/02/91	48.3	<.15	.36	.09	.31	.10	.15
07/02/91	07/09/91	36.3	<.15	.14	<.05	.11	<.05	.05
07/09/91	07/16/91	9.1	<.15	<.10	--	--	--	--
07/16/91	07/23/91	76.5	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/30/91	22.9	<.15	<.10	--	--	--	--
07/30/91	08/06/91	24.4	<.15	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
WI—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.32	<.05	2.0	nd
--	--	--	--	--	--	<.05	.06	nd	nd
--	--	--	--	--	--	1.0	<.05	5.0	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.11	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	.21	<.05	<.05	<.05	<.05	.11	.22	4	7
<.05	.05	<.05	<.05	<.05	<.05	.10	.05	3	2
--	--	--	--	--	--	<.05	.08	nd	5
.11	.06	<.05	<.05	<.05	<.05	.12	1.3	2	25
<.05	<.05	<.05	<.05	<.05	<.05	.11	.59	6	32
<.05	<.05	.10	<.05	<.05	<.05	.05	.11	2	5
.19	<.05	<.05	<.05	<.05	<.05	.09	.31	4	15
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.11	nd	4
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyanazine	DEA
WI37 Spooner,								
08/06/91	08/13/91	2.0	<0.15	<0.10	--	--	--	--
08/13/91	08/20/91	16.3	<.15	<.10	<0.05	<0.05	<0.05	<0.05
08/27/91	09/03/91	30.0	<.15	<.10	--	--	--	--
09/03/91	09/10/91	104.4	<.15	<.10	--	--	--	--
09/10/91	09/17/91	31.8	<.15	<.10	<.05	<.05	<.05	<.05
WI98 Wildcat Mountain,								
03/06/90	03/13/90	21.8	<.15	<.10	--	--	--	--
03/13/90	03/20/90	45.0	<.15	<.10	--	--	--	--
03/20/90	03/27/90	7.6	<.15	<.10	--	--	--	--
03/27/90	04/03/90	9.4	.20	.30	<.05	<.05	<.05	<.05
04/03/90	04/10/90	13.7	<.15	<.10	--	--	--	--
04/10/90	04/17/90	13.5	<.15	<.10	<.05	<.05	<.05	<.05
04/17/90	04/24/90	11.2	.23	<.10	--	--	--	--
04/24/90	05/01/90	16.0	<.15	.28	.15	.30	<.05	.11
05/08/90	05/15/90	55.9	.16	<.10	.21	.10	.05	.05
05/15/90	05/22/90	42.2	.17	<.10	--	--	--	--
05/22/90	05/29/90	20.3	.32	.66	--	--	--	--
05/29/90	06/05/90	18.5	.88	.34	--	--	--	--
06/05/90	06/12/90	4.8	<.15	.16	--	--	--	--
06/12/90	06/19/90	63.5	.38	.41	.20	.25	<.05	.13
06/19/90	06/26/90	61.7	<.15	.20	.07	.13	<.05	.07
06/26/90	07/03/90	57.7	<.15	.14	--	--	--	--
07/03/90	07/10/90	16.0	<.15	<.10	--	--	--	--
07/10/90	07/17/90	1.5	.15	.27	--	--	--	--
07/17/90	07/24/90	15.5	<.15	<.10	--	--	--	--
07/24/90	07/31/90	18.5	<.15	<.10	<.05	<.05	<.05	<.05
07/31/90	08/07/90	87.6	<.15	<.10	--	--	--	--
08/07/90	08/14/90	1.8	.22	<.10	<.05	<.05	<.05	<.05
08/14/90	08/21/90	73.7	<.15	.15	<.05	<.05	<.05	<.05
08/21/90	08/28/90	63.5	<.15	<.10	--	--	--	--
09/04/90	09/11/90	10.7	<.32	.16	<.05	.06	<.05	<.05
09/11/90	09/18/90	17.3	<.32	<.10	--	--	--	--
09/18/90	09/25/90	7.6	<.32	<.10	--	--	--	--
10/02/90	10/09/90	24.4	<.32	<.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	9.8	<.32	<.10	--	--	--	--
10/16/90	10/23/90	12.7	<.32	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
WI—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
WI									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.14	<.05	2	nd
<.05	<.05	<.05	<.05	<.05	<.05	.15	.30	2	5
<.05	.08	<.05	<.05	<.05	<.05	.21	.10	12	6
--	--	--	--	--	--	.11	<.05	4	nd
--	--	--	--	--	--	.20	.44	4	9
--	--	--	--	--	--	.56	.22	10	4
--	--	--	--	--	--	<.05	.10	nd	nd
<.05	.06	<.05	<.05	<.05	<.05	.20	.25	13	16
<.05	<.05	<.05	<.05	<.05	<.05	.07	.13	4	8
--	--	--	--	--	--	<.05	.08	nd	5
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.09	.17	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
WI98 Wildcat Mountain,								
10/30/90	11/06/90	8.9	<0.32	<0.10	<0.05	<0.05	<0.05	<0.05
11/06/90	11/13/90	3.3	<.32	<.10	--	--	--	--
11/20/90	11/27/90	13.5	<.32	<.10	<.05	<.05	<.05	<.05
--	12/04/90	18.3	.43	<.22	--	--	--	--
12/11/90	12/18/90	21.8	.34	<.10	--	--	--	--
12/18/90	12/26/90	2.0	<.32	.15	--	--	--	--
12/26/90	01/02/91	3.1	<.32	.10	--	--	--	--
01/02/91	01/08/91	7.1	<.32	<.10	<.05	<.05	<.05	<.05
01/08/91	01/15/91	4.8	<.32	<.22	--	--	--	--
02/12/91	02/19/91	6.6	<.32	<.10	--	--	--	--
02/26/91	03/05/91	14.2	<.32	.28	<.05	<.05	<.05	<.05
03/12/91	03/19/91	6.4	<.32	<.10	--	--	--	--
03/19/91	03/27/91	30.5	<.15	<.10	--	--	--	--
03/26/91	04/02/91	8.4	<.15	<.10	--	--	--	--
04/02/91	04/09/91	49.8	<.15	.11	<.05	.11	<.05	<.05
04/10/91	04/16/91	38.4	<.15	<.10	--	--	--	--
04/16/91	04/23/91	13.7	<.15	<.10	<.05	<.05	<.05	<.05
04/23/91	04/30/91	18.3	.39	.13	.29	.29	.14	.15
04/30/91	05/07/91	22.9	<.15	.17	.09	.10	<.05	<.05
05/14/91	05/21/91	26.9	.37	.16	.36	.16	<.05	.12
05/21/91	05/28/91	48.3	.36	.12	.52	.15	<.05	.10
05/28/91	06/04/91	29.5	.33	.60	--	--	--	--
06/04/91	06/11/91	4.8	.23	1.2	--	--	--	--
06/11/91	06/18/91	26.4	<.15	.17	.15	.17	<.05	.08
06/18/91	06/25/91	.60	<.15	.55	--	--	--	--
07/02/91	07/09/91	3.6	<.15	.12	--	--	--	--
07/09/91	07/16/91	46.0	<.15	<.10	--	--	--	--
07/16/91	07/23/91	35.6	<.15	.12	<.05	<.05	<.05	<.05
07/23/91	07/30/91	11.4	<.15	<.10	--	--	--	--
07/30/91	08/06/91	4.3	<.15	<.10	--	--	--	--
08/06/91	08/13/91	63.5	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	10.4	<.15	<.10	--	--	--	--
09/10/91	09/17/91	99.8	<.15	<.10	<.05	<.05	<.05	<.05
WI99 Lake Geneva,								
03/06/90	03/13/90	68.6	<.15	<.10	--	--	--	--
03/13/90	03/20/90	13.5	<.15	<.10	--	--	--	--
03/20/90	03/27/90	9.4	<.15	<.10	--	--	--	--
03/27/90	04/03/90	11.4	<.15	<.10	--	--	--	--
04/03/90	04/10/90	14.0	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
WI—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.27	<.05	5	nd
--	--	--	--	--	--	.21	<.05	5	nd
--	--	--	--	--	--	<.05	.09	nd	nd
--	--	--	--	--	--	<.05	.08	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.11	nd	5
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
.07	.29	<.05	<.05	<.05	<.05	.29	.29	5	5
<.05	.06	<.05	<.05	<.05	<.05	.09	.10	2	2
<.05	.05	<.05	<.05	<.05	<.05	.36	.16	10	4
<.05	.09	<.05	<.05	<.05	<.05	.52	.15	25	7
--	--	--	--	--	--	.28	.49	8	14
--	--	--	--	--	--	.20	.98	1	5
<.05	<.05	<.05	<.05	<.05	<.05	.15	.17	4	4
--	--	--	--	--	--	<.05	.45	nd	nd
--	--	--	--	--	--	<.05	.09	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
WI									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/ day/year)	Ending date of collection (month/ day/year)	Precipi- tation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
WI99 Lake Geneva,								
04/10/90	04/17/90	17.3	<0.15	<0.10	--	--	--	--
04/17/90	04/24/90	18.5	.27	<.10	--	--	--	--
04/24/90	05/01/90	1.0	<.15	<.10	--	--	--	--
05/01/90	05/08/90	41.7	.22	<.10	--	--	--	--
05/08/90	05/15/90	67.1	.41	.10	--	--	--	--
05/15/90	05/22/90	53.1	.86	.45	--	--	--	--
05/22/90	05/29/90	6.1	.16	.14	0.22	0.19	0.10	0.07
05/29/90	06/05/90	9.9	2.7	3.7	--	--	--	--
06/05/90	06/12/90	2.8	.28	.68	--	--	--	--
06/12/90	06/19/90	52.6	.53	.19	--	--	--	--
06/19/90	06/26/90	39.6	<.15	.18	--	--	--	--
06/26/90	07/03/90	29.2	.15	.23	.17	.25	<.05	.10
07/03/90	07/10/90	3.1	<.15	.53	.18	.45	<.05	.27
07/10/90	07/17/90	6.9	.29	.21	.06	.19	<.05	<.05
07/17/90	07/24/90	50.8	<.15	<.10	--	--	--	--
07/24/90	07/31/90	34.5	<.15	<.10	<.05	<.05	<.05	<.05
07/31/90	08/07/90	1.3	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	5.3	<.15	<.10	<.05	<.05	<.05	<.05
08/14/90	08/21/90	61.2	<.15	<.10	--	--	--	--
08/21/90	08/28/90	1.8	<.15	<.10	--	--	--	--
08/28/90	09/04/90	.50	<.32	<.10	--	--	--	--
09/11/90	09/18/90	7.4	<.32	.26	<.05	<.05	<.05	<.05
09/18/90	09/25/90	14.5	<.32	<.10	<.05	<.05	<.05	<.05
09/25/90	10/02/90	1.3	<.32	<.10	--	--	--	--
10/02/90	10/09/90	26.4	<.32	.21	--	--	--	--
10/09/90	10/16/90	39.6	<.32	<.10	--	--	--	--
10/16/90	10/23/90	21.3	<.32	<.10	--	--	--	--
10/30/90	11/06/90	51.1	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	5.1	<.32	<.10	--	--	--	--
11/20/90	11/27/90	22.4	<.32	<.10	<.05	<.05	<.05	<.05
11/27/90	12/04/90	30.7	<.32	<.23	<.05	<.05	<.05	<.05
12/11/90	12/18/90	15.0	<.32	<.10	--	--	--	--
12/26/90	01/02/91	22.9	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	6.4	<.32	<.10	--	--	--	--
02/12/91	02/19/91	9.9	<.32	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metolachlor	Metribuzin	Prometon	Propazine	Simazine	Alachlor	Atrazine	Alachlor	Atrazine
WI—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	.17	<.05	3	nd
--	--	--	--	--	--	<.05	.05	nd	nd
--	--	--	--	--	--	.14	<.05	6	nd
--	--	--	--	--	--	.26	.06	17	4
--	--	--	--	--	--	.55	.30	29	16
<0.05	0.68	<0.05	<0.05	<0.05	<0.05	.22	.19	1	1
--	--	--	--	--	--	1.7	2.6	17	25
--	--	--	--	--	--	.18	.45	nd	1
--	--	--	--	--	--	.34	.12	18	6
--	--	--	--	--	--	<.05	.11	nd	4
<.05	.06	<.05	<.05	<.05	<.05	.17	.25	5	7
<.05	.15	<.05	<.05	<.05	<.05	.18	.45	1	1
<.05	.08	<.05	<.05	<.05	<.05	.06	.19	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.13	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
WI99 Lake Geneva,								
02/26/91	03/05/91	24.1	<0.32	0.34	<0.05	<0.05	<0.05	<0.05
03/05/91	03/12/91	3.8	<.32	.31	--	--	--	--
03/12/91	03/19/91	11.7	<.32	<.10	--	--	--	--
03/19/91	03/26/91	29.7	<.32	<.10	--	--	--	--
03/26/91	04/02/91	50.0	<.15	<.10	--	--	--	--
04/02/91	04/09/91	17.3	<.15	.18	.07	.16	.10	.05
04/09/91	04/16/91	32.8	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	.80	.15	.24	--	--	--	--
04/23/91	04/30/91	29.2	.73	.78	.54	.48	.12	.08
04/30/91	05/07/91	17.5	.15	<.10	--	--	--	--
05/14/91	05/21/91	15.8	.41	.30	.38	.31	.17	.19
05/21/91	05/28/91	38.6	.70	.64	.54	.89	.19	.42
05/28/91	06/04/91	24.4	.31	1.2	--	--	--	--
06/04/91	06/11/91	1.3	.44	1.4	--	--	--	--
06/11/91	06/18/91	29.7	<.15	.39	.14	.31	<.05	.25
06/18/91	06/25/91	6.1	<.15	<.10	--	--	--	--
06/25/91	07/02/91	1.3	<.15	.10	--	--	--	--
07/02/91	07/09/91	2.3	<.15	.40	--	--	--	--
07/09/91	07/16/91	5.8	<.15	<.10	--	--	--	--
07/16/91	07/23/91	19.1	<.15	<.10	--	--	--	--
07/23/91	07/30/91	2.5	<.15	<.10	--	--	--	--
08/06/91	08/13/91	47.5	<.15	<.10	<.05	<.05	<.05	<.05
08/27/91	09/03/91	38.1	<.15	<.10	--	--	--	--
09/03/91	09/10/91	16.0	<.15	<.10	--	--	--	--
09/10/91	09/17/91	68.6	<.15	<.10	<.05	<.05	<.05	<.05
WV04 Babcock State								
02/27/90	03/06/90	23.6	<.15	<.10	--	--	--	--
03/06/90	03/13/90	4.3	<.15	<.10	<.05	.05	<.05	<.05
03/13/90	03/20/90	33.3	<.15	<.10	--	--	--	--
03/20/90	03/27/90	15.8	<.15	<.10	--	--	--	--
03/27/90	04/03/90	11.7	<.15	.25	<.05	<.05	<.05	<.05
04/03/90	04/10/90	36.6	<.15	<.10	--	--	--	--
04/10/90	04/17/90	27.2	<.15	<.10	--	--	--	--
04/17/90	04/24/90	29.0	<.15	<.10	<.05	<.05	<.05	<.05
04/24/90	05/01/90	4.0	<.15	<.10	--	--	--	--
05/01/90	05/08/90	14.7	<.15	<.10	--	--	--	--

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
WI—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	.25	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.16	<.05	<.05	<.05	<.05	.07	.16	1	3
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	.13	.19	nd	nd
<.05	.37	<.05	<.05	<.05	<.05	.54	.48	16	14
--	--	--	--	--	--	.13	.06	2	1
<.05	.19	<.05	<.05	<.05	<.05	.38	.31	6	5
<.05	.38	<.05	<.05	<.05	<.05	.54	.89	21	34
--	--	--	--	--	--	.26	.99	6	24
--	--	--	--	--	--	.37	1.1	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	.14	.31	4	9
--	--	--	--	--	--	<.05	.07	nd	nd
--	--	--	--	--	--	<.05	.08	nd	nd
--	--	--	--	--	--	<.05	.33	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
Park, WV									
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Aia- chlor	Atra- zine	Cyana- zine	DEA
WV04 Babcock State								
05/08/90	05/15/90	17.8	<0.15	<0.10	--	--	--	--
05/15/90	05/22/90	39.6	<.15	<.10	--	--	--	--
05/22/90	05/29/90	34.0	<.15	<.10	<0.05	<0.05	<0.05	<0.05
05/29/90	06/05/90	38.4	<.15	<.10	--	--	--	--
06/05/90	06/12/90	16.3	<.15	.10	<.05	<.05	<.05	<.05
06/12/90	06/19/90	13.0	<.15	<.10	--	--	--	--
06/19/90	06/26/90	20.8	<.15	<.10	--	--	--	--
06/26/90	07/03/90	15.2	.23	<.10	--	--	--	--
07/03/90	07/10/90	11.2	<.15	<.10	--	--	--	--
07/10/90	07/17/90	79.8	<.15	<.10	--	--	--	--
07/17/90	07/24/90	26.9	<.15	<.10	<.05	<.05	<.05	<.05
07/24/90	07/31/90	3.8	<.15	<.10	<.05	<.05	<.05	<.05
07/31/90	08/07/90	33.0	<.15	<.10	--	--	--	--
08/07/90	08/14/90	59.9	<.15	.10	<.05	<.05	<.05	<.05
08/14/90	08/21/90	33.5	<.15	<.10	<.05	<.05	<.05	<.05
08/21/90	08/28/90	61.5	<.15	<.10	--	--	--	--
08/28/90	09/04/90	5.1	<.32	<.10	--	--	--	--
09/04/90	09/11/90	6.6	<.32	<.10	--	--	--	--
09/11/90	09/18/90	25.2	<.32	<.10	--	--	--	--
09/18/90	09/25/90	20.3	<.32	<.10	--	--	--	--
09/25/90	10/02/90	3.3	<.32	<.10	<.05	<.05	<.05	<.05
10/02/90	10/09/90	17.3	<.32	<.10	--	--	--	--
10/09/90	10/16/90	54.4	<.32	.13	<.05	<.05	<.05	<.05
10/16/90	10/23/90	67.1	<.32	<.10	--	--	--	--
10/23/90	10/30/90	1.5	<.32	<.10	--	--	--	--
10/30/90	11/06/90	10.2	<.32	.19	<.05	<.05	<.05	<.05
11/06/90	11/13/90	23.1	<.32	<.10	--	--	--	--
11/13/90	11/20/90	6.1	<.32	<.10	--	--	--	--
11/20/90	11/27/90	8.6	<.32	<.10	<.05	<.05	<.05	<.05
11/27/90	12/04/90	22.9	<.32	<.23	<.05	<.05	<.05	<.05
12/04/90	12/11/90	.50	<.32	<.10	--	--	--	--
12/11/90	12/18/90	37.1	<.32	<.10	--	--	--	--
12/18/90	12/26/90	49.5	<.32	<.10	<.05	<.05	<.05	<.05
12/26/90	01/02/91	49.3	<.32	.32	<.05	<.05	<.05	<.05
01/02/91	01/08/91	30.5	<.32	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Park, WV—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	.14	<.05	2	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
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--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	r J	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
WV04 Babcock State								
01/08/91	01/15/91	21.8	<0.32	<0.22	<0.05	<0.05	<0.05	<0.05
01/15/91	01/22/91	32.0	<.32	<.10	--	--	--	--
01/22/91	01/29/91	5.1	<.32	<.22	--	--	--	--
01/29/91	02/05/91	18.8	<.32	<.23	<.05	<.05	<.05	<.05
02/05/91	02/12/91	14.0	<.32	<.10	<.05	<.05	<.05	<.05
02/12/91	02/19/91	39.1	<.32	<.10	--	--	--	--
02/19/91	02/26/91	16.3	<.32	.28	<.05	<.05	<.05	<.05
02/26/91	03/05/91	29.0	<.32	<.10	<.05	<.05	<.05	<.05
03/05/91	03/12/91	9.4	<.32	<.10	<.05	<.05	<.05	<.05
03/12/91	03/19/91	52.6	<.32	<.10	--	--	--	--
03/19/91	03/26/91	50.1	<.15	<.10	--	--	--	--
03/26/91	04/02/91	59.7	<.15	<.10	--	--	--	--
04/02/91	04/09/91	8.1	<.15	<.10	--	--	--	--
04/09/91	04/16/91	28.5	<.15	<.10	--	--	--	--
04/16/91	04/23/91	9.4	<.15	<.10	--	--	--	--
04/23/91	04/30/91	3.1	<.15	<.10	--	--	--	--
04/30/91	05/07/91	6.6	.24	.45	<.05	.13	<.05	<.05
05/14/91	05/21/91	30.2	<.15	<.10	<.05	<.05	<.05	<.05
05/21/91	05/28/91	16.3	<.15	<.10	<.05	<.05	<.05	<.05
05/28/91	06/04/91	23.1	<.15	<.10	<.05	<.05	<.05	<.05
06/11/91	06/18/91	16.5	<.15	<.10	--	--	--	--
06/18/91	06/25/91	65.0	<.15	<.10	<.05	<.05	<.05	<.05
07/02/91	07/09/91	27.7	<.15	.15	<.05	<.05	<.05	<.05
07/09/91	07/16/91	16.0	<.15	<.10	<.05	<.05	<.05	<.05
07/16/91	07/23/91	18.3	<.15	<.10	--	--	--	--
07/23/91	07/30/91	37.3	<.15	<.10	--	--	--	--
07/30/91	08/06/91	.50	<.15	<.10	--	--	--	--
08/06/91	08/13/91	42.4	<.15	<.10	--	--	--	--
08/27/91	09/03/91	8.4	<.15	<.10	<.05	<.05	<.05	<.05
09/03/91	09/10/91	37.9	<.15	<.10	--	--	--	--
WV18 Parsons,								
02/27/90	03/06/90	18.0	<.15	<.10	--	--	--	--
03/06/90	03/13/90	13.7	<.15	<.10	--	--	--	--
03/13/90	03/20/90	16.3	<.15	<.10	--	--	--	--
03/20/90	03/27/90	7.1	<.15	<.10	--	--	--	--
03/27/90	04/03/90	11.9	<.15	.20	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
Park, WV—Continued									
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.07	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.13	nd	1
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
.07	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
WV									
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
WV18 Parsons,								
04/03/90	04/10/90	21.6	<0.15	<0.10	--	--	--	--
04/10/90	04/17/90	21.1	<.15	<.10	<0.05	<0.05	<0.05	<0.05
04/24/90	05/01/90	4.3	<.15	<.10	--	--	--	--
05/01/90	05/08/90	47.2	<.15	<.10	--	--	--	--
05/08/90	05/15/90	20.8	<.15	<.10	--	--	--	--
05/15/90	05/22/90	35.1	<.15	<.10	--	--	--	--
05/22/90	05/29/90	65.8	<.15	<.10	--	--	--	--
05/29/90	06/05/90	25.7	<.15	<.10	--	--	--	--
06/05/90	06/12/90	20.3	<.15	<.10	--	--	--	--
06/12/90	06/19/90	16.0	<.15	<.10	--	--	--	--
06/19/90	06/26/90	19.8	<.15	.65	--	--	--	--
06/26/90	07/03/90	42.7	<.15	<.10	--	--	--	--
07/03/90	07/10/90	24.9	<.15	<.10	--	--	--	--
07/10/90	07/17/90	83.3	<.15	<.10	--	--	--	--
07/17/90	07/24/90	36.8	<.15	<.10	--	--	--	--
07/24/90	07/31/90	1.3	<.15	<.10	<.05	<.05	<.05	<.05
07/31/90	08/07/90	7.9	.18	<.10	.07	.05	<.05	<.05
08/07/90	08/14/90	21.8	<.15	<.10	<.05	<.05	<.05	<.05
08/14/90	08/21/90	18.0	<.15	<.10	--	--	--	--
08/21/90	08/28/90	55.4	<.15	<.10	--	--	--	--
08/28/90	09/04/90	1.8	<.15	<.10	--	--	--	--
09/04/90	09/11/90	33.3	<.32	.14	<.05	<.05	<.05	<.05
09/11/90	09/18/90	44.5	<.32	.12	<.05	<.05	<.05	<.05
09/18/90	09/25/90	30.2	<.32	<.10	--	--	--	--
09/25/90	10/02/90	6.6	<.32	.12	--	--	--	--
10/02/90	10/09/90	15.2	<.32	.10	<.05	<.05	<.05	<.05
10/09/90	10/16/90	35.3	<.32	<.10	--	--	--	--
10/16/90	10/23/90	54.4	<.32	<.10	--	--	--	--
10/30/90	11/06/90	9.7	<.32	<.10	<.05	<.05	<.05	<.05
11/06/90	11/13/90	15.5	<.32	<.10	<.05	<.05	<.05	<.05
11/12/90	11/20/90	6.6	<.32	<.10	<.05	<.05	<.05	<.05
11/20/90	11/27/90	10.4	<.32	<.10	--	--	--	--
11/27/90	12/04/90	14.2	<.32	<.23	<.05	<.05	<.05	<.05
12/11/90	12/18/90	50.3	<.32	<.10	<.05	<.05	<.05	<.05
12/18/90	12/25/90	50.6	<.32	<.10	<.05	<.05	<.05	<.05

precipitation in the Midwestern and Northeastern United States, 1990–91—Continued

[illegible]

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyana-zine	DEA
WV18 Parsons,								
12/25/90	01/01/91	59.9	<0.32	<0.10	--	--	--	--
01/01/91	01/08/91	28.2	<.32	<.10	<0.05	<0.05	<0.05	<0.05
01/08/91	01/15/91	31.5	<.32	<.22	<.05	<.05	<.05	<.05
01/15/91	01/22/91	25.4	<.32	<.10	--	--	--	--
01/22/91	01/29/91	7.6	<.32	<.22	--	--	--	--
01/29/91	02/05/91	14.0	<.32	<.23	<.05	<.05	<.05	<.05
02/05/91	02/12/91	19.8	<.32	<.23	--	--	--	--
02/12/91	02/19/91	29.5	<.32	<.10	--	--	--	--
02/19/91	02/26/91	15.5	<.32	.21	<.05	<.05	<.05	<.05
02/26/91	03/05/91	35.1	<.32	.25	<.05	<.05	<.05	<.05
03/05/91	03/12/91	24.9	<.32	<.10	<.05	<.05	<.05	<.05
03/12/91	03/19/91	31.5	<.32	<.10	--	--	--	--
03/19/91	03/26/91	31.5	<.15	<.10	--	--	--	--
03/26/91	04/02/91	13.2	<.15	<.10	<.05	<.05	<.05	<.05
04/02/91	04/09/91	26.4	<.15	<.10	--	--	--	--
04/09/91	04/16/91	60.2	<.15	<.10	<.05	<.05	<.05	<.05
04/16/91	04/23/91	12.5	<.15	<.10	<.05	<.05	<.05	<.05
04/23/91	04/30/91	16.8	<.15	<.10	--	--	--	--
04/30/91	05/07/91	13.0	.23	.91	.10	.70	.35	.12
05/14/91	05/21/91	13.2	<.15	<.10	--	--	--	--
05/21/91	05/28/91	21.3	<.15	<.10	<.05	.05	<.05	<.05
05/28/91	06/04/91	22.4	<.15	<.10	--	--	--	--
06/11/91	06/18/91	12.5	<.15	<.10	<.05	<.05	<.05	<.05
06/18/91	06/25/91	47.8	<.15	<.10	--	--	--	--
06/25/91	07/02/91	9.7	<.15	<.10	.06	<.05	<.05	<.05
07/02/91	07/09/91	1.8	<.15	.30	--	--	--	--
07/09/91	07/16/91	25.2	<.15	<.10	--	--	--	--
07/16/91	07/23/91	5.3	<.15	<.10	<.05	<.05	<.05	<.05
07/23/91	07/30/91	30.7	<.15	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	12.2	<.15	<.10	<.05	<.05	<.05	<.05
08/06/91	08/13/91	27.7	<.15	<.10	--	--	--	--
08/27/91	09/03/91	2.8	<.15	<.10	--	--	--	--
09/03/91	09/10/91	39.9	<.15	<.10	--	--	--	--
09/10/91	09/17/91	29.0	<.15	<.10	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
WV—Continued									
--	--	--	--	--	--	<0.05	0.05	nd	3
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	1
<.05	.07	<.05	<.05	<.05	<.05	.10	.70	1	9
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	.05	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	.06	<.05	1	nd
--	--	--	--	--	--	<.05	.24	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetan- ilide herbicides	Tri- azines herbicides	Ala- chlor	Atra- zine	Cyana- zine	DEA
WY02 Sinks Canyon,								
02/27/90	03/06/90	15.5	<0.15	<0.10	--	--	--	--
03/06/90	03/13/90	7.4	<.15	<.10	--	--	--	--
03/20/90	03/27/90	3.3	<.15	<.10	--	--	--	--
03/27/90	04/03/90	25.7	<.15	.20	<0.05	<0.05	<0.05	<0.05
04/03/90	04/10/90	20.6	<.15	.10	--	--	--	--
04/10/90	04/17/90	8.6	<.15	<.10	--	--	--	--
04/17/90	04/24/90	.80	<.15	<.10	--	--	--	--
04/24/90	05/01/90	9.4	<.15	<.10	<.05	<.05	<.05	<.05
05/01/90	05/08/90	4.1	<.15	<.10	--	--	--	--
05/08/90	05/15/90	19.6	<.15	<.10	--	--	--	--
05/22/90	05/29/90	1.3	<.15	<.10	--	--	--	--
05/29/90	06/05/90	5.6	<.15	<.10	--	--	--	--
06/12/90	06/19/90	10.2	<.15	<.10	--	--	--	--
06/26/90	07/03/90	1.5	<.15	<.10	--	--	--	--
07/03/90	07/10/90	1.8	<.15	<.10	--	--	--	--
07/10/90	07/17/90	7.9	.25	<.10	.07	<.05	<.05	<.05
07/17/90	07/24/90	41.2	<.15	<.10	--	--	--	--
07/24/90	07/31/90	13.0	<.15	<.10	<.05	<.05	<.05	<.05
08/07/90	08/14/90	16.0	<.15	<.10	<.05	<.05	<.05	<.05
08/14/90	08/21/90	5.0	<.15	<.10	<.05	<.05	<.05	<.05
08/28/90	09/04/90	2.5	<.32	<.10	<.05	<.05	<.05	<.05
09/11/90	09/18/90	1.5	<.32	<.10	--	--	--	--
09/18/90	09/25/90	38.4	<.32	<.10	--	--	--	--
09/25/90	10/02/90	1.8	<.32	.10	--	--	--	--
10/02/90	10/09/90	7.6	<.32	.24	<.05	<.05	<.05	<.05
10/09/90	10/16/90	1.3	<.32	<.10	--	--	--	--
10/16/90	10/23/90	8.9	<.32	<.10	--	--	--	--
10/30/90	11/06/90	41.7	<.32	.11	--	--	--	--
12/11/90	12/18/90	1.5	<.32	<.10	--	--	--	--
12/18/90	12/26/90	6.6	<.32	<.10	--	--	--	--
01/15/91	01/22/91	3.3	<.32	<.10	--	--	--	--
01/22/91	01/29/91	9.9	<.32	<.22	--	--	--	--
02/12/91	02/19/91	12.2	<.32	<.10	--	--	--	--
02/19/91	02/26/91	4.6	<.32	<.10	--	--	--	--
02/26/91	03/05/91	22.4	<.32	.12	<.05	<.05	<.05	<.05

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
WY									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	.05	<.05	<.05	<.05	<.05	.07	<.05	1	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	3
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	.06	nd	1
--	--	--	--	--	--	<.05	.07	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd

Table 7. Concentrations and deposition of herbicides and metabolites in

Beginning date of collection (month/day/year)	Ending date of collection (month/day/year)	Precipitation (mm)	Analyses by immunosorbent assay (µg/L)		Analyses by gas chromatography/			
			Acetanilide herbicides	Triazines herbicides	Alachlor	Atrazine	Cyanazine	DEA
WY02 Sinks Canyon,								
03/19/91	03/26/91	3.8	<0.15	<0.10	--	--	--	--
03/26/91	04/02/91	4.6	<.15	<.10	--	--	--	--
04/09/91	04/16/91	50.6	<.15	<.10	--	--	--	--
04/16/91	04/18/91	21.1	<.15	<.10	--	--	--	--
04/18/91	04/23/91	11.7	<.15	<.10	<0.05	<0.05	<0.05	<0.05
04/23/91	04/30/91	21.8	<.15	<.10	--	--	--	--
04/30/91	05/07/91	12.5	<.15	.20	--	--	--	--
05/07/91	05/14/91	13.0	<.15	.15	--	--	--	--
05/14/91	05/21/91	50.0	<.15	<.10	<.05	<.05	<.05	<.05
05/21/91	05/28/91	16.3	<.15	<.10	<.05	<.05	<.05	<.05
05/28/91	06/04/91	69.3	<.15	<.10	--	--	--	--
06/04/91	06/11/91	2.0	<.15	<.10	--	--	--	--
06/11/91	06/18/91	2.5	<.15	<.10	--	--	--	--
06/25/91	07/02/91	4.8	<.15	<.10	--	--	--	--
07/09/91	07/16/91	2.0	1.3	3.9	--	--	--	--
07/23/91	07/30/91	8.4	<.15	<.10	<.05	<.05	<.05	<.05
07/30/91	08/06/91	2.8	<.15	<.10	--	--	--	--
08/06/91	08/13/91	.50	<.15	<.10	--	--	--	--
09/03/91	09/10/91	7.9	<.15	<.10	<.05	<.05	<.05	<.05
09/10/91	09/17/91	3.1	<.15	<.10	--	--	--	--

mass spectrometry (µg/L)						Estimated concentrations (µg/L)		Estimated deposition (µg/m ²)	
DIA	Metol-achlor	Metri-buzin	Prome-ton	Propa-zine	Sima-zine	Alachlor	Atrazine	Alachlor	Atrazine
WY—Continued									
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	<0.05	nd	nd
--	--	--	--	--	--	<0.05	.16	nd	2
--	--	--	--	--	--	<0.05	.12	nd	2
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	1.1	3.2	2	7
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd
<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	nd	nd
--	--	--	--	--	--	<.05	<.05	nd	nd