USGS
science for a changing world

Water-Quality Assessment of the Eastern Iowa Basins: Hydrologic and Biologic Data, September 1995 through September 1996

Open-File Report 99-66

U.S. Department of the Interior
U.S. Geological Survey
National Water-Quality Assessment Program

U.S. Department of the Interior
U.S. Geological Survey

Water-Quality Assessment of the Eastern Iowa Basins: Hydrologic and Biologic Data, September 1995 Through September 1996

By KIMBERLEE K. B. AKERS, DOUGLAS J. SCHNOEBELEN, MARK E. SAVOCA, LINDA R. ROBERTS, *and* KENT D. BECHER

Open-File Report 99–66

NATIONAL WATER-QUALITY ASSESSMENT PROGRAM—EASTERN IOWA BASINS

Iowa City, Iowa
1999

U.S. Department of the Interior

Bruce Babbitt, Secretary

U.S. Geological Survey

Charles G. Groat, Director

For additional information write to:

District Chief
U.S. Geological Survey
P.O. Box 1230
Iowa City, IA 52244

Copies of this report can be purchased from:

U.S. Geological Survey
Information Services
Building 810
Box 25286, Federal Center
Denver, CO 80225

FOREWORD

The mission of the U.S. Geological Survey (USGS) is to assess the quantity and quality of the earth resources of the Nation and to provide information that will assist resource managers and policymakers at Federal, State, and local levels in making sound decisions. Assessment of water-quality conditions and trends is an important part of this overall mission.

One of the greatest challenges faced by water-resources scientists is acquiring reliable information that will guide the use and protection of the Nation's water resources. That challenge is being addressed by Federal, State, interstate, and local water-resource agencies and by many academic institutions. These organizations are collecting water-quality data for a host of purposes that include compliance with permits and water-supply standards; development of remediation plans for specific contamination problems; operational decisions on industrial, wastewater, or water-supply facilities; and research on factors that affect water quality. An additional need for water-quality information is to provide a basis on which regional and national-level policy decisions can be based. Wise decisions must be based on sound information. As a society we need to know whether certain types of water-quality problems are isolated or ubiquitous, whether there are significant differences in conditions among regions, whether the conditions are changing over time, and why these conditions change from place to place and over time. The information can be used to help determine the efficacy of existing water-quality policies and to help analysts determine the need for and likely consequences of new policies.

To address these needs, the U.S. Congress appropriated funds in 1986 for the USGS to begin a pilot program in seven project areas to develop and refine the National Water-Quality Assessment (NAWQA) Program. In 1991, the USGS began full implementation of the program. The NAWQA Program builds upon an existing base of water-quality studies of the USGS, as well as those of other Federal, State, and local agencies. The objectives of the NAWQA Program are:

- Describe current water-quality conditions for a large part of the Nation's freshwater streams, rivers, and aquifers.
- Describe how water quality is changing over time.
- Improve understanding of the primary natural and human factors that affect water-quality conditions.

This information will help support the development and evaluation of management, regulatory, and monitoring decisions by other Federal, State, and local agencies to protect, use, and enhance water resources.

The goals of the NAWQA Program are being achieved through ongoing and proposed investigations of 59 of the Nation's most important river basins and aquifer systems, which are referred to as study units. These study units are distributed throughout the Nation and cover a diversity of hydrogeologic settings. More than two-thirds of the Nation's freshwater use occurs within the 59 study units and more than two-thirds of the people served by public water-supply systems live within their boundaries.

National synthesis of data analysis, based on aggregation of comparable information obtained from the study areas, is a major component of the program. This effort focuses on selected water-quality topics using nationally consistent information. Comparative studies will explain differences and similarities in observed water-quality conditions among study units and will identify changes and trends and their causes. The first topics addressed by the national synthesis are pesticides, nutrients, volatile organic compounds, and aquatic biology. Discussions on these and other water-quality topics will be published in periodic summaries of the quality of the Nation's ground and surface water as the information becomes available.

This report is an element of the comprehensive body of information developed as part of the NAWQA Program. The program depends heavily on the advice, cooperation, and information from many Federal, State, interstate, tribal, and local agencies and the public. The assistance and suggestions of all are greatly appreciated.

Robert M. Hirsch
Chief Hydrologist

CONTENTS

FIGURES

TABLES

TABLES—Continued

CONVERSION FACTORS AND ABBREVIATIONS

Multiply	By	To Obtain
Length		
inch (in.)	25.4	millimeter
inch (in.)	2.54	centimeter
foot (ft)	0.3048	meter
mile (mi)	1.609	kilometer
Area		
square mile (mi^2)	2.590	square kilometer
Volume		
gallon (gal)	3.785	liter
gallon (gal)	3,785	milliliter

Temperature, in degrees Celsius (°C), can be converted to degrees Fahrenheit (°F) by use of the following equation: °F=1.8(°C) + 32.

Abbreviated water-quality units: Chemical concentrations and temperature for water samples are given in metric units. Chemical concentration is given in milligrams per liter (mg/L) or micrograms per liter (µg/L). Milligrams per liter is a unit expressing the concentration of chemical constituents in solution as weight (milligrams) of solute per unit volume (liter) of water. One thousand micrograms per liter (1,000 µg/L) is equivalent to 1 mg/L. Chemical concentrations for fish-tissue and bed-sediment samples are also given in metric units. Chemical concentrations are given in micrograms per gram (µg/g) or micrograms per kilogram (µg/kg). Micrograms per gram is a unit expressing the concentration of chemical constituent as weight (micrograms) of solute per unit mass (grams). One microgram per one thousand grams (1 µg/1,000 g) is equivalent to 1 µg/kg.

Other abbreviations used in this report:

EIWA	Eastern Iowa Basins
MDL	Method detection limit
MRL	Method reporting limit
NAWQA	National Water-Quality Assessment Program
NWQL	U.S. Geological Survey National Water-Quality Laboratory
UHL	University of Iowa Hygienic Laboratory
USGS	U.S. Geological Survey
cm	centimeter
g	gram
L	liter
µm	micrometer
mL	milliliter
mm	millimeter

Water-Quality Assessment of the Eastern Iowa Basins: Hydrologic and Biologic Data, September 1995 Through September 1996

By Kimberlee K. B. Akers, Douglas J. Schnoebelen, Mark E. Savoca, Linda R. Roberts, *and* Kent D. Becher

Abstract

The U.S. Geological Survey began data-collection activities in the Eastern Iowa Basins study unit of the National Water-Quality Assessment Program in September 1995 with the purpose of determining the status and trends in water quality. Surface-water data were collected, beginning in March 1996, on a monthly basis with occasional extra high- and low-flow samples. Data collected from 12 sites on rivers and streams in the study unit included determinations of the physical properties and concentrations of nutrients, major ions, organic carbon, trace elements, suspended sediment, and dissolved pesticides. Data collected at four additional sites included physical parameters and determination of the concentration of dissolved pesticides. In addition, bed-sediment and fish-tissue samples were collected at 16 sites and analyzed for trace elements and hydrophobic pesticides. There were two ground-water studies conducted in June and July 1996. The first looked at the quality of ground water in the Silurian-Devonian and Upper Carbonate aquifers and sampled 33 wells once, and the second examined the effects of agriculture on shallow ground water of the Iowa River alluvial aquifer and sampled 23 wells once. Ground-water samples were analyzed for physical properties, nutrients, major ions, organic carbon, trace elements, dissolved pesticides, and volatile organic compounds.

INTRODUCTION

In 1991, the U.S. Geological Survey (USGS), Department of the Interior, began the National Water-Quality Assessment (NAWQA) Program. The long-term goals of this program are to describe the status of and trends in the quality of a large, representative part of the Nation's surface- and ground-water resources and to identify the major factors that affect the quality of the resources. In addressing these goals, the program provides water-quality information that can be useful to policymakers and managers at the national, State, and local levels. Studies of 59 hydrologic systems (see cover design), ranging in size from 1,200 to 62,000 mi^2, include parts of most major river basins and aquifer systems (study-unit investigations) and represent from 60 to 70 percent of the Nation's water use and population served by public water supplies.

The Eastern Iowa Basins (EIWA) study unit was selected as a important hydrologic system representative of an agricultural area in the Midwest.

Purpose and Scope

This report presents the results of data-collection activities in the Eastern Iowa Basins NAWQA study unit. These data were collected from September 1995 through September 1996 and include the results of the analysis of water samples from 16 surface-water sites and 56 ground-water wells and the analysis of bed-sediment and fish-tissue samples from 16 sites. Surface- and ground-water samples were analyzed for physical properties, nutrients, major ions, organic carbon, trace elements, and dissolved pesticides. In addition, surface-water sample analyses included sedi-

ment concentration, and ground-water sample analyses included volatile organic compounds (VOC's), radon-222, and tritium. Bed sediment and fish tissue were analyzed for trace elements and pesticides.

Description of the Eastern Iowa Basins

The EIWA study unit covers about 19,500 mi^2 in eastern Iowa and southern Minnesota and includes the Wapsipinicon, Cedar, Iowa, and Skunk River Basins (fig. 1). These four major rivers generally flow in a southeasterly direction toward eventual discharge into the Mississippi River. The Wapsipinicon River originates in southern Minnesota, has a drainage area of 2,540 mi^2, and is about 225 mi long. The Cedar River also originates in southern Minnesota and joins the Iowa River about 30 mi upstream from the mouth of the Iowa River. Together the Cedar River Basin and the Iowa River Basin encompass about 12,640 mi^2, more than 90 percent of which is in Iowa. The Skunk River Basin originates in central Iowa and drains about 4,350 mi^2.

There are three major landform regions and one subregion within the EIWA study unit: the Des Moines Lobe, the Southern Iowa Drift Plain, the Iowan Surface, and the Iowan Karst, which is a subdivision of the Iowan Surface. The Des Moines Lobe is characterized by low relief with some distinct ridges near the eastern boundary and occasional depressions that form lakes, ponds, and marshes. Glacial till is the dominant surficial material with alluvium along the streams. In the Southern Iowa Drift Plain, streams have eroded deeply into the glacial drift and the loess mantle to produce a steeply rolling terrain with broad, flat drainage divides. The Iowan Surface has gently rolling topography with long slopes, low relief, and a mature drainage pattern. The surficial material is primarily glacial drift with thin layers of windblown loess on the ridges and alluvium near the streams. In the Iowan Karst, glacial deposits are thin, and sinkholes are evidence of the shallow limestone beneath the land surface.

Land use and land cover in the EIWA study unit is primarily agricultural with about 93 percent of the total area used for cropland or pasture. The principal crops are corn, oats, hay, and soybeans. The remaining land area consists of about 4 percent forests, about 2 percent urban, and about 1 percent water and wetlands (U.S. Geological Survey, 1990).

IMPLEMENTATION OF WATER-QUALITY STUDIES

Surface-Water-Quality Data Collection

Sampling Sites

The design of the surface-water-quality sampling program involved the selection of sites to increase the understanding of seasonal and spatial variability of physical and chemical characteristics in the EIWA study unit. The NAWQA network of surface-water-quality sampling sites consists of two types of basic fixed sites—integrator and indicator. Integrator basic fixed sites represent large subbasins in the study unit where the stream or river is affected by a combination of land-use types, point sources of chemical contributions, and natural factors that affect water quality. Indicator basic fixed sites are usually smaller basins and represent a specific combination of land use and physiographic condition. In the EIWA study unit, surface-water samples were collected at six integrator and six indicator sites (fig. 1 and table 1). Bed-sediment and fish-tissue samples were collected at 16 other sites, and surface-water samples were collected at 4 sites by University of Iowa Hygienic Laboratory (UHL) personnel for the Iowa Department of Natural Resources (fig. 1 and table 1).

Surface-Water Sample Collection

A complete discussion of the collection and processing of surface-water samples is described in Shelton (1994). All surface-water samples were obtained by collecting depth-integrated subsamples at equally spaced vertical sections across the stream (Ward and Harr, 1990). At each surface-water site, a minimum of 10 equally spaced vertical water samples were collected using cable-mounted or hand-held samplers (Shelton, 1994). Typically, a hand-held sampler is used when wading small streams, and a cable-mounted sampler is used for sampling larger streams or during high flows from a bridge. All equipment used in sampling and processing was rinsed with native water before use. For sample splitting, a Teflon cone (decaport) splitter was used. Sample water for pesticide analysis was passed through a 0.7-µm baked-glass fiber filter by a Teflon diaphragm pump and Teflon tubing. Samples for organic carbon analysis were filtered through a 47-mm-diameter, 0.45-µm silver

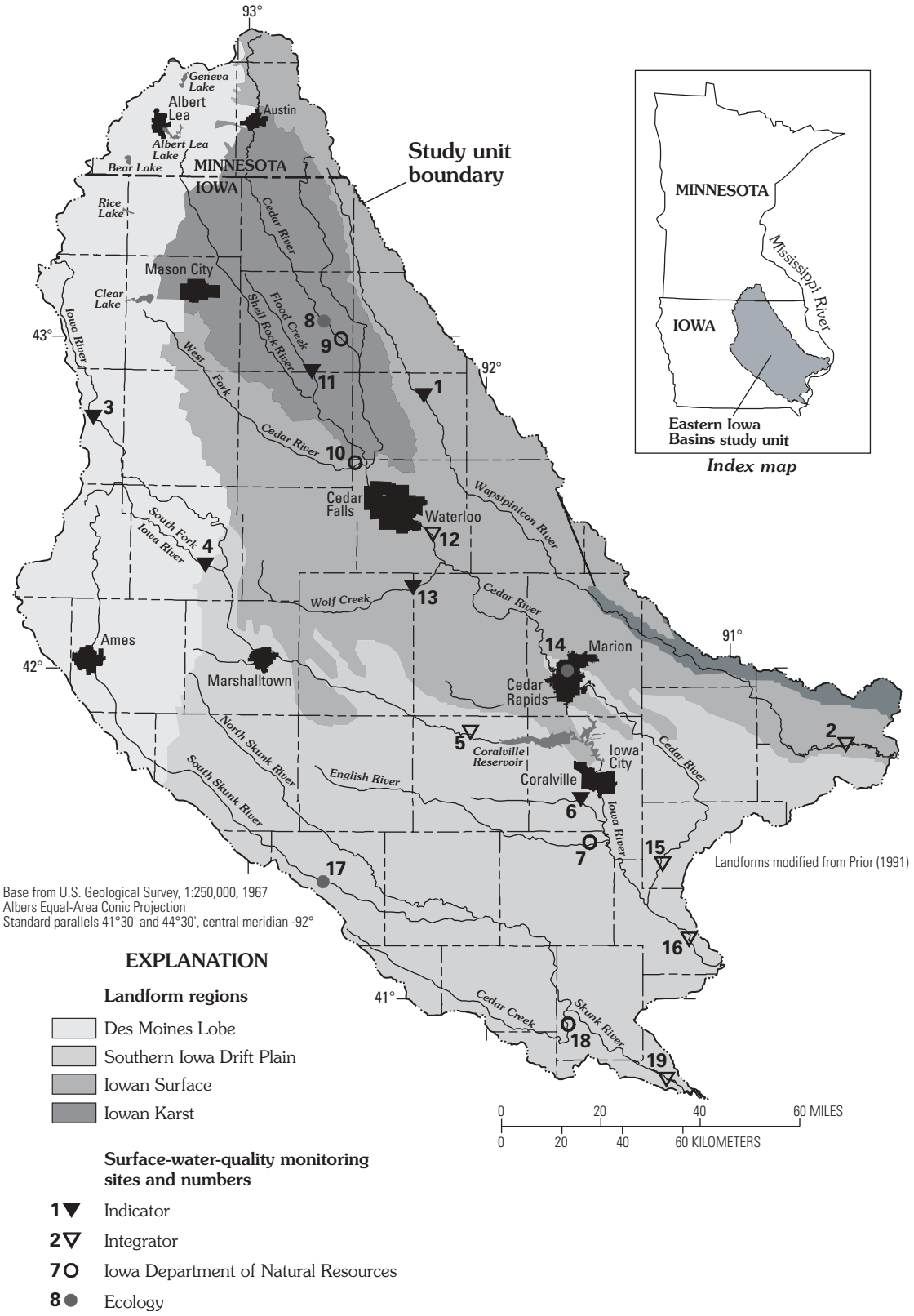

Figure 1. Location of surface-water-quality sampling sites in the Eastern Iowa Basins, September 1995–September 1996.

Table 1. Surface-water sampling sites in the Eastern Iowa Basins study unit
[mi^2, square miles; IDNR, Iowa Department of Natural Resources site]

Site (fig. 1)	Site identification number	Station name	Location (degrees, minutes, seconds)		Drainage area (mi^2)	Type of data[1]	Site type
			Latitude	Longitude			
1	05420680	Wapsipinicon River near Tripoli, IA	42°50'10"	92°15'26"	346	F, N, B, M, P, T, S	Indicator
2	05422000	Wapsipinicon River near DeWitt, IA	41°46'01"	90°32'05"	2,340	F, C, N, B, M, P, T, S	Integrator
3	05449500	Iowa River near Rowan, IA	42°45'36"	93°37'23"	418	F, C, N, B, M, P, T, S	Indicator
4	05451210	South Fork Iowa River northeast of New Providence, IA	42°18'54"	93°09'08"	224	F, N, B, M, P, T, S	Indicator
5	05453100	Iowa River at Marengo, IA	41°48'48"	92°03'51"	2,790	F, C, N, B, M, P, T, S	Integrator
6	05455100	Old Man's Creek near Iowa City, IA	41°36'23"	91°36'56"	201	F, N, B, M, P, T, S	Indicator
7	05455570	English River at Riverside, IA	41°28'32"	91°34'49"	626	F, P	IDNR
8	05457700	Cedar River at Charles City, IA	43°03'45"	92°40'23"	1,050	B, T	Ecology
9	05457750	Cedar River near Carville, IA	43°00'23"	92°36'08"	1,075	F, P	IDNR
10	05458900	West Fork Cedar River near Finchford, IA	42°37'50"	92°32'24"	846	F, P	IDNR
11	05461390	Flood Creek near Powersville, IA	42°54'26"	92°43'14"	150	F, N, B, M, P, T, S	Indicator
12	05464020	Cedar River at Gilbertville, IA	42°24'57"	92°13'07"	5,240	F, C, N, B, M, P, T, S	Integrator
13	05464220	Wolf Creek near Dysart, IA	42°15'06"	92°17'55"	327	F, C, N, B, M, P, T, S	Indicator
14	05464490	McLoud Run at Cedar Rapids, IA	41°59'59"	91°39'59"	5	B, T	Ecology
15	05465000	Cedar River near Conesville, IA	41°24'36"	91°17'06"	7,790	F, C, N, B, M, P, T, S	Integrator
16	05465500	Iowa River at Wapello, IA	41°10'48"	91°10'57"	12,500	F, C, N, B, M, P, T, S	Integrator
17	05471500	South Skunk River near Oskaloosa, IA	41°21'19"	92°39'31"	1,630	B, T	Ecology
18	05473400	Cedar Creek near Oakland Mills, IA	40°55'20"	91°40'10"	530	F, B, P, T	IDNR/ Ecology
19	05474000	Skunk River at Augusta, IA	40°45'13"	91°16'40"	4,310	F, C, N, B, M, P, T, S	Integrator

[1]Type of data: F, physical properties; C, chlorophyll; N, nutrients; B, bed sediment; M, major ions; P, dissolved pesticides; T, fish tissue; S, suspended sediment.

membrane filter in a stainless-steel chamber pressurized by nitrogen gas. All samples were chilled and shipped by next-day air freight to the USGS National Water-Quality Laboratory (NWQL) for analysis. For chlorophyll analysis, 30 mL of sample water was filtered through a 47-mm-diameter, borosilicate glass fiber filter. The glass fiber filter was folded into quarters, wrapped in aluminum foil, and kept on ice and stored in the laboratory freezer until analyzed.

At each vertical section in the stream, surface-water measurements of specific conductance, pH, water temperature, and dissolved oxygen were

obtained with a multiprobe instrument. The median value for each physical property was then calculated and stored in the National Water Information System (NWIS) data base. Alkalinity was determined at the time of sample collection by incremental titration (Wood, 1981; Shelton, 1994). All equipment used to collect and process samples (with the exception of carbon) was cleaned with a 0.1-percent nonphosphate detergent, rinsed with deionized water, rinsed with methanol certified by the manufacturer to be free of pesticides, air dried, wrapped in aluminum foil, and stored in a dust-free environment prior to sample collection (Shelton, 1994). Equipment used in the collection of dissolved organic carbon (DOC) and suspended organic carbon (SOC) was not rinsed with detergent or methanol but was rinsed with deionized water certified by the manufacturer to be free of both pesticides and VOC's. Water samples for fecal-coliform and fecal-streptococcal bacteria were collected and analyzed at each site using membrane filtration procedures and incubation (Myers and Wilde, 1997). All bottles and equipment used in the collection of bacteria samples were sterilized in an autoclave and wrapped in foil before sample collection.

UHL personnel collected samples for analysis of dissolved pesticides by dipping a 1-L baked glass bottle into the center of the stream. The sample was then filtered through a 0.7-µm, baked glass fiber filter by EIWA NAWQA personnel. UHL personnel also collected physical property data that included pH, dissolved oxygen, water temperature, air temperature, gage height, and instantaneous discharge.

Biologic Sample Collection

Biological studies evaluate the effects of physical and chemical characteristics of water and hydrologic conditions on aquatic biota and how biological and habitat characteristics differ among environmental settings in study units. Bed-sediment and fish-tissue samples are the primary means by which trace elements and hydrophobic organic contaminants are initially assessed. Bed-sediment and fish-tissue samples were collected at 16 sites in September 1995 and at 4 sites in September 1996.

Samples were collected and processed according to procedures outlined in Shelton and Capel (1994). Samples were collected in fine-grained sediments in nearshore depositional areas. The surficial 1 to 2 cm of bed sediment within 5 to 10 different depositional zones at each sampling site were subsampled several times, and the subsamples were composited and sieved.

Fish were collected using electroshocking equipment carried on either a backpack, barge, or boat. Common carp (*Cyprinus carpio*) was the target taxon, although white sucker (*Catostomus commersoni*) or redhorse (*Moxostoma spp.*) were collected at sites where common carp were not sufficiently abundant. River carpsucker (*Carpiodes carpio*) or highfin carpsucker (C*arpiodes velifer*) were collected in addition to common carp at three sites in 1995. At two sites, common carp were collected in sufficient abundance to compare organic compound samples of two different size classes of fish. At one of these sites, common carp were collected in such abundance that two size-class samples were also sufficient for trace element analysis.

Each sample consisted of a composite of 8 to 12 fish of the same species and similar size. Each fish in a sample was measured, weighed, and examined for external anomalies, such as parasites, lesions, tumors, and diseases. Then scales and (or) the pectoral fin ray were collected for age determination of the fish. Powderless latex gloves were worn at all times during fish collection and processing. For analysis of organic compounds, fish were dissected with a stainless-steel scalpel blade (precleaned with methanol), examined for gender, and individually wrapped in heavy-duty aluminum foil (dull side towards fish) and then placed into a polyethylene bag. Following processing, all fish samples were placed on dry ice at the collection site in preparation for shipment to the analytical laboratory. If long-term storage was necessary, the samples were stored in a freezer.

For analysis of trace elements, the body cavity was opened with stainless-steel scissors precleaned with nitric acid. Gender was determined. The liver tissue was exposed with and excised by means of a precleaned, stainless-steel scalpel blade to eliminate possible contamination from outside the body cavity. The dissected livers were placed into a plastic bag and then weighed. A sample weighing 5 g was considered minimally acceptable. The site number, date, location, species name, and the analyses to be performed were written on an index card and placed into a separate plastic bag along with the bagged liver sample. The bagged sample with identifying information was placed on dry ice at the collection site and shipped frozen to the laboratory.

Analytical Procedures

For the analysis of major ions, nutrients, DOC, SOC, pesticides, and pesticide metabolites, surface-water samples were sent to the NWQL in Arvada, Colorado. The NWQL was also used to analyze for trace elements and organic compounds in bed sediment and fish tissue. Whole fish were composited for pesticide analysis, whereas only fish livers were composited for the trace element analysis. For analysis of bed-sediment particle size, samples were sent to the USGS sediment laboratory in Iowa City, Iowa. The analytical methods used in all sample processing can be found in tables 4-10 (at the end of this report).

Samples were analyzed for chlorophyll in the USGS office in Iowa City according to the procedure outlined in method 445.0 (Arar and Collins, 1992).

Ground-Water-Quality Data Collection

Geohydrology

The geology of the EIWA study unit consists mainly of bedrock that ranges in age from Pennsylvanian to Cambrian. The subcrop areas of the different bedrock units form broad, linear bands that trend northwest-southeast and regionally dip to the southeast. The units consist primarily of sandstone, shale, limestone, and dolomite. The eastern part of the Silurian-Devonian and Upper Carbonate aquifers was the focus of one study in the EIWA study unit (fig. 2) conducted in 1996.

The Silurian-Devonian aquifer underlies the central and southern parts of the study unit and consists of 200 to 400 ft of shallow marine limestone, dolomite, sandstone, shale, and evaporite deposits. These units gently dip to the southwest (fig. 2) beneath regionally confining Devonian shale of the Lime Creek Formation and Yellow Spring Group in the western part of the study unit. The aquifer forms the bedrock surface in the eastern part of the study unit where it is overlain by unconsolidated Quaternary deposits (sand, gravel, and clay), and is unconfined except in areas where fine-grained deposits produce locally confined conditions. The Silurian-Devonian aquifer is underlain by Ordovician-age rocks throughout the study unit.

The Upper Carbonate aquifer underlies the northern part of the study unit and consists of 250 to 600 ft of Ordovician and Devonian shallow marine limestone, dolomite, dolomitic limestone, and shale. The aquifer is overlain by unconsolidated Quaternary and Cretaceous deposits (sand, gravel, and clay) and is unconfined except in areas where fine-grained deposits produce locally confined conditions. The Upper Carbonate aquifer is underlain by confining units of Ordovician age.

A second NAWQA ground-water study was begun to investigate the effects of changing land use on shallow ground-water quality in the Iowa River alluvial aquifer (fig. 3). The area of study for the Iowa River alluvial aquifer encompassed 83 mi^2 along a 16-mi reach of the Iowa River in east-central Iowa (Savoca and others, 1998). The river valley is underlain by alluvial clay, silt, and gravel of variable thickness (10 to 55 ft); the alluvial deposits are underlain by glacial till (Detroy and Kuzniar, 1988).

Site Selection

Potential well locations in the study unit were identified using a stratified random selection process (Scott, 1990). An onsite reconnaissance within a 1-mi radius of each potential well location was conducted to determine if a suitable well could be found. Well-selection criteria included existing domestic well completed in the Silurian-Devonian or Upper Carbonate aquifers located within the study unit; permission to sample the well from the landowner; the depth of the well was known; the well was equipped with a submersible pump; and a sample could be obtained before a pressure tank or other treatment system. Information about the well was obtained from well-owner interviews and driller's logs. If a suitable well could not be found at the primary location, a search was initiated at the closest alternate site.

For the study of the Silurian-Devonian and Upper Carbonate aquifers, 33 wells were selected for sampling with depths ranging from 32 to 700 ft (table 2). Ground-water samples were collected during June and July 1996 and followed NAWQA protocols (Koterba and others, 1995). Twenty-three wells screened in the Iowa River alluvial aquifer were sampled during a 3-week period in 1996 (table 3).

Ground-Water Sample Collection

The sampling procedures for ground water are described by Koterba and others (1995). Before sample collection, all sampling equipment was thoroughly cleaned. Sampling lines and hoses were cleaned by circulating a 0.1-percent nonphosphate detergent solution through the entire system with a peristaltic pump

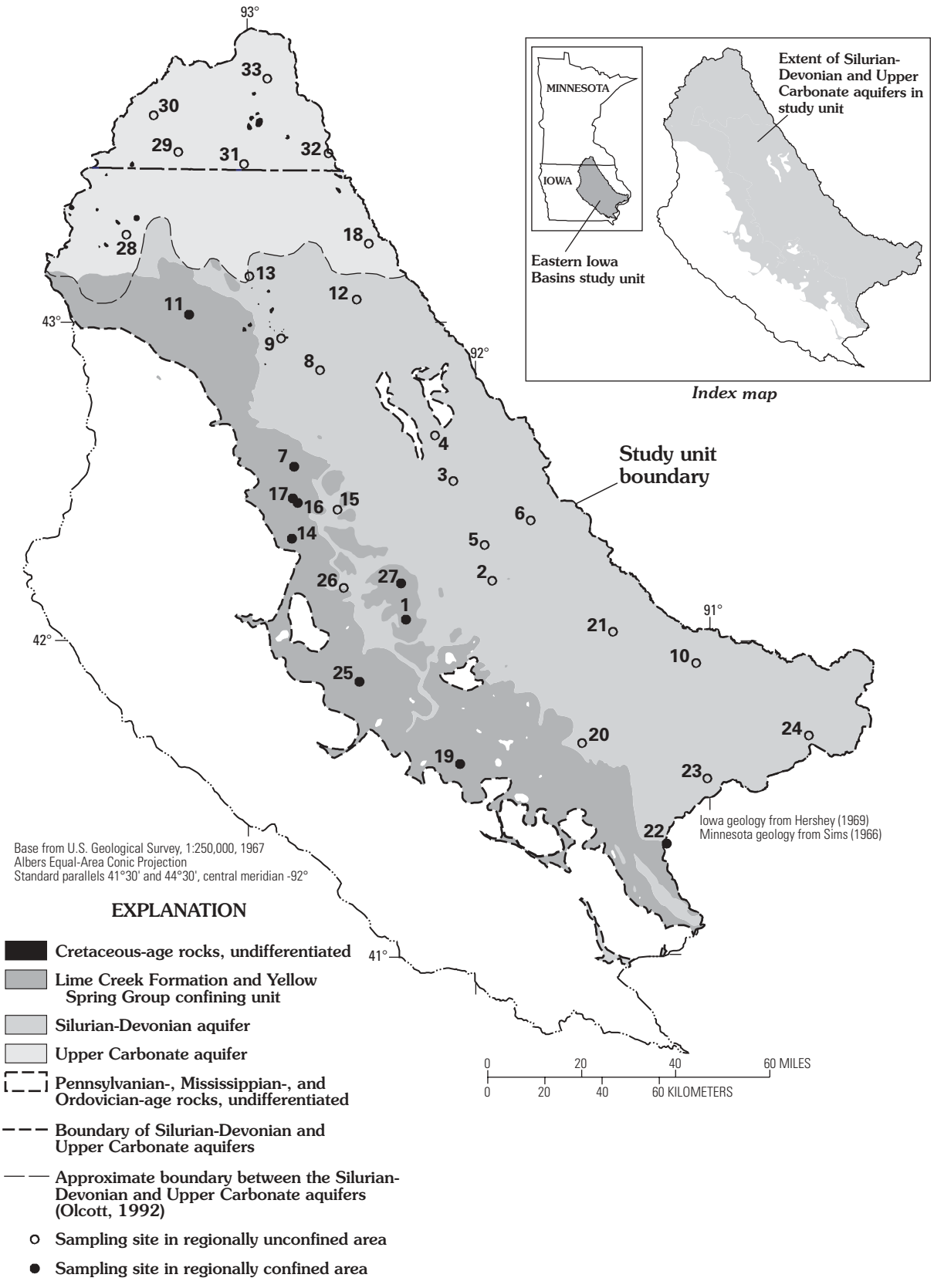

Figure 2. Location of the Silurian-Devonian and Upper Carbonate aquifers and sampling sites.

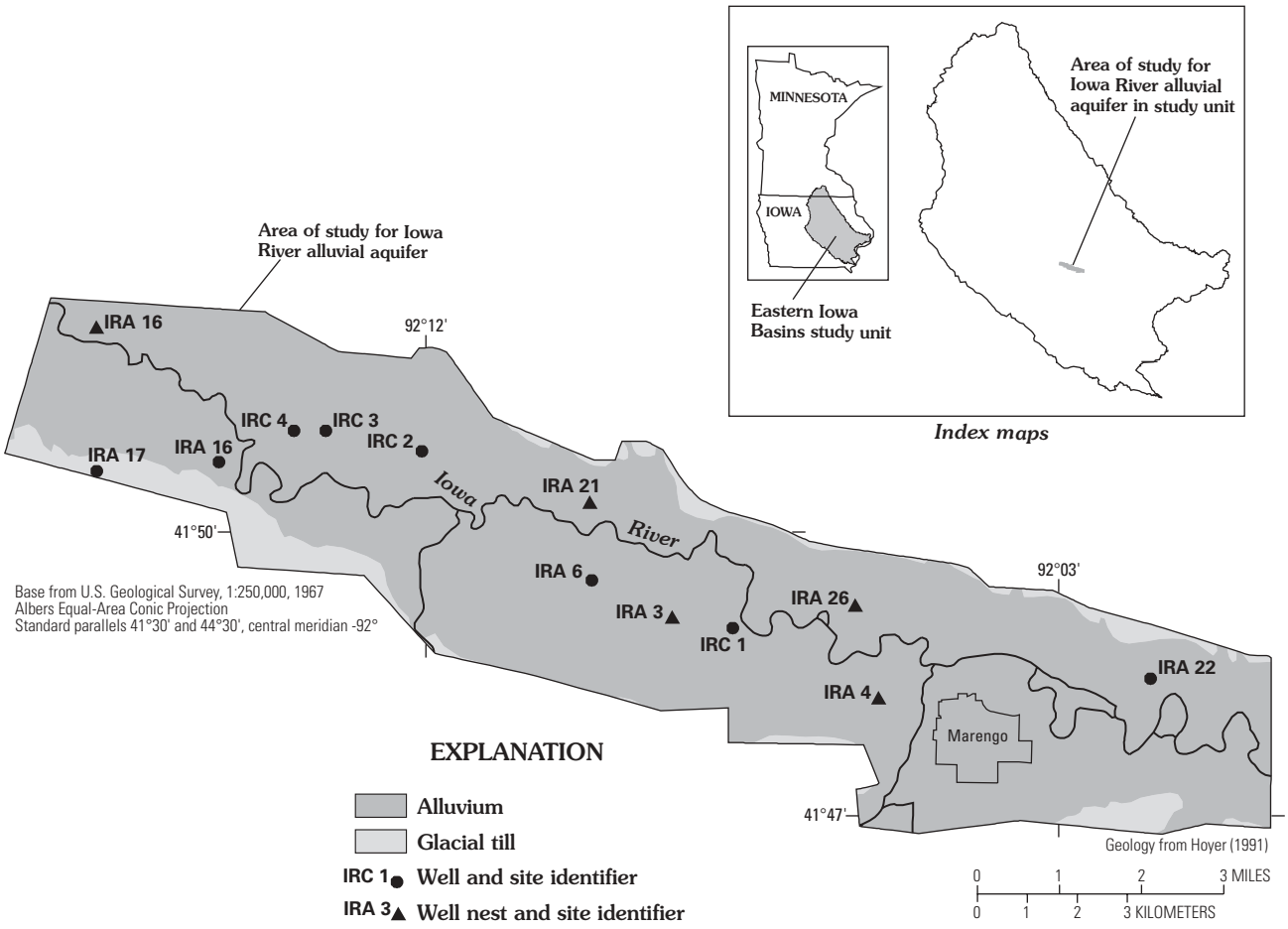

Figure 3. Location of Iowa River alluvial aquifer and sampling sites.

for 10 minutes. The lines were then rinsed with 12 to 16 L of deionized water. All sampling and preservation chamber stands were washed with deionized water. All filter assemblies were also washed with a 0.1-percent nonphosphate detergent solution and rinsed with deionized water, with the exception of the DOC filter, which was washed with deionized water and rinsed with deionized water guaranteed by the manufacturer to be free of pesticides and VOC's. Cleaned equipment was wrapped in aluminum foil and placed in clean plastic bags.

Before sample collection, the static water level was recorded, and the wells were purged of at least three casing volumes. Pumping continued until measured values of specific conductance, pH, dissolved oxygen, and water temperature stabilized. Samples were then collected by filling containers in a sampling chamber made by placing a 6-mL polyethylene bag over a polyvinyl chloride (PVC) frame. All bottles were filled inside the sampling chamber to minimize the potential for contamination. Holes were cut in the bag for the inflow hose, waste discharge, and access for sampling. Powderless latex gloves were worn during sampling. To begin sampling, flow valves were switched to route the water into the sampling chamber, and the sampling lines were flushed out for several minutes. For organic compound samples, all sampling lines and connections between the faucet and the sampling chamber were Teflon or stainless steel. Except for the baked glass bottles, all bottles were rinsed three times with pumped native ground water before filling. Samples were collected at each site for onsite determination of alkalinity, and laboratory analysis of VOC's, pesticides, pesticide metabolites, DOC, major ions, nutrients, tritium, radon, and stable isotopes.

Samples for pesticide analyses were filtered using a 142-mm-diameter glass fiber filter with 0.7-µm pore openings. DOC samples were collected and filtered with a stainless-steel filter assembly and a 47-mm-

Table 2. Wells sampled in the Silurian-Devonian and Upper Carbonate aquifers

Site (fig. 2)	Site identification number	Local identifier	Location (degrees, minutes, seconds)		Well depth (feet)	County, State
			Latitude	Longitude		
1	420424092175101	084N 12W 19 BCC	42°04'24"	92°17'52"	560	Benton, IA
2	421157091554201	085N 09W 05 CBA	42°11'57"	91°55'45"	312	Benton, IA
3	423056092054601	089N 11W 13 CAC	42°30'56"	92°05'46"	155	Black Hawk, IA
4	423940092102801	091N 11W 29 CAC	42°39'40"	92°10'29"	120	Bremer, IA
5	421850091574001	087N 10W 25 CDC	42°18'45"	91°57'44"	218	Buchanan, IA
6	422329091455101	088N 08W 34 CAA	42°23'29"	91°45'51"	240	Buchanan, IA
7	423328092464901	090N 16W 31 DCB	42°33'28"	92°46'49"	280	Butler, IA
8	425158092402301	093N 16W 13 DAD	42°51'58"	92°40'23"	114	Butler, IA
9	425757092503001	094N 17W 10 CDD	42°57'57"	92°50'30"	240	Butler, IA
10	415600091033701	082N 02W 03 DCD	41°56'00"	91°03'37"	200	Cedar, IA
11	430216093142901	095N 20W 19 AAA	43°02'15"	93°14'30"	120	Cerro Gordo, IA
12	430532092305401	096N 14W 33 BCB	43°05'33"	92°30'54"	100	Chickasaw, IA
13	430947092590101	096N 18W 04 BCC	43°09'47"	92°58'59"	343	Floyd, IA
14	421944092471701	087N 17W 23 DDA	42°19'44"	92°47'17"	507	Grundy, IA
15	422524092353101	088N 15W 22 BCB	42°25'24"	92°35'31"	240	Grundy, IA
16	422631092454801	088N 16W 07 CDC	42°26'31"	92°45'50"	440	Grundy, IA
17	422723092470701	088N 16W 01 CCD	42°27'23"	92°47'06"	220	Grundy, IA
18	431614092275401	098N 14W 26 DCC	43°16'13"	92°27'55"	182	Howard, IA
19	413652092035801	079N 11W 36 AAA	41°36'52"	92°03'58"	700	Iowa, IA
20	414056091325201	079N 06W 04 ABD	41°40'56"	91°32'52"	225	Johnson, IA
21	420206091244901	084N 05W 34 DDC	42°02'06"	91°24'49"	291	Linn, IA
22	412030091113801	076N 03W 34 CBB	41°21'30"	91°11'38"	360	Muscatine, IA
23	413401091010901	078N 02W 12 DDD	41°34'01"	91°01'09"	240	Muscatine, IA
24	414153090350801	080N 03E 35 BBA	41°41'53"	90°35'08"	198	Scott, IA
25	415231092295301	082N 14W 32 AAB	41°52'31"	92°29'43"	320	Tama, IA
26	421030092340001	085N 15W 14 BDD	42°10'29"	92°33'51"	332	Tama, IA
27	421120092190501	085N 13W 12 BCC	42°11'21"	92°19'06"	350	Tama, IA
28	431725093310801	098N 23W 23 DAA	43°17'24"	93°31'08"	58	Winnebago, IA
29	433317093175601	101N 21W 13 BAD	43°33'16"	93°17'58"	115	Freeborn, MN
30	434012093243601	102N 22W 01 AAD	43°40'11"	93°24'35"	180	Freeborn, MN

Table 2. Wells sampled in the Silurian-Devonian and Upper Carbonate aquifers—Continued

Site (fig. 2)	Site identification number	Local identifier	Location (degrees, minutes, seconds)		Well depth (feet)	County, State
			Latitude	Longitude		
31	433109093004001	101N 18W 29 DAA	43°31'10"	93°00'8"	32	Mower, MN
32	433323092383201	101N 15W 16 BAB	43°33'23"	92°383'2"	160	Mower, MN
33	434732092545001	104N 17W 19 DDB	43°47'32"	92°54'50"	120	Mower, MN

Table 3. Wells sampled in the Iowa River alluvial aquifer

Site (fig. 3)	Site identification number	Local identifier	Location (degrees, minutes, seconds)		Well depth (feet)	County, State
			Latitude	Longitude		
IRA 16	415211092164101	082N 12W 31 DAD	41°52'11"	92°16'41"	26.0	Benton
IRA 16	415211092164102	082N 12W 31 DAD	41°52'11"	92°16'41"	15.0	Benton
IRC 4	414816092053401	081N 11W 23 DCC	41°48'16"	92°05'34"	31.0	Iowa
IRC 4	414816092053402	081N 11W 23 DCC	41°48'16"	92°05'34"	13.5	Iowa
IRC 4	414816092053403	081N 11W 23 DCC	41°48'16"	92°05'34"	11.0	Iowa
IRA 26	414818092055401	081N 11W 14 CCA	41°49'15"	92°05'54"	22.5	Iowa
IRA 26	414818092055402	081N 11W 14 CCA	41°49'15"	92°05'54"	13.5	Iowa
IRA 26	414818092055403	081N 11W 14 CCA	41°49'15"	92°05'54"	11.0	Iowa
IRA 22	414828092014201	081N 10W 20 DAC	41°48'28"	92°01'42"	25.0	Iowa
IRC 1	414900092073801	081N 11W 21 ABD	41°49'00"	92°07'38"	22.5	Iowa
IRA 3	414907092083001	081N 11W 20 AAA	41°49'07"	92°08'30"	29.0	Iowa
IRA 3	414907092083002	081N 11W 20 AAA	41°49'07"	92°08'30"	9.0	Iowa
IRA 3	414907092083003	081N 11W 20 AAA	41°49'07"	92°08'30"	15.5	Iowa
IRA 6	414930092093801	081N 11W 17 CBB	41°49'30"	92°09'38"	30.0	Iowa
IRA 21	415020092094001	081N 11W 07 DAA	41°50'20"	92°09'40"	25.0	Iowa
IRA 21	415020092094003	081N 11W 07 DAA	41°50'20"	92°09'40"	15.0	Iowa
IRA 21	415020092094004	081N 11W 07 DAA	41°50'20"	92°09'40"	12.0	Iowa
IRA 21	415020092094010	081N 11W 07 DAA	41°50'20"	92°09'40"	32.0	Iowa
IRA 17	415039092164001	081N 12W 05 CCC	41°50'39"	92°16'40"	40.0	Iowa
IRA 19	415045092145601	081N 12W 09 ABC	41°50'45"	92°14'56"	25.0	Iowa
IRC 2	415052092120301	081N 12W 11 AAD	41°50'52"	92°12'03"	27.5	Iowa
IRC 3	415105092132501	081N 12W 03 DDB	41°51'05"	92°13'25"	22.5	Iowa
IRC 4	415105092135201	081N 12W 03 CDA	41°51'05"	92°13'52"	22.5	Iowa

diameter silver filter membrane with 0.45-µm openings. Filtration was done under pressure from nitrogen gas.

All samples were preserved and treated immediately after collection. Samples for VOC's were treated with a 1:1 hydrochloric acid solution (HCl). Samples for major ions were treated with 1 mL of nitric acid. All samples were then chilled for shipment to NWQL.

Radon-222 samples were collected by inserting a syringe through a gas-impermeable membrane in the gas-collection tube and withdrawing 15 mL of sample water. To allow the withdrawal of sample water without degassing, sufficient backpressure was created by closing a valve in the sample-collection tube. The syringe was then inverted (needle up) and voided until all air bubbles were gone and only 10 mL of sample remain in the barrel. The sample was then injected (needle down) into a vial at the base of a mineral oil layer. The vial was capped and shaken for approximately 10 seconds. Radon-222 samples were shipped (overnight delivery) the day of collection.

Analytical Procedures

For the analysis of major ions, nutrients, DOC, SOC, pesticides, pesticide metabolites, VOC's, and radon, ground-water samples were sent to the NWQL in Arvada, Colorado. Ground-water samples were analyzed for tritium at the USGS Isotope Tracers Project Laboratory in Menlo Park, California, and for environmental isotopes at the USGS National Research Program Laboratory in Reston, Virginia. The analytical methods used in all sample processing are listed in tables 4-10 at the end of this report.

Water-Quality Analysis and Quality Control

Analytical results were evaluated in the context of minimum reporting levels (MRL's) and method detection limits (MDL's) established by NWQL. An MRL is the minimum concentration of a constituent that can be reliably measured and reported by the laboratory using a given analytical method. MRL's are commonly reported with analytical results for common ions, nutrients, DOC, radiochemicals, and VOC's. An MDL is the minimum concentration of a substance that can be identified, measured, and reported with 99-percent confidence that the constituent concentration is greater than zero. MDL's are generally smaller and more well defined statistically than MRL's and are commonly reported with analytical results for pesticides (Zaugg and others, 1995). MRL's and MDL's provide information about relative analytical precision and detection sensitivity but do not constitute low concentration reporting limits for conclusively identified constituents (Zaugg and others, 1995). A numerical value is reported with an "E" (estimated) code for measurements less than the MDL if a chromatograph peak is observed at the correct retention time and the qualifying information from the spectrometer conclusively identifies the constituent. Data also may be estimated when a target constituent is detected and identified, but the quantification is not completed because the resulting value is greater than the highest calibration standard for the method. Values censored with an "E" code necessarily carry a lower confidence.

Surface Water

The philosophy of NAWQA surface-water quality-control design is described in detail by Mueller and others (1997). About 15 percent of the total samples collected for the EIWA NAWQA were analyzed for quality control. Quality-control samples submitted for analysis during the 1996 water year (October 1, 1995, through September 30, 1996) included equipment blanks for two sets of sampling equipment, five field blanks, six replicate samples, three spike samples, and laboratory surrogate recoveries. Equipment blank samples of deionized water guaranteed by the manufacturer to be free of pesticides and VOC's and deionized water guaranteed by the manufacturer to be free of inorganic compounds were passed through all sampling equipment at the beginning of data collection to verify the initial cleanliness of the sampling equipment. Field blank samples of the same deionized water that was used with equipment blank samples were collected by passing the deionized water through all pumps, filter plates, and filters to verify cleanliness of sampling equipment and technique. Field blank samples verified that the surface-water samples were not contaminated from either the sampling equipment, transport of the equipment, or the cleaning procedures done between sites. Blank samples (equipment and field) indicated that all constituents were less than the MDL for all samples.

The objective of the replicate samples was to estimate the precision of concentration values from sample processing and analysis. Analysis of organic constituents are generally more variable than analyses of inorganic constituents. In particular, replicate sam-

ples for pesticides were an important way to evaluate the consistency of the identifying target constituent. Each replicate sample is an aliquot of the native sample water processed through the cone splitter, that passes through the same sample equipment, and is prepared in the same way.

A spike sample is a sample to which a laboratory-certified concentration of selected constituents has been added. Spike samples were used to estimate percent recovery and possible degradation of the constituent concentration during sample processing and analysis. The spike recovery (in percent, %) is calculated as follows:

$$\text{Spike recovery \%} = [(C_{spiked} - C_{unspiked})/C_{expd}] * 100 \quad (1)$$

where C_{spiked} is the measured concentration of the spiked sample, in micrograms per liter; $C_{unspiked}$ is the measured concentration of the unspiked sample, in micrograms per liter; and C_{expd} is the expected or theoretical concentration of the spiked sample, in micrograms per liter. C_{expd} is calculated from the concentration of the spike mixture, the amount of spike added, and volume of the sample using the following equation:

$$C_{expd} = C_{soln} * \text{Amt/SmplVol}, \quad (2)$$

where C_{soln} is the concentration of the spike solution, in micrograms per liter; Amt is the amount of spike added, in milliliters; and SmplVol is the spiked sample volume, in liters.

For the EIWA study unit, the concentration of pesticide compounds in the spike solution (C_{soln}) for 1996 was 1.0 µg/L, except for permethrin which was 0.3 µg/L. The amount of spike added (Amt) for all spike samples was 0.100 mL. The sample volumes for the three spikes were 0.947, 0.948, and 0.923 L for spike samples collected at Iowa River near Rowan (site 3, fig. 1), Iowa River at Marengo (site 5, fig. 1), and Cedar River at Gilbertville (site 12, fig. 1), respectively. The spike recoveries for the pesticide compounds ranged from 33 to 301 percent.

A surrogate compound is an organic compound that has similar physical and chemical properties to the constituents being determined but is not naturally present in the sample. A surrogate compound is added to each pesticide sample that is processed at the NWQL as part of their quality-control protocols. The percent recovery of the surrogate compounds allows a quality check on amount of recovery for the pesticide sample. Surrogate recoveries were typically between 80 and 120 percent for the pesticide compounds and are listed in table 15 at the end of this report.

Biology

A replicate bed-sediment sample and fish-tissue sample were collected at one site in 1996. These samples were analyzed for trace elements and organic compounds.

Ground Water

Quality-control samples consisted of equipment blanks, field blanks, trip blanks, replicate samples, and laboratory surrogate recoveries. Three field blanks were analyzed for pesticides and pesticide metabolites; five for VOC's; two for major ions and nutrients; and six for DOC. Three replicate samples were analyzed for major ions, nutrients, DOC, VOC's, pesticides, pesticide metabolites, radon-222, tritium, and environmental isotopes; and one for major ions, nutrients, DOC, VOC's, and pesticides. One VOC equipment blank and two VOC trip blanks were used to investigate VOC concentrations during the sampling season.

ACKNOWLEDGMENTS

The following people worked on the 1995 and 1996 bed-sediment and fish-tissue sampling:

Stephen Porter	USGS, Central Region, Lakewood, CO
Rod Deweese	USGS, Central Region, Lakewood, CO
Steve Kalkhoff	USGS, Iowa City, IA
Deb Sneck-Fahrer	USGS, Iowa City, IA
Kimberlee Akers	USGS, Iowa City, IA
Eric Sadorf	USGS, Iowa City, IA
Jim Cerveny	USGS, Iowa City, IA
Danita Winegarden	USGS, Iowa City, IA
Bob Einhellig	USGS, Iowa City, IA
Linda Roberts	USGS, Iowa City, IA
Sienna Hill	USGS, Iowa City, IA
Joel Galloway	USGS, Iowa City, IA
Jenna Tobias	USGS, Iowa City, IA
Jim Sondag	USGS, Council Bluffs, IA
Kathy Lee	USGS, Mounds View, MN
Anna Sojka	USGS, Lincoln, NE
Dave Schwartz	USGS, Lincoln, NE
Scott Yess	U.S. Fish & Wildlife Service, Onalaska, WI
Kent Johnson	University of Iowa Hygienic Laboratory, Iowa City, IA
Matt McAndrew	Volunteer, West Liberty, IA

SELECTED REFERENCES

American Society for Testing Materials, 1996, Annual book of ASTM standards, Section 11, Water and environmental technology: West Conshohocken, Pennsylvania, v. 11.02, D5072–92, p. 674–676.

Arar, E.J., and Collins, G.B., 1992, Method 445.0, *In Vitro* determination of chlorophyll *a* and pheophytin *a* in marine and freshwater phytoplankton by fluorescence: U.S. Environmental Protection Agency, Revision 1.1, 9 p.

Arbogast, B.F., ed., 1996, Analytical methods manual for mineral resource surveys program: U.S. Geological Survey Open-File Report 96–525, 248 p.

Coplen, T.B., Wildman, J.D., and Chen, J., 1991, Improvements in the gaseous hydrogen-water equilibrium technique for hydrogen isotope ratio analysis: Analytical Chemistry, v. 63, p. 910–912.

Detroy, M.G., and Kuzniar, R.L., 1988, Occurrence and distribution of nitrate and herbicides in the Iowa River alluvial aquifer, Iowa, May 1984 to November 1985: U.S. Geological Survey Water-Resources Investigations Report 88–4117, 93 p.

Epstein, S., and Mayeda, T., 1953, Variation of O-18 content of water from natural sources: Geochimica Cosmochimica Acta, v. 4, p. 213–244.

Fishman, M.J., 1993, Methods of analysis by the U.S. Geological Survey National Water-Quality Laboratory—determination of inorganic and organic constituents in water and fluvial sediments: U.S. Geological Survey Open-File Report 93–125, 217 p.

Foreman, W.T., Connor, B.F., Furlong, E.T., Vaught, D.G., and Merten, L.M., 1995, Methods of analysis by the U.S. Geological Survey National Water-Quality Laboratory—determination of organochlorine pesticides and polychlorinated biphenyls in bottom sediment by dual capillary-column gas chromatography with electron-capture detection: U.S. Geological Survey Open-File Report 95–140, 78 p.

Furlong, E.T., Vaught, D.G., Merten, L.M., Foreman, W.T., and Gates, P.M., 1996, Methods of analysis by the U.S. Geological Survey National Water-Quality Laboratory—determination of semivolatile organic compounds in bottom sediment by solvent extraction, gel permeation chromatographic fractionation, and capillary-column gas chromatography/mass spectrometry: U.S. Geological Survey Open-File Report 95–719, 67 p.

Gilliom, R.J., Alley, W.M., and Gurtz, M.E., 1995, Design of the National Water-Quality Assessment Program—occurrence and distribution of water-quality conditions: U.S. Geological Survey Circular 1112, 33 p.

Guy, H.P., 1969, Laboratory theory and methods for sediment analysis: U.S. Geological Survey Techniques of Water-Resources Investigations, book 5, chap. C1, 58 p.

Hershey, H.G., 1969, Geologic map of Iowa: Iowa Geological Survey, scale 1:500,000, 1 sheet.

Hoffman, G.L., 1996, Methods of analysis by the U.S. Geological Survey National Water-Quality Laboratory—preparation procedure for aquatic biological material determined for trace metals: U.S. Geological Survey Open-File Report 96–362, 42 p.

Hoyer, B.E., and Hallberg, G.R., 1991, Groundwater vulnerability regions of Iowa: Iowa Department of Natural Resources, Special Map Series II, scale 1:500,000, 1 sheet.

Koterba, M.T., Wilde, F.D., and Lapham, W.W., 1995, Ground-water data-collection protocols and procedures for the National Water-Quality Assessment Program—collection and documentation of water-quality samples and related data: U.S. Geological Survey Open-File Report 95–399, 113 p.

Leiker, T.J., Madsen, J.E., Deacon, J.R., and Foreman, W.T., 1995, Methods of analysis by the U.S. Geological Survey National Water-Quality Laboratory—determination of chlorinated pesticides in aquatic tissue by capillary-column gas chromatography with electron-capture detection: U.S. Geological Survey Open-File Report 94–62, 15 p.

Mueller, D.K., Martin, J.D., and Lopes, T.J., 1997, Quality-control design for surface-water sampling in the National Water-Quality Assessment Program: U.S. Geological Survey Open-File Report 97–223, 17 p.

Myers, D.N., and Wilde, F.D., eds., 1997, Biological indicators: U.S. Geological Survey Techniques of Water-Resources Investigations, book 9, chap. A7, 38 p.

Olcott, P.G., 1992, Ground water atlas of the United State—segment 9, Iowa, Michigan, Minnesota, Wisconsin: U.S. Geological Survey Hydrologic Investigations Atlas HA–730–J, 31 p.

Ostlund, H.G., and Dorsey, H.G., 1977, Rapid electrolytic enrichment of hydrogen gas proportional counting of tritium, *in* International Conference on Low Radioactivity Measurement and Applications, High Tatras, Czechoslovakia, October 1975 [Proceedings]: 6 p.

Prior, J.C., 1991, Landforms of Iowa: Iowa City, University of Iowa Press, 153 p.

Rose, D.L., and Schroeder, M.P., 1995, Methods of analysis by the U.S. Geological Survey National Water–Quality Laboratory—determination of volatile organic compounds in water by purge and trap capillary gas chromatography/mass spectrometry: U.S. Geological Survey Open-File Report 94–708, 26 p.

Savoca, M.E., Sadorf, E.M., and Akers, K.K., 1998, Ground-water quality in the eastern part of the Silurian-Devonian and Upper Carbonate aquifers in the Eastern Iowa Basins, Iowa and Minnesota, 1996: U.S. Geological Survey Water-Resources Investigations Report 98–4224, 40 p.

Scott, J.C., 1990, Computerized stratified random site-selection approaches for design of a ground-water-quality sampling network: U.S. Geological Survey Water-Resources Investigations Report 90–4101, 109 p.

Shelton, L.R., 1994, Field guide for collection and processing stream-water samples for the National Water-Quality Assessment Program: U.S. Geological Survey Open-File Report 94–455, 42 p.

Shelton, L.R., and Capel, P.D., 1994, Guidelines for collecting and processing samples of stream bed sediment for analysis of trace elements and organic contaminants for the National Water-Quality Assessment Program: U.S. Geological Survey Open-File Report 94–458, 20 p.

Sims, P.K., 1966, Geologic map of Minnesota: Minnesota Geological Survey, scale 1:250,000, 1 sheet.

U.S. Geological Survey, 1990, Land use and land cover digital data from 1:250,000- and 1:100,000-scale maps [machine-readable data files].

Ward, J.R., and Harr, C.A., 1990, Methods for collection and processing of surface-water and bed-material samples for physical and chemical analyses: U.S. Geological Survey Open-File Report 90–140, 71 p.

Wood, W.W., 1981, Guidelines for collection and field analysis of ground-water samples for selected unstable constituents: U.S. Geological Survey Techniques of Water-Resources Investigations, book 1, chap. D2, 24 p.

Zaugg, S.D., Sandstrom, M.W., Smith, S.G., and Fehlbert, K.M., 1995, Methods of analysis by the U.S. Geological Survey National Water-Quality Laboratory—determination of pesticides in water by C-18 solid-phase extraction and capillary-column gas chromatography/mass spectrometry with selected-ion monitoring: U.S. Geological Survey Open-File Report 95–181, 60 p.

HYDROLOGIC AND BIOLOGIC DATA

Table 4. Minimum reporting limits and analytical techniques for nutrients, major ions, suspended sediment, and radiochemical and stable isotopes analyzed in water samples, September 1995 through September 1996

[MRL, minimum reporting level; mg/L, milligrams per liter; µg/L, micrograms per liter; pCi/L, picocuries per liter; n/a, not applicable; /mil, per thousand]

Constituent	Chemical Abstract Service (CAS) registry number	MRL	Reference for analytical technique
	Nutrients		
Dissolved ammonia nitrogen	7664–41–7	0.02 mg/L	Fishman (1993)
Dissolved nitrite nitrogen	14797–65-0	.01 mg/L	do.
Dissolved ammonia nitrogen plus organic nitrogen	17778–88-0	.10 mg/L	do.
Dissolved nitrite plus nitrate nitrogen		.05 mg/L	do.
Total ammonia nitrogen plus organic nitrogen	17778–88–0	.10 mg/L	do.
Total phosphorus	7723–14–0	.01 mg/L	do.
Dissolved orthophosphate	14265–44–2	.01 mg/L	do.
Dissolved organic carbon		.10 mg/L	do.
Suspended organic carbon		.10 mg/L	do.
	Major ions		
Calcium	7440–70–2	.02 mg/L	Fishman (1993)
Magnesium	7439–95–4	.004 mg/L	do.
Sodium	7440–23–5	.1 mg/L	do.
Potassium	7440–09–7	.1 mg/L	do.
Chloride	16887–00–6	.1 mg/L	do.
Sulfate	14808–79–8	.1 mg/L	do.
Fluoride	16984-–48–8	.1 mg/L	do.
Bromide	24959–67–9	.1 mg/L	do.
Silica	7631–86–9	.1 mg/L	do.
Iron	7439–89–6	10 µg/L	do.
Manganese	7439–96–5	4 µg/L	do.
	Suspended sediment		
Suspended sediment			Guy (1969)
	Radiochemical and stable isotopes		
Tritium	10028–17–8	1.0 pCi/L	Ostlund and Dorsey (1977)
Radon-222	14859–67–7	80.0 pCi/L	American Society for Testing Materials (1996)
Oxygen-18/oxygen-16	n/a	/mil	Epstein and Mayeda (1953)
Deuterium/protium	n/a	/mil	Coplen and others (1991)

Table 5. Minimum reporting limits and analytical techniques for selected pesticides analyzed in water samples, September 1995 to September 1996

[MRL, minimum reporting level; µg/L, micrograms per liter; *, constituent not registered in the State of Iowa (Jim Ellerhoff, Iowa Department of Agriculture and Land Stewardship, Pesticide Bureau, written commun., 1998); pct, percent; n/a, not applicable]

Pesticide	Trade name	Chemical Abstract Service (CAS) registry number	MRL (µg/L, except as noted)	Reference for analytical technique
2,6-diethylaniline		579–66–8	0.003	Zaugg and others (1995)
acetochlor	Harness, Surpass	34256–82–1	.002	do.
alachlor	Lasso	15972–60–8	.002	do.
atrazine	atrazine, AAtrex	1912–24–9	.001	do.
azinphos-methyl	Guthion	86–50–0	.001	do.
benfluralin	n/a	1861–40–1	.002	do.
butylate	Sutan, Genate	2008–41–5	.002	do.
carbaryl	Sevin, Savit	63–25–2	.003	do.
carbofuran	Furadan	1563–66–2	.003	do.
chlorpyrifos	Dursban, Lorsban	2921–88–2	.004	do.
cyanazine	Bladex	21725–46–2	.004	do.
DCPA	Dacthal	1861–32–1	.002	do.
deethylatrazine	n/a	6190–65–4	.002	do.
diazinon	several	333–41–5	.002	do.
dieldrin	n/a	60–57–1	.001	do.
disulfoton	Di-Syston	298–04–4	.017	do.
EPTC	Eradicane, Eptam	759–94–4	.002	do.
ethalfluralin	Sonalan, Curbit	55283–68–6	.004	do.
ethoprophos	Mocap	13194–48–4	.003	do.
fonofos	Dyfonate	944–22–9	.003	do.
lindane	Gammasan	58–89–9	.004	do.
linuron	Lorox, Linex	330–55–2	.002	do.
malathion	several	121–75–5	.005	do.
metolachlor	Dual	51218–45–2	.002	do.
metribuzin	Sencor, Lexone	21087–64–9	.004	do.
molinate*	n/a	2212–67–1	.004	do.
napropamide	Devrinol	15299–99–7	.003	do.
parathion	Parathion 15 pct wettable	56–38–2	.004	do.
parathion-methyl	Penncap-M	298–00–0	.006	do.
pebulate	Tillam	1114–71–2	.004	do.
pendimethalin	Prowl	40487–42–1	.004	do.
phorate	Thimet	298–02–2	.002	do.
prometon	Pramitol	1610–18–0	.018	do.
propachlor	Ramrod	1918–16–7	.007	do.
propanil*	n/a	709–98–8	.004	do.

Table 5. Minimum reporting limits and analytical techniques for selected pesticides analyzed in water samples, September 1995 to September 1996—Continued

Pesticide	Trade name	Chemical Abstract Service (CAS) registry number	MRL (μg/L, except as noted)	Reference for analytical technique
propargite	Omite, Comite	2312–35–8	0.013	Zaugg and others (1995)
propyzamide	Kerb	23950–58–5	.003	do.
simazine	Princep	122–34–9	.005	do.
tebuthiuron	Spike	34014–18–1	.010	do.
terbacil	Sinbar	5902–51–2	.007	do.
terbufos	Counter	13071–79–9	.013	do.
thiobencarb*	n/a	28249–77–6	.002	do.
tri-allate*	n/a	2303–17–5	.001	do.
trifluralin	Treflan, Trilin, Trific	1582–09–8	.002	do.
alpha-HCH	n/a	319–84–6	.002	do.
cis-permethrin	n/a	54774–45–7	.005	do.
p, p'-DDE	n/a	72–55–9	.006	do.
diazinon-d10 (surrogate)	n/a	100155–47–3	.1 pct	do.
terbuthylazine (surrogate)	n/a	5915–41–3	.1 pct	do.
alpha-HCH-d6 (surrogate)	n/a	n/a	.1 pct	do.

Table 6. Minimum reporting limits and analytical techniques for volatile organic compounds analyzed in water samples, September 1995 through September 1996

[MRL, minimum reporting level; μg/L, micrograms per liter; pct, percent]

Volatile organic compound	Chemical Abstract Service (CAS) registry number	MRL (μg/L, except as noted)	Reference for analytical technique
1, 1, 1, 2-Tetrachloroethane	630–20–6	0.05	Rose and Schroeder (1995)
1, 1, 1-Trichloroethane	71–55–6	.05	do.
1, 1, 2, 2-Tetrachloroethane	79–34–5	.10	do.
1, 1, 2-Trichloroethane	79–00–5	.10	do.
1, 1, 2-Trichlorotrifluoroethane	76–13–1	.05	do.
1, 1-Dichloroethane	75–34–3	.05	do.
1, 1-Dichloroethylene	75–35–4	.10	do.
1, 1-Dichloropropene	563–58–6	.05	do.
1, 2, 3, 4-Tetramethylbenzene	488–23–3	.05	do.
1, 2, 3, 5-Tetramethylbenzene	527–53–7	.05	do.
1, 2, 3-Trichlorobenzene	87–61–6	.20	do.
1, 2, 3-Trichloropropane	96–18–4	.20	do.
1, 2, 3-Trimethylbenzene	526–73–8	.05	do.
1, 2, 4-Trichlorobenzene	120–82–1	.20	do.
1, 2, 4-Trimethylbenzene	95–63–6	.05	do.
1, 2-Dibromo-3-chloropropane	96–12–8	.50	do.
1, 2-Dibromoethane	106–93–4	.10	do.
1, 2-Dichlorobenzene	95–50–1	.05	do.
1, 2-Dichloroethane	107–06–2	.05	do.
1, 2-Dichloropropane	78–87–5	.05	do.
1, 3, 5-Trimethylbenzene	108–67–8	.05	do.
1, 3-Dichlorobenzene	541–73–1	.05	do.
1, 3-Dichloropropane	142–28–9	.05	do.
1, 4-Bromofluorobenzene	460–00–4	.1 pct	do.
1, 4-Dichlorobenzene	106–46–7	.05	do.
2, 2-Dichloropropane	594–20–7	.05	do.
2-Butanone	78–93–3	5.0	do.
2-Chlorotoluene	95–49–8	.05	do.
2-Hexanone	591–78–6	5.0	do.
3-Chloropropene	107–05–1	.10	do.
4-Chlorotoluene	106–-43–4	.05	do.
4-Isopropyl-1-methylbenzene	99–87–6	.05	do.
4-Methyl-2-pentanone	108–01–1	5.0	do.
Acetone	67–64–1	5.0	do.
Acrolein	107–02–8	2.0	do.

Table 6. Minimum reporting limits and analytical techniques for volatile organic compounds analyzed in water samples, September 1995 through September 1996—Continued

Volatile organic compound	Chemical Abstract Service (CAS) registry number	MRL (µg/L, except as noted)	Reference for analytical technique
Acrylonitrile	107–13–1	2.0	Rose and Schroeder (1995)
Benzene	71–43–2	.05	do.
Bromobenzene	108–86–1	.05	do.
Bromochloromethane	74–97–5	.10	do.
Bromodichloromethane	75–27–4	.10	do.
Bromoform	75–25–2	.20	do.
Bromomethane	74–83–9	.10	do.
Butylbenzene	104–51–8	.05	do.
Carbon disulfide	75–15–0	.05	do.
Chlorobenzene	108–90–7	.05	do.
Chloroethane	75–00–3	.10	do.
Chloroform	67–66–3	.05	do.
Chloromethane	74–87–3	.20	do.
Dibromochloromethane	124–48–1	.10	do.
Dibromomethane	74–95–3	.10	do.
Dichlorodifluoromethane	75–71–8	.20	do.
Dichloromethane	75–09–2	.10	do.
Diethyl ether	60–29–7	.10	do.
Diisopropyl ether	108–20–3	.10	do.
Ethyl methacrylate	97–63–2	1.0	do.
Ethyl tert-butyl ether	637–92–3	.10	do.
Ethylbenzene	100–41–4	.05	do.
Hexachlorobutadiene	87–68–3	.20	do.
Hexachloroethane	67–72–1	.05	do.
Isopropylbenzene	98–82–8	.05	do.
Methyl acrylate	96–33–3	2.0	do.
Methyl acrylonitrile	126–98–7	2.0	do.
Methyl iodide	74–88–4	.05	do.
Methyl methacrylate	80–62–6	1.0	do.
Naphthalene	91–20–3	.2 0	do.
Propylbenzene	103–65–1	.05	do.
Styrene	100–42–5	.05	do.
Tetrachloroethylene	127–18–4	.05	do.
Tetrachloromethane	56–23–5	.05	do.
Tetrahydrofuran	109–99–9	5 .0	do.
Toluene	108–88–3	2.0	do.
Trichloroethylene	79–01–6	.05	do.

Table 6. Minimum reporting limits and analytical techniques for volatile organic compounds analyzed in water samples, September 1995 through September 1996—Continued

Volatile organic compound	Chemical Abstract Service (CAS) registry number	MRL (μg/L, except as noted)	Reference for analytical technique
Trichlorofluoromethane	75–69–4	0.10	Rose and Schroeder (1995)
Vinyl acetate	108–05–4	5.0	do.
Vinyl bromide	593–60–2	.20	do.
Vinylchloride	75–01–4	.05	do.
cis-1, 2-Dichloroethylene	156–59–2	.05	do.
cis-1, 3-Dichloropropene	10061–01–5	.10	do.
m- and p-Xylene		.05	do.
o-Ethyl toluene	611–14–3	5.0	do.
o-Xylene	95–47–6	.05	do.
sec-Butylbenzene	135–98–8	.05	do.
tert-Butyl methyl ether	1634–04–4	.10	do.
tert-Butylbenzene	98–06–6	.05	do.
tert-Pentyl methyl ether	994–05–8	.10	do.
trans-1, 2-Dichloroethylene	156–60–5	.05	do.
trans-1, 3-Dichloropropene	10061–02–6	.10	do.
trans-1, 4-Dichloro-2-butene	110–57–6	5.0	do.
1, 2-Dichloroethane-d4 (surrogate)	17060–07–0	.1 pct	do.
Toluene-d8	2037–26–5	.1 pct	do.

Table 7. Minimum reporting limits and analytical techniques for trace elements analyzed in fish-tissue samples, September 1995 through September 1996

[MRL, minimum reporting level; μg/g, micrograms per gram; n/a, not applicable]

Trace element	Chemical Abstract Service (CAS) registry number	MRL (μg/g)	Reference for analytical technique
aluminum	7429–90–5	1	Hoffman (1996)
antimony	7440–36–0	.1	do.
arsenic	7440–38–2	.1	do.
barium	7440–39–3	.1	do.
beryllium	7440–41–7	.1	do.
boron	7440–42–8	.2	do.
cadmium	7440–43–9	.1	do.
chromium	7440–47–3	.5	do.
cobalt	7440–48–4	.1	do.
copper	7440–50–8	.5	do.
iron	7439–89–6	1	do.
lead	7439–92–1	.1	do.
manganese	7439–96–5	.1	do.
mercury	7439–97–6	n/a	do.
molybdenum	7439–98–7	.1	do.
nickel	7440–02–0	.1	do.
selenium	7782–49–2	.1	do.
silver	7440–22–4	.1	do.
strontium	7440–24–6	.1	do.
uranium	7440–61–1	.1	do.
vanadium	7440–62–2	.1	do.
zinc	7440–66–6	.5	do.

Table 8. Minimum reporting limits and analytical techniques for organochlorine pesticides and total polychlorinated biphenyls analyzed in fish-tissue samples, September 1995 through September 1996

[MRL, minimum reporting level; µg/kg, micrograms per kilogram; pct, percent]

Constituent	Chemical Abstract Service (CAS) registry number	MRL (µg/kg, except as noted)	Reference for analytical technique
Organochlorine pesticides			
2,4,6-Trichlorobiphenyl (surrogate)	35693–92–6	0.1 pct	Leiker and others (1995)
3,5-Dichlorobiphenyl (surrogate)	34883–41–5	.1 pct	do.
Aldrin	309–00–2	5	do.
Dacthal	1861–32–1	5	do.
Dieldrin	60–57–1	5	do.
Endrin	72–20–8	5	do.
Heptachlor	76–44–8	5	do.
Heptachlor epoxide	1024–57–3	5	do.
Hexachlorobenzene	118–74–1	5	do.
Lindane	58–89–9	5	do.
Lipids		0.5	do.
Mirex	2385–85–5	5	do.
Oxychlordane	27304–13–8	5	do.
Pentachloroanisole	1825–21–4	5	do.
Toxaphene	8001–35–2	200	do.
alpha-HCH	319–84–6	5	do.
alpha-HCH-d6 (surrogate)		.1 pct	do.
beta-HCH	319–85–7	5	do.
cis-Chlordane	5103–71–9	5	do.
cis-Nonachlor	5103–73–1	5	do.
delta-HCH	319–86–8	5	do.
o,p'-DDD	53–19–0	5	do.
o,p'-DDE	3424–82–6	5	do.
o,p'-DDT	789–02–6	5	do.
o,p'-Methoxychlor	30667–99–3	5	do.
p,p'-DDD	72–54–8	5	do.
p,p'-DDE	72–55–9	5	do.
p,p'-DDT	50–29–3	5	do.
p,p'-Methoxychlor	72–43–5	5	do.
trans-Chlordane	5103–74–2	5	do.
trans-Nonachlor	39765–80–5	5	do.
Polychlorinated biphenyls			
Polychlorinated biphenyls	1336–36–3	50	do.

Table 9. Minimum reporting limits and analytical techniques for trace elements and carbon analyzed in bed-sediment samples, September 1995 through September 1996

[μg/g, micrograms per gram; pct, percent]

Constituent	Chemical Abstract Service (CAS) registry number	MRL (μg/g, except as noted)	Reference for analytical technique
	Trace elements		
aluminum	7429–90–5	0.005 pct	Arbogast (1996)
antimony	7440–36–0	.1	do.
arsenic	7440–38–2	.1	do.
barium	7440–39–3	1	do.
beryllium	7440–41–7	1	do.
bismuth	7440–69–9	10	do.
cadmium	7440–43–9	.1	do.
calcium	7440–70–2	.005 pct	do.
cerium	7440–45–1	4	do.
chromium	7440–47–3	1	do.
cobalt	7440–48–4	1	do.
copper	7440–50–8	1	do.
europium	7440–53–1	2	do.
gallium	7440–55–3	4	do.
gold	7440–57–5	8	do.
holmium	7440–60–0	4	do.
iron	7439–89–6	.005 pct	do.
lanthanum	7439–91–0	2	do.
lead	7439–92–1	4	do.
lithium	7439–93–2	2	do.
magnesium	7439–95–4	.005 pct	do.
manganese	7439–96–5	4	do.
mercury	7439–97–6	.02	do.
molybdenum	7439–98–7	2	do.
neodymium	7440–00–8	4	do.
nickel	7440–02–0	2	do.
niobium	7440–03–1	4	do.
phosphorus	7723–14–0	.005 pct	do.
potassium	7440–09–7	.05 pct	do.
scandium	7440–20–2	2	do.
selenium	7782–49–2	.1	do.
silver	7440–22–4	.1	do.
sodium	7440–23–5	.005 pct	do.
strontium	7440–24–6	2	do.
sulfur	7704–34–9	0.05 pct	do.

Table 9. Minimum reporting limits and analytical techniques for trace elements and carbon analyzed in bed-sediment samples, September 1995 through September 1996—Continued

Constituent	Chemical Abstract Service (CAS) registry number	MRL (μg/g, except as noted)	Reference for analytical technique
	Trace elements—Continued		
tantalum	7440–25–7	40	Arbogast (1996)
thorium	7440–29–1	1	do.
tin	7440–31–5	5	do.
titanium	7440–32–6	.005 pct	do.
uranium	7440–61–1	.05	do.
vanadium	7440–62–2	2	do.
ytterbium	7440–64–4	1	do.
yttrium	7440–65–5	2	do.
zinc	7440–66–6	4	do.
	Carbon		
carbon, inorganic	n/a	.01 pct	do.
carbon, organic	n/a	.01 pct	do.
carbon, organic plus inorganic	n/a	.01 pct	do.

Table 10. Minimum reporting limits and analytical techniques for chlorinated pesticides and semivolatile organic compounds analyzed in bed-sediment samples, September 1995 through September 1996

[MRL, minimum reporting level μg/kg, micrograms per kilogram; pct, percent; n/a, not applicable]

Constituent	Chemical Abstract Service (CAS) registry number	MRL (μg/kg, except as noted)	Reference for analytical technique
	Chlorinated pesticides		
2,2',3,4,4',5,6,6'-Octachlorobiphenyl (surrogate)	74472–52–9	0.1 pct	Foreman and others (1995)
3,5-Dichlorobiphenyl (surrogate)	34883–41–5	.1 pct	do.
Aldrin	309–00–2	1	do.
Chloroneb	2675–77–6	5	do.
Dacthal	1861–32–1	5	do.
Dieldrin	60–57–1	1	do.
Endrin	72–20–8	2	do.
Heptachlor	76–44–8	1	do.
Heptachlor epoxide	1024–57–3	1	do.
Hexachlorobenzene	118–74–1	1	do.
Isodrin	465–73–6	1	do.
Lindane	58–89–9	1	do.
Mirex	2385–85–5	1	do.
Oxychlordane	27304–13–8	1	do.
Pentachloroanisole	1825–21–4	1	do.
Polychlorinated biphenyls	1336–36–3	50	do.
Toxaphene	8001–35–2	200	do.
alpha-Endosulfan	959–98–8	1	do.
alpha-HCH	319–84–6	1	do.
beta-HCH	319–85–7	1	do.
cis-Chlordane	5103–71–9	1	do.
cis-Nonachlor	4103–73–1	1	do.
cis-Permethrin	54774–45–7	5	do.
o,p'-DDD	53–19–0	1	do.
o,p'-DDE	3424–82–6	1	do.
o,p'-DDT	789–02–6	2	do.
o,p'-Methoxychlor	30667–99–3	5	do.
p,p'-DDD	72–54–8	1	do.
p,p'-DDE	72–55–9	1	do.
p,p'-DDT	50–29–3	2	do.
p,p'-Methoxychlor	72–43–5	5	do.
trans-Chlordane	5103–74–2	1	do.
trans-Nonachlor	39765–80–5	1	do.
trans-Permethrin	51877–74–8	5	do.

Table 10. Minimum reporting limits and analytical techniques for chlorinated pesticides and semivolatile organic compounds analyzed in bed-sediment samples, September 1995 through September 1996—Continued

Constituent	Chemical Abstract Service (CAS) registry number	MRL (μg/kg, except as noted)	Reference for analytical technique
Semvolatile organic compounds			
1,2,4-Trichlorobenzene	120–82–1	50	Furlong and others (1996)
1,2-Dichlorobenzene	95–50–1	50	do.
1,2-Dimethylnaphthalene	573–98–8	50	do.
1,3-Dichlorobenzene	541–73–1	50	do.
1,4-Dichlorobenzene	106–46–7	50	do.
1,6-Dimethylnaphthalene	575–43–9	50	do.
1-Methyl-9H-fluorene	1730–37–6	50	do.
1-Methylphenanthrene	832–69–9	50	do.
1-Methylpyrene	2381–21–7	50	do.
2,2'-Biquinoline	119–91–5	50	do.
2,3,5,6-Tetramethylphenol	527–35–5	50	do.
2,3,6-Trimethylnaphthalene	829–26–5	50	do.
2,4,6-Trichlorophenol	88–06–2	n/a	do.
2,4,6-Trimethylphenol	527–60–6	n/a	do.
2,4-Dichlorophenol	120–83–2	n/a	do.
2,4-Dinitrophenol	51–28–5	n/a	do.
2,4-Dinitrotoluene	121–14–2	50	do.
2,6-Dimethylnaphthalene	581–42–0	50	do.
2,6-Dinitrotoluene	606–20–2	50	do.
2-Chloronaphthalene	91–58–7	50	do.
2-Chlorophenol	95–57–8	50	do.
2-Ethylnaphthalene	939–27–5	50	do.
2-Fluorobiphenyl (surrogate)	321–60–8	.1 pct	do.
2-Methylanthracene	613–12–7	50	do.
2-Nitrophenol	88–75–5	n/a	do.
3,5-Dimethylphenol	108–68–9	50	do.
4,6-Dinitro-2-methylphenol	534–52–1	n/a	do.
4-Bromophenylphenylether	101–55–3	50	do.
4-Chloro-3-methylphenol	59–50–7	50	do.
4-Chlorophenyl phenyl ether	7005–72–3	50	do.
4-Nitrophenol	100–02–7	n/a	do.
4H-cyclopenta[def]phenanthrene	203–64–5	50	do.
Acenaphthene	83–32–9	50	do.
Acenaphthylene	208–96–8	50	do.
Acridine	260–94–6	50	do.

Table 10. Minimum reporting limits and analytical techniques for chlorinated pesticides and semivolatile organic compounds analyzed in bed-sediment samples, September 1995 through September 1996—Continued

Constituent	Chemical Abstract Service (CAS) registry number	MRL (μg/kg, except as noted)	Reference for analytical technique
Semivolatile organic compounds—Continued			
Anthacene	120–12–7	50	Furlong and others (1996)
Anthraquinone	84–65–1	50	do.
Azobenzene	103–33–3	50	do.
Benz[a]anthracene	56–55–3	50	do.
Benzo[a]pyrene	50–32–8	50	do.
Benzo[b]fluoranthene	205–99–2	50	do.
Benzo[c]cinnoline	230–17–1	50	do.
Benzo[ghi]perylene	191–24–2	50	do.
Benzo[k]fluoranthene	207–08–9	50	do.
Bis(2-ethylhexyl) phthalate	117–81–7	50	do.
Butylbenzyl phthalate	85–68–7	50	do.
C8-Alkylphenol		50	do.
Carbazole	86–74–8	50	do.
Chrysene	218–01–9	50	do.
Di-n-butyl phthalate	84–74–2	50	do.
Di-n-octyl phthalate	117–84–0	50	do.
Dibenz[a,h]anthracene	53–70–3	50	do.
Dibenzothiophene	132–65–0	50	do.
Diethyl phthalate	84–66–2	50	do.
Dimethyl phthalate	131–11–3	50	do.
Fluoranthene	206–44–0	50	do.
Fluorene	86–73–7	50	do.
Hexachlorobenzene	118–74–1	50	do.
Hexachlorobutadiene	87–68–3	n/a	do.
Hexachlorocyclopentadiene	77–47–4	n/a	do.
Hexachloroethane	67–72–1	n/a	do.
Indeno[1,2,3-cd]pyrene	193–39–5	50	do.
Isophorone	78–59–1	50	do.
Isoquinoline	119–65–3	50	do.
N-Nitrosodi-n-propylamine	621–64–7	50	do.
N-Nitrosodiphenylamine	86–30–6	50	do.
Naphthalene	91–20–3	50	do.
Nitrobenzene	98–95–3	50	do.
Nitrobenzene-d5 (surrogate)	4165–60–0	.1 pct	do.
Pentachloroanisole	1825–21–4	50	do.

Table 10. Minimum reporting limits and analytical techniques for chlorinated pesticides and semivolatile organic compounds analyzed in bed-sediment samples, September 1995 through September 1996—Continued

Constituent	Chemical Abstract Service (CAS) registry number	MRL (μg/kg, except as noted)	Reference for analytical technique
Semivolatile organic compounds—Continued			
Pentachloronitrobenzene	82–68–8	50	Furlong and others (1996)
Pentachlorophenol	87–86–5	n/a	do.
Phenanthrene	85–01–8	50	do.
Phenanthridine	229–87–8	50	do.
Phenol	108–95–2	50	do.
Pyrene	129–00–0	50	do.
Quinoline	91–22–5	50	do.
Terphenyl-d14 (surrogate)	1718–51–0	.1 pct	do.
bis(2-Chloroethoxy)methane	111–91–1	50	do.
bis(2-Chloroethyl)ether	111–44–4	50	do.
bis(2-Chloroisopropyl) ether	108–60–1	n/a	do.
p-Cresol	106–44–5	50	do.

Table 11. Physical properties determined onsite at selected surface-water sites, 1996

[ft^3/s, cubic feet per second; ft, feet; µS/cm, microsiemens per centimeter; ° C, degrees Celsius; mg/L, milligrams per liter; %, percent; --, data not collected]

Date (month-day-year)	Time (24-hour)	Type of sample	Discharge (ft^3/s)	Gage height (ft)	Specific conductance (µS/cm)	pH (standard units)	Water temperature (°C)	Air temperature (°C)	Oxygen, dissolved (mg/L)	Dissolved oxygen saturation (%)
05420680, Wapsipinicon River near Tripoli, IA (map number 1, fig. 1)										
03-27-96	1234	regular	1,350	12.15	236	7.2	0.0	-3.0	11.3	85
04-18-96	0945	do.	138	8.25	396	8.5	10.5	--	10.3	99
05-16-96	1003	do.	113	8.00	408	8.1	12.5	15.5	9.2	90
06-24-96	1148	do.	820	10.86	452	7.7	19.0	25.0	7.4	85
07-18-96	1100	do.	92	7.79	422	7.9	25.0	27.5	6.9	86
08-15-96	1022	do.	31	7.09	420	8.0	21.0	19.0	8.0	91
09-19-96	0950	do.	19	6.91	433	8.2	14.0	11.0	9.6	94
05422000, Wapsipinicon River near DeWitt, IA (map number 2, fig. 1)										
03-14-96	1226	regular	1,430	6.67	382	7.9	2.0	17.0	11.1	87
04-24-96	1127	do.	840	5.77	361	8.8	13.5	--	12.7	122
05-22-96	1225	do.	3,860	8.99	450	7.8	18.5	23.5	7.5	90
05-29-96	1013	do.	14,800	12.77	195	7.3	11.5	--	8.4	81
06-26-96	1043	do.	4,670	10.06	484	7.9	22.5	24.0	7.5	89
07-24-96	1046	do.	970	5.85	418	8.3	23.5	24.0	10.2	121
08-27-96	0940	do.	476	4.90	328	8.7	23.5	24.0	8.8	105
09-25-96	0955	do.	283	4.34	408	8.3	15.0	15.0	10.1	102
05449500, Iowa River near Rowan, IA (map number 3, fig. 1)										
03-20-96	1052	regular	85	3.80	538	7.9	1.0	2.0	13.5	102
04-16-96	1025	do.	184	4.54	683	8.3	6.0	6.0	11.1	95
05-14-96	1018	do.	204	4.69	705	8.2	12.0	10.0	9.4	91
06-20-96	0856	do.	1,070	8.71	673	7.8	17.5	23.5	7.1	81
07-16-96	1100	do.	117	4.12	680	8.1	22.0	25.5	7.4	88
08-13-96	0905	do.	142	4.30	699	8.2	21.5	19.5	7.3	85
09-17-96	0925	do.	66	3.70	688	8.1	13.5	12.5	9.2	92
05451210, South Fork Iowa River northeast of New Providence, IA (map number 4, fig. 1)										
03-19-96	1307	regular	63	3.14	431	8.0	1.0	3.0	13.0	99
04-15-96	1245	do.	39	2.94	548	8.5	6.5	9.0	14.3	121
05-13-96	1325	do.	138	3.78	685	8.3	13.0	20.5	11.0	106
06-17-96	1305	do.	773	6.31	456	7.7	19.5	24.5	7.2	86
07-15-96	1435	do.	34	2.84	587	8.3	28.0	32.5	10.6	136

Table 11. Physical properties determined onsite at selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Discharge (ft^3/s)	Gage height (ft)	Specific conductance ($\mu S/cm$)	pH (standard units)	Water temperature (°C)	Air temperature (°C)	Oxygen, dissolved (mg/L)	Dissolved oxygen saturation (%)
05451210, South Fork Iowa River northeast of New Providence, IA (map number 4, fig. 1)—Continued										
08-12-96	1304	regular	32	2.75	628	8.4	25.5	28.5	9.7	118
09-16-96	1257	do.	7.6	2.27	526	8.3	19.0	26.0	12.3	140
05453100, Iowa River at Marengo, IA (map number 5, fig. 1)										
03-15-96	1205	regular	1,130	7.07	475	7.8	3.0	14.5	11.8	100
04-25-96	1100	do.	865	6.27	473	8.6	13.5	17.0	11.2	113
05-23-96	1128	do.	2,450	9.55	523	8.0	18.0	17.0	7.3	88
05-31-96	1130	do.	4,700	12.96	560	8.0	14.5	23.0	8.4	85
06-27-96	1010	do.	4,820	13.11	604	8.0	22.5	26.0	7.1	86
07-25-96	0918	do.	1,120	7.11	577	8.2	23.0	19.0	7.5	88
08-26-96	0958	do.	738	6.24	360	8.7	23.0	27.0	10.5	125
09-26-96	0937	do.	432	5.59	455	8.3	14.0	13.0	8.8	89
05455100, Old Man's Creek near Iowa City, IA (map number 6, fig. 1)										
03-18-96	1051	regular	35	2.66	426	7.7	4.5	7.0	11.9	98
04-11-96	1015	do.	23	2.47	453	8.5	11.0	19.0	12.0	118
05-07-96	1034	do.	27	2.48	483	8.6	11.5	15.0	11.5	108
05-10-96	1012	do.	4,730	15.21	130	7.1	15.5	16.0	6.8	70
05-21-96	1322	do.	525	6.40	344	7.3	15.0	24.0	7.0	71
06-14-96	0936	do.	203	3.78	467	7.6	19.0	27.0	7.7	86
07-11-96	0940	do.	33	2.04	517	8.0	18.5	21.0	9.9	108
08-08-96	0922	do.	13	1.59	520	7.9	22.0	27.0	8.6	101
09-09-96	1112	do.	5.9	1.39	516	7.8	20.0	19.0	8.4	94
05455570, English River at Riverside, IA (map number 7, fig. 1)										
04-04-96	0940	regular	90	3.62	--	8.0	9.5	1.7	11.3	--
05-08-96	0940	do.	77	3.47	--	7.9	12.7	13.0	10.5	--
06-03-96	0740	do.	2250	9.97	--	7.3	15.0	13.0	8.8	--
06-17-96	0855	do.	560	6.05	--	7.6	23.0	26.7	7.8	--
07-08-96	0850	do.	230	3.80	--	8.0	24.0	--	7.8	--
08-06-96	0940	do.	45	3.17	--	8.0	26.0	--	8.0	--
09-04-96	0735	do.	90	2.80	--	7.8	20.5	26.4	8.4	--

Table 11. Physical properties determined onsite at selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Discharge (ft^3/s)	Gage height (ft)	Specific conductance ($\mu S/cm$)	pH (standard units)	Water temperature (°C)	Air temperature (°C)	Oxygen, dissolved (mg/L)	Dissolved oxygen saturation (%)
05457750, Cedar River near Carville, IA (map number 9, fig. 1)										
03-21-96	0750	regular	380	2.44	--	7.9	1.0	-6.7	12.5	--
04-02-96	1020	do.	1,470	4.06	--	7.6	4.5	10.0	12.8	--
05-29-96	1010	do.	800	3.09	--	8.2	11.5	16.0	13.1	--
06-12-96	1125	do.	780	3.06	--	8.1	20.5	26.7	8.4	--
08-20-96	1010	do.	180	2.08	--	8.3	21.5	23.8	7.9	--
09-26-96	0750	do.	150	2.04	--	8.3	13.5	18.0	8.2	--
05458900, West Fork Cedar River near Finchford, IA (map number 10, fig. 1)										
03-21-96	1440	regular	270	6.09	--	8.0	4.5	1.7	12.5	--
04-02-96	1155	do.	550	7.15	--	7.9	7.5	15.5	11.4	--
05-29-96	0855	do.	1,100	8.29	--	8.0	10.0	13.0	11.9	--
06-12-96	1020	do.	990	8.36	--	8.0	19.5	26.7	9.2	--
08-20-96	0900	do.	110	5.47	--	8.2	20.0	23.8	8.5	--
09-26-96	0645	do.	100	5.42	--	8.3	12.0	18.0	10.0	--
05461390, Flood Creek near Powersville, IA (map number 11, fig. 1)										
03-28-96	0914	regular	9.1	2.35	403	7.8	1.0	4.0	12.8	92
04-17-96	0959	do.	3.2	2.19	432	8.5	6.0	--	14.4	122
05-15-96	0944	do.	2.8	2.17	443	8.2	11.0	12.5	11.6	109
06-04-96	1145	do.	101	3.47	572	8.1	12.0	16.0	9.6	92
06-07-96	1210	do.	188	4.51	532	8.0	12.0	--	9.1	87
06-19-96	1103	do.	268	5.16	564	7.9	14.5	20.5	8.6	91
07-17-96	1110	do.	29	2.79	491	8.1	17.5	24.5	8.8	102
08-14-96	1003	do.	9.9	2.41	494	8.1	17.0	24.0	9.6	107
09-18-96	1014	do.	2.4	2.17	467	8.2	12.0	12.0	11.5	104

Table 11. Physical properties determined onsite at selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Discharge (ft^3/s)	Gage height (ft)	Specific conductance ($\mu S/cm$)	pH (standard units)	Water temperature (°C)	Air temperature (°C)	Oxygen, dissolved (mg/L)	Dissolved oxygen saturation (%)
05464020, Cedar River at Gilbertville, IA (map number 12, fig. 1)										
03-26-96	1315	regular	3,780	8.15	485	8.1	2.5	--	13.4	96
04-23-96	1008	do.	2,970	6.95	510	8.8	10.5	7.5	12.9	114
05-21-96	1014	do.	2,520	6.82	499	8.4	19.5	20.0	10.1	110
06-25-96	1035	do.	7,660	9.51	586	8.2	21.5	26.0	8.2	93
07-23-96	0954	do.	1,790	6.17	494	8.3	22.0	21.5	9.7	113
08-29-96	0930	do.	1,700	6.20	540	8.3	21.5	25.0	9.4	106
09-24-96	1014	do.	1,070	5.55	495	8.6	15.5	10.0	12.0	120
05464220, Wolf Creek near Dysart, IA (map number 13, fig. 1)										
03-21-96	1246	regular	61	2.51	528	8.1	5.0	4.0	12.7	100
04-22-96	1056	do.	50	2.43	529	8.4	11.5	--	11.5	108
05-20-96	1119	do.	155	2.97	541	8.1	19.5	--	7.9	88
06-18-96	1008	do.	1,880	7.13	352	7.5	19.0	20.5	6.2	72
07-22-96	1208	do.	128	2.73	594	8.1	23.0	28.5	8.7	106
08-28-96	1045	do.	44	2.32	540	8.2	20.5	26.0	10.6	119
09-23-96	1122	do.	31	2.24	542	8.1	16.0	18.0	11.2	118
05465000, Cedar River near Conesville, IA (map number 15, fig. 1)										
03-11-96	1206	regular	3,280	6.54	557	8	2.5	6.0	12.3	94
04-10-96	1228	do.	4,990	7.59	503	8.4	9.5	16.0	8.3	75
05-11-96	1326	do.	32,000	14.25	251	7.6	15.0	20.0	6.6	68
06-13-96	1046	do.	11,000	10.38	585	8.1	20.5	28.0	7.7	88
07-08-96	1037	do.	5,500	7.97	552	8.5	26.0	27.5	10.0	126
08-05-96	1050	do.	2,510	6.00	455	9.0	24.5	30.5	11.1	137
09-10-96	0935	do.	1,750	5.50	508	8.8	22.0	23.5	9.1	104
05465500, Iowa River at Wapello, IA (map number 16, fig. 1)										
03-13-96	0915	regular	5,160	11.40	558	8.0	5.0	15.0	11.6	95
04-08-96	1210	do.	7,880	12.58	465	8.4	8.0	11.0	10.9	96
05-08-96	1141	do.	4,290	10.98	475	8.7	13.0	20.0	9.4	91
05-30-96	1200	do.	39,500	20.98	327	7.5	14.0	25.0	8.1	79
06-11-96	1047	do.	21,900	17.53	543	8.1	17.5	23.5	8.4	91
07-09-96	1102	do.	11,700	14.47	562	8.4	25.5	22.0	9.4	116
08-06-96	1050	do.	3,400	10.97	475	8.8	27.0	30.5	9.6	126
09-11-96	1000	do.	2,390	10.30	483	8.7	23.0	25.0	9.1	108

Table 11. Physical properties determined onsite at selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Discharge (ft^3/s)	Gage height (ft)	Specific conductance ($\mu S/cm$)	pH (standard units)	Water temperature (°C)	Air temperature (°C)	Oxygen, dissolved (mg/L)	Dissolved oxygen saturation (%)
05473400, Cedar Creek near Oakland Mills, IA (map number 18, fig. 1)										
04-04-96	1200	regular	95	3.75	--	8.3	9.5	1.5	11.8	--
05-08-96	1240	do.	1,850	9.55	--	7.5	13.0	21.0	10.0	--
06-17-96	1110	do.	260	4.50	--	8.4	25.0	26.5	9.5	--
07-08-96	1235	do.	30	3.15	--	8.6	27.0	--	10.4	--
08-06-96	1255	do.	10	2.89	--	8.6	30.0	--	10.0	--
09-04-96	0930	do.	25	3.13	--	8.0	22.5	25.5	6.5	--
05474000, South Skunk River at Augusta, IA (map number 19, fig. 1)										
03-12-96	1356	regular	1,940	3.38	501	7.9	2.0	16.0	12.5	91
04-09-96	1210	do.	931	2.60	509	8.8	9.5	12.0	16.7	148
05-09-96	1120	do.	13,300	11.38	257	7.8	15.0	--	7.3	77
06-12-96	0915	do.	6,090	7.06	534	8.0	18.0	27.0	8.3	89
07-10-96	0956	do.	1,830	3.50	622	8.3	23.5	24.5	8.6	102
08-07-96	0935	do.	714	2.36	606	8.2	28.0	27.5	7.3	94
09-12-96	0916	do.	337	1.89	430	8.0	20.5	13.5	7.3	82

Table 12. Miscellaneous onsite determinations at selected surface-water sites, 1996

[mg/L, milligrams per liter; col/100 mL, number of colonies per 100 milliliters; µg/L, micrograms per liter; --, data not collected; K, nonideal colony count; >, greater than indicated value]

Date (month-day-year)	Time (24-hour)	Type of sample	Alkalinity (mg/L)	Bicarbonate concentration (mg/L)	Carbonate concentration (mg/L)	Fecal coliform (col/100 mL)	Fecal streptococci (col/100 mL)	Chlorophyll *a* (µg/L)
05420680, Wapsipinicon River near Tripoli, IA (map number 1, fig. 1)								
03-27-96	1234	regular	51	62	0	960	K67,000	--
04-18-96	0945	do.	136	166	0	K20	K270	--
05-16-96	1003	do.	149	182	0	77	K54	--
06-24-96	1148	do.	114	139	0	560	900	--
07-18-96	1100	do.	155	189	0	K200	K220	--
08-15-96	1022	do.	146	178	0	220	420	--
09-19-96	0950	do.	157	184	4	250	580	--
05422000, Wapsipinicon River near DeWitt, IA (map number 2, fig. 1)								
03-14-96	1226	regular	147	179	0	K20	2,400	--
04-24-96	1127	do.	116	129	6	K36	430	--
05-22-96	1225	do.	124	151	0	4,900	8,900	45.0
05-29-96	1013	do.	57	70	0	16,000	45,000	5.12
06-26-96	1043	do.	123	150	0	2,000	K580	11.4
07-24-96	1046	do.	147	165	7	550	1,400	220
08-27-96	0940	do.	100	117	2	200	1,900	289
09-25-96	0955	do.	147	170	5	220	1,400	33.4
05449500, Iowa River near Rowan, IA (map number 3, fig. 1)								
03-20-96	1052	regular	227	277	0	4,400	1,100	--
04-16-96	1025	do.	276	337	0	4,900	1,500	--
05-14-96	1018	do.	278	339	0	130	330	--
06-20-96	0856	do.	258	315	0	1,600	2,600	6.11
07-16-96	1100	do.	258	315	0	400	230	15.5
08-13-96	0905	do.	282	344	0	2,300	410	--
09-17-96	0925	do.	264	322	0	380	200	20.2

Table 12. Miscellaneous onsite determinations at selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Alkalinity (mg/L)	Bicarbonate concentration (mg/L)	Carbonate concentration (mg/L)	Fecal coliform (col/100 mL)	Fecal streptococci (col/100 mL)	Chlorophyll *a* (μg/L)
05451210, South Fork Iowa River northeast of New Providence, IA (map number 4, fig. 1)								
03-19-96	1307	regular	174	212	0	K28	470	--
04-15-96	1245	do.	225	272	1	56	K170	--
05-13-96	1325	do.	277	336	1	270	K270	--
06-17-96	1305	do.	252	308	0	K140,000	K140,000	--
07-15-96	1435	do.	202	246	0	180	K23	--
08-12-96	1304	do.	255	311	0	200	K54	--
09-16-96	1257	do.	221	225	7	420	280	--
05453100, Iowa River at Marengo, IA (map number 5, fig. 1)								
03-15-96	1205	regular	170	207	0	K11	1,200	--
04-25-96	1100	do.	172	205	2	K16	K260	--
05-23-96	1128	do.	182	222	0	25,000	70,000	26.6
05-31-96	1130	do.	219	267	0	1,300	1,300	8.89
06-27-96	1010	do.	224	273	0	K470	1,000	9.15
07-25-96	0918	do.	221	270	0	1,100	730	22.4
08-26-96	0958	do.	107	101	14	370	1,600	629
09-26-96	0937	do.	157	182	5	300	1,900	286
05455100, Old Man's Creek near Iowa City, IA (map number 6, fig. 1)								
03-18-96	1051	regular	146	178	0	K17	730	--
04-11-96	1015	do.	150	183	0	K58	290	--
05-07-96	1034	do.	182	220	1	260	K180	--
05-10-96	1012	do.	41	50	0	>6,000	>10,000	--
05-21-96	1322	do.	100	122	0	K200,000	K95,000	--
06-14-96	0936	do.	139	170	0	K1,200	1,300	--
07-11-96	0940	do.	172	210	0	200	310	--
08-08-96	0922	do.	190	232	0	170	K130	--
09-09-96	1112	do.	202	246	0	280	750	--

Table 12. Miscellaneous onsite determinations at selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Alkalinity (mg/L)	Bicarbonate concentration (mg/L)	Carbonate concentration (mg/L)	Fecal coliform (col/100 mL)	Fecal streptococci (col/100 mL)	Chlorophyll *a* (μg/L)
05461390, Flood Creek near Powersville, IA (map number 11, fig. 1)								
03-28-96	0914	regular	137	167	0	130	3,200	--
04-17-96	0959	do.	166	203	0	140	K230	--
05-15-96	0944	do.	170	207	0	610	510	--
06-04-96	1145	do.	198	242	0	540	410	--
06-07-96	1210	do.	159	194	0	2,600	20,000	--
06-19-96	1103	do.	167	204	0	1,800	2,400	--
07-17-96	1110	do.	176	215	0	K1,300	1,900	--
08-14-96	1003	do.	186	227	0	780	610	--
09-18-96	1014	do.	10	12	0	1,100	670	--
09-18-96	1019	do.	10	12	0	1,100	670	--
05464020, Cedar River at Gilbertville, IA (map number 12, fig. 1)								
03-26-96	1315	regular	182	222	0	1,500	790	--
04-23-96	1008	do.	186	215	6	820	1,000	--
05-21-96	1014	do.	174	210	1	420	810	106
06-25-96	1035	do.	200	244	0	K720	K390	25.3
07-23-96	0954	do.	164	200	0	500	1,300	97.2
08-29-96	0930	do.	194	234	1	920	3,000	136
09-24-96	1014	do.	146	168	5	2,200	680	88.9
05464220, Wolf Creek near Dysart, IA (map number 13, fig. 1)								
03-21-96	1246	regular	234	286	0	K3	450	--
04-22-96	1056	do.	189	231	0	K29	K50	--
05-20-96	1119	do.	188	229	0	2,000	2,700	14.0
05-20-96	1124	replicate	--	--	--	--	--	13.5
06-18-96	1008	regular	94	115	0	8,900	79,000	--
07-22-96	1208	do.	208	254	0	680	K240	--
08-28-96	1045	do.	186	225	1	130	210	--
09-23-96	1122	do.	180	220	0	900	1,600	--

Table 12. Miscellaneous onsite determinations at selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Alkalinity (mg/L)	Bicarbonate concentration (mg/L)	Carbonate concentration (mg/L)	Fecal coliform (col/100 mL)	Fecal streptococci (col/100 mL)	Chlorophyll *a* (μg/L)
05465000, Cedar River near Conesville, IA (map number 15, fig. 1)								
03-11-96	1206	regular	216	264	0	K25	K52	--
04-10-96	1228	do.	168	205	0	K6	400	--
05-11-96	1326	do.	67	82	0	9,800	K180,000	--
06-13-96	1046	do.	184	225	0	K180	K98	32.4
07-08-96	1037	do.	166	203	0	K54	2,700	171
08-05-96	1050	do.	121	118	14	160	K14	264
09-10-96	0935	do.	123	138	6	160	2,500	--
05465500, Iowa River at Wapello, IA (map number 16, fig. 1)								
03-13-96	0915	regular	179	218	0	K15	700	--
04-08-96	1210	do.	151	184	0	K21	61	--
05-08-96	1141	do.	144	173	1	48	440	--
05-30-96	1200	do.	96	117	0	6,300	19,000	17.5
06-11-96	1047	do.	194	237	0	K330	840	18.7
07-09-96	1102	do.	251	306	0	K44	1,100	105
08-06-96	1050	do.	139	132	19	310	K52	180
09-11-96	1000	do.	132	146	7	210	2,800	258
05474000, Skunk River at Augusta, IA (map number 19, fig. 1)								
03-12-96	1356	regular	163	199	0	--	4,800	--
04-09-96	1210	do.	171	204	2	K10	930	--
05-09-96	1120	do.	87	106	0	>6,000	>10,000	--
06-12-96	0915	do.	172	210	0	K400	780	7.85
07-10-96	0956	do.	216	264	0	80	240	23.3
08-07-96	0935	do.	221	277	0	K57	K76	--
09-12-96	0916	do.	137	167	0	230	510	152

Table 13. Nutrient and sediment concentrations in samples from selected surface-water sites, 1996

[mg/L, milligram per liter; <, less than indicated detection limit; >, greater than indicated value; --, data not collected]

Date (month-day-year)	Time (24-hour)	Type of sample	Nitrogen ammonia, dissolved (mg/L)	Nitrogen, nitrite, dissolved (mg/L)	Nitrogen ammonia plus organic, dissolved (mg/L)	Nitrite plus nitrate (mg/L)	Nitrogen ammonia plus organic, total (mg/L)	Phosphorus, total (mg/L)	Phosphorus, dissolved (mg/L)	Orthophosphorus, total as P (mg/L)	Dissolved organic carbon (mg/L)	Suspended organic carbon (mg/L)	Sediment (mg/L)
05420680, Wapsipinicon River near Tripoli, IA (map number 1, fig. 1)													
03-27-96	1234	regular	0.88	0.05	2.2	6.3	3.0	0.58	0.14	0.10	12	>5.0	202
04-18-96	0945	do.	<.02	.02	.3	2.6	.7	.09	<.01	.01	3.7	>2.0	11
05-16-96	1003	do.	<.02	.03	.3	2.7	.6	.10	<.01	<.01	3.0	1.4	21
06-24-96	1148	do.	<.02	.10	.5	15	.7	.13	.02	.03	3.5	.4	41
07-18-96	1100	do.	.02	.02	.2	3.0	.6	.08	.03	.06	3.1	1.1	28
08-15-96	1022	do.	.02	.01	.3	.11	.8	.14	.05	.07	3.4	2.3	28
09-19-96	0950	do.	<.02	.01	.2	.15	.9	.10	.01	.02	3.4	1.2	10
05422000, Wapsipinicon River near DeWitt, IA (map number 2, fig. 1)													
03-14-96	1226	regular	.43	.02	1.0	2.7	1.3	.28	.15	.11	4.7	1.4	73
04-24-96	1127	do.	<.02	.01	.3	1.4	1.7	.26	.01	<.01	2.9	>2.0	171
05-22-96	1225	do.	<.02	.09	.6	11	2.1	.59	.09	.04	3.6	>5.0	481
05-29-96	1013	do.	<.02	.06	.6	4.3	3.0	.99	.19	.13	5.0	>5.0	842
06-26-96	1043	do.	<.02	.05	.4	15	1.5	.38	.06	.07	3.7	4.5	700
07-24-96	1046	do.	.05	.03	.3	.51	2.0	.25	.03	.01	3.1	3.0	295
08-27-96	0940	do.	<.02	.01	.3	.23	2.7	.33	.01	.02	4.8	1.3	110
09-25-96	0955	do.	<.02	.03	<.2	.40	2.0	.14	<.01	<.01	3.9	>5.0	43
05449500, Iowa River near Rowan, IA (map number 3, fig. 1)													
03-20-96	1052	regular	.21	.03	.6	2.3	.7	.16	.13	.11	4.4	2.0	106
04-16-96	1025	do.	.09	.03	.5	4.7	.8	.15	.08	.08	5.0	2.2	47
05-14-96	1018	do.	.04	.03	.5	5.3	1.0	.12	.05	.01	4.2	2.0	91
06-20-96	0856	do.	<.02	.08	.5	12	1.5	.27	.11	.11	4.5	.9	259
07-16-96	1100	do.	.03	.04	.4	5.1	.7	.14	.07	.09	3.5	1.6	106
07-16-96	1105	replicate	.03	.04	.4	5.2	.9	.13	.08	.09	3.8	1.8	50
08-13-96	0905	regular	.03	.05	.5	6.3	.9	.20	.11	.12	3.6	1.6	115
09-17-96	0925	do.	<.02	.04	.3	2.5	.6	.07	.05	.06	3.7	1.0	47

Table 13. Nutrient and sediment concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Nitrogen ammonia, dissolved (mg/L)	Nitrogen, nitrite, dissolved (mg/L)	Nitrogen ammonia plus organic, dissolved (mg/L)	Nitrite plus nitrate (mg/L)	Nitrogen ammonia plus organic, total (mg/L)	Phosphorus, total (mg/L)	Phosphorus, dissolved (mg/L)	Orthophosphorus, total as P (mg/L)	Dissolved organic carbon (mg/L)	Suspended organic carbon (mg/L)	Sediment (mg/L)
05451210, South Fork Iowa River northeast of New Providence, IA (map number 4, fig. 1)													
03-19-96	1307	regular	0.27	0.02	0.7	2.2	0.7	0.21	0.16	0.14	3.6	1.0	13
04-15-96	1245	do.	<.02	.03	.3	3.1	.4	.02	<.01	<.01	4.5	.5	22
05-13-96	1325	do.	<.02	.05	.5	9.2	.8	.08	.07	<.01	3.3	1.1	69
06-17-96	1305	do.	.04	.07	.7	14	1.7	.37	.17	.14	5.1	>5.0	1,940
07-15-96	1435	do.	.03	.07	.4	8.1	.6	.04	<.01	.01	4.1	1.0	24
08-12-96	1304	do.	.04	.04	.4	6.7	.5	.06	.08	.09	4.4	.7	29
09-16-96	1257	do.	<.02	.01	.3	.12	.6	.05	<.01	.01	4.2	1.0	26
05453100, Iowa River at Marengo, IA (map number 5, fig. 1)													
03-15-96	1205	regular	.26	.03	.6	2.9	1.1	.37	.17	.15	3.2	2.0	178
04-25-96	1100	do.	<.02	.02	.5	1.4	1.8	.29	.02	<.01	3.6	>5.0	220
05-23-96	1128	do.	<.02	.05	.5	6.9	3.8	1.3	.12	.07	3.7	3.4	1,470
05-31-96	1130	do.	<.02	.03	.4	9.4	1.6	.51	.11	.10	2.8	3.4	527
06-27-96	1010	do.	<.02	.06	.4	12	3.4	1.2	.14	.14	3.5	3.6	2,540
07-25-96	0918	do.	.05	.03	.5	6.6	1.1	.35	.13	.16	2.9	2.4	393
08-26-96	0958	do.	<.02	.02	.3	.14	3.5	.37	.01	.02	4.4	3.0	156
09-26-96	0937	do.	<.02	.03	.2	.44	1.8	.27	<.01	<.01	3.5	>5.0	109
05455100, Old Man's Creek near Iowa City, IA (map number 6, fig. 1)													
03-18-96	1051	regular	.35	.05	.7	2.9	.9	.13	.07	.05	3.5	.4	16
04-11-96	1015	do.	.03	.03	.4	1.5	.5	.09	.06	.04	3.5	.8	8
05-07-96	1014	blank	--	--	--	--	--	--	--	--	1.6	.1	--
05-07-96	1034	regular	<.02	.02	.3	1.1	<.2	.03	.04	.02	3.6	>1.9	9
05-10-96	1012	do.	.33	.05	.9	2.2	7.5	3.2	.19	.18	6.4	>10	3,490
05-21-96	1322	do.	.14	.10	.8	6.5	3.4	1.1	.14	.12	7.1	>10	1,860
06-14-96	0936	do.	.08	.06	.4	12	.9	.25	.11	.07	2.4	.8	132
07-11-96	0940	do.	.04	.03	.2	9.4	.3	.08	.07	.09	2.9	.8	39
08-08-96	0922	do.	.02	.04	.4	2.5	.5	.07	.03	.05	3.4	1.1	16
09-09-96	1112	do.	.08	.02	.3	.17	.7	.10	.04	.04	4.0	1.0	14

Table 13. Nutrient and sediment concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Nitrogen ammonia, dissolved (mg/L)	Nitrogen, nitrite, dissolved (mg/L)	Nitrogen ammonia plus organic, dissolved (mg/L)	Nitrite plus nitrate (mg/L)	Nitrogen ammonia plus organic, total (mg/L)	Phosphorus, total (mg/L)	Phosphorus, dissolved (mg/L)	Orthophosphorus, total as P (mg/L)	Dissolved organic carbon (mg/L)	Suspended organic carbon (mg/L)	Sediment (mg/L)
05461390, Flood Creek near Powersville, IA (map number 11, fig. 1)													
03-28-96	0914	regular	0.19	0.05	0.6	7.5	1.0	0.23	0.21	0.21	6.4	0.7	32
04-17-96	0959	do.	.02	<.01	<.2	5.9	.2	.05	.04	.03	1.4	.4	70
05-15-96	0944	do.	.06	.18	.3	5.1	.3	.04	.02	.03	1.8	.2	4
06-04-96	1145	do.	.06	.05	.3	14	.5	.14	.08	.08	2.4	.8	50
06-07-96	1210	do.	.04	.06	.3	3.5	1.3	.16	.11	.09	2.9	1.9	195
06-19-96	1043	blank	--	--	--	--	--	--	--	--	.4	<.1	--
06-19-96	1103	regular	.02	.04	.3	19	.9	.12	.06	.04	2.2	1.0	175
07-17-96	1110	do.	.03	.04	<.2	9.3	.5	.05	.07	.09	1.5	.6	15
08-14-96	1003	do.	.03	.07	<.2	8.3	.2	.06	.06	.07	1.3	.3	11
09-18-96	1014	do.	<.02	.08	<.2	6.4	.2	.03	.03	.03	1.3	.3	6
09-18-96	1019	do.	<.02	.08	<.2	6.6	.2	.03	.05	.03	1.3	.5	7
05464020, Cedar River at Gilbertville, IA (map number 12, fig. 1)													
03-26-96	1315	regular	.20	.03	.5	3.6	3.1	.51	.13	.14	3.6	2.1	64
04-23-96	0948	blank	.03	.02	<.2	.06	<.2	<.01	<.01	<.01	.4	.1	--
04-23-96	1008	regular	.03	.03	<.2	3.5	1.7	.24	<.01	.01	4.0	>2.0	48
05-21-96	1014	do.	.02	.08	.5	3.8	.8	.06	.02	<.01	3.6	>5.0	173
06-25-96	1035	do.	<.02	.03	.5	11	1.2	.26	.10	.10	3.9	1.2	192
07-23-96	0954	do.	.04	.04	.2	2.9	1.6	.20	<.01	.02	3	4.5	61
08-29-96	0930	do.	<.02	.03	.3	3.8	1.5	.21	.04	.05	3.2	4.2	45
09-24-96	1014	do.	<.02	.06	.3	1.8	1.8	.21	<.01	<.01	2.6	>5.0	28
05464220, Wolf Creek near Dysart, IA (map number 13, fig. 1)													
03-21-96	1246	regular	.25	.03	.6	4.9	.6	.14	.10	.10	3.6	.9	40
04-22-96	1056	do.	.03	.05	<.2	4.2	.4	.09	.04	.04	2.8	.7	22
05-20-96	1119	do.	.13	.09	.5	8.5	1.2	.32	.07	.07	3.0	>5.0	328
05-20-96	1124	replicate	.03	.22	<.2	8.0	<.2	<.01	.01	<.01	2.4	4.7	545
06-18-96	1008	regular	.12	.08	.7	12	1.4	.33	.11	.10	4.8	3.0	839
06-18-96	1013	replicate	.11	.08	.7	12	2.3	.63	.12	.10	4.6	>5.0	779
07-22-96	1208	regular	.04	.04	.2	11	.6	.11	.08	.09	2.4	1.3	54
08-28-96	1045	do.	<.02	.06	.2	3.4	.4	.03	.03	.04	2.2	.7	28
09-23-96	1122	do.	.05	.07	.3	3.2	.4	.06	<.01	.01	2.3	1.0	25

Table 13. Nutrient and sediment concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Nitrogen ammonia, dissolved (mg/L)	Nitrogen, nitrite, dissolved (mg/L)	Nitrogen ammonia plus organic, dissolved (mg/L)	Nitrite plus nitrate (mg/L)	Nitrogen ammonia plus organic, total (mg/L)	Phosphorus, total (mg/L)	Phosphorus, dissolved (mg/L)	Orthophosphorus, total as P (mg/L)	Dissolved organic carbon (mg/L)	Suspended organic carbon (mg/L)	Sediment (mg/L)
05465000, Cedar River near Conesville, IA (map number 15, fig. 1)													
03-11-96	1206	regular	0.52	0.03	1.1	4.0	1.5	0.40	0.28	0.22	5.5	0.8	29
04-10-96	1228	do.	<.02	.02	.6	4.8	1.2	.35	.21	.18	5.6	>2.0	66
05-11-96	1326	do.	.28	.06	.7	3.5	5.4	1.8	.22	.21	5.7	>17	1,220
06-13-96	1046	do.	.06	.03	.4	12	2.1	.69	.15	.10	3.3	>5.0	2,490
07-08-96	1037	do.	.03	.03	.3	7.5	1.1	.08	.02	.02	3.6	>5.0	254
08-05-96	1050	do.	.03	.02	.3	.26	2.4	.22	<.01	<.01	4.0	>5.0	69
09-10-96	0935	do.	<.02	.02	.4	.13	2.6	.29	.01	.02	4.0	>5.0	63
05465500, Iowa River at Wapello, IA (map number 16, fig. 1)													
03-13-96	0915	regular	.45	.03	1.0	3.7	1.3	.38	.27	.23	4.8	1.8	78
04-08-96	1210	do.	<.02	.02	.3	1.7	1.5	.19	.02	<.01	3.7	4.9	1,730
04-08-96	1215	replicate	.06	.03	.7	4.6	1.3	.38	.22	.19	6.5	4.6	434
05-08-96	1141	regular	<.02	.03	.4	1.9	1.9	.28	.01	<.01	4.2	>5.0	91
05-30-96	1200	do.	.06	.04	.4	6.6	2.2	.73	.13	.13	4.4	8.7	546
06-11-96	1047	do.	.04	.04	.5	11	1.3	.38	.13	.10	3.2	4.1	292
07-09-96	1102	do.	.03	.05	.3	8.5	.9	.11	.06	.08	3.3	4.4	528
08-06-96	1050	do.	.02	.04	.3	1.2	2.4	.24	<.01	<.01	3.2	>5.0	76
09-11-96	1000	do.	<.02	.01	.4	.06	2.4	.27	.03	<.01	3.7	>5.0	87
05474000, Skunk River at Augusta, IA (map number 19, fig. 1)													
03-12-96	1336	blank	.02	<.01	<.2	.06	<.2	<.01	.02	.02	.4	.1	--
03-12-96	1356	regular	.44	.03	1.0	3.4	1.1	.27	.20	.16	4.9	>2.0	176
04-09-96	1210	do.	.06	.03	.7	4.6	1.3	.38	.20	.19	6.2	3.7	58
05-09-96	1120	do.	.25	.08	1.0	3.7	7.0	2.6	.11	.09	7.2	>10	3,530
05-09-96	1125	replicate	--	--	--	--	--	--	--	--	--	--	3,640
06-12-96	0915	regular	.03	.03	.4	11	1.2	.45	.13	.12	3.0	5.1	433
07-10-96	0936	blank	.03	<.01	<.2	<.05	<.2	<.01	<.01	<.01	--	--	--
07-10-96	0956	regular	.03	.02	.3	8.9	1.0	.28	.16	.19	3.0	2.4	133
08-07-96	0935	do.	.02	.03	.3	5.4	1.0	.32	.14	.18	3.2	2.8	122
09-12-96	0916	do.	<.02	.03	.4	.38	1.4	.18	.02	.02	4.1	>5.0	99

Table 14. Major ion concentrations in samples from selected surface-water sites, 1996
[mg/L, milligrams per liter; µg/L, micrograms per liter; <, less than indicated detection limit]

Date (month-day-year)	Time (24-hour)	Type of sample	Calcium (mg/L as Ca)	Magnesium (mg/L as Mg)	Sodium (mg/L as Na)	Potassium (mg/L as K)	Chloride (mg/L as Cl)	Sulfate (mg/L as SO4)	Fluoride (mg/L as F)	Silica (mg/L as SiO_2)	Iron (µg/L as Fe)	Manganese (µg/L as Mn)
05420680, Wapsipinicon River near Tripoli, IA (map number 1, fig. 1)												
03-27-96	1234	regular	26	6.1	3.3	8.4	18	12	0.2	9.9	410	150
04-18-96	0945	do.	53	12	9.2	2.2	20	24	.2	5.0	80	46
05-16-96	1003	do.	51	12	10	1.9	21	23	.2	1.7	180	75
06-24-96	1148	do.	58	12	6.6	2.0	20	17	.2	12	9	14
07-18-96	1100	do.	53	12	8.7	2.1	18	22	.2	9.7	6	16
08-15-96	1022	do.	46	12	16	2.9	25	21	.2	3.9	20	74
09-19-96	0950	do.	52	14	13	2.7	23	24	.3	3.1	18	51
05422000, Wapsipinicon River near DeWitt, IA (map number 2, fig. 1)												
03-14-96	1226	blank	47	13	7.1	5.6	15	21	.1	9.4	81	21
04-24-96	1127	regular	39	16	10	2.3	20	29	.2	.05	24	3
05-22-96	1225	do.	51	16	6.3	2.7	18	26	.2	7.9	<3	5
05-29-96	1013	do.	24	7.5	2.7	3.6	6.2	9.3	.2	6.9	13	22
06-26-96	1043	do.	63	15	6.3	2.7	19	20	.2	12	<3	2
07-24-96	1046	do.	45	18	8.4	2.0	17	28	.2	1.3	6	<1
08-27-96	0940	do.	26	17	9.2	2.0	19	26	.2	.49	36	6
09-25-96	0955	do.	38	20	9.4	1.8	18	26	.1	2.1	20	10
05449500, Iowa River near Rowan, IA (map number 3, fig. 1)												
03-20-96	1052	regular	75	23	6.7	2.4	14	35	.3	16	35	190
04-16-96	1025	do.	95	27	9.0	12	20	43	.3	18	19	100
05-14-96	1018	do.	92	29	7.5	1.6	21	39	.3	15	15	120
06-20-96	0856	do.	90	26	5.0	1.9	16	24	.4	24	22	23
07-16-96	1100	do.	85	29	8.9	1.9	18	42	.3	20	5	31
07-16-96	1105	replicate	84	29	8.9	1.9	19	42	.3	20	4	30
08-13-96	0905	regular	89	29	8.1	3.0	18	37	.3	24	<3	41
09-17-96	0925	do.	83	31	13	2.4	25	53	.3	17	7	110

Table 14. Major ion concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Calcium (mg/L as Ca)	Magnesium (mg/L as Mg)	Sodium (mg/L as Na)	Potassium (mg/L as K)	Chloride (mg/L as Cl)	Sulfate (mg/L as SO4)	Fluoride (mg/L as F)	Silica (mg/L as SiO_2)	Iron (µg/L as Fe)	Manganese (µg/L as Mn)
05451210, South Fork Iowa River northeast of New Providence, IA (map number 4, fig. 1)												
03-19-96	1307	regular	60	17	5.2	2.4	12	19	0.3	13	32	70
04-15-96	1245	do.	67	27	9.0	2.4	19	29	.3	2.4	65	84
05-13-96	1325	do.	88	28	7.6	1.6	23	27	.4	15	10	29
06-17-96	1305	do.	60	17	3.7	3.3	12	13	.3	15	9	4
07-15-96	1435	do.	63	30	7.6	1.7	19	26	.4	9.1	9	11
08-12-96	1304	do.	76	28	7.6	2.5	18	23	.3	21	4	15
09-16-96	1257	do.	50	28	11	2.5	19	23	.4	7.4	11	60
05453100, Iowa River at Marengo, IA (map number 5, fig. 1)												
03-15-96	1205	regular	61	20	8.4	2.8	14	30	.3	13	6	43
04-25-96	1100	do.	49	26	12	2.2	20	44	.2	.03	15	6
05-23-96	1128	do.	61	20	7.1	2.2	14	31	.3	10	<3	18
05-31-96	1130	do.	71	23	7.4	1.8	15	29	.3	15	<3	5
06-27-96	1010	do.	77	24	6.7	2.0	15	25	.3	18	<3	23
07-25-96	0918	do.	68	22	9.2	2.5	16	34	.3	15	<3	8
08-26-96	0958	do.	25	22	12	2.1	19	44	.2	.23	31	3
09-26-96	0937	do.	39	24	14	2.5	21	47	.3	3.0	7	5
05455100, Old Man's Creek near Iowa City, IA (map number 6, fig. 1)												
03-18-96	1051	regular	47	18	13	3.1	20	24	.2	10	37	350
04-11-96	1015	do.	45	20	16	2.5	24	29	.3	4.0	58	470
05-07-96	1034	do.	50	20	18	2.5	30	28	.3	2.9	55	450
05-10-96	1012	do.	13	3.6	2.6	5.2	4.0	6.8	.2	12	950	150
05-21-96	1322	do.	36	12	7.2	4.3	14	18	.2	12	160	30
06-14-96	0936	do.	50	19	8.9	1.2	15	23	.3	10	8	66
07-11-96	0940	do.	56	21	12	1.3	17	23	.3	13	3	96
08-08-96	0922	do.	55	22	16	2.4	21	26	.3	5.8	14	390
09-09-96	1112	do.	50	20	19	2.4	23	28	.3	11	19	1,300
05461390, Flood Creek near Powersville, IA (map number 11, fig. 1)												
03-28-96	0914	regular	58	11	3.6	4.3	12	17	.1	11	48	19
04-17-96	0959	do.	65	13	3.9	1.5	11	19	.1	4.4	<3	21
05-15-96	0944	do.	65	13	3.9	1.6	10	21	.1	8.6	4	29
06-04-96	1145	do.	81	19	6.3	1.4	19	16	.2	11	<3	5

Table 14. Major ion concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Calcium (mg/L as Ca)	Magnesium (mg/L as Mg)	Sodium (mg/L as Na)	Potassium (mg/L as K)	Chloride (mg/L as Cl)	Sulfate (mg/L as SO4)	Fluoride (mg/L as F)	Silica (mg/L as SiO_2)	Iron (µg/L as Fe)	Manganese (µg/L as Mn)
05461390, Flood Creek near Powersville, IA (map number 11, fig. 1)—Continued												
06-07-96	1210	regular	67	17	5.7	1.8	18	14	0.3	11	4	6
06-19-96	1103	do.	74	17	5.0	1.5	18	14	.3	12	16	4
07-17-96	1110	do.	71	12	4.6	2.1	13	17	.1	11	<3	4
08-14-96	1003	do.	70	13	4.3	2.0	12	19	.1	10	<3	4
09-18-96	1014	do.	72	14	4.4	1.6	11	22	.1	8.4	<3	6
09-18-96	1019	do.	70	13	4.3	1.5	11	22	.1	8.2	<3	5
05464020, Cedar River at Gilbertville, IA (map number 12, fig. 1)												
03-26-96	1315	regular	61	18	12	3.8	23	31	.3	9.9	19	15
04-23-96	0948	blank	.09	<.01	.4	<.10	<.10	<.1	<.1	.02	<3	<1
04-23-96	1008	regular	60	21	12	3.0	23	37	.3	2.0	8	2
05-21-96	1014	do.	53	21	12	2.5	24	33	.2	2.6	16	3
06-25-96	1035	do.	75	21	8.2	2.4	21	26	.3	15	3	2
07-23-96	0954	do.	53	22	13	2.5	24	38	.3	6.9	6	1
08-29-96	0930	do.	63	23	14	3.0	24	35	.3	11	9	<1
09-24-96	1014	do.	42	20	18	2.6	31	42	.2	2.2	7	2
05464220, Wolf Creek near Dysart, IA (map number 13, fig. 1)												
03-21-96	1246	regular	69	21	9.2	2.0	17	46	.3	12	8	110
04-22-96	1056	do.	64	22	10	1.6	18	45	.3	4.3	17	120
05-20-96	1119	do.	66	21	7.3	1.3	16	30	.3	10	7	9
05-20-96	1124	replicate	65	21	7.3	1.3	16	28	.3	10	<3	7
06-18-96	1008	regular	40	12	3.8	4.2	9.6	13	.3	12	7	74
06-18-96	1013	replicate	38	11	3.7	4.1	9.6	13	.3	12	5	66
07-22-96	1208	regular	76	23	8.2	1.0	16	35	.3	13	4	16
08-28-96	1045	do.	65	23	10	1.6	17	55	.3	7.4	6	140
09-23-96	1122	do.	63	21	9.5	1.5	16	62	.3	5.5	4	180
05465000, Cedar River near Conesville, IA (map number 15, fig. 1)												
03-11-96	1206	regular	67	19	24	5.7	35	35	.3	17	24	17
04-10-96	1228	do.	58	17	16	4.7	29	31	.3	11	17	6
05-11-96	1326	do.	25	7.6	6.7	4.7	13	16	.2	9.9	590	7
06-13-96	1046	do.	73	20	12	2.0	23	29	.3	12	<3	2
07-08-96	1037	do.	59	21	17	2.1	29	34	.3	8.0	11	<1

Table 14. Major ion concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Calcium (mg/L as Ca)	Magnesium (mg/L as Mg)	Sodium (mg/L as Na)	Potassium (mg/L as K)	Chloride (mg/L as Cl)	Sulfate (mg/L as SO4)	Fluoride (mg/L as F)	Silica (mg/L as SiO_2)	Iron (µg/L as Fe)	Manganese (µg/L as Mn)
05465000, Cedar River near Conesville, IA (map number 15, fig. 1)—Continued												
08-05-96	1050	regular	27	21	29	2.8	42	46	0.3	0.10	6	1
09-10-96	0935	do.	31	21	35	3.2	48	50	.3	.07	9	2
05465500, Iowa River at Wapello, IA (map number 16, fig. 1)												
03-13-96	0915	regular	65	19	20	5.2	32	34	.3	12	20	16
04-08-96	1210	do.	59	21	15	3.1	24	52	.3	4.0	11	1
04-08-96	1215	replicate	57	16	14	5.1	26	29	.3	10	28	4
05-08-96	1141	regular	41	20	21	2.7	35	40	.2	.05	17	6
05-30-96	1200	do.	36	11	6.5	3.1	12	18	.2	8.9	<3	2
06-11-96	1047	do.	63	18	9.5	2.4	19	28	.3	11	<3	3
07-09-96	1102	do.	66	22	12	2.3	21	30	.3	11	<3	<1
08-06-96	1050	do.	35	21	23	2.4	34	44	.2	2.6	6	1
09-11-96	1000	do.	32	21	31	3.1	44	47	.2	.42	16	12
05474000, Skunk River at Augusta, IA (map number 19, fig. 1)												
03-12-96	1336	blank	.32	.03	.7	<.10	<.10	<.10	<.1	1.3	<3	<1
03-12-96	1356	regular	63	19	13	4.6	21	43	.2	13	15	13
04-09-96	1210	do.	56	16	13	4.9	26	28	.4	10	31	5
05-09-96	1120	do.	31	8.6	6.9	4.9	9.6	22	.2	9.9	370	7
06-12-96	0915	do.	62	20	8.4	2.4	15	32	.3	14	4	2
07-10-96	0936	blank	.06	<.01	.3	<.10	<.10	<.10	<.1	<.01	<3	<1
07-10-96	0956	regular	80	24	9.1	2.2	17	35	.4	17	<3	2
08-07-96	0935	do.	75	24	11	2.7	19	38	.3	16	<3	2
09-12-96	0916	do.	37	20	13	3.7	18	43	.2	2.3	7	51

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996

[Concentrations are in micrograms per liter. <, less than indicated detection limit; E, estimated; --, data not collected]

Date (month-day-year)	Time (24-hour)	Type of sample	2, 6-diethyl-aniline	Aceto-chlor	Alachlor	Atrazine	Azin-phos-methyl	Ben-fluralin	Butylate	Carbaryl	Carbofuran	Chlor-pyrifos	Cyanazine
05420680, Wapsipinicon River near Tripoli, IA (map number 1, fig. 1)													
03-27-96	1234	regular	<0.003	0.06	0.03	0.36	<0.001	<0.002	<0.002	<0.003	<0.003	<0.004	0.09
04-18-96	0945	do.	<.003	.01	.03	.10	<.001	<.002	<.002	<.003	<.003	<.004	.01
05-16-96	1003	do.	<.003	.14	.03	.14	<.001	<.002	<.002	<.003	<.003	<.004	.04
06-24-96	1148	do.	<.003	.10	.06	2.1	<.001	<.002	<.002	<.003	E.20	.01	.18
07-18-96	1100	do.	<.003	<.002	.01	.34	<.001	<.002	<.002	<.003	E.03	<.004	.02
08-15-96	1022	do.	<.003	.01	.01	.37	<.001	<.002	<.002	<.003	<.003	<.004	.02
09-19-96	0950	do.	<.003	<.002	<.002	.12	<.001	<.002	<.002	<.003	<.003	<.004	<.004
05422000, Wapsipinicon River near DeWitt, IA (map number 2, fig. 1)													
03-14-96	1226	regular	<.003	.03	.01	.13	<.001	<.002	<.002	<.003	<.003	<.004	.01
04-24-96	1127	do.	<.003	.03	.01	.18	<.001	<.002	<.002	<.003	<.003	<.004	.02
05-22-96	1225	do.	<.003	2.2	.08	5.8	<.001	<.002	<.002	<.003	<.003	<.004	.96
05-29-96	1013	do.	<.003	1.9	.14	6.3	<.001	<.002	<.002	<.003	<.003	<.07	.90
06-26-96	1043	do.	<.003	.18	.11	4.9	<.001	<.002	<.002	<.003	E.34	.03	.34
07-24-96	1046	do.	<.003	.02	.01	.47	<.001	<.002	<.002	<.003	<.003	E.004	.04
08-27-96	0940	do.	<.003	.01	<.002	.19	<.001	<.002	<.002	<.003	<.003	<.004	.02
09-25-96	0955	do.	<.003	<.002	<.002	.13	<.001	<.002	<.002	<.003	<.003	<.004	.005
05449500, Iowa River near Rowan, IA (map number 3, fig. 1)													
03-20-96	1052	regular	<.003	.005	.005	.06	<.001	<.002	<.002	<.003	<.003	<.004	.01
04-16-96	1025	do.	<.003	.01	.01	.05	<.001	<.002	<.002	<.003	<.003	<.004	<.004
05-14-96	1018	do.	<.003	.06	.01	.06	<.001	<.002	<.002	<.003	<.003	<.004	.01
06-20-96	0856	do.	<.003	.14	.13	3.4	<.001	<.002	<.002	<.003	E.30	<.004	.26
07-16-96	1100	do.	<.003	.01	.01	.13	<.001	<.002	<.002	<.003	<.003	<.004	.01
07-16-96	1105	replicate	<.003	<.002	.01	.14	<.001	<.002	<.002	<.003	<.003	<.004	.01
08-13-96	0905	regular	<.003	<.002	.01	.19	<.001	<.002	<.002	<.003	<.003	<.004	<.004
09-17-96	0925	do.	<.003	<.002	<.002	.04	<.001	<.002	<.002	<.003	<.003	<.004	<.004
09-17-96	0935	spike	.081	.11	.12	.16	E.14	.09	.10	E.22	E.15	.08	.12

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	2, 6-diethyl-aniline	Aceto-chlor	Alachlor	Atrazine	Azin-phos-methyl	Ben-fluralin	Butylate	Carbaryl	Carbofuran	Chlor-pyrifos	Cyanazine
05451210, South Fork Iowa River northeast of New Providence, IA (map number 4, fig. 1)													
03-19-96	1307	regular	<0.003	0.03	0.02	0.10	<0.001	<0.002	<0.002	<0.003	<0.003	<0.004	0.01
04-15-96	1245	do.	<.003	.02	<.002	.08	<.001	<.002	<.002	<.003	<.003	<.004	.01
05-13-96	1325	do.	<.003	.49	.02	.13	<.001	<.002	<.002	<.003	<.003	<.004	.01
06-17-96	1305	do.	<.003	.34	.28	20	<.001	<.002	<.002	<.003	E1.5	.01	.10
07-15-96	1435	do.	<.003	<.002	<.002	.17	<.001	<.002	<.002	<.003	<.003	<.004	<.004
08-12-96	1304	do.	<.003	.02	.01	.19	<.001	<.002	<.002	<.003	<.003	<.004	<.004
09-16-96	1257	do.	<.003	<.002	<.002	.11	<.001	<.002	<.002	<.003	<.003	<.004	<.004
05453100, Iowa River at Marengo, IA (map number 5, fig. 1)													
03-15-96	1205	regular	<.003	.01	E.004	.07	<.001	<.002	<.002	<.003	<.003	<.004	.02
04-25-96	1100	do.	<.003	.06	<.002	.14	<.001	<.002	<.002	<.003	<.003	<.004	.05
05-23-96	1128	do.	<.003	1.5	.05	E4.7	<.001	<.002	<.002	<.003	<.003	<.004	E6.3
05-31-96	1130	do.	<.003	.18	.04	.80	<.001	<.002	<.002	<.003	<.003	<.01	.30
06-27-96	1010	do.	<.003	.04	.02	1.7	<.001	<.002	<.002	<.003	E.07	.02	.14
07-25-96	0918	do.	<.003	.02	.01	.67	<.001	<.002	<.002	<.003	<.003	<.004	.05
08-26-96	0958	do.	<.003	<.002	<.002	.16	<.001	<.002	<.002	<.003	<.003	<.004	.02
09-26-96	0937	do.	<.003	.02	.005	.10	<.001	<.002	<.002	<.003	<.003	<.004	.06
09-26-96	0947	spike	.088	.13	.13	.21	E.14	.09	.11	E.20	E.14	.10	.18
05455100, Old Man's Creek near Iowa City, IA (map number 6, fig. 1)													
03-18-96	1051	regular	<.003	.005	.01	.08	<.001	<.002	<.002	<.003	<.003	<.004	.03
04-11-96	1015	do.	<.003	.02	.004	.10	<.001	<.002	<.002	<.003	<.003	<.004	.09
05-07-96	1034	do.	<.003	.19	.01	.46	<.001	<.002	<.002	<.003	<.003	<.004	.21
05-10-96	1012	do.	<.003	E5.7	.04	E20	<.001	<.002	.02	<.003	E.06	<.40	E9.9
05-21-96	1322	do.	<.003	4.4	.06	E10	<.001	<.002	.02	<.003	E.05	<.004	E8.0
06-14-96	0936	do.	<.003	.06	<.050	.75	<.001	<.002	<.002	<.003	<.003	.03	.30
07-11-96	0940	do.	<.003	.02	.01	.48	<.001	<.002	<.002	<.003	<.003	.01	.11
08-08-96	0922	do.	<.003	E.004	<.002	.28	<.001	<.002	<.002	<.003	<.003	.01	.08
09-09-96	1112	do.	<.003	<.002	<.002	.14	<.001	<.002	<.002	<.003	<.003	<.004	.04

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	2, 6-diethyl-aniline	Aceto-chlor	Alachlor	Atrazine	Azin-phos-methyl	Ben-fluralin	Butylate	Carbaryl	Carbofuran	Chlor-pyrifos	Cyanazine
05455570, English River at Riverside , IA (map number 7, fig. 1)													
04-04-96	0940	regular	<0.003	E.004	<0.002	0.10	<.001	<0.002	<0.002	<0.003	<0.003	<0.004	0.03
05-08-96	0940	do.	<.003	.36	.01	.55	<.001	<.002	<.002	<.003	<.003	<.01	.24
06-03-96	0740	do.	<.003	2.2	.02	E11	<.001	<.002	<.002	<.003	<.003	<.07	2.0
06-17-96	0855	do.	<.003	.07	.01	.95	<.001	<.002	<.002	<.003	<.003	.03	.28
07-08-96	0850	do.	<.003	<.02	<.002	.66	<.001	<.002	<.002	<.003	<.003	.01	.11
08-06-96	0940	do.	<.003	.01	<.002	.46	<.001	<.002	<.002	<.003	<.003	<.004	.08
09-04-96	0735	do.	<.003	<.002	<.002	.18	<.001	<.002	<.002	<.003	<.003	<.004	.03
05457750, Cedar River near Carville , IA (map number 9, fig. 1)													
03-21-96	0750	regular	<.003	.05	.05	.10	<.001	<.002	<.002	<.003	<.003	<.004	.01
04-02-96	1020	do.	<.003	.93	.08	.22	<.001	<.002	<.002	<.003	<.003	<.004	.02
05-29-96	1010	do.	<.003	.26	.04	.24	<.001	<.002	<.002	<.003	<.003	<.004	.07
06-12-96	1125	do.	<.003	.26	.06	.61	<.001	<.002	<.002	<.003	E .03	<.004	.37
08-20-96	1010	do.	<.003	<.002	<.002	.01	<.001	<.002	<.002	<.003	<.003	<.004	<.004
09-26-96	0750	do.	<.003	.005	<.002	.05	<.001	<.002	<.002	<.003	<.003	<.004	<.004
05458900, West Fork Cedar River near Finchford, IA (map number 10, fig. 1)													
03-21-96	1440	regular	<.003	.01	.01	.09	<.001	<.002	<.002	<.003	<.003	<.004	.01
04-02-96	1155	do.	<.003	.06	.02	.19	<.001	<.002	<.002	<.003	<.003	<.004	.02
05-29-96	0855	do.	<.003	1.3	.04	1.3	<.001	<.002	<.002	<.003	<.003	<.004	.32
06-12-96	1020	do.	<.003	.12	.01	.86	<.001	<.002	<.002	<.003	E.09	<.004	.06
08-20-96	0900	do.	<.003	<.002	<.002	.09	<.001	<.002	<.002	<.003	<.003	<.004	<.004
09-26-96	0645	do.	<.003	<.002	<.002	.05	<.001	<.002	<.002	<.003	<.003	<.004	<.004

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	2, 6-diethyl-aniline	Aceto-chlor	Alachlor	Atrazine	Azin-phos-methyl	Ben-fluralin	Butylate	Carbaryl	Carbofuran	Chlor-pyrifos	Cyanazine
05461390, Flood Creek near Powersville, IA (map number 11, fig. 1)													
03-28-96	0914	regular	<0.003	0.02	0.01	0.15	<0.001	<0.002	<0.002	<0.003	<0.003	<0.004	0.01
04-17-96	0959	do.	<.003	<.002	<.002	.06	<.001	<.002	<.002	<.003	<.003	<.004	<.004
05-15-96	0944	do.	<.003	.13	.01	.08	<.001	<.002	<.002	<.003	<.003	<.004	.01
06-04-96	1145	do.	<.003	.06	.02	.30	<.001	<.002	<.002	<.003	<.003	<.004	.04
06-07-96	1210	do.	<.003	.35	.14	1.4	<.001	<.002	<.002	<.003	E.020	<.004	.11
06-19-96	1043	blank	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004
06-19-96	1103	regular	<.003	.10	.05	2.0	<.001	<.002	<.002	<.003	E.440	<.004	.04
07-17-96	1110	do.	<.003	<.002	<.002	.21	<.001	<.002	<.002	<.003	<.003	<.004	<.004
08-14-96	1003	do.	<.003	<.002	<.002	.13	<.001	<.002	<.002	<.003	<.003	<.004	<.004
09-18-96	1014	do.	<.003	<.002	<.002	.08	<.001	<.002	<.002	<.003	<.003	<.004	<.004
09-18-96	1019	do.	<.003	<.002	<.002	.07	<.001	<.002	<.002	<.003	<.003	<.004	<.004
05464020, Cedar River at Gilbertville, IA (map number 12, fig. 1)													
03-26-96	1315	regular	<.003	.02	.01	.08	<.001	<.002	<.002	<.003	<.003	<.004	.01
04-23-96	0948	blank	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004
04-23-96	1008	regular	<.003	.03	.01	.11	<.001	<.002	<.002	<.003	<.003	<.004	.01
05-21-96	1014	do.	<.003	.16	.01	.28	<.001	<.002	<.002	<.003	<.003	<.004	.21
06-25-96	1035	do.	<.003	1.7	.03	1.5	<.001	<.002	<.002	<.003	E.200	.009	.08
07-23-96	0954	do.	<.003	<.002	<.002	.16	<.001	<.002	<.002	<.003	<.003	<.004	.01
08-29-96	0930	do.	<.003	.02	<.002	.18	<.001	<.002	<.002	<.003	<.003	<.004	.01
09-24-96	1014	do.	<.003	<.002	<.002	.07	<.001	<.002	<.002	<.003	<.003	<.004	<.004
09-24-96	1024	spike	.08	.11	.12	.19	E.14	.09	.10	E.22	E.16	.10	.12
05464220, Wolf Creek near Dysart, IA (map number 13, fig. 1)													
03-21-96	1246	regular	<.003	.005	.01	.08	<.001	<.002	<.002	<.003	<.003	<.004	.01
04-22-96	1056	do.	<.003	.03	.005	.18	<.001	<.002	<.002	<.003	<.003	<.004	.03
05-20-96	1119	do.	<.003	.21	.26	.66	<.001	<.002	<.002	<.003	<.003	<.004	.12
05-20-96	1124	replicate	<.003	.22	.27	.68	<.001	<.002	<.002	<.003	<.003	<.004	.14
06-18-96	1008	regular	<.003	1.1	.08	20	<.001	<.002	<.002	<.003	E.79	<.004	1.2
06-18-96	1013	replicate	<.003	1.1	.08	20	<.001	<.002	<.002	<.003	E.76	<.004	1.1
07-22-96	1208	regular	<.003	.01	E.003	.22	<.001	<.002	<.002	<.003	<.003	.007	.02
08-28-96	1045	do.	<.003	<.002	<.002	.15	<.001	<.002	<.002	<.003	<.003	<.004	.01
09-23-96	1122	do.	<.003	<.002	<.002	.11	<.001	<.002	<.002	<.003	<.003	<.004	.01

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	2, 6-diethyl-aniline	Aceto-chlor	Alachlor	Atrazine	Azin-phos-methyl	Ben-fluralin	Butylate	Carbaryl	Carbofuran	Chlor-pyrifos	Cyanazine
05465000, Cedar River near Conesville, IA (map number 15, fig. 1)													
03-11-96	1206	regular	<0.003	0.03	0.03	0.13	<0.001	<0.002	<0.002	<0.003	<0.003	<0.004	0.01
04-10-96	1228	do.	<.003	.15	.02	.14	<.001	<.002	<.002	<.003	<.003	<.004	.01
05-11-96	1326	do.	<.003	E7.1	.24	E20	<.001	<.002	<.002	<.003	<.003	<.16	E6.3
06-13-96	1046	do.	<.003	.19	.03	1.1	<.001	<.002	<.002	<.003	E.03	<.004	.11
07-08-96	1037	do.	<.003	.01	E.004	.53	<.001	<.002	<.002	<.003	<.003	<.004	.03
08-05-96	1050	do.	<.003	<.002	<.002	.15	<.001	<.002	<.002	<.003	<.003	<.004	.01
09-10-96	0935	do.	<.003	<.002	<.002	.12	<.001	<.002	<.002	<.003	<.003	<.004	.05
05465500, Iowa River at Wapello, IA (map number 16, fig. 1)													
03-13-96	0915	regular	<.003	.03	.02	.14	<.001	<.002	.022	<.003	<.003	<.004	.03
04-08-96	1210	do.	<.003	.02	.01	.12	<.001	<.002	<.002	<.003	<.003	<.004	.07
04-08-96	1215	replicate	<.003	.29	.02	.16	<.001	<.002	<.002	<.003	<.003	<.004	.02
05-08-96	1141	regular	<.003	.12	.01	.20	<.001	<.002	<.002	<.003	<.003	<.004	.06
05-30-96	1200	do.	<.003	1.1	.12	5.8	<.001	<.002	<.002	<.003	<.003	.08	2.6
06-11-96	1047	do.	<.003	.31	.04	1.9	<.001	<.002	<.002	<.003	E.02	<.004	.74
07-09-96	1102	do.	<.003	.02	.01	1.4	<.001	<.002	<.002	<.003	<.003	<.004	.12
08-06-96	1050	do.	<.003	<.002	<.002	.26	<.001	<.002	<.002	<.003	<.003	<.004	.02
09-11-96	1000	do.	<.003	<.002	<.002	.14	<.001	<.002	<.002	<.003	<.003	<.004	.01
05473400, Cedar Creek near Oakland Mills, IA (map number 18, fig. 1)													
04-04-96	1200	regular	<.003	<.002	<.008	.12	<.001	<.002	<.002	<.003	<.003	<.004	.07
05-08-96	1240	do.	<.003	E9.6	.03	E14	<.001	<.002	<.002	<.003	<.003	<.004	E8.0
06-17-96	1110	do.	<.003	.06	E.002	1.8	<.001	<.002	<.002	<.003	<.003	.05	.63
07-08-96	1235	do.	<.003	.03	<.002	1.5	<.001	<.002	<.002	<.003	<.003	<.004	.43
08-06-96	1255	do.	<.003	<.002	<.002	1.1	<.001	<.002	<.002	<.003	<.003	<.004	.26
09-04-96	0930	do.	<.003	.02	<.002	1.1	<.001	<.002	<.002	<.003	<.003	<.004	.39
05474000, Skunk River at Augusta, IA (map number 19, fig. 1)													
03-12-96	1336	blank	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004
03-12-96	1356	regular	<.003	.05	.01	.21	<.001	<.002	<.002	<.003	<.003	<.004	.13
04-09-96	1210	do.	<.003	.28	.02	.15	<.001	<.002	<.002	<.003	<.003	<.004	.02
05-09-96	1120	do.	<.003	E5.1	.53	E10	<.001	<.002	<.002	<.003	E.09	<.40	E9.6
06-12-96	0915	do.	<.003	.14	.02	2.1	<.001	<.002	<.002	<.003	E.01	<.004	.94
07-10-96	0956	do.	<.003	.02	.01	1.5	<.001	<.002	<.002	<.003	<.003	<.004	.12
08-07-96	0935	do.	<.003	.03	<.002	.49	<.001	<.002	<.002	<.003	<.003	<.004	.06
09-12-96	0916	do.	<.003	<.002	<.002	.33	<.001	<.002	<.002	<.003	<.003	<.004	.10

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Dacthal	Deethyl-atrazine	Diazinon	Dieldrin	Disulf-oton	EPTC	Ethal-fluralin	Etho-prophos	Fonofos	Lindane	Linuron
05420680, Wapsipinicon River near Tripoli, IA (map number 1, fig. 1)													
03-27-96	1234	regular	<0.002	E0.13	<0.002	<0.001	<0.017	<0.002	<0.004	<0.003	<0.003	<0.004	<0.002
04-18-96	0945	do.	<.002	E.06	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05-16-96	1003	do.	<.002	E.08	<.002	<.001	<.017	.02	<.004	<.003	<.003	<.004	<.002
06-24-96	1148	do.	<.002	E.21	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
07-18-96	1100	do.	<.002	E.09	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
08-15-96	1022	do.	<.002	E.07	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-19-96	0950	do.	<.002	E.06	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05422000, Wapsipinicon River near DeWitt, IA (map number 2, fig. 1)													
03-14-96	1226	regular	<.002	E.06	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
04-24-96	1127	do.	<.002	E.07	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05-22-96	1225	do.	<.002	E.24	<.002	<.001	<.017	.004	<.004	<.003	.01	<.004	<.002
05-29-96	1013	do.	<.002	E.23	<.002	<.001	<.017	.005	<.004	<.003	.02	<.004	<.002
06-26-96	1043	do.	<.002	E.22	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
07-24-96	1046	do.	<.002	E.08	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
08-27-96	0940	do.	<.002	E.07	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-25-96	0955	do.	<.002	E.05	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05449500, Iowa River near Rowan, IA (map number 3, fig. 1)													
03-20-96	1052	regular	<.002	E.02	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
04-16-96	1025	do.	<.002	E.03	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05-14-96	1018	do.	<.002	E.04	<.002	<.001	<.017	E.002	<.004	<.003	<.003	<.004	<.002
06-20-96	0856	do.	<.002	E.12	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
07-16-96	1100	do.	<.002	E.02	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
07-16-96	1105	replicate	<.002	E.02	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
08-13-96	0905	regular	<.002	E.05	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-17-96	0925	do.	<.002	E.02	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-17-96	0935	spike	.11	E.06	.11	.09	.05	.09	.09	.10	.10	.09	.10

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Dacthal	Deethyl-atrazine	Diazinon	Dieldrin	Disulf-oton	EPTC	Ethal-fluralin	Etho-prophos	Fonofos	Lindane	Linuron
05451210, South Fork Iowa River NE of New Providence, IA (map number 4, fig. 1)													
03-19-96	1307	regular	<0.002	E0.05	<0.002	<0.001	<0.017	<0.002	<0.004	<0.003	<0.003	<0.004	<0.002
04-15-96	1245	do.	<.002	E.03	<.002	<.001	<.017	.02	<.004	<.003	<.003	<.004	<.002
05-13-96	1325	do.	<.002	E.06	<.002	<.001	<.017	E.002	<.004	<.003	<.003	<.004	<.002
06-17-96	1305	do.	<.002	E.34	<.002	<.001	<.017	E.002	<.004	<.003	<.003	<.004	<.002
07-15-96	1435	do.	<.002	E.04	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
08-12-96	1304	do.	<.002	E.04	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-16-96	1257	do.	<.002	E.03	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05453100, Iowa River at Marengo, IA (map number 5, fig. 1)													
03-15-96	1205	regular	<.002	E.03	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
04-25-96	1100	do.	<.002	E.03	<.002	<.001	<.017	.001	<.004	<.003	<.003	<.004	<.002
05-23-96	1128	do.	<.002	E.17	<.002	<.001	<.017	<.002	<.004	<.003	.02	<.004	<.002
05-31-96	1130	do.	<.002	E.06	<.002	<.001	<.017	<.002	<.004	<.003	.004	<.004	<.002
06-27-96	1010	do.	<.002	E.13	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
07-25-96	0918	do.	<.002	E.06	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
08-26-96	0958	do.	<.002	E.05	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-26-96	0937	do.	<.002	E.02	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-26-96	0947	spike	.11	E.08	.11	.10	.10	.10	.10	.11	.11	.10	.10
05455100, Old Man's Creek near Iowa City, IA (map number 6, fig. 1)													
03-18-96	1051	regular	<.002	E.03	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
04-11-96	1015	do.	<.002	E.03	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05-07-96	1034	do.	<.002	E.03	<.002	<.001	<.017	.02	<.004	<.003	<.003	<.004	<.002
05-10-96	1012	do.	<.002	E.31	<.002	<.001	<.017	.03	<.004	<.003	.42	<.004	<.002
05-21-96	1322	do.	<.002	E.33	<.002	<.001	<.017	.01	<.004	<.003	.10	<.004	<.002
06-14-96	0936	do.	<.002	.33	<.002	<.001	<.017	<.002	<.004	<.003	.02	<.004	<.002
07-11-96	0940	do.	<.002	E.07	<.002	<.001	<.017	<.002	<.004	<.003	.01	<.004	<.002
08-08-96	0922	do.	<.002	E.06	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-09-96	1112	do.	<.002	E.02	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Dacthal	Deethyl-atrazine	Diazinon	Dieldrin	Disulf-oton	EPTC	Ethal-fluralin	Etho-prophos	Fonofos	Lindane	Linuron
05455570, English River at Riverside, IA (map number 7, fig. 1)													
04-04-96	0940	regular	<0.002	E.02	<0.002	<0.001	<0.017	<0.002	<0.004	<0.003	<0.003	<0.004	<0.002
05-08-96	0940	do.	<.002	E.04	<.002	<.001	<.017	.02	<.004	<.003	<.003	<.004	<.002
06-03-96	0740	do.	<.002	E.48	<.002	<.001	<.017	<.002	<.004	<.003	.01	<.004	<.002
06-17-96	0855	do.	<002	E.15	<.002	<.001	<.017	<.002	<.004	<.003	.01	<.004	<.002
07-08-96	0850	do.	<.002	E.10	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
08-06-96	0940	do.	<.002	E.07	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-04-96	0735	do.	<.002	E.03	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05457750, Cedar River near Carville, IA (map number 9, fig. 1)													
03-21-96	0750	regular	<.002	E.03	<.002	<.001	<.017	.01	<.004	E.003	<.003	<.004	<.002
04-02-96	1020	do.	<.002	E.08	<.002	<.001	<.017	<.002	<.004	E.004	<.003	<.004	<.002
05-29-96	1010	do.	<.002	E.05	<.002	<.001	<.017	.01	<.004	<.003	<.003	<.004	<.002
06-12-96	1125	do.	<.002	E.15	E.002	<.001	<.017	E.002	<.004	<.003	<.003	<.004	<.002
08-20-96	1010	do.	<.002	E.04	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-26-96	0750	do.	<.002	E.02	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05458900, West Fork Cedar River near Finchford, IA (map number 10, fig. 1)													
03-21-96	1440	regular	<.002	E.03	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
04-02-96	1155	do.	<.002	E.07	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05-29-96	0855	do.	<.002	E.11	<.002	<.001	<.017	.005	<.004	<.003	<.003	<.004	<.002
06-12-96	1020	do.	<.002	E.13	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
08-20-96	0900	do.	<.002	E.03	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-26-96	0645	do.	E.002	E.02	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Dacthal	Deethyl-atrazine	Diazinon	Dieldrin	Disulf-oton	EPTC	Ethal-fluralin	Etho-prophos	Fonofos	Lindane	Linuron
05461390, Flood Creek near Powersville, IA (map number 11, fig. 1)													
03-28-96	0914	regular	<0.002	E0.06	<0.002	<0.001	<0.017	E0.002	<0.004	<0.003	<0.003	<0.004	<0.002
04-17-96	0959	do.	<.002	E.06	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05-15-96	0944	do.	<.002	E.06	<.002	<.001	<.017	.01	<.004	<.003	<.003	<.004	<.002
06-04-96	1145	do.	<.002	E.17	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
06-07-96	1210	do.	<.002	E.14	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
06-19-96	1043	blank	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
06-19-96	1103	regular	<.002	E.27	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
07-17-96	1110	do.	<.002	E.07	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
08-14-96	1003	do.	<.002	E.05	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-18-96	1014	do.	<.002	E.04	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-18-96	1019	do.	<.002	E.03	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05464020, Cedar River at Gilbertville, IA (map number 12, fig. 1)													
03-26-96	1315	regular	<.002	E.06	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
04-23-96	0948	blank	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
04-23-96	1008	regular	E.002	E.04	<.002	<.001	<.017	E.002	<.004	<.003	<.003	<.004	<.002
05-21-96	1014	do.	<.002	E.08	<.002	<.001	<.017	.01	<.004	<.003	<.003	<.004	<.002
06-25-96	1035	do.	<.002	E.09	.001	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
07-23-96	0954	do.	<.002	E.04	.001	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
08-29-96	0930	do.	<.002	E.07	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-24-96	1014	do.	<.002	E.04	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-24-96	1024	spike	.11	E.09	.12	.09	.04	.10	.10	.12	.10	.10	.10
05464220, Wolf Creek near Dysart, IA (map number 13, fig. 1)													
03-21-96	1246	regular	<.002	E.05	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
04-22-96	1056	do.	<.002	E.05	<.002	<.001	<.017	E.004	<.004	<.003	<.003	<.004	<.002
05-20-96	1119	do.	<.002	E.07	<.002	<.001	<.017	E.003	<.004	<.003	<.003	<.004	<.002
05-20-96	1124	replicate	<.002	E.09	.01	<.001	<.017	E.003	<.004	<.003	<.003	<.004	<.002
06-18-96	1008	regular	<.002	E.37	<.002	<.001	<.017	<.002	<.004	<.003	.01	<.004	<.002
06-18-96	1013	replicate	<.002	E.29	<.002	.01	<.017	E.002	<.004	<.003	.01	<.004	<.002
07-22-96	1208	regular	<.002	E.04	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
08-28-96	1045	do.	<.002	E.05	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-23-96	1122	do.	<.002	E.05	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	Dacthal	Deethyl-atrazine	Diazinon	Dieldrin	Disulf-oton	EPTC	Ethal-fluralin	Etho-prophos	Fonofos	Lindane	Linuron
05465000, Cedar River near Conesville, IA (map number 15, fig. 1)													
03-11-96	1206	regular	<0.002	E0.06	<0.002	<0.001	<0.017	<0.002	<0.004	<0.003	<0.003	<0.004	<0.002
04-10-96	1228	do.	<.002	E.07	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05-11-96	1326	do.	E.002	E.34	.02	.01	<.017	.08	<.004	<.003	.08	<.004	<.002
06-13-96	1046	do.	<.002	E.06	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
07-08-96	1037	do.	<.002	E.08	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
08-05-96	1050	do.	<.002	E.05	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-10-96	0935	do.	<.002	E.03	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05465500, Iowa River at Wapello, IA (map number 16, fig. 1)													
03-13-96	0915	regular	<.002	E.06	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
04-08-96	1210	do.	<.002	E.05	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
04-08-96	1215	replicate	<.002	E.06	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05-08-96	1141	regular	<.002	E.05	<.002	<.001	<.017	.01	<.004	<.003	<.003	<.004	<.002
05-30-96	1200	do.	<.002	E.30	<.002	<.001	<.017	.01	<.004	<.003	.02	<.004	<.002
06-11-96	1047	do.	<.002	E.14	<.002	<.001	<.017	<.002	<.004	<.003	.01	<.004	<.002
07-09-96	1102	do.	<.002	E.08	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
08-06-96	1050	do.	<.002	E.05	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-11-96	1000	do.	<.002	E.04	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05473400, Cedar Creek near Oakland Mills, IA (map number 18, fig. 1)													
04-04-96	1200	regular	<.002	E.03	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05-08-96	1240	do.	<.002	E.23	<.002	<.001	<.017	.005	<.004	<.003	<.003	<.004	<.002
06-17-96	1110	do.	<.002	E.20	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
07-08-96	1235	do.	<.002	E.16	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
08-06-96	1255	do.	<.002	E.10	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-04-96	0930	do.	<.002	E.15	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05474000, Skunk River at Augusta, IA (map number 19, fig. 1)													
03-12-96	1336	blank	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
03-12-96	1356	regular	<.002	E.06	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
04-09-96	1210	do.	<.002	E.08	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
05-09-96	1120	do.	<.002	E.31	<.002	<.001	<.017	.005	<.004	<.003	<.003	<.004	<.002
06-12-96	0915	do.	<.002	E.17	<.002	<.004	<.017	E.002	<.004	<.003	<.003	<.004	<.002
07-10-96	0956	do.	<.002	E.09	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
08-07-96	0935	do.	<.002	E.06	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
09-12-96	0916	do.	<.002	E.05	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date	Time (24-hour)	Type of sample	Mala-thion	Metol-achlor	Metri-buzin	Molinate	Naprop-amide	Parathion	Parathion-methyl	Pebulate	Pendi-methalin	Phorate	Prometon
05420680, Wapsipinicon River near Tripoli, IA (map number 1, fig. 1)													
03-27-96	1234	regular	<0.005	E7.6	--	<0.004	<0.003	<0.004	<0.006	<0.004	<0.004	<0.002	<0.018
04-18-96	0945	do.	<.005	.48	<0.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-16-96	1003	do.	<.005	.28	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
06-24-96	1148	do.	<.005	.55	.01	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
07-18-96	1100	do.	<.005	.12	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
08-15-96	1022	do.	<.005	.10	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.06
09-19-96	0950	do.	<.005	.05	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05422000, Wapsipinicon River near DeWitt, IA (map number 2, fig. 1)													
03-14-96	1226	blank	<.005	.97	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
04-24-96	1127	regular	<.005	.33	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-22-96	1225	do.	<.005	4.9	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-29-96	1013	do.	<.005	6.0	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
06-26-96	1043	do.	<.005	1.1	.02	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
07-24-96	1046	do.	<.005	.15	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
08-27-96	0940	do.	<.005	.06	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
09-25-96	0955	do.	<.005	.03	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05449500, Iowa River near Rowan, IA (map number 3, fig. 1)													
03-20-96	1052	regular	<.005	.19	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
04-16-96	1025	do.	<.005	.12	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-14-96	1018	do.	<.005	.15	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
06-20-96	0856	do.	<.005	1.5	.01	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.02
07-16-96	1100	do.	<.005	.01	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.02
07-16-96	1105	replicate	<.005	.01	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.02
08-13-96	0905	regular	<.005	.20	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.02
09-17-96	0925	do.	<.005	.06	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.02
09-17-96	0935	spike	.11	.19	.10	.10	.10	.12	.12	.10	.10	.06	.14

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date	Time (24-hour)	Type of sample	Mala-thion	Metol-achlor	Metri-buzin	Molinate	Naprop-amide	Parathion	Parathion-methyl	Pebulate	Pendi-methalin	Phorate	Prometon
05451210, South Fork Iowa River northeast of New Providence, IA (map number 4, fig. 1)													
03-19-96	1307	regular	<0.005	1.3	<0.004	<0.004	<0.003	<0.004	<0.006	<0.004	<0.004	<0.002	<0.018
04-15-96	1245	do.	<.005	.44	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-13-96	1325	do.	<.005	.85	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.02
06-17-96	1305	do.	<.005	4.0	.01	<.004	<.003	<.004	<.006	<.004	.04	<.002	.02
07-15-96	1435	do.	<.005	.11	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
08-12-96	1304	do.	<.005	.39	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.10
09-16-96	1257	do.	<.005	.08	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.03
05453100, Iowa River at Marengo, IA (map number 5, fig. 1)													
03-15-96	1205	regular	<.005	.30	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
04-25-96	1100	do.	<.005	.27	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-23-96	1128	do.	<.005	1.2	.01	<.004	<.003	<.004	<.006	<.004	.04	<.002	.02
05-31-96	1130	do.	<.005	.78	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
06-27-96	1010	do.	<.005	.63	.01	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
07-25-96	0918	do.	<.005	.39	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.02
08-26-96	0958	do.	<.005	.08	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
09-26-96	0937	do.	<.005	.26	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
09-26-96	0947	spike	.11	.38	.10	.11	.11	.12	.12	.10	.10	.10	.13
05455100, Old Man's Creek near Iowa City, IA (map number 6, fig. 1)													
03-18-96	1051	regular	<.005	.06	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
04-11-96	1015	do.	<.005	.06	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-07-96	1034	do.	<.005	.37	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-10-96	1012	do.	<.005	E10	.15	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-21-96	1322	do.	.08	E6.0	.03	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.02
06-14-96	0936	do.	<.005	.21	.05	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.05
07-11-96	0940	do.	<.005	.11	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
08-08-96	0922	do.	<.005	.09	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
09-09-96	1112	do.	<.005	.05	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date	Time (24-hour)	Type of sample	Mala-thion	Metol-achlor	Metri-buzin	Molinate	Naprop-amide	Parathion	Parathion-methyl	Pebulate	Pendi-methalin	Phorate	Prometon
05455570, English River at Riverside, IA (map number 7, fig. 1)													
04-04-96	0940	regular	<0.005	0.06	<0.004	<0.004	<0.003	<0.004	<0.006	<0.004	<0.004	<0.002	<0.018
05-08-96	0940	do.	<.005	.44	<.004	<.004	<.003	<.004	<.006	<.004	.03	<.002	<.018
06-03-96	0740	do.	<.005	2.5	.06	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.02
06-17-96	0855	do.	<.005	.28	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.01
07-08-96	0850	do.	<.005	.12	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.01
08-06-96	0940	do.	<.005	.11	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.02
09-04-96	0735	do.	<.005	.04	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.01
05457750, Cedar River near Carville, IA (map number 9, fig. 1)													
03-21-96	0750	regular	<.005	.98	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.01
04-02-96	1020	do.	<.005	3.8	.01	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.01
05-29-96	1010	do.	<.005	.54	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.01
06-12-96	1125	do.	<.005	.94	.03	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.01
08-20-96	1010	do.	<.005	.07	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.06
09-26-96	0750	do.	<.005	.04	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.01
05458900, West Fork Cedar River near Finchford, IA (map number 10, fig. 1)													
03-21-96	1440	regular	<.005	.57	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.10
04-02-96	1155	do.	<.005	.84	.01	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.01
05-29-96	0855	do.	<.005	.85	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.01
06-12-96	1020	do.	<.005	.40	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.01
08-20-96	0900	do.	<.005	.06	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.01
09-26-96	0645	do.	<.005	.04	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	E.01

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date	Time (24-hour)	Type of sample	Mala-thion	Metol-achlor	Metri-buzin	Molinate	Naprop-amide	Parathion	Parathion-methyl	Pebulate	Pendi-methalin	Phorate	Prometon
05461390, Flood Creek near Powersville, IA (map number 11, fig. 1)													
03-28-96	0914	regular	<0.005	0.29	--	<0.004	<0.003	<0.004	<0.006	<0.004	<0.004	<0.002	<0.018
04-17-96	0959	do.	<.005	.10	<0.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-15-96	0944	do.	<.005	.06	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
06-04-96	1145	do.	<.005	.67	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
06-07-96	1210	do.	<.005	1.8	.01	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
06-19-96	1043	blank	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
06-19-96	1103	regular	<.005	1.2	.007	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
07-17-96	1110	do.	<.005	.02	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
08-14-96	1003	do.	<.005	.01	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
09-18-96	1014	do.	<.005	.005	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
09-18-96	1019	do.	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05464020, Cedar River at Gilbertville, IA (map number 12, fig. 1)													
03-26-96	1315	regular	<.005	.46	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
04-23-96	0948	blank	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
04-23-96	1008	regular	<.005	.27	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-21-96	1014	do.	<.005	1.0	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
06-25-96	1035	do.	<.005	.59	.02	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
07-23-96	0954	do.	<.005	.06	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
08-29-96	0930	do.	<.005	.12	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.02
09-24-96	1014	do.	<.005	.04	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.03
09-24-96	1024	spike	.12	.17	.10	.11	.11	.13	.12	.10	.10	.05	.15
05464220, Wolf Creek near Dysart, IA (map number 13, fig. 1)													
03-21-96	1246	regular	<.005	.15	<.004	<.004	E.004	<.004	<.006	<.004	<.004	<.002	<.018
04-22-96	1056	do.	<.005	.25	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-20-96	1119	do.	<.005	.39	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-20-96	1124	replicate	<.005	.40	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
06-18-96	1008	regular	<.005	3.8	.11	.02	<.003	<.004	<.006	<.004	.07	<.002	<.018
06-18-96	1013	replicate	<.005	3.8	.10	.01	<.003	<.004	<.006	<.004	.08	<.002	<.018
07-22-96	1208	regular	<.005	.08	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
08-28-96	1045	do.	<.005	.07	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
09-23-96	1122	do.	<.005	.08	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.02

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date	Time (24-hour)	Type of sample	Mala-thion	Metol-achlor	Metri-buzin	Molinate	Naprop-amide	Parathion	Parathion-methyl	Pebulate	Pendi-methalin	Phorate	Prometon
05465000, Cedar River near Conesville, IA (map number 15, fig. 1)													
03-11-96	1206	regular	0.02	1.8	<0.004	<0.004	<0.003	<0.004	<0.006	<0.004	<0.004	<0.002	<0.018
04-10-96	1228	do.	<.005	1.0	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-11-96	1326	do.	<.005	E10	.05	<.004	<.003	<.004	<.006	<.004	.07	<.002	.08
06-13-96	1046	do.	<.005	.67	.01	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
07-08-96	1037	do.	<.005	.14	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
08-05-96	1050	do.	<.005	.05	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
09-10-96	0935	do.	<.005	.05	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05465500, Iowa River at Wapello, IA (map number 16, fig. 1)													
03-13-96	0915	regular	<.005	1.3	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
04-08-96	1210	do.	<.005	.22	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
04-08-96	1215	replicate	<.005	1.9	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-08-96	1141	regular	<.005	.31	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.02
05-30-96	1200	do.	<.005	3.3	.02	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
06-11-96	1047	do.	<.005	1.0	.01	<.004	<.003	<.004	<.006	<.004	.03	<.002	<.018
07-09-96	1102	do.	<.005	.38	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
08-06-96	1050	do.	<.005	.07	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.02
09-11-96	1000	do.	<.005	.05	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.02
05473400, Cedar Creek near Oakland Mills, IA (map number 18, fig. 1)													
04-04-96	1200	regular	<.005	.02	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-08-96	1240	do.	<.005	E13	<.004	<.004	<.003	<.004	<.006	<.004	.30	<.002	<.018
06-17-96	1110	do.	<.005	.37	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
07-08-96	1235	do.	<.005	.26	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.02
08-06-96	1255	do.	<.005	.11	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.05
09-04-96	0930	do.	<.005	.19	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.04
05474000, Skunk River at Augusta, IA (map number 19, fig. 1)													
03-12-96	1336	blank	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
03-12-96	1356	regular	<.005	.41	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
04-09-96	1210	do.	<.005	1.8	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
05-09-96	1120	do.	<.005	E5.1	.04	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
06-12-96	0915	do.	<.005	.83	.01	<.004	<.003	<.004	<.006	<.004	.04	<.002	<.018
07-10-96	0956	do.	<.005	.34	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
08-07-96	0935	do.	<.005	.16	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.02
09-12-96	0916	do.	<.005	.13	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	.02

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date	Time (24-hour)	Type of sample	Prop-achlor	Propanil	Propargite	Propyz-amide	Simazine	Tebu-thiuron	Terbacil	Terbufos	Thio-bencarb	Triallate	Trifluralin
05420680, Wapsipinicon River near Tripoli, IA (map number 1, fig. 1)													
03-27-96	1234	regular	<0.007	<0.004	<0.013	<0.003	0.01	E0.01	<0.007	<0.013	<0.002	<0.001	<0.002
04-18-96	0945	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05-16-96	1003	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
06-24-96	1148	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
07-18-96	1100	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
08-15-96	1022	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
09-19-96	0950	do.	<.007	<.004	<.013	.06	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05422000, Wapsipinicon River near DeWitt, IA (map number 2, fig. 1)													
03-14-96	1226	blank	<.007	<.004	<.013	<.003	.005	<.010	<.007	<.013	<.002	<.001	<.002
04-24-96	1127	regular	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05-22-96	1225	do.	<.007	<.004	<.013	<.003	.03	.01	<.007	<.013	<.002	<.001	<.002
05-29-96	1013	do.	.02	<.004	<.013	<.003	.03	.02	<.007	<.013	<.002	<.001	<.002
06-26-96	1043	do.	<.007	<.004	<.013	<.003	.02	<.010	<.007	<.013	<.002	<.001	<.002
07-24-96	1046	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
08-27-96	0940	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
09-25-96	0955	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05449500, Iowa River near Rowan, IA (map number 3, fig. 1)													
03-20-96	1052	regular	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
04-16-96	1025	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05-14-96	1018	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
06-20-96	0856	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	.005
07-16-96	1100	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
07-16-96	1105	replicate	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
08-13-96	0905	regular	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
09-17-96	0925	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
09-17-96	0935	spike	.12	.13	.10	.11	.11	.15	E.08	.10	.12	.10	.09

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date	Time (24-hour)	Type of sample	Prop-achlor	Propanil	Propargite	Propyz-amide	Simazine	Tebu-thiuron	Terbacil	Terbufos	Thio-bencarb	Triallate	Trifluralin
05451210, South Fork Iowa River northeast of New Providence, IA (map number 4, fig. 1)													
03-19-96	1307	regular	<0.007	<0.004	<0.013	<0.003	0.01	<0.010	<0.007	<0.013	<0.002	<0.001	<0.002
04-15-96	1245	do,	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05-13-96	1325	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
06-17-96	1305	do.	<.007	<.004	<.013	<.003	.24	<.010	<.007	<.013	<.002	<.001	.01
07-15-96	1435	do.	<.007	<.004	<.013	<.003	.005	<.010	<.007	<.013	<.002	<.001	<.002
08-12-96	1304	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
09-16-96	1257	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05453100, Iowa River at Marengo, IA (map number 5, fig. 1)													
03-15-96	1205	regular	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
04-25-96	1100	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
05-23-96	1128	do.	<.007	<.004	<.013	<.003	.03	<.010	<.007	<.013	<.002	<.001	<.002
05-31-96	1130	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
06-27-96	1010	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
07-25-96	0918	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
08-26-96	0958	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
09-26-96	0937	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
09-26-96	0947	spike	.13	.12	.11	.10	.11	.14	E.09	.10	.12	.11	.10
05455100, Old Man's Creek near Iowa City, IA (map number 6, fig. 1)													
03-18-96	1051	regular	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
04-11-96	1015	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05-07-96	1034	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05-10-96	1012	do.	<.007	<.004	<.013	<.003	.09	<.010	<.007	<.013	<.002	<.001	<.002
05-21-96	1322	do.	<.007	<.004	<.013	<.003	.05	<.010	<.007	<.013	<.002	<.001	.01
06-14-96	0936	do.	<.05	<.004	<.013	<.003	<.05	<.010	<.007	<.013	<.002	<.001	E.002
07-11-96	0940	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
08-08-96	0922	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
09-09-96	1112	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05455570, English River at Riverside, IA (map number 7, fig. 1)													
04-04-96	0940	regular	<.007	<.004	<.013	<.003	.04	<.010	<.007	<.013	<.002	<.001	<.002
05-08-96	0940	do.	<.007	<.004	<.013	<.003	.02	<.010	<.007	<.013	<.002	<.001	<.002
06-03-96	0740	do.	<.007	<.004	<.013	<.003	.04	<.010	<.007	<.013	<.002	<.001	<.002
06-17-96	0855	do.	<.007	<.004	<.013	<.003	.02	<.010	<.007	<.013	<.002	<.001	E.002
07-08-96	0850	do.	<.007	<.004	<.013	<.003	.04	<.010	<.007	<.013	<.002	<.001	<.002
08-06-96	0940	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
09-04-96	0735	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date	Time (24-hour)	Type of sample	Prop-achlor	Propanil	Propargite	Propyz-amide	Simazine	Tebu-thiuron	Terbacil	Terbufos	Thio-bencarb	Triallate	Trifluralin
05457750, Cedar River near Carville, IA (map number 9, fig. 1)													
03-21-96	0750	regular	<0.007	<0.004	<0.013	<0.003	E0.005	E0.01	<0.007	<0.013	<0.002	<0.001	<0.002
04-02-96	1020	do.	<.007	<.004	<.013	<.003	<.005	E.01	<.007	<.013	<.002	<.001	.01
05-29-96	1010	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
06-12-96	1125	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
08-20-96	1010	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
09-26-96	0750	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05458900, West Fork Cedar River near Finchford, IA (map number 10, fig. 1)													
03-21-96	1440	regular	<.007	<.004	<.013	<.003	E.005	<.010	<.007	<.013	<.002	<.001	<.002
04-02-96	1155	do.	<.007	<.004	<.013	<.003	E.005	E.005	<.007	<.013	<.002	<.001	<.002
05-29-96	0855	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
06-12-96	1020	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	E.002
08-20-96	0900	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
09-26-96	0645	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05461390, Flood Creek near Powersville, IA (map number 11, fig. 1)													
03-28-96	0914	regular	<.007	<.004	<.013	<.003	.02	<.010	<.007	<.013	<.002	<.001	<.002
04-17-96	0959	do.	<.007	<.004	<.013	<.003	.005	<.010	<.007	<.013	<.002	<.001	<.002
05-15-96	0944	do.	<.007	<.004	<.013	<.003	.005	<.010	<.007	<.013	<.002	<.001	<.002
06-04-96	1145	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	.01
06-07-96	1210	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	.01
06-19-96	1043	blank	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
06-19-96	1103	regular	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	.01
07-17-96	1110	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
08-14-96	1003	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
09-18-96	1014	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
09-18-96	1019	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05464020, Cedar River at Gilbertville, IA (map number 12, fig. 1)													
03-26-96	1315	regular	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
04-23-96	0948	blank	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
04-23-96	1008	regular	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05-21-96	1014	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
06-25-96	1035	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
07-23-96	0954	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
08-29-96	0930	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
09-24-96	1014	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
09-24-96	1024	spike	.13	.13	.11	.11	.12	.16	E.09	.08	.12	.11	.09

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date	Time (24-hour)	Type of sample	Prop-achlor	Propanil	Propargite	Propyz-amide	Simazine	Tebu-thiuron	Terbacil	Terbufos	Thio-bencarb	Triallate	Trifluralin
05464220, Wolf Creek near Dysart, IA (map number 13, fig. 1)													
03-21-96	1246	regular	<0.007	<0.004	<0.013	<0.003	E0.005	<0.010	<0.007	<0.013	<0.002	<0.001	<0.002
04-22-96	1056	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
05-20-96	1119	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	E.01
05-20-96	1124	replicate	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	E.01
06-18-96	1008	regular	<.007	<.004	<.013	<.003	.05	<.010	<.007	<.013	<.002	<.001	.01
06-18-96	1013	replicate	<.007	<.004	<.013	<.003	.04	<.010	<.007	<.013	<.002	<.001	.01
07-22-96	1208	regular	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
08-28-96	1045	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
09-23-96	1122	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
05465000, Cedar River near Conesville, IA (map number 15, fig. 1)													
03-11-96	1206	regular	<.007	<.004	<.013	<.003	.005	<.010	<.007	<.013	<.002	<.001	<.002
04-10-96	1228	do.	<.007	<.004	<.013	<.003	.005	<.010	<.007	<.013	<.002	<.001	<.002
05-11-96	1326	do.	<.007	<.004	<.013	<.003	.16	<.010	<.007	<.013	<.002	<.001	.01
06-13-96	1046	do.	<.007	<.004	<.013	<.003	.02	<.010	<.007	<.013	<.002	<.001	E.002
07-08-96	1037	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
08-05-96	1050	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
09-10-96	0935	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05465500, Iowa River at Wapello, IA (map number 16, fig. 1)													
03-13-96	0915	regular	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
04-08-96	1210	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
04-08-96	1215	replicate	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
05-08-96	1141	regular	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05-30-96	1200	do.	<.007	<.004	<.013	<.003	.06	<.010	<.007	<.013	<.002	<.001	<.002
06-11-96	1047	do.	<.007	<.004	<.013	<.003	.03	<.010	<.007	<.013	<.002	<.001	E.003
07-09-96	1102	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
08-06-96	1050	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
09-11-96	1000	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05473400, Cedar Creek near Oakland Mills, IA (map number 18, fig. 1)													
04-04-96	1200	regular	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
05-08-96	1240	do.	<.007	<.004	<.013	<.003	.05	<.010	<.007	<.013	<.002	<.001	<.002
06-17-96	1110	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	E.002
07-08-96	1235	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
08-06-96	1255	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
09-04-96	0930	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date	Time (24-hour)	Type of sample	Prop-achlor	Propanil	Propargite	Propyz-amide	Simazine	Tebu-thiuron	Terbacil	Terbufos	Thio-bencarb	Triallate	Trifluralin
05474000, Skunk River at Augusta, IA (map number 19, fig. 1)													
03-12-96	1336	blank	<0.007	<0.004	<0.013	<0.003	<0.005	<0.010	<0.007	<0.013	<0.002	<0.001	<0.002
03-12-96	1356	regular	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
04-09-96	1210	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
05-09-96	1120	do.	<.007	<.004	<.013	<.003	.08	<.010	<.007	<.013	<.002	<.001	<.002
06-12-96	0915	do.	<.007	<.004	<.013	<.003	.02	<.010	<.007	<.013	<.002	<.001	E.002
07-10-96	0956	do.	<.007	<.004	<.013	<.003	.01	<.010	<.007	<.013	<.002	<.001	<.002
08-07-96	0935	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
09-12-96	0916	do.	<.007	<.004	<.013	<.003	E.005	.04	<.007	<.013	<.002	<.001	<.002

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	alpha-HCH	cis-Permethrin	p,p′-DDE	Diazinon (surrogate, % recovery)	Terbuthylazine (surrogate, % recovery)	alpha-HCH-d6 (surrogate, % recovery)
05420680, Wapsipinicon River near Tripoli, IA (map number 1, fig. 1)								
03-27-96	1234	regular	<0.002	<0.005	<0.006	124	114	122
04-18-96	0945	do.	<.002	<.005	<.006	100	114	100
05-16-96	1003	do.	<.002	<.005	<.006	106	106	93.5
06-24-96	1148	do.	<.002	<.005	<.006	101	119	108
07-18-96	1100	do.	<.002	<.005	<.006	145	148	127
08-15-96	1022	do.	<.002	<.005	<.006	108	115	97.9
09-19-96	0950	do.	<.002	<.005	<.006	97.1	109	91.8
05422000, Wapsipinicon River near DeWitt, IA (map number 2, fig. 1)								
03-14-96	1226	blank	<.002	<.005	<.006	100	110	100
04-24-96	1127	regular	<.002	<.005	<.006	100	120	100
05-22-96	1225	do.	<.002	<.005	<.006	124	124	106
05-29-96	1013	do.	<.002	<.005	<.006	115	112	99.1
06-26-96	1043	do.	<.002	<.005	<.006	98.5	118	110
07-24-96	1046	do.	<.002	<.005	<.006	131	135	117
08-27-96	0940	do.	<.002	<.005	<.006	112	133	129
09-25-96	0955	do.	<.002	<.005	<.006	104	113	100
05449500, Iowa River near Rowan, IA (map number 3, fig. 1)								
03-20-96	1052	regular	<.002	<.005	<.006	100	123	100
04-16-96	1025	do.	<.002	<.005	<.006	90.0	111	90.0
05-14-96	1018	do.	<.002	<.005	<.006	106	118	103
06-20-96	0856	do.	<.002	<.005	<.006	104	117	109
07-16-96	1100	do.	<.002	<.005	<.006	140	151	135
07-16-96	1105	replicate	<.002	<.005	<.006	135	154	138
08-13-96	0905	regular	<.002	<.005	<.006	116	136	97.5
09-17-96	0925	do.	<.002	<.005	<.006	99.6	118	95.6
09-17-96	0935	spike	.10	.03	.06	104	115	96.0

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	alpha-HCH	cis-Permethrin	p,p'-DDE	Diazinon (surrogate, % recovery)	Terbuthylazine (surrogate, % recovery)	alpha-HCH-d6 (surrogate, % recovery)
05451210, South Fork Iowa River northeast of New Providence, IA (map number 4, fig. 1)								
03-19-96	1307	regular	<0.002	<0.005	<0.006	100	121	100
04-15-96	1245	do.	<.002	<.005	<.006	90.0	112	90.0
05-13-96	1325	do.	<.002	<.005	<.006	105	121	103
06-17-96	1305	do.	<.002	<.005	<.006	97.4	123	107
07-15-96	1435	do.	<.002	<.005	<.006	137	154	140
08-12-96	1304	do.	<.002	<.005	<.006	109	122	96.6
09-16-96	1257	do.	<.002	<.005	<.006	100	120	99.1
05453100, Iowa River at Marengo, IA (map number 5, fig. 1)								
03-15-96	1205	regular	<.002	<.005	<.006	100	117	100
04-25-96	1100	do.	<.002	<.005	<.006	100	121	90.0
05-23-96	1128	do.	<.002	<.005	<.006	127	121	108
05-31-96	1130	do.	<.002	<.005	<.006	118	118	103
06-27-96	1010	do.	<.002	<.005	<.006	98.8	115	105
07-25-96	0918	do.	<.002	<.005	<.006	128	136	119
08-26-96	0958	do.	<.002	<.005	<.006	114	138	133
09-26-96	0937	do.	<.002	<.005	<.006	103	104	95.2
09-26-96	0947	spike	.10	.03	.07	106	109	98.7
05455100, Old Man's Creek near Iowa City, IA (map number 6, fig. 1)								
03-18-96	1051	regular	<.002	<.005	<.006	112	112	113
04-11-96	1015	do.	<.002	<.005	<.006	100	120	100
05-07-96	1034	do.	<.002	<.005	<.006	97.6	112	95.1
05-10-96	1012	do.	<.002	<.005	<.006	108	117	105
05-21-96	1322	do.	<.002	<.005	<.006	132	136	119
06-14-96	0936	do.	<.002	<.005	<.006	107	122	113
07-11-96	0940	do.	<.002	<.005	<.006	140	160	142
08-08-96	0922	do.	<.002	<.005	<.006	112	122	103
09-09-96	1112	do.	<.002	<.005	<.006	108	127	106

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	alpha-HCH	cis-Permethrin	p,p'-DDE	Diazinon (surrogate, % recovery)	Terbuthylazine (surrogate, % recovery)	alpha-HCH-d6 (surrogate, % recovery)
05455570, English River at Riverside, IA (map number 7, fig. 1)								
04-04-96	0940	regular	<0.002	<0.005	<0.006	100	130	100
05-08-96	0940	do.	<.002	<.005	<.006	110	109	93.8
06-03-96	0740	do.	<.002	<.005	<.006	115	109	93.5
06-17-96	0855	do.	<.002	<.005	<.006	100	106	106
07-08-96	0850	do.	<.002	<.005	<.006	118	142	126
08-06-96	0940	do.	<.002	<.005	<.006	113	121	101
09-04-96	0735	do.	<.002	<.005	<.006	110	120	100
05457750, Cedar River near Carville, IA (map number 9, fig. 1)								
03-21-96	0750	regular	<.002	<.005	<.006	100	117	100
04-02-96	1020	do.	<.002	<.005	<.006	100	126	100
05-29-96	1010	do.	<.002	<.005	<.006	117	118	97.8
06-12-96	1125	do.	<.002	<.005	<.006	109	126	109
08-20-96	1010	do.	<.002	<.005	<.006	106	124	120
09-26-96	0750	do.	<.002	<.005	<.006	91.9	113	99.1
05458900, West Fork Cedar River near Finchford, IA (map number 10, fig. 1)								
03-21-96	1440	regular	<.002	<.005	<.006	100	117	100
04-02-96	1155	do.	<.002	<.005	<.006	100	121	100
05-29-96	0855	do.	<.002	<.005	<.006	115	115	95.4
06-12-96	1020	do.	<.002	<.005	<.006	105	120	105
08-20-96	0900	do.	<.002	<.005	<.006	114	134	127
09-26-96	0645	do.	<.002	<.005	<.006	89.2	108	97.4

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	alpha-HCH	cis-Permethrin	p,p'-DDE	Diazinon (surrogate, % recovery)	Terbuthylazine (surrogate, % recovery)	alpha-HCH-d6 (surrogate, % recovery)
05461390, Flood Creek near Powersville, IA (map number 11, fig. 1)								
03-28-96	0914	regular	<0.002	<0.005	<0.006	121	117	123
04-17-96	0959	do.	<.002	<.005	<.006	90.0	109	90.0
05-15-96	0944	do.	<.002	<.005	<.006	111	112	95.2
06-04-96	1145	do.	<.002	<.005	<.006	111	108	9.1
06-07-96	1210	do.	<.002	<.005	<.006	88.0	107	95.4
06-19-96	1043	blank	<.002	<.005	<.006	101	111	106
06-19-96	1103	regular	<.002	<.005	<.006	103	115	107
07-17-96	1110	do.	<.002	<.005	<.006	138	146	122
08-14-96	1003	do.	<.002	<.005	<.006	101	110	92.6
09-18-96	1014	do.	<.002	<.005	<.006	95.6	110	9.6
09-18-96	1019	do.	<.002	<.005	<.006	91.6	108	88.4
05464020, Cedar River at Gilbertville, IA (map number 12, fig. 1)								
03-26-96	1315	regular	<.002	<.005	<.006	100	114	100
04-23-96	0948	blank	<.002	<.005	<.006	100	109	100
04-23-96	1008	regular	<.002	<.005	<.006	112	113	113
05-21-96	1014	do.	<.002	<.005	<.006	130	132	119
06-25-96	1035	do.	<.002	<.005	<.006	97.1	116	109
07-23-96	0954	do.	<.002	<.005	<.006	139	138	123
08-29-96	0930	do.	<.002	<.005	<.006	105	128	105
09-24-96	1014	do.	<.002	<.005	<.006	92.9	114	96.8
09-24-96	1024	spike	.10	.02	.06	102	116	100
05464220, Wolf Creek near Dysart, IA (map number 13, fig. 1)								
03-21-96	1246	regular	<.002	<.005	<.006	100	117	100
04-22-96	1056	do.	<.002	<.005	<.006	100	111	100
05-20-96	1119	do.	<.002	<.005	<.006	119	130	111
05-20-96	1124	replicate	<.002	<.005	<.006	127	134	114
06-18-96	1008	regular	<.002	<.005	<.006	101	124	106
06-18-96	1013	replicate	<.002	<.005	<.006	99.7	120	106
07-22-96	1208	regular	<.002	<.005	<.006	131	135	119
08-28-96	1045	do.	<.002	<.005	<.006	104	129	105
09-23-96	1122	do.	<.002	<.005	<.006	99.4	117	94.9

Table 15. Selected dissolved pesticide concentrations in samples from selected surface-water sites, 1996—Continued

Date (month-day-year)	Time (24-hour)	Type of sample	alpha-HCH	cis-Permethrin	p,p'-DDE	Diazinon (surrogate, % recovery)	Terbuthylazine (surrogate, % recovery)	alpha-HCH-d6 (surrogate, % recovery)
05465000, Cedar River near Conesville, IA (map number 15, fig. 1)								
03-11-96	1206	regular	<0.002	<0.005	<0.006	100	115	100
04-10-96	1228	do.	<.002	<.005	<.006	100	124	100
05-11-96	1326	do.	<.002	<.005	<.006	107	119	111
06-13-96	1046	do.	<.002	<.005	<.006	104	124	109
07-08-96	1037	do.	<.002	<.005	<.006	98.8	112	102
08-05-96	1050	do.	<.002	z<.005	<.006	107	111	92.5
09-10-96	0935	do.	<.002	<.005	<.006	108	121	103
05465500, Iowa River at Wapello, IA (map number 16, fig. 1)								
03-13-96	0915	regular	<.002	<.005	<.006	100	116	100
04-08-96	1210	do.	<.002	<.005	<.006	98.4	122	104
04-08-96	1215	replicate	<.002	<.005	<.006	100	121	100
05-08-96	1141	regular	<.002	<.005	<.006	103	111	100
05-30-96	1200	do.	<.002	<.005	<.006	113	113	100
06-11-96	1047	do.	<.002	<.005	<.006	95.4	118	103
07-09-96	1102	do.	<.002	<.005	<.006	122	144	132
08-06-96	1050	do.	<.002	<.005	<.006	108	117	94.1
09-11-96	1000	do.	<.002	<.005	<.006	103	114	97.1
05473400, Cedar Creek near Oakland Mills, IA (map number 18, fig. 1)								
04-04-96	1200	regular	<.002	<.005	<.006	100	120	100
05-08-96	1240	do.	<.002	<.005	<.006	107	108	91.6
06-17-96	1110	do.	<.002	<.005	<.006	102	111	105
07-08-96	1235	do.	<.002	<.005	<.006	123	141	131
08-06-96	1255	do.	<.002	<.005	<.006	116	124	102
09-04-96	0930	do.	<.002	<.005	<.006	112	122	97.6
05474000, Skunk River at Augusta, IA (map number 19, fig. 1)								
03-12-96	1336	blank	<.002	<.005	<.006	100	113	100
03-12-96	1356	regular	<.002	<.005	<.006	100	116	100
04-09-96	1210	do.	<.002	<.005	<.006	90.0	107	100
05-09-96	1120	do.	<.002	<.005	<.006	99.7	113	98.6
06-12-96	0915	do.	<.002	<.005	<.006	105	129	107
07-10-96	0956	do.	<.002	<.005	<.006	132	138	136
08-07-96	0935	do.	<.002	<.005	<.006	107	115	96.2
09-12-96	0916	do.	<.002	<.005	<.006	107	116	98.7

Table 16. Concentrations of selected metals in fish-tissue samples, 1995–96

[Concentrations are in micrograms per gram; g, grams; mm, millimeter; <, less than indicated detection limit]

Map number (fig. 1)	Station identification	Date (month-day-year)	Species		Number of fish	Average weight (g)	Average total length (mm)	Aluminum	Antimony	Arsenic	Barium	Beryllium	Boron
			Common name	Scientific name									
					1995								
1	05420680	09-24-95	White sucker	*Catostomus commersoni*	8	611	388	2.9	<0.2	0.4	0.2	<0.2	0.5
2	05422000	09-20-95	Common carp	*Cyprinus carpio*	8	1,236	458	3.7	<.2	.2	.1	<.2	1.2
3	05449500	09-22-95	Common carp	*Cyprinus carpio*	8	1,720	491	2.8	<.2	.4	<.1	<.2	.6
4	05451210	09-21-95	Common carp	*Cyprinus carpio*	8	3,169	593	2.7	<.2	.2	<.1	<.2	.7
		09-21-95	Highfin carpsucker	*Carpiodes velifer*	8	288	283	38	<.2	1.3	1.3	<.2	.9
5	05453100	09-20-95	Common carp	*Cyprinus carpio*	8	1,548	468	5.0	<.1	.3	<.1	<.1	.7
6	05455100	09-25-95	Common carp	*Cyprinus carpio*	8	1,407	473	6.6	<.1	<.1	.2	<.1	.3
8	05457700	09-23-95	Common carp	*Cyprinus carpio*	8	1,703	512	2.1	<.2	.4	<.1	<.2	.8
11	05461390	09-24-95	White sucker	*Catostomus commersoni*	8	227	281	20	<.2	<.2	.6	<.2	1.1
12	05464020	09-21-95	Common carp - large	*Cyprinus carpio*	8	1,552	486	4.4	<.2	.3	.1	<.2	.7
		09-21-95	Common carp - small	*Cyprinus carpio*	8	724	386	5.9	<.3	<.3	.2	<.3	.5
13	05464220	09-18-95	Common carp	*Cyprinus carpio*	8	1,507	481	11	<.2	.3	.2	<.2	.4
14	05464490	09-25-95	White sucker	*Catostomus commersoni*	12	103	216	<1.0	<.2	.2	<.1	<.2	1.4
15	05465000	09-18-95	Common carp	*Cyprinus carpio*	8	1,963	536	19	<.2	<.2	.4	<.2	.6
16	05465500	09-19-95	Common carp	*Cyprinus carpio*	8	1,473	473	5.6	<.2	.3	.4	<.2	.7
		09-19-95	River carpsucker	*Carpiodes carpio*	8	695	379	14	<.2	1.0	1.0	<.2	.9
17	05471500	09-19-95	Common carp	*Cyprinus carpio*	8	1,060	424	17	<.2	.3	.3	<.2	1.1
18	05473400	09-23-95	Common carp	*Cyprinus carpio*	8	249	267	23	<.4	<.4	.5	<.4	1.4
19	05474000	09-22-95	Common carp	*Cyprinus carpio*	8	1,332	458	2.4	<.2	.8	.1	<.2	1.1
					1996								
1	05420680	09-12-96	Redhorse spp.	*Moxostoma spp.*	10	970	449	1.4	<.1	.2	.2	<.1	<.2
3	05449500	09-11-96	Common carp	*Cyprinus carpio*	8	2,720	596	17	<.2	.4	.3	<.2	<.2
			Common carp	*Cyprinus carpio*	8	3,375	632	31	<.2	.4	.4	<.2	<.2
5	05453100	09-10-96	Common carp	*Cyprinus caCyprinus carpiorpio*	8	1,740	517	19	<.1	.2	.4	<.1	<.2
15	05465000	09-13-96	Common carp	*Cyprinus carpio*	8	2,224	561	8.4	<.2	.3	.2	<.2	<.2

Table 16. Concentrations of selected metals in fish-tissue samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Species		Cadmium	Chromium	Cobalt	Copper	Iron	Lead	Manganese
			Common name	Scientific name							
					1995						
1	05420680	09-24-95	White sucker	*Catostomus commersoni*	1.3	0.5	<0.2	44	1,000	<0.2	6.7
2	05422000	09-20-95	Common carp	*Cyprinus carpio*	4.3	<.5	.2	96	910	<.2	7.7
3	05449500	09-22-95	Common carp	*Cyprinus carpio*	6.9	<.5	<.2	77	350	<.2	4.7
4	05451210	09-21-95	Common carp	*Cyprinus carpio*	4.5	<.5	<.2	57	480	<.2	3.5
		09-21-95	Highfin carpsucker	*Carpiodes velifer*	.6	<.5	.3	43	15,000	.6	6.2
5	05453100	09-20-95	Common carp	*Cyprinus carpio*	6.1	<.5	.2	62	780	<.1	4.1
6	05455100	09-25-95	Common carp	*Cyprinus carpio*	.9	<.5	<.1	46	330	<.1	6.1
8	05457700	09-23-95	Common carp	*Cyprinus carpio*	2.4	<.5	.2	100	750	<.2	5.4
11	05461390	09-24-95	White sucker	*Catostomus commersoni*	.6	.7	<.2	64	300	<.2	6.4
12	05464020	09-21-95	Common carp - large	*Cyprinus carpio*	4.1	<.5	<.2	76	890	<.2	7.6
		09-21-95	Common carp - small	*Cyprinus carpio*	1.2	<.5	<.3	76	790	<.3	5.2
13	05464220	09-18-95	Common carp	*Cyprinus carpio*	6.7	<.5	.3	93	630	<.2	7.7
14	05464490	09-25-95	White sucker	*Catostomus commersoni*	<.2	.6	<.2	93	260	<.2	8.1
15	05465000	09-18-95	Common carp	*Cyprinus carpio*	4.3	<.5	.2	74	900	<.2	7.5
16	05465500	09-19-95	Common carp	*Cyprinus carpio*	2.2	<.5	.2	92	570	<.2	12
		09-19-95	River carpsucker	*Carpiodes carpio*	1.0	<.5	.4	47	7,100	.7	4.7
17	05471500	09-19-95	Common carp	*Cyprinus carpio*	3.9	<.5	.3	86	1,200	<.2	8.2
18	05473400	09-23-95	Common carp	*Cyprinus carpio*	3.0	.7	<.4	100	820	<.4	6.4
19	05474000	09-22-95	Common carp	*Cyprinus carpio*	5.1	<.5	.2	88	740	<.2	4.0
					1996						
1	05420680	09-12-96	Redhorse spp.	*Moxostoma spp.*	1.0	<.5	<.1	27	250	<.1	4.4
3	05449500	09-11-96	Common carp	*Cyprinus carpio*	9.2	.5	.3	100	740	<.2	7.4
		09-11-96	Common carp	*Cyprinus carpio*	9.0	.6	.3	59	450	.2	7.2
5	05453100	09-10-96	Common carp	*Cyprinus carpio*	6.8	<.5	.3	56	960	.1	8.5
15	05465000	09-13-96	Common carp	*Cyprinus carpio*	7.8	<.5	.2	92	1,200	<.2	7.3

Table 16. Concentrations of selected metals in fish-tissue samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Species		Mercury	Molybdenum	Nickel	Selenium	Silver	Strontium	Uranium	Vanadium	Zinc
			Common name	Scientific name									
					1995								
1	05420680	09-24-95	White sucker	*Catostomus commersoni*	<0.1	1.4	<0.2	8.8	0.3	0.4	<0.2	0.6	110
2	05422000	09-20-95	Common carp	*Cyprinus carpio*	.2	1.3	<.2	5.5	.5	.2	<.2	1.0	770
3	05449500	09-22-95	Common carp	*Cyprinus carpio*	.2	1.0	<.2	7.4	.6	.1	<.2	.6	720
4	05451210	09-21-95	Common carp	*Cyprinus carpio*	.2	.9	<.2	4.9	.3	.1	<.2	1.0	600
			Highfin carpsucker		.2	4.0	.2	9.8	.2	.6	<.2	3.9	85
5	05453100	09-20-95	Common carp	*Cyprinus carpio*	.2	1.3	<.1	6.0	.3	.1	<.1	4.1	500
6	05455100	09-25-95	Common carp	*Cyprinus carpio*	<.1	.6	<.1	3.7	.2	.3	<.1	.3	480
8	05457700	09-23-95	Common carp	*Cyprinus carpio*	.3	1.3	<.2	11	.9	.2	<.2	.9	790
11	05461390	09-24-95	White sucker	*Catostomus commersoni*	.1	1.1	<.2	7.3	.6	.5	<.2	.4	100
12	05464020	09-21-95	Common carp - large	*Cyprinus carpio*	.2	1.6	<.2	9.3	1.0	.3	<.2	1.2	720
			Common carp - small	*Cyprinus carpio*	.1	1.0	<.3	5.4	1.2	.4	<.3	.3	670
13	05464220	09-18-95	Common carp	*Cyprinus carpio*	.2	1.7	<.2	8.2	.6	.3	<.2	.9	700
14	05464490	09-25-95	White sucker		<.1	1.4	1.2	7.8	1.0	.1	<.2	.2	120
15	05465000	09-18-95	Common carp	*Cyprinus carpio*	.3	1.1	<.2	5.9	.5	.3	<.2	1.6	470
16	05465500	09-19-95	Common carp	*Cyprinus carpio*	<.1	1.2	.5	5.6	.6	.6	<.2	.7	1,100
			River carpsucker	*Carpiodes carpio*	.3	3.8	.3	6.4	.3	.2	<.2	4.4	98
17	05471500	09-19-95	Common carp	*Cyprinus carpio*	.2	2.1	<.2	8.5	.3	.3	<.2	2.2	590
18	05473400	09-23-95	Common carp	*Cyprinus carpio*	.1	2.1	<.4	12	.8	.4	<.4	.6	680
19	05474000	09-22-95	Common carp	*Cyprinus carpio*	.2	1.0	<.2	5.7	.4	.4	<.2	1.0	870
					1996								
1	05420680	09-12-96	Redhorse spp.	*Moxostoma spp.*	<.1	.7	.1	5.1	.2	.6	<.1	.4	55
3	05449500	09-11-96	Common carp	*Cyprinus carpio*	.4	1.5	<.2	9.7	.7	.2	<.2	1.5	1,200
			Common carp	*Cyprinus carpio*	.4	1.5	<.2	8.9	.4	.3	<.2	2.2	710
5	05453100	09-10-96	Common carp	*Cyprinus carpio*	.2	1.0	.2	6.0	.3	.4	<.1	2.6	630
15	05465000	09-13-96	Common carp	*Cyprinus carpio*	.4	1.5	<.2	6.5	.9	.4	<.2	2.2	870

Table 17. Concentrations of organochlorine compounds in fish-tissue samples, 1995–96

[Concentrations are in micrograms per kilogram; g, grams; mm, millimeters; <, less than indicated value; E, estimated value; D-R, deleted, sample ruined; D-U, deleted due to interference; --, data not collected]

Map number (fig. 1)	Station identification	Date (month-day-year)	Species		Number of fish	Average weight (g)	Average total length (mm)	Aldrin	DCPA (dacthal)	Dieldrin	Endrin	Heptachlor	Heptachlor epoxide
			Common name	Scientific name									
					1995								
1	05420680	09-24-95	White sucker	*Catostomus commersoni*	8	446	346	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2	05422000	09-20-95	Common carp	*Cyprinus carpio*	8	1,399	478	<5.0	<5.0	32	<5.0	<5.0	10
3	05449500	09-22-95	Common carp	*Cyprinus carpio*	8	2,483	567	<5.0	5.6	94	<5.0	<5.0	12
			Highfin carpsucker	*Carpiodes velifer*	8	835	389	<5.0	<5.0	11	<5.0	<5.0	<5.0
4	05451210	09-21-95	Common carp	*Cyprinus carpio*	8	3,169	594	<5.0	<5.0	98	<5.0	<5.0	28
			Highfin carpsucker	*Carpiodes velifer*	8	275	279	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
5	05453100	09-20-95	Common carp	*Cyprinus carpio*	8	1,425	478	<5.0	<5.0	180	<5.0	<5.0	40
6	05455100	09-25-95	Common carp - small	*Cyprinus carpio*	8	635	358	<5.0	<5.0	51	<5.0	<5.0	10
			Common carp - large	*Cyprinus carpio*	8	2,603	572	54	<5.0	160	E22	<5.0	E21
8	05457700	09-23-95	Common carp	*Cyprinus carpio*	8	2,111	548	<5.0	<5.0	18	<5.0	<5.0	<5.0
11	05461390	09-24-95	White sucker	*Catostomus commersoni*	8	120	231	<5.0	<5.0	89	<5.0	<5.0	14
12	05464020	09-21-95	Common carp - small	*Cyprinus carpio*	7	712	384	<5.0	<5.0	14	<5.0	<5.0	<5.0
			Common carp - large	*Cyprinus carpio*	7	1,722	506	<5.0	<5.0	37	<5.0	<5.0	<5.0
13	05464220	09-18-95	Common carp	*Cyprinus carpio*	8	1,151	447	<5.0	<5.0	54	<5.0	<5.0	5.5
14	05464490	09-25-95	White sucker	*Catostomus commersoni*	12	79	199	<5.0	<5.0	6.1	<5.0	<5.0	<5.0
15	05465000	09-18-95	Common carp	*Cyprinus carpio*	8	1,963	536	<5.0	25	180	<5.0	<5.0	36
16	05465500	09-19-95	Common carp	*Cyprinus carpio*	8	1,275	456	<5.0	6.4	88	<5.0	<5.0	12
			River carpsucker	*Carpiodes carpio*	8	750	381	<5.0	<5.0	63	<11	<5.0	E10
17	05471500	09-19-95	Common carp	*Cyprinus carpio*	8	881	414	<5.0	<5.0	27	<5.0	<5.0	5.0
18	05473400	09-23-95	Common carp	*Cyprinus carpio*	8	265	264	<5.0	<5.0	8.3	<5.0	<5.0	<5.0
19	05474000	09-22-95	Common carp	*Cyprinus carpio*	8	945	414	<5.0	<5.0	59	<5.0	<5.0	12
					1996								
1	05420680	09-12-96	Redhorse spp.	*Moxostoma spp.*	10	757	416	<5.0	<5.0	8	<5.0	<5.0	<5.0
3	05449500	09-11-96	Common carp	*Cyprinus carpio*	8	1,380	476	<5.0	<5.0	22	<11	<5.0	<5.0
			Common carp	*Cyprinu carpio*	8	1,852	528	<5.0	<5.0	32	<6.1	<5.0	<5.0
5	05453100	09-10-96	Common carp	*Cyprinus carpio*	8	1,948	530	<5.0	<5.0	140	<5.0	<5.0	<29
15	05465000	09-13-96	Common carp	*Cyprinus carpio*	8	1,809	527	<5.0	<5.0	E77	<5.0	<5.0	E12
		09-18-96	Channel catfish	*Ictalurus punctatus*	7	--	--	<5.0	<5.0	8	<5.0	<5.0	<5.0

Table 17. Concentrations of organochlorine compounds in fish-tissue samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Species		Hexachlorobenzene	gamma-HCH (lindane)	Lipids (percent)	Mirex	Oxychlordane	Pentachloroanisole	Total PCB	Toxaphene	alpha-HCH (alpha-BHC)
			Common name	Scientific name									
					1995								
1	05420680	09-24-95	White sucker	*Catostomus commersoni*	<5.0	<5.0	2.3	<5.0	<5.0	<5.0	<50	<200	<5.0
2	05422000	09-20-95	Common carp	*Cyprinus carpio*	<5.0	<5.0	8.9	<5.0	8.4	<5.0	200	<200	<5.0
3	05449500	09-22-95	Common carp	*Cyprinus carpio*	<5.0	<5.0	11.8	<5.0	6.8	5.6	91	<200	<5.0
			Highfin carpsucker	*Carpiodes velifer*	<5.0	<5.0	4.6	<5.0	<5.0	<5.0	<50	<200	<5.0
4	05451210	09-21-95	Common carp	*Cyprinus carpio*	<5.0	<5.0	12.2	<5.0	12	<5.0	69	<290	<5.0
			Highfin carpsucker	*Carpiodes velifer*	<5.0	<5.0	1.5	<5.0	<5.0	<5.0	<50	<200	<5.0
5	05453100	09-20-95	Common carp	*Cyprinus carpio*	<5.0	<5.0	8.6	<5.0	29	8.5	53	<200	<5.0
6	05455100	09-25-95	Common carp - small	*Cyprinus carpio*	<5.0	<5.0	4.9	<5.0	6.3	<5.0	<50	<200	<5.0
			Common carp - large	*Cyprinus carpio*	<5.0	<5.0	11.0	<5.0	<5.0	<5.0	69	<200	<5.0
8	05457700	09-23-95	Common carp	*Cyprinus carpio*	<5.0	<5.0	6.1	<5.0	<5.0	<5.0	140	<200	<5.0
11	05461390	09-24-95	White sucker	*Catostomus commersoni*	<5.0	<5.0	10.8	60	10	<5.0	60	<200	<5.0
12	05464020	09-21-95	Common carp - small	*Cyprinus carpio*	<5.0	<5.0	6.7	<5.0	<5.0	<5.0	140	<200	<5.0
			Common carp - large	*Cyprinus carpio*	<5.0	<5.0	7.5	<5.0	7.4	<5.0	260	<330	<5.0
13	05464220	09-18-95	Common carp	*Cyprinus carpio*	<5.0	<5.0	5.5	<5.0	6.9	<5.0	180	<200	<5.0
14	05464490	09-25-95	White sucker	*Catostomus commersoni*	<5.0	<5.0	3.4	<5.0	7.6	<5.0	71	<210	<5.0
15	05465000	09-18-95	Common carp	*Cyprinus carpio*	<5.0	<5.0	16.1	<5.0	18	<5.0	480	<300	<5.3
16	05465500	09-19-95	Common carp	*Cyprinus carpio*	<5.0	<5.0	9.8	<5.0	15	<5.0	180	<200	<5.0
			River carpsucker	*Carpiodes carpio*	<5.0	<5.0	14.0	<5.0	E9.2	<5.0	360	<200	<5.0
17	05471500	09-19-95	Common carp	*Cyprinus carpio*	<5.0	<5.0	5.1	<5.0	7.2	<5.0	54	<200	<5.0
18	05473400	09-23-95	Common carp	*Cyprinus carpio*	<5.0	<5.0	1.4	<5.0	<5.0	<5.0	<50	<200	<5.0
19	05474000	09-22-95	Common carp	*Cyprinus carpio*	<5.0	<5.0	8.7	<5.0	<5.0	<5.0	95	<200	<5.0
					1996								
1	05420680	09-12-96	Redhorse spp.	*Moxostoma spp.*	<5.0	<5.0	6.8	<5.0	<5.0	<5.0	<50	<200	<5.0
3	05449500	09-11-96	Common carp	*Cyprinus carpio*	<5.0	<5.0	3.9	<5.0	5.8	<5.0	<50	<200	<5.0
			Common carp	*Cyprinus carpio*	<5.0	<5.0	6.8	<5.0	<5.0	<5.0	66	<200	<5.0
5	05453100	09-10-96	Common carp	*Cyprinus carpio*	<5.0	<5.0	24.0	<5.0	<16	6.4	70	<200	<5.0
15	05465000	09-13-96	Common carp	*Cyprinus carpio*	<5.0	<5.0	14.0	<5.0	E9.1	<5.0	500	<200	<6.0
		09-18-96	Channel catfish	*Ictalurus punctatus*	D-R	<5.0	3.8	<10	<5.0	<5.0	130	<200	<5.0

Table 17. Concentrations of organochlorine compounds in fish tissue samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Species		alpha d6 HCH (surrogate, % recovery)	beta-HCH (beta-BHC)	cis-Chlordane	cis-Nonachlor	delta-HCH (delta-BHC)	o, p'-DDD	o, p'-DDE	o, p'-DDT
			Common name	Scientific name								
					1995							
1	05420680	09-24-95	White sucker	*Catostomus commersoni*	99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0
2	05422000	09-20-95	Common carp	*Cyprinus carpio*	83	<5.0	6.9	<5.0	<5.0	<5.0	<5.0	<5.0
3	05449500	09-22-95	Common carp	*Cyprinus carpio*	92	<5.0	10	<5.0	<6.7	6.4	<12.0	<5.0
			Highfin carpsucker	*Carpiodes velifer*	88	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4	05451210	09-21-95	Common carp	*Cyprinus carpio*	103	<5.0	17	E8.4	<5.0	5.3	<5.4	<5.0
			Highfin carpsucker	*Carpiodes velifer*	99	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
5	05453100	09-20-95	Common carp	*Cyprinus carpio*	102	<6.0	34	13	<9.0	<5.0	<5.0	<5.0
6	05455100	09-25-95	Common carp - small	*Cyprinus carpio*	107	<5.0	6.6	<5.0	<5.0	<5.0	<5.0	<5.0
			Common carp - large	*Cyprinus carpio*	92	<5.0	17	6.0	<5.0	<7.0	<5.0	<5.0
8	05457700	09-23-95	Common carp	*Cyprinus carpio*	89	<5.0	7.3	<5.0	<5.0	8.3	<5.0	<5.0
11	05461390	09-24-95	White sucker	*Catostomus commersoni*	96	<5.0	12	E5.3	<5.0	6.7	<5.7	<5.0
12	05464020	09-21-95	Common carp - small	*Cyprinus carpio*	E113	<5.0	5.2	<5.0	<5.0	<5.0	<5.0	<5.0
			Common carp - large	*Cyprinus carpio*	110	<5.0	9.3	<5.0	<5.0	<5.0	<5.0	<5.0
13	05464220	09-18-95	Common carp	*Cyprinus carpio*	94	<5.0	7.6	<5.0	<5.0	<5.0	<5.0	<5.0
14	05464490	09-25-95	White sucker	*Catostomus commersoni*	105	<5.0	22	7.3	<5.0	<5.0	<5.0	<5.0
15	05465000	09-18-95	Common carp	*Cyprinus carpio*	101	5.7	23	8.5	<11.0	<14.0	<5.0	<10.0
16	05465500	09-19-95	Common carp	*Cyprinus carpio*	84	<5.0	13	5.8	<5.0	<5.0	<5.0	<5.0
			River carpsucker	*Carpiodes carpio*	E120	<5.0	15	E12	<11.0	<5.0	<7.0	<5.0
17	05471500	09-19-95	Common carp	*Cyprinus carpio*	87	<5.0	14	5.7	<5.0	<5.0	<5.0	<5.0
18	05473400	09-23-95	Common carp	*Cyprinus carpio*	94	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0
19	05474000	09-22-95	Common carp	*Cyprinus carpio*	112	<5.0	5.7	<5.0	<5.0	<5.0	<5.0	<5.0
					1996							
1	05420680	09-12-96	Redhorse spp.	*Moxostoma spp.*	101	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
3	05449500	09-11-96	Common carp	*Cyprinus carpio*	89	<5.0	5.3	<5.0	<5.0	<5.0	<5.0	<5.0
			Common carp	*Cyprinus carpio*	85	<5.0	8.4	<5.0	<5.0	<5.0	<5.0	<5.0
5	05453100	09-10-96	Common carp	*Cyprinus carpio*	64	<5.0	18	E9.3	<5.0	<5.0	<5.0	<5.0
15	05465000	09-13-96	Common carp	*Cyprinus carpio*	--	<14	E16	E9.1	<5.0	E15	<5.0	<5.0
		09-18-96	Channel catfish	*Cyprinus carpio*	148	D-R	E6.0	<5.0	<5.0	<5.0	<5.0	<5.0

Table 17. Concentrations of organochlorine compounds in fish tissue samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Species		o, p′-Methoxychlor	p, p′-DDD	p, p′-DDE	p, p′-DDT	p, p′-Methoxychlor	trans-Chlordane	trans-Nonachlor	Weight (grams)
			Common	Scientific								
					1995							
1	05420680	09-24-95	White sucker	*Catostomus commersoni*	<10.0	<10.0	13	<10.0	<10.0	<5.0	<5.0	10.0
2	05422000	09-20-95	Common carp	*Cyprinus carpio*	<5.0	<5.0	32	<5.0	<5.0	5.4	14	10.0
3	05449500	09-22-95	Common carp	*Cyprinus carpio*	<6.2	E42.0	130	<5.0	<5.0	11	19	10.0
			Highfin carpsucker	*Carpiodes velifer*	<5.0	<5.0	14	<5.0	<5.0	<5.0	<5.0	10.1
4	05451210	09-21-95	Common carp	*Cyprinus carpio*	<5.0	E16	81	<5.0	<5.0	18	33	10.0
			Highfin carpsucker	*Carpiodes velifer*	<5.0	<5.0	8.3	<5.0	<5.0	<5.0	<5.0	10.0
5	05453100	09-20-95	Common carp	*Cyprinus carpio*	<5.0	12	65	<5.0	<5.0	26	53	10.1
6	05455100	09-25-95	Common carp - small	*Cyprinus carpio*	<5.0	E7.3	29	<5.0	<5.0	7.2	13	10.0
			Common carp - large	*Cyprinus carpio*	<5.0	<8.0	52	<5.0	<5.0	26	32	10.0
8	05457700	09-23-95	Common carp	*Cyprinus carpio*	<5.0	E49	280	<5.0	<5.0	<5.0	9	10.0
11	05461390	09-24-95	White sucker	*Catostomus commersoni*	<5.0	E39	86	13.0	<5.0	16	23	10.0
12	05464020	09-21-95	Common carp - small	*Cyprinus carpio*	<5.0	D-U	E67	<5.0	<5.0	6.4	9.2	10.0
			Common carp - large	*Cyprinus carpio*	<5.0	E27	250	<5.0	<5.0	6.3	22	10.0
13	05464220	09-18-95	Common carp	*Cyprinus carpio*	<5.0	E28	85	5.3	<5.0	5.3	15	10.1
14	05464490	09-25-95	White sucker	*Catostomus commersoni*	9,500	E14	23	9.5	<5.0	6.5	18	10.0
15	05465000	09-18-95	Common carp	*Cyprinus carpio*	<10.0	E26	130	<10.0	<10.0	24	38	10.0
16	05465500	09-19-95	Common carp	*Cyprinus carpio*	<5.0	E13	39	<5.0	<5.0	10	17	10.0
			River carpsucker	*Carpiodes carpio*	<5.0	D-U	64	8.4	<5.0	17	31	10.0
17	05471500	09-19-95	Common carp	*Cyprinus carpio*	<5.0	14	51	<5.0	<5.0	12	22	10.1
18	05473400	09-23-95	Common carp	*Cyprinus carpio*	<10.0	<10	6.3	<10.0	<10.0	<5.0	5.1	10.0
19	05474000	09-22-95	Common carp	*Cyprinus carpio*	<5.0	E9.0	22	<5.0	<5.0	5.8	8.9	10.0
					1996							
1	05420680	09-12-96	Redhorse spp.	*Moxostoma spp.*	<5.0	<5.0	21	<5.0	<5.0	<5.0	<5.0	10.0
3	05449500	09-11-96	Common carp	*Cyprinus carpio*	<5.0	14	54	<5.0	<5.0	<5.0	6.7	10.0
			Common carp	*Cyprinus carpio*	<5.0	21	130	<5.0	<5.0	6.4	9.8	10.1
5	05453100	09-10-96	Common carp	*Cyprinus carpio*	<5.0	<5.0	90	<5.0	<5.0	16	34	10.0
15	05465000	09-13-96	Common carp	*Cyprinus carpio*	<5.0	E12	210	<5.0	<5.0	E12	E24	10.0
		09-18-96	Channel catfish	*Ictalurus punctatus*	<5.0	E5.2	32	<5.0	<5.0	<5.0	E15	10.0

Table 18. Concentrations of selected metals in bed-sediment samples, 1995–96

[Concentrations are in micrograms per gram; %, percent; mm, millimeter; Sand, percent of sample finer than 0.125 mm; Silt, percent of sample finer than 0.062 mm; Clay, percent of sample settled in 0.004-mm pipette; <, less than indicated detection limit]

Map number (fig. 1)	Station identification	Date (month-day-year)	Time (24-hour)	Sand (%)	Silt (%)	Clay (%)	Aluminum (%)	Antimony	Arsenic	Barium	Beryllium	Bismuth	Cadmium	Calcium (%)
							1995							
1	05420680	09-24-95	1229	63	16	21	6.1	0.4	9.6	670	2	<10	0.4	1.8
2	05422000	09-20-95	1003	15	57	28	4.1	.4	6.0	550	<1	<10	.3	11
3	05449500	09-22-95	1030	25	45	30	5.5	.6	8.0	590	1	<10	.6	4.5
4	05451210	09-21-95	1145	91	7	2	4.8	.4	6.9	540	1	<10	.3	5.3
5	05453100	09-20-95	1100	37	42	21	5.0	.6	7.2	610	1	<10	.3	4.8
6	05455100	09-25-95	0945	45	41	14	5.1	.7	6.8	660	1	<10	.3	.93
8	05457700	09-23-95	1400	62	24	14	4.9	.4	5.7	550	1	<10	.4	6.7
11	05461390	09-24-95	0945	75	14	11	6.1	.3	4.7	640	1	<10	.4	1.5
12	05464020	09-21-95	1030	59	23	18	5.3	.4	8.8	540	1	<10	.4	6.3
13	05464220	09-18-95	1300	39	45	16	5.3	.6	5.9	640	1	<10	.4	1.7
14	05464490	09-25-95	1015	96	3	1	4.6	.8	8.8	650	1	<10	.5	6.7
15	05465000	09-18-95	1036	71	20	9	4.8	.5	5.2	570	1	<10	.3	9.0
16	05465500	09-19-95	0908	5	74	21	4.0	.4	4.5	530	<1	<10	.2	12
17	05471500	09-19-95	1400	49	34	17	5.1	.6	4.7	600	1	<10	.3	5.9
18	05473400	09-23-95	0830	53	26	21	6.0	.8	8.3	570	1	<10	.3	1.5
19	05474000	09-22-95	1031	50	34	16	5.2	.7	6.4	580	1	<10	.2	2.0
							1996							
1	05420680	09-12-96	0900	87	5	8	6.4	.6	8.9	650	2	<10	.5	1.3
3	05449500	09-11-96	1100	30	36	34	5.1	.5	6.4	570	1	<10	.6	3.7
			1400	30	37	33	5.1	.6	6.5	580	1	<10	.6	3.9
5	05453100	09-10-96	1030	15	57	28	4.9	.6	6.2	610	1	<10	.4	4.8
15	05465000	09-13-96	1000	55	29	16	4.2	.5	4.9	600	1	<10	.4	10

Table 18. Concentrations of selected metals in bed-sediment samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Time (24-hour)	Carbon, inorganic (%)	Carbon, organic (%)	Carbon, organic and inorganic (%)	Cerium	Chromium	Cobalt	Copper	Europium	Gallium	Gold
							1995						
1	05420680	09-24-95	1229	0.31	3.88	4.19	63	65	13	13	<2	14	<8
2	05422000	09-20-95	1003	3.17	2.61	5.78	51	35	8	7	<2	7	<8
3	05449500	09-22-95	1030	1.26	3.66	4.92	54	53	11	16	<2	12	<8
4	05451210	09-21-95	1145	1.64	2.36	4.00	67	46	10	13	<2	10	<8
5	05453100	09-20-95	1100	1.31	1.67	2.98	58	41	9	12	<2	9	<8
6	05455100	09-25-95	0945	.13	1.25	1.38	60	45	13	10	<2	10	<8
8	05457700	09-23-95	1400	2.16	3.28	5.44	52	44	8	18	<2	10	<8
11	05461390	09-24-95	0945	.16	3.41	3.57	69	60	10	14	<2	13	<8
12	05464020	09-21-95	1030	1.84	3.28	5.12	56	49	10	24	<2	11	<8
13	05464220	09-18-95	1300	.29	1.90	2.19	62	47	10	10	<2	10	<8
14	05464490	09-25-95	1015	2.01	2.66	4.67	59	45	10	27	<2	10	<8
15	05465000	09-18-95	1036	2.78	2.43	5.21	50	42	8	13	<2	11	<8
16	05465500	09-19-95	0908	3.77	1.87	5.64	49	34	7	9	<2	9	<8
17	05471500	09-19-95	1400	1.60	1.70	3.30	56	42	9	13	<2	11	<8
18	05473400	09-23-95	0830	.37	1.21	1.58	70	55	13	14	<2	13	<8
19	05474000	09-22-95	1031	.50	1.21	1.71	62	46	10	10	<2	10	<8
							1996						
1	05420680	09-12-96	0900	.12	3.73	3.85	73	75	17	20	<2	17	<8
3	05449500	09-11-96	1100	.98	3.24	4.22	57	54	10	18	<2	13	<8
			1400	1.10	3.11	4.21	60	56	11	20	<2	13	<8
5	05453100	09-10-96	1030	1.34	1.58	2.92	66	49	11	13	<2	13	<8
15	05465000	09-13-96	1000	3.13	2.72	5.85	56	43	9	13	<2	11	<8

Table 18. Concentrations of selected metals in bed-sediment samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Time (24-hour)	Hol-mium	Iron (%)	Lanthanum	Lead	Lithium	Magnesium (%)	Manganese	Mercury	Molybdenum
						1995						
1	05420680	09-24-95	1229	<4	5.0	33	19	30	0.61	2,100	0.07	<2
2	05422000	09-20-95	1003	<4	2.2	28	8	20	.65	2,400	.03	<2
3	05449500	09-22-95	1030	<4	3.0	29	14	30	1.1	1,600	.07	<2
4	05451210	09-21-95	1145	<4	2.6	36	12	20	1.2	1,400	.02	<2
5	05453100	09-20-95	1100	<4	2.4	30	11	20	.64	1,200	.03	<2
6	05455100	09-25-95	0945	<4	2.3	30	13	20	.44	2,900	.02	<2
8	05457700	09-23-95	1400	<4	2.5	28	19	20	1.2	700	.07	<2
11	05461390	09-24-95	0945	<4	2.9	36	18	30	.59	710	.04	<2
12	05464020	09-21-95	1030	<4	3.1	30	20	30	.98	960	.09	<2
13	05464220	09-18-95	1300	<4	2.4	33	14	20	.53	920	.03	<2
14	05464490	09-25-95	1015	<4	2.9	29	44	20	.79	1,300	.05	<2
15	05465000	09-18-95	1036	<4	2.3	27	19	20	.90	960	.04	<2
16	05465500	09-19-95	0908	<4	1.8	26	12	20	.79	730	.03	<2
17	05471500	09-19-95	1400	<4	2.3	30	12	20	.61	1,100	.02	<2
18	05473400	09-23-95	0830	<4	3.0	37	15	30	.66	1,100	.03	<2
19	05474000	09-22-95	1031	<4	2.2	31	12	30	.60	1,200	.02	<2
						1996						
1	05420680	09-12-96	0900	<4	5.2	41	25	40	.63	2,200	.06	<2
3	05449500	09-11-96	1100	<4	2.7	34	16	20	1.1	1,300	.05	<2
			1400	<4	2.7	35	21	20	1.1	1,300	.06	<2
5	05453100	09-10-96	1030	<4	2.3	38	17	20	.68	1,000	.02	<2
15	05465000	09-13-96	1000	<4	2.0	32	15	20	.82	1,200	.03	<2

Table 18. Concentrations of selected metals in bed-sediment samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Time (24-hour)	Neodymium	Nickel	Niobium	Phosphorus (%)	Potassium (%)	Scandium	Selenium	Silver	Sodium (%)	Strontium	Sulfur
							1995							
1	05420680	09-24-95	1229	28	29	9	0.20	1.1	10	1.8	0.2	0.58	120	0.08
2	05422000	09-20-95	1003	18	17	6	.09	1.1	6	.7	.1	.63	200	.06
3	05449500	09-22-95	1030	24	26	9	.11	1.3	8	1.7	.3	.64	140	.10
4	05451210	09-21-95	1145	29	21	8	.10	1.3	7	1.1	.1	.82	160	.06
5	05453100	09-20-95	1100	23	20	8	.08	1.4	7	.7	.1	.79	170	.05
6	05455100	09-25-95	0945	26	22	10	.09	1.5	7	.4	.1	.89	140	<.05
8	05457700	09-23-95	1400	22	21	8	.13	1.3	7	1.7	.3	.62	150	.08
11	05461390	09-24-95	0945	32	25	11	.10	1.4	9	1.3	.2	.69	120	.05
12	05464020	09-21-95	1030	26	24	7	.15	1.2	8	1.5	.5	.61	170	.09
13	05464220	09-18-95	1300	28	21	10	.08	1.5	7	.8	.2	.85	160	.07
14	05464490	09-25-95	1015	22	21	7	.16	1.3	6	1.1	.2	.73	140	.13
15	05465000	09-18-95	1036	20	21	7	.09	1.2	7	.9	.3	.60	210	.08
16	05465500	09-19-95	0908	15	16	5	.08	1.1	5	.8	.2	.58	230	.08
17	05471500	09-19-95	1400	23	20	9	.09	1.4	7	.7	.1	.75	170	.06
18	05473400	09-23-95	0830	30	28	12	.07	1.5	9	.8	.1	.62	120	<.05
19	05474000	09-22-95	1031	25	21	10	.07	1.5	7	.6	.1	.78	130	<.05
							1996							
1	05420680	09-12-96	0900	32	30	14	.19	1.2	11	1.3	.2	.58	110	.07
3	05449500	09-11-96	1100	25	23	11	.10	1.3	8	1.0	.3	.76	140	.08
			1400	25	22	11	.10	1.3	8	1.0	.3	.78	150	.08
5	05453100	09-10-96	1030	27	21	9	.08	1.4	7	.5	.2	.82	160	.05
15	05465000	09-13-96	1000	16	18	8	.10	1.1	6	.7	.3	.63	240	.11

Table 18. Concentrations of selected metals in bed-sediment samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Time (24-hour)	Tantalum	Thorium	Tin	Titanium (%)	Uranium	Vanadium	Ytterbium	Yttrium	Zinc
						1995						
1	05420680	09-24-95	1229	<40	13	<5	0.29	2.8	88	2	20	100
2	05422000	09-20-95	1003	<40	6	<5	.21	2.2	51	1	15	68
3	05449500	09-22-95	1030	<40	9	<5	.25	2.5	94	2	18	110
4	05451210	09-21-95	1145	<40	14	<5	.27	3.0	71	2	18	74
5	05453100	09-20-95	1100	<40	9	<5	.25	3.0	67	2	17	70
6	05455100	09-25-95	0945	<40	10	<5	.31	3.4	69	2	18	58
8	05457700	09-23-95	1400	<40	9	<5	.23	2.3	64	2	17	97
11	05461390	09-24-95	0945	<40	12	<5	.31	3.0	81	2	21	95
12	05464020	09-21-95	1030	<40	8	<5	.24	2.6	71	2	17	100
13	05464220	09-18-95	1300	<40	9	<5	.31	3.3	72	2	19	68
14	05464490	09-25-95	1015	<40	9	<5	.25	3.0	62	2	17	130
15	05465000	09-18-95	1036	<40	5	<5	.22	2.6	63	2	16	83
16	05465500	09-19-95	0908	<40	8	<5	.20	2.3	49	2	15	71
17	05471500	09-19-95	1400	<40	10	<5	.24	2.7	69	2	17	73
18	05473400	09-23-95	0830	<40	13	<5	.31	3.7	89	2	21	71
19	05474000	09-22-95	1031	<40	11	<5	.30	3.4	70	2	18	60
						1996						
1	05420680	09-12-96	0900	<40	10	<5	.33	2.7	99	2	23	110
3	05449500	09-11-96	1100	<40	8	<5	.26	2.4	85	2	19	90
			1400	<40	8	<5	.27	2.3	85	2	19	92
5	05453100	09-10-96	1030	<40	11	<5	.28	2.8	71	2	21	63
15	05465000	09-13-96	1000	<40	7	<5	.23	2.3	58	2	18	68

Table 19. Concentrations of selected organochlorine compounds in bed-sediment samples, 1995–96

[Concentrations are in micrograms per kilogram, except as noted; %, percent; <, less than indicated detection limit; E, estimated; g/kg, grams per kilogram]

Map number (fig. 1)	Station identification	Date (month-day-year)	Time (24-hour)	2,2',3,4,4',5,6,6'-Octachlorbiphenyl (surrogate, % recovery)	3,5-Dichlorobiphenyl (surrogate, % recovery)	Aldrin	Chloroneb	Dacthal	Dieldrin	Endrin	Heptachlor	Heptachlor epoxide	Hexachlorobenzene
							1995						
1	05420680	09-24-95	1229	71.0	70.0	<1	<5	<5	<1	<2	<1	<1	<1
2	05422000	09-20-95	1003	77.0	77.0	<1	<5	<5	<1	<2	<1	<1	<1
3	05449500	09-22-95	1030	60.0	64.0	<1	<5	<5	3.0	<2	<1	<1	<1
4	05451210	09-21-95	1145	75.0	64.0	<1	<5	<5	<1	<2	<1	<1	<1
5	05453100	09-20-95	1100	71.0	64.0	<1	<5	<5	<1	<2	<1	<1	<1
6	05455100	09-25-95	0945	80.0	67.0	<1	<5	<5	<1	<2	<1	<1	<1
8	05457700	09-23-95	1400	75.0	82.0	<1	<5	<5	<1	<2	<1	<1	<1
11	05461390	09-24-95	0945	80.0	68.0	<1	<5	<5	<1	<2	<1	<1	<1
12	05464020	09-21-95	1030	60.0	62.0	<1	<5	<5	<1	<2	<1	<1	<1
13	05464220	09-18-95	1300	70.0	67.0	<1	<5	<5	<1	<2	<1	<1	<1
14	05464490	09-25-95	1015	67.0	72.0	<1	<5	<5	<1	<2	<1	<1	<1
15	05465000	09-18-95	1036	93.0	95.0	<1	<5	<5	<1	<2	<1	<1	<1
16	05465500	09-19-95	0908	68.0	70.0	<1	<5	<5	<1	<2	<1	<1	<1
17	05471500	09-19-95	1400	92.0	83.0	<1	<5	<5	<1	<2	<1	<1	<1
18	05473400	09-23-95	0830	72.0	71.0	<1	<5	<5	<1	<2	<1	<1	<1
19	05474000	09-22-95	1031	96.0	96.0	<1	<5	<5	<1	<2	<1	<1	<1
							1996						
1	05420680	09-12-96	0900	63.0	71.0	<1	<5	<5	<1	<2	<1	<1	<1
3	05449500	09-11-96	1100	--	76.0	<1	<5	<5	2.5	<2	<1	<1	<50
			1400	69.0	71.0	<1	<5	<5	2.5	<2	<1	<1	<50
5	05453100	09-10-96	1030	66.0	73.0	<1	<5	<5	<1	<2	<1	<1	<1
15	05465000	09-13-96	1000	72.0	77.0	<1	<5	<5	<1	<2	<1	<1	<50

Table 19. Concentrations of selected organochlorine compounds in bed-sediment samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Time (24-hour)	Isodrin	Lindane	Mirex	Oxychlordane	Pentachloroanisole	Polychlorinated biphenyls	Toxaphene	alpha-Endosulfan	alpha-HCH	alpha-HCH-d6 (surrogate, % recovery)
							1995						
1	05420680	09-24-95	1229	<1	<1	<1	<1	<1	<50	<200	<1	<1	90.0
2	05422000	09-20-95	1003	<1	<1	<1	<1	<1	<50	<200	<1	<1	82.0
3	05449500	09-22-95	1030	<1	<1	<1	<1	<1	<50	<200	<1	<1	68.0
4	05451210	09-21-95	1145	<1	<1	<1	<1	<1	<50	<200	<1	<1	71.0
5	05453100	09-20-95	1100	<1	<1	<1	<1	<1	<50	<200	<1	<1	66.0
6	05455100	09-25-95	0945	<1	<1	<1	<1	<1	<50	<200	<1	<1	64.0
8	05457700	09-23-95	1400	<1	<1	<1	<1	<1	<50	<200	<1	<1	61.0
11	05461390	09-24-95	0945	<1	<1	<1	<1	<1	<50	<200	<1	<1	70.0
12	05464020	09-21-95	1030	<1	<1	<1	<1	<1	<50	<200	<1	<1	86.0
13	05464220	09-18-95	1300	<1	<1	<1	<1	<1	<50	<200	<1	<1	55.0
14	05464490	09-25-95	1015	<1	<1	<1	<1	<1	<50	<200	<1	<1	77.0
15	05465000	09-18-95	1036	<1	<1	<1	<1	<1	<50	<200	<1	<1	95.0
16	05465500	09-19-95	0908	<1	<1	<1	<1	<1	<50	<200	<1	<1	98.0
17	05471500	09-19-95	1400	<1	<1	<1	<1	<1	<50	<200	<1	<1	59.0
18	05473400	09-23-95	0830	<1	<1	<1	<1	<1	<50	<200	<1	<1	98.0
19	05474000	09-22-95	1031	<1	<1	<1	<1	<1	<50	<200	<1	<1	90.0
							1996						
1	05420680	09-12-96	0900	<1	<1	<1	<1	<1	<50	<200	<1	<1	88.0
3	05449500	09-11-96	1100	<1	<1	<1	<1	<50	<50	<200	<1	<1	91.0
			1400	<1	<1	<1	<1	<50	<50	<200	<1	<1	83.0
5	05453100	09-10-96	1030	<1	<1	<1	<1	<1	<50	<200	<1	<1	86.0
15	05465000	09-13-96	1000	<1	<1	<1	<1	<50	<50	<200	<1	<1	94.0

Table 19. Concentrations of selected organochlorine compounds in bed-sediment samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Time (24-hour)	beta-HCH	cis-Chlordane	cis-Nonachlor	cis-Permethrin	o,p'-DDD	o,p'-DDE	o,p'-DDT	o,p'-Methoxychlor	p,p'-DDD	p,p'-DDE	p,p'-DDT
							1995							
1	05420680	09-24-95	1229	<1	<1	<1	<5	<1	<1	<2	<5	<1	<1	<2
2	05422000	09-20-95	1003	<1	<1	<1	<5	<1	<1	<2	<5	<1	<1	<2
3	05449500	09-22-95	1030	<1	<1	<1	<5	<1	<1	<2	<5	E3.2	1.8	3.9
4	05451210	09-21-95	1145	<1	<1	<1	<5	<1	<1	<2	<5	<1	<1	<2
5	05453100	09-20-95	1100	<1	<1	<1	<5	<1	<1	<2	<5	<1	<1	<2
6	05455100	09-25-95	0945	<1	<1	<1	<5	<1	<1	<2	<5	<1	<1	<2
8	05457700	09-23-95	1400	<1	<1	<1	<5	<1	<1	<2	<5	1	1.7	<2
11	05461390	09-24-95	0945	<1	<1	<1	<5	<1	<1	<2	<5	<1	<1	<2
12	05464020	09-21-95	1030	<1	<1	<1	<5	<1	<1	<2	<5	<1	<1	<2
13	05464220	09-18-95	1300	<1	<1	<1	<5	<1	<1	<2	<5	E1.4	1.3	<2
14	05464490	09-25-95	1015	<1	2	<1	<5	<1	<1	<2	<5	<1	<1	<2
15	05465000	09-18-95	1036	<1	<1	<1	<5	<1	<1	<2	<5	<1	<1	<2
16	05465500	09-19-95	0908	<1	<1	<1	<5	<1	<1	<2	<5	<1	<1	<2
17	05471500	09-19-95	1400	<1	<1	<1	<5	<1	<1	<2	<5	<1	<1	<2
18	05473400	09-23-95	0830	<1	<1	<1	<5	<1	<1	<2	<5	<1	<1	<2
19	05474000	09-22-95	1031	<1	<1	<1	<5	<1	<1	<2	<5	<1	<1	<2
							1996							
1	05420680	09-12-96	0900	<1	<1	<1	<5	<1	<1	<2	<5	<1	<1	<2
3	05449500	09-11-96	1100	<1	<1	<1	<5	<1	<1	<2	<5	3.2	3.3	5.6
			1400	<1	<1	<1	<5	<1	<1	<2	<5	2.9	2.9	<2
5	05453100	09-10-96	1030	<1	<1	<1	<5	<1	<1	<2	<5	<1	<1	<2
15	05465000	09-13-96	1000	<1	<1	<1	<5	<1	<1	<2	<5	<1	<1	<2

Table 19. Concentrations of selected organochlorine compounds in bed-sediment samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Time (24-hour)	p,p′-Methoxychlor	trans-Chlordane	trans-Nonachlor	trans-Permethrin	Organic carbon (g/kg)	1,2,4-Trichlorobenzene	1,2-Dichlorobenzene	Phenol	1,3-Dichlorobenzene
						1995						
1	05420680	09-24-95	1229	<5	<1	<1	<5	28	<50	<50	E40	<50
2	05422000	09-20-95	1003	<5	<1	<1	<5	21	<50	<50	140	<50
3	05449500	09-22-95	1030	<5	<1	<1	<5	35	<50	<50	61	<50
4	05451210	09-21-95	1145	<5	<1	<1	<5	4.2	<50	<50	E9.0	<50
5	05453100	09-20-95	1100	<5	<1	<1	<5	16	<50	<50	70	<50
6	05455100	09-25-95	0945	<5	<1	<1	<5	8.8	<50	<50	E11	<50
8	05457700	09-23-95	1400	<5	<1	<1	<5	17	<50	<50	52	<50
11	05461390	09-24-95	0945	<5	<1	<1	<5	18	<50	<50	E19	<50
12	05464020	09-21-95	1030	<5	<1	<1	<5	20	<50	<50	64	<50
13	05464220	09-18-95	1300	<5	<1	<1	<5	17	<50	<50	E37	<50
14	05464490	09-25-95	1015	<5	1.9	<1	<5	1.5	<50	<50	E9.0	<50
15	05465000	09-18-95	1036	<5	<1	<1	<5	10	<50	<50	E38	<50
16	05465500	09-19-95	0908	<5	<1	<1	<5	17	<50	<50	E12	<50
17	05471500	09-19-95	1400	<5	<1	<1	<5	11	<50	<50	99	<50
18	05473400	09-23-95	0830	<5	<1	<1	<5	6.9	<50	<50	E10	<50
19	05474000	09-22-95	1031	<5	<1	<1	<5	10	<50	<50	E48	<50
						1996						
1	05420680	09-12-96	0900	<5	<1	<1	<5	9.1	<50	<50	E24	<50
3	05449500	09-11-96	1100	<5	<1	<1	<5	32	<50	<50	E49	<50
			1400	<5	<1	<1	<5	35	<50	<50	E39	<50
5	05453100	09-10-96	1030	<5	<1	<1	<5	12	<50	<50	E33	<50
15	05465000	09-13-96	1000	<5	<1	<1	<5	18	<50	<50	110	<50

Table 19. Concentrations of selected organochlorine compounds in bed-sediment samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Time (24-hour)	1,4-Dichlorobenzene	1,6-Dimethylnaphthalene	1-Methyl-9H-fluorene	1-Methylphenanthrene	1-Methylpyrene	2,2′-Biquinoline	2,3,6-Trimethylnaphthalene	2,4-Dinitrotoluene	2,6-Dimethylnaphthalene	2,6-Dinitrotoluene
							1995						
1	05420680	09-24-95	1229	<50	E17	<50	<50	<50	<50	<50	<50	E49	<50
2	05422000	09-20-95	1003	<50	<50	<50	<50	<50	<50	<50	<50	65	<50
3	05449500	09-22-95	1030	<50	E21	<50	E13	<50	<50	<50	<50	E39	<50
4	05451210	09-21-95	1145	<50	<50	<50	<50	<50	<50	<50	<50	E15	<50
5	05453100	09-20-95	1100	<50	<50	<50	<50	<50	<50	<50	<50	E39	<50
6	05455100	09-25-95	0945	<50	<50	<50	<50	<50	<50	<50	<50	E25	<50
8	05457700	09-23-95	1400	<50	<50	<50	E24	<50	<50	<50	<50	E41	<50
11	05461390	09-24-95	0945	<50	<50	<50	<50	<50	<50	<50	<50	E22	<50
12	05464020	09-21-95	1030	<50	E25	E29	E47	71	<50	E20	<50	E49	<50
13	05464220	09-18-95	1300	<50	<50	<50	E8.0	<50	<50	<50	<50	E39	<50
14	05464490	09-25-95	1015	<50	E17	<50	E17	E27	<50	<50	<50	E21	<50
15	05465000	09-18-95	1036	<50	E18	<50	<50	<50	<50	<50	<50	E34	E20
16	05465500	09-19-95	0908	<50	E20	<50	E17	E26	<50	E16	<50	82	E25
17	05471500	09-19-95	1400	<50	<50	<50	<50	<50	<50	<50	<50	56	<50
18	05473400	09-23-95	0830	<50	<50	<50	<50	<50	<50	<50	<50	E26	<50
19	05474000	09-22-95	1031	<50	E18	<50	E15	<50	<50	<50	<50	E35	<50
							1996						
1	05420680	09-12-96	0900	<50	<50	<50	<50	<50	<50	<50	<50	E21	<50
3	05449500	09-11-96	1100	<50	<50	<50	E27	<50	<50	<50	<50	E33	<50
			1400	<50	<50	<50	E27	<50	<50	<50	<50	E33	<50
5	05453100	09-10-96	1030	<50	<50	<50	<50	<50	<50	<50	<50	E35	<50
15	05465000	09-13-96	1000	<50	<50	<50	<50	E33	<50	<50	<50	E48	<50

Table 19. Concentrations of selected organochlorine compounds in bed-sediment samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Time (24-hour)	2-Chloronaphthalene	2-Chlorophenol	2-Fluorobiphenyl (surrogate, % recovery)	2-Methylanthracene	3,5-Dimethylphenol	4-Bromophenyl-phenylether	4-Chloro-3-methylphenol	4-Chlorophenyl phenyl ether	4H-cyclopenta[def]phenanthrene	Acenaphthene
							1995						
1	05420680	09-24-95	1229	<50	<50	74.0	<50	<50	<50	<50	<50	<50	<50
2	05422000	09-20-95	1003	<50	<50	82.0	<50	<50	<50	<50	<50	<50	<50
3	05449500	09-22-95	1030	<50	<50	70.0	E26	<50	<50	<50	<50	E17	E21
4	05451210	09-21-95	1145	<50	<50	75.0	<50	<50	<50	<50	<50	<50	<50
5	05453100	09-20-95	1100	<50	<50	76.0	<50	<50	<50	<50	<50	E11	E17
6	05455100	09-25-95	0945	<50	<50	66.0	<50	<50	<50	<50	<50	<50	<50
8	05457700	09-23-95	1400	<50	<50	70.0	<50	<50	<50	<50	<50	E22	<50
11	05461390	09-24-95	0945	<50	<50	80.0	<50	<50	<50	<50	<50	<50	<50
12	05464020	09-21-95	1030	<50	<50	78.0	E43	<50	<50	<50	<50	59	E24
13	05464220	09-18-95	1300	<50	<50	80.0	<50	<50	<50	<50	<50	E9.0	E16
14	05464490	09-25-95	1015	<50	<50	79.0	E27	<50	<50	<50	<50	E27	E21
15	05465000	09-18-95	1036	<50	<50	80.0	<50	<50	<50	<50	<50	<50	<50
16	05465500	09-19-95	0908	<50	<50	83.0	<50	<50	<50	<50	<50	E19	E18
17	05471500	09-19-95	1400	<50	<50	82.0	<50	<50	<50	<50	<50	<50	<50
18	05473400	09-23-95	0830	<50	<50	79.0	<50	<50	<50	<50	<50	<50	<50
19	05474000	09-22-95	1031	<50	<50	73.0	<50	<50	<50	<50	<50	<50	<50
							1996						
1	05420680	09-12-96	0900	<50	<50	84.0	<50	<50	<50	<50	<50	<50	<50
3	05449500	09-11-96	1100	<50	<50	88.0	E39	<50	<50	<50	<50	E24	<50
			1400	<50	<50	77.0	<50	<50	<50	<50	<50	E24	<50
5	05453100	09-10-96	1030	<50	<50	88.0	E30	<50	<50	<50	<50	<50	<50
15	05465000	09-13-96	1000	<50	<50	81.0	<50	<50	<50	<50	<50	<50	<50

Table 19. Concentrations of selected organochlorine compounds in bed-sediment samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Time (24-hour)	Acenaphthylene	Acridine	Anthracene	Anthraquinone	Azobenzene	Benz[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[c]cinnoline	Benzo[ghi]perylene
							1995						
1	05420680	09-24-95	1229	<50	<50	E11	<50	<50	E36	E45	54	<50	<50
2	05422000	09-20-95	1003	E27	<50	<50	<50	<50	E38	<50	57	<50	<50
3	05449500	09-22-95	1030	E26	E23	E15	E39	<50	59	64	73	<50	<50
4	05451210	09-21-95	1145	<50	<50	<50	<50	<50	E36	E34	<50	<50	<50
5	05453100	09-20-95	1100	E23	<50	E8.0	<50	<50	E42	E44	55	<50	<50
6	05455100	09-25-95	0945	<50	<50	<50	<50	<50	E36	<50	<50	<50	<50
8	05457700	09-23-95	1400	<50	<50	E27	<50	<50	E38	E29	E42	<50	E25
11	05461390	09-24-95	0945	<50	<50	<50	E19	<50	E38	E43	52	<50	<50
12	05464020	09-21-95	1030	61	<50	62	E40	<50	210	230	170	<50	92
13	05464220	09-18-95	1300	E20	<50	E6.0	E24	<50	E37	E41	54	<50	<50
14	05464490	09-25-95	1015	E26	E21	E23	E32	<50	95	82	97	<50	52
15	05465000	09-18-95	1036	E27	<50	E13	<50	<50	E42	E35	58	<50	<50
16	05465500	09-19-95	0908	E28	E18	E17	<50	<50	52	50	64	<50	<50
17	05471500	09-19-95	1400	<50	E19	E6.0	<50	<50	E38	<50	53	<50	<50
18	05473400	09-23-95	0830	<50	<50	E11	<50	<50	E35	E34	52	<50	<50
19	05474000	09-22-95	1031	<50	<50	E11	<50	<50	E36	E35	53	<50	<50
							1996						
1	05420680	09-12-96	0900	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
3	05449500	09-11-96	1100	<50	<50	E34	<60	<50	64	86	79	<50	<50
			1400	E27	<50	E33	<60	<50	67	72	75	<50	<50
5	05453100	09-10-96	1030	<50	<50	<50	<50	<50	E42	<50	E45	<50	<50
15	05465000	09-13-96	1000	<50	<50	E26	<50	<50	56	57	63	<50	<50

Table 19. Concentrations of selected organochlorine compounds in bed-sediment samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Time (24-hour)	Benzo[k]-fluoranthene	Bis(2-ethylhexyl) phthalate	Butylbenzyl-phthalate	C8-Alkyl-phenol	Carbazole	Chrysene	Di-n-butyl-phthalate	Di-n-octyl-phthalate	Dibenz[a,h]anthracene	Dibenzothiophene
							1995						
1	05420680	09-24-95	1229	E23	E65	53	<50	<50	E14	50	<50	<50	<50
2	05422000	09-20-95	1003	E25	E80	60	<50	<50	E17	<50	<50	<50	<50
3	05449500	09-22-95	1030	E46	E160	E48	<50	E20	E49	E44	E73	<50	E19
4	05451210	09-21-95	1145	<50	E51	E33	<50	<50	E6.0	E36	<50	<50	<50
5	05453100	09-20-95	1100	E28	E95	E41	<50	<50	E17	E41	<50	<50	E15
6	05455100	09-25-95	0945	<50	E53	E34	<50	<50	E8.0	E37	<50	<50	<50
8	05457700	09-23-95	1400	E29	89	E47	<50	<50	E32	E72	<50	<50	<50
11	05461390	09-24-95	0945	E25	E55	E35	<50	E10	E12	E36	<50	<50	<50
12	05464020	09-21-95	1030	180	E180	55	<50	E18	190	59	<50	64	E28
13	05464220	09-18-95	1300	E27	E92	E40	<50	E11	E15	E49	E51	<50	E15
14	05464490	09-25-95	1015	86	E110	55	<50	E19	95	57	E55	58	E24
15	05465000	09-18-95	1036	E25	E85	57	<50	<50	E22	63	<50	<50	E20
16	05465500	09-19-95	0908	E43	E89	57	<50	<50	E37	65	<50	<50	E20
17	05471500	09-19-95	1400	E26	E62	E40	<50	<50	E14	E45	<50	<50	<50
18	05473400	09-23-95	0830	E21	E68	E46	<50	<50	E12	53	<50	<50	<50
19	05474000	09-22-95	1031	E22	E66	E48	<50	<50	E12	59	<50	<50	<50
							1996						
1	05420680	09-12-96	0900	<50	E81	E62	<50	<50	<50	62	<50	<50	<50
3	05449500	09-11-96	1100	E44	E200	E80	<50	E37	E49	74	<50	<50	<50
			1400	E43	E210	E83	<50	E36	E47	71	<50	<50	<50
5	05453100	09-10-96	1030	E26	E95	E60	<50	<50	E21	59	<50	<50	<50
15	05465000	09-13-96	1000	E38	E110	E60	<50	<50	E36	67	<50	<50	<50

Table 19. Concentrations of organochlorine compounds metals in bed-sediment samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Time (24-hour)	Diethyl phthalate	Dimethyl phthalate	Fluoranthene	Fluorene	Indeno-[1,2,3-cd]-pyrene	Isophorone	Isoquinoline	N-Nitrosodi-n-propylamine	N-Nitrosodiphenylamine	Naphthalene
							1995						
1	05420680	09-24-95	1229	E27	<50	E21	E25	<50	<50	<50	<50	<50	E10
2	05422000	09-20-95	1003	E32	<50	<50	E25	<50	<50	<50	<50	<50	E11
3	05449500	09-22-95	1030	E21	<50	100	E23	<50	<50	<50	<50	<50	<5.0
4	05451210	09-21-95	1145	E17	<50	E16	<50	<50	<50	<50	<50	<50	<50
5	05453100	09-20-95	1100	E20	<50	E33	E18	<50	<50	<50	<50	<50	<5.0
6	05455100	09-25-95	0945	E18	<50	E18	<50	<50	<50	<50	<50	<50	<50
8	05457700	09-23-95	1400	E29	<50	E48	<50	E35	<50	<50	<50	<50	<50
11	05461390	09-24-95	0945	E16	<50	E23	E17	<50	<50	<50	<50	<50	<50
12	05464020	09-21-95	1030	E30	E7.0	320	E36	96	<50	<50	<50	<50	E28
13	05464220	09-18-95	1300	E18	E9.0	E30	E17	<50	<50	<50	<50	<50	<5.0
14	05464490	09-25-95	1015	E26	<50	180	E27	56	<50	E19	<50	<50	E12
15	05465000	09-18-95	1036	E29	E7.0	E30	E25	<50	<50	E19	<50	<50	E11
16	05465500	09-19-95	0908	E31	<50	56	E25	<50	<50	<50	<50	<50	E12
17	05471500	09-19-95	1400	E17	<50	E22	<50	<50	<50	<50	<50	<50	<50
18	05473400	09-23-95	0830	E27	<50	E18	<50	<50	<50	E17	<50	<50	E10
19	05474000	09-22-95	1031	E27	<50	E21	E24	<50	<50	E19	<50	<50	E10
							1996						
1	05420680	09-12-96	0900	E25	<50	E35	<50	<50	<50	<50	<50	<50	<50
3	05449500	09-11-96	1100	E34	<50	100	E30	<50	<50	<50	<50	<50	<5.0
			1400	E35	<50	95	<50	<50	<50	<50	<50	<50	E11
5	05453100	09-10-96	1030	E26	<50	E42	<50	<50	<50	<50	<50	<50	<50
15	05465000	09-13-96	1000	E28	<50	63	<50	<50	<50	<50	<50	<50	<50

Table 19. Concentrations of selected organochlorine compounds in bed-sediment samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Time (24-hour)	Nitrobenzene	Nitro-benzene-d5 (surrogate, % recovery)	Pentachloronitrobenzene	Phenanthrene	Phenanthridine	1,2-Dimethylnaphthalene	Pyrene	Quinoline	Terphenyl-d14 (surrogate, % recovery)
						1995						
1	05420680	09-24-95	1229	<50	76.0	<50	E6.0	<50	<50	E18	<50	97.0
2	05422000	09-20-95	1003	<50	86.0	<50	<50	<50	<50	<50	<50	110
3	05449500	09-22-95	1030	<50	73.0	<50	E45	<50	<50	75	<50	110
4	05451210	09-21-95	1145	<50	73.0	<50	<50	<50	<50	E15	<50	90.0
5	05453100	09-20-95	1100	<50	66.0	<50	E13	<50	<50	E27	<50	110
6	05455100	09-25-95	0945	<50	60.0	<50	<50	<50	<50	E16	<50	120
8	05457700	09-23-95	1400	<50	69.0	<50	E18	<50	<50	E46	<50	110
11	05461390	09-24-95	0945	<50	80.0	<50	E8.0	<50	<50	E18	<50	100
12	05464020	09-21-95	1030	<50	80.0	<50	150	<50	E16	370	<50	110
13	05464220	09-18-95	1300	<50	78.0	<50	E12	<50	<50	E24	<50	110
14	05464490	09-25-95	1015	<50	84.0	<50	76	<50	<50	140	<50	100
15	05465000	09-18-95	1036	<50	76.0	<50	E11	<50	<50	E28	<50	100
16	05465500	09-19-95	0908	<50	86.0	<50	E20	<50	<50	E50	<50	110
17	05471500	09-19-95	1400	<50	85.0	<50	E8.0	<50	<50	E20	<50	110
18	05473400	09-23-95	0830	<50	81.0	<50	E6.0	<50	<50	E16	<50	110
19	05474000	09-22-95	1031	<50	75.0	<50	E6.0	<50	<50	E17	<50	96.0
						1996						
1	05420680	09-12-96	0900	<50	66.0	<50	<50	<50	<50	E25	<50	110
3	05449500	09-11-96	1100	<50	83.0	<50	E46	<50	<50	74	<50	100
			1400	<50	74.0	<50	E43	<50	<50	71	<50	100
5	05453100	09-10-96	1030	<50	79.0	<50	E13	<50	<50	E32	<50	110
15	05465000	09-13-96	1000	<50	83.0	<50	E20	<50	<50	56	<50	110

Table 19. Concentrations of selected organochlorine compounds in bed-sediment samples, 1995–96—Continued

Map number (fig. 1)	Station identification	Date (month-day-year)	Time (24-hour)	bis(2-chloroethoxy) methane	p-Cresol	Inorganic carbon (g/kg)	Total carbon (g/kg)
				1995			
1	05420680	09-24-95	1229	<50	17	1.2	29
2	05422000	09-20-95	1003	<50	720	27	48
3	05449500	09-22-95	1030	<50	34	8.0	43
4	05451210	09-21-95	1145	<50	23	4.2	8.4
5	05453100	09-20-95	1100	<50	63	8.7	25
6	05455100	09-25-95	0945	<50	23	.40	9.2
8	05457700	09-23-95	1400	<50	550	14	31
11	05461390	09-24-95	0945	<50	39	1.0	19
12	05464020	09-21-95	1030	<50	160	6.6	27
13	05464220	09-18-95	1300	<50	64	1.2	18
14	05464490	09-25-95	1015	<50	50	2.1	3.6
15	05465000	09-18-95	1036	<50	150	7.9	18
16	05465500	09-19-95	0908	<50	53	35	52
17	05471500	09-19-95	1400	<50	570	8.9	20
18	05473400	09-23-95	0830	<50	17	2.2	9.1
19	05474000	09-22-95	1031	<50	18	3.9	14
				1996			
1	05420680	09-12-96	0900	<50	50	<.10	9.1
3	05449500	09-11-96	1100	<50	200	7.8	40
			1400	<50	140	8.3	43
5	05453100	09-10-96	1030	<50	250	11	23
15	05465000	09-13-96	1000	<50	1,200	11	29

Table 20. Miscellaneous onsite determinations in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996

[µS/cm, microsiemens per centimeter; °C, degrees Celsius; mg/L, milligrams per liter; %, percent]

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Turbidity	Specific conductance (µS/cm)	pH (standard units)	Water temperature (°C)	Oxygen, dissolved (mg/L)	Dissolved oxygen saturation (%)	Alkalinity (mg/L as $CaCO_3$)	Bicarbonate concentration (mg/L as HCO_3)	Carbonate concentration (mg/L as CO_3)
1	420424092175101	06-19-96	1140	regular	10	1,870	7.1	14.0	0.1	1	254	310	0
2	421157091554201	06-18-96	1540	do.	10	569	7.2	14.5	.1	1	275	336	0
3	423056092054601	06-26-96	1220	do.	--	518	7.3	11.5	.1	1	217	265	0
4	423940092102801	06-26-96	1015	do.	--	589	7.2	11.0	.1	1	350	427	0
5	421850091574001	06-18-96	1030	do.	14	740	6.8	12.5	7.8	71	257	314	0
6	422329091455101	06-27-96	1025	do.	--	703	6.8	10.5	.5	5	311	379	0
7	423328092464901	07-01-96	1430	do.	--	478	7.2	12.5	.1	1	219	267	0
8	425158092402301	07-03-96	1045	do.	--	481	7.3	16.0	5.9	59	148	181	0
9	425757092503001	07-03-96	1420	do.	--	536	7.2	13.5	2.2	20	184	225	0
10	415600091033701	06-17-96	1055	do.	1	417	7.3	12.0	1.3	12	213	260	0
11	430216093142901	07-09-96	1300	do.	0	703	7.0	10.0	.1	1	384	469	0
12	430532092305401	07-08-96	1415	do.	7	542	7.2	9.5	0	0	276	337	0
13	430947092590101	07-09-96	1000	do.	0	525	7.1	9.5	.1	0	289	353	0
14	421944092471701	07-01-96	1145	do.	--	1,360	6.9	12.5	.1	1	251	306	0
15	422524092353101	06-25-96	1300	do.	--	680	7.3	11.5	.1	1	345	421	0
16	422631092454801	07-02-96	1330	do.	--	658	7.1	16.0	.1	1	221	270	0
17	422723092470701	07-02-96	1030	do.	--	1,120	6.9	13.0	.3	2	374	456	0
18	431614092275401	07-17-96	1010	do.	2	537	7.1	11.0	.1	1	293	358	0
19	413652092035801	06-12-96	1225	do.	--	3,810	6.9	17.5	0	0	230	281	0
20	414056091325201	06-05-96	1137	do.	16	617	6.9	12.0	.2	2	320	390	0
21	420206091244901	06-20-96	1100	do.	--	395	7.3	15.5	.1	1	252	308	0
22	412030091113801	06-10-96	1050	do.	3	801	7.5	13.5	.1	2	448	547	0
23	413401091010901	06-11-96	1140	do.	--	521	7.2	16.0	.1	1	278	339	0
24	414153090350801	06-06-96	1130	do.	--	422	7.2	12.5	0	0	220	268	0
25	415231092295301	06-19-96	1430	do.	--	774	7.5	12.5	.1	1	416	508	0

Table 20. Miscellaneous onsite determinations in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Turbidity	Specific conductance (μS/cm)	pH (standard units)	Water temperature (°C)	Oxygen, dissolved (mg/L)	Dissolved oxygen saturation (%)	Alkalinity (mg/L as $CaCO_3$)	Bicarbonate concentration (mg/L as HCO_3)	Carbonate concentration (mg/L as CO_3)
26	421030092340001	06-25-96	1030	regular	--	1,410	7.2	10.5	0.1	1	231	282	0
27	421120092190501	06-24-96	1040	do.	--	2,020	6.8	11.5	0	0	304	371	0
28	431725093310801	07-10-96	0830	do.	3	684	7.1	9.5	.1	1	352	430	0
29	433317093175601	07-16-96	1215	do.	8	547	7.2	11.5	.1	1	271	331	0
30	434012093243601	07-16-96	1020	do.	4	968	7.0	16.5	.1	1	417	509	0
31	433109093004001	07-10-96	1200	do.	2	539	7.1	10.0	.1	1	292	356	0
32	433323092383201	07-11-96	0940	do.	7	517	7.2	9.5	0	0	240	293	0
33	434732092545001	07-15-96	1300	do.	2	493	7.0	11.5	.1	1	258	315	0

Table 21. Nutrient concentrations in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996

[mg/L, milligrams per liter; <, less than; --, data not collected]

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-fchour)	Type of sample	Nitrogen ammonia, dissolved (mg/L)	Nitrogen, nitrite, dissolved (mg/L)	Nitrogen ammonia plus organic, dissolved (mg/L)	Nitrite plus nitrate (mg/L)	Phosphorus, total (mg/L)	Orthophos-phorus, total, as P (mg/L)
1	420424092175101	06-19-96	1140	regular	2.4	<0.01	2.8	<0.05	<0.01	<0.01
2	421157091554201	06-18-96	1540	do.	1.3	<.01	1.3	<.05	<.01	<.01
3	423056092054601	06-26-96	1220	do.	.15	<.01	<.2	<.05	.04	.06
4	423940092102801	06-26-96	1015	do.	2.1	<.01	2.0	<.05	.14	.16
5	421850091574001	06-18-96	1030	do.	.04	<.01	.3	18	.06	.07
6	422329091455101	06-27-96	1005	blank	<.02	<.01	<.2	<.05	<.01	<.01
			1025	regular	.38	.03	.4	1.4	<.01	<.01
7	423328092464901	07-01-96	1430	do.	.43	<.01	.4	<.05	<.01	<.01
8	425158092402301	07-03-96	1045	regular	.02	.01	<.2	13	.04	.04
9	425757092503001	07-03-96	1420	do.	.02	.01	<.2	3.0	.02	.02
10	415600091033701	06-17-96	1055	do.	.03	<.01	<.2	1.7	<.01	<.01
11	430216093142901	07-09-96	1300	do.	.49	<.01	.5	<.05	<.01	.01
12	430532092305401	07-08-96	1355	blank	.02	<.01	<.2	<.05	<.01	.01
			1415	regular	1.1	<.01	1.2	<.05	.04	.03
13	430947092590101	07-09-96	1000	do.	.19	<.01	.2	<.05	<.01	.02
14	421944092471701	07-01-96	1145	do.	1.4	<.01	1.5	.05	<.01	.01
			1150	replicate	1.4	<.01	1.5	<.05	<.01	<.01
15	422524092353101	06-25-96	1300	regular	3.9	<.01	3.9	<.05	.05	.10
16	422631092454801	07-02-96	1330	do.	.6	<.01	.5	<.05	<.01	.01
17	422723092470701	07-02-96	1030	do.	1.5	<.01	2.0	.05	<.01	<.01
18	431614092275401	07-17-96	1010	do.	2.2	<.01	2.4	.08	.07	.04
			1015	replicate	2.2	<.01	2.4	.09	.04	.05
19	413652092035801	06-12-96	1225	regular	1.6	<.01	2.4	<.05	<.01	<.01
20	414056091325201	06-05-96	1137	do.	.17	<.01	<.2	.09	.02	.01

Table 21. Nutrient concentrations in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-fchour)	Type of sample	Nitrogen ammonia, dissolved (mg/L)	Nitrogen, nitrite, dissolved (mg/L)	Nitrogen ammonia plus organic, dissolved (mg/L)	Nitrite plus nitrate (mg/L)	Phosphorus, total (mg/L)	Orthophos-phorus, total, as P (mg/L)
21	420206091244901	06-20-96	1100	regular	0.08	<0.01	<0.2	<0.05	<0.01	0.01
			1105	replicate	.07	<.01	<.2	<.05	<.01	.01
22	412030091113801	06-10-96	1050	regular	1.5	<.01	7.3	<.05	.13	.11
23	413401091010901	06-11-96	1140	do.	.56	<.01	.6	<.05	.04	.04
24	414153090350801	06-06-96	1130	do.	1.0	.01	1.2	3.2	.02	.02
25	415231092295301	06-19-96	1430	do.	4.5	<.01	5.9	<.05	.51	.16
26	421030092340001	06-25-96	1030	do.	4.0	.01	3.8	<.05	.03	.03
27	421120092190501	06-24-96	1040	do.	2.9	<.01	2.7	<.05	<.01	<.01
28	431725093310801	07-10-96	0830	do.	.27	<.01	.3	<.05	.03	.03
29	433317093175601	07-16-96	1215	do.	.12	<.01	<.2	1.1	.03	.03
30	434012093243601	07-16-96	1020	do.	.83	.01	1.2	.07	.03	.04
31	433109093004001	07-10-96	1200	do.	.60	<.01	.7	.15	<.01	<.01
32	433323092383201	07-11-96	0940	do.	.33	<.01	.3	<.05	.04	.02
			0945	replicate	.34	<.01	.3	<.05	.03	.02
33	434732092545001	07-15-96	1300	regular	.38	<.01	.3	1.6	<.01	.02

Table 22. Major ion concentrations in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996

[mg/L, milligrams per liter; μg/L, micrograms per liter; <, less than]

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Calcium (mg/L as Ca)	Magnesium (mg/L as Mg)	Sodium (mg/L as Na)	Potassium (mg/L as K)	Chloride (mg/L as Cl)	Sulfate (mg/L as SO_4)	Fluoride (mg/L as F)	Silica (mg/L as SiO_2)	Bromide (mg/L at Br)	Iron (μg/L as Fe)	Manganese (μg/L as Mn)
1	420424092175101	06-19-96	1140	regular	140	53	200	17	12	770	2.1	7.0	0.13	810	11
2	421157091554201	06-18-96	1540	do.	49	25	36	5.4	3.2	42	.9	7.1	.03	330	3
3	423056092054601	06-26-96	1220	do.	77	19	6.6	.6	8.5	53	.5	16	.11	1,200	67
4	423940092102801	06-26-96	1015	do.	75	25	17	2.2	.1	<.10	.5	14	.05	2,300	11
5	421850091574001	06-18-96	1030	do.	100	18	7.3	24	12	48	.2	12	.04	<3	4
6	422329091455101	06-27-96	1005	blank	1.2	.05	2.1	<.10	<.1	<.10	<.1	12	<.01	30	<1
			1025	regular	100	20	17	2.1	17	66	.3	14	.05	14	6
7	423328092464901	07-01-96	1430	do.	61	21	7.7	1.8	1.6	33	.7	11	.02	380	25
8	425158092402301	07-03-96	1045	do.	73	13	4.4	2.0	15	24	<.1	14	.05	<3	<1
9	425757092503001	07-03-96	1420	do.	79	19	4.3	2.0	13	64	.1	11	.05	3	27
10	415600091033701	06-17-96	1055	do.	53	22	3.8	.50	.5	11	.3	13	.02	3	11
11	430216093142901	07-09-96	1300	do.	72	42	21	8.1	3.9	6.9	2.1	8.2	.06	160	5
12	430532092305401	07-08-96	1355	blank	.18	.02	.3	<.10	<.1	<.10	<.1	.54	<.01	3	<1
			1415	regular	73	23	13	1.7	.2	22	.5	12	.02	1,300	18
13	430947092590101	07-09-96	1000	do.	69	28	7.6	3.3	.5	5.6	1.6	9.1	.02	250	5
14	421944092471701	07-01-96	1145	do.	140	95	33	7.2	2.4	550	1.6	7.9	.01	1,800	12
			1150	replicate	140	94	33	7.3	2.5	550	1.6	7.9	<.01	1,800	13
15	422524092353101	06-25-96	1300	regular	63	30	38	2.8	.4	23	.8	13	<.01	590	11
16	422631092454801	07-02-96	1330	do.	99	27	7.3	2.1	.3	140	1.4	11	.01	660	21
17	422723092470701	07-02-96	1030	do.	86	51	95	7.5	2.3	250	.8	7.9	.03	1,300	9
18	431614092275401	07-17-96	1010	do.	67	24	8.9	2.1	.2	32	.4	13	.04	1,400	13
			1015	replicate	68	24	8.9	2.0	.2	33	.4	13	.07	1,400	13
19	413652092035801	06-12-96	1225	regular	230	110	530	17	30	2,000	1.3	8.5	.15	420	34
20	414056091325201	06-05-96	1137	do.	83	30	6.6	.90	.6	20	.3	23	.04	340	58
21	420206091244901	06-20-96	1100	do.	55	17	4.9	.70	.4	8.6	.3	15	.02	280	36
			1105	replicate	55	17	4.9	.60	.4	8.6	.2	15	.02	290	37
22	412030091113801	06-10-96	1050	regular	58	23	90	2.8	2.6	<.10	.2	12	<.01	300	82
23	413401091010901	06-11-96	1140	do.	70	25	8.6	.90	.4	<.10	.3	22	.05	2,600	170
24	414153090350801	06-06-96	1130	do.	42	21	14	1.0	2.2	2.3	.5	12	.01	240	68

Table 22. Major ion concentrations in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Calcium (mg/L as Ca)	Magnesium (mg/L as Mg)	Sodium (mg/L as Na)	Potassium (mg/L as K)	Chloride (mg/L as Cl)	Sulfate (mg/L as SO_4)	Fluoride (mg/L as F)	Silica (mg/L as SiO_2)	Bromide (mg/L at Br)	Iron (µg/L as Fe)	Manganese (µg/L as Mn)
25	415231092295301	06-19-96	1430	regular	51	18	98	2.3	1.2	<0.10	0.7	13	<0.01	2,300	16
26	421030092340001	06-25-96	1030	do.	160	60	60	3.7	1.6	580	.7	14	.12	2,200	740
27	421120092190501	06-24-96	1040	do.	220	120	100	13	5.6	930	2.3	7.7	.11	1,100	23
28	431725093310801	07-10-96	0830	do.	100	32	8.5	2.1	5.8	20	.3	26	.06	1,200	260
29	433317093175601	07-16-96	1215	do.	77	26	3.4	1.2	3.0	21	.2	26	.07	2,100	150
30	434012093243601	07-16-96	1020	do.	140	41	6.9	3.5	29	100	.2	31	.08	4,900	130
31	433109093004001	07-10-96	1200	do.	74	26	8.4	4.3	.6	5.1	.5	8.5	.01	430	15
32	433323092383201	07-11-96	0940	do.	75	21	7.0	1.2	5.7	27	.3	21	.04	1,800	87
			0945	replicate	74	21	6.9	1.2	6.0	28	.3	21	.04	1,700	86
33	434732092545001	07-15-96	1300	do.	69	19	6.9	1.5	.2	9.6	.5	12	.02	630	78

Table 23. Concentrations of radiochemicals and stable isotopes in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996
[pCi/L, picocuries per liter; <, less than indicated detection limit; --, no data collected]

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Tritium, total (pCi/L)	Tritium, precision estimate (pCi/L)	Radon-222, total (pCi/L)	Radon-222, precision estimate (pCi/L)	Oxygen 18/16 ratio	Hydrogen 2/1 ratio
1	420424092175101	06-19-96	1140	regular	<1.0	1	100	20	-8.53	-57.5
2	421157091554201	06-18-96	1540	do.	<1.0	1	110	20	-7.31	-47.2
3	423056092054601	06-26-96	1220	do.	36	3	820	29	-7.60	-50.9
4	423940092102801	06-26-96	1015	do.	<1.0	1	280	21	-8.17	-53.5
5	421850091574001	06-18-96	1030	do.	33	3	630	30	-9.23	-62.5
6	422329091455101	06-27-96	1005	blank	42	3	66	17	-9.41	-61.5
			1025	regular	28	2	270	21	-8.12	-52.4
7	423328092464901	07-01-96	1430	do.	7.0	1	130	19	-8.03	-52.9
8	425158092402301	07-03-96	1045	do.	67	4	720	42	-8.59	-57.0
9	425757092503001	07-03-96	1420	do.	55	4	830	43	-8.63	-56.7
10	415600091033701	06-17-96	1055	do.	<1.0	1	100	24	-7.50	-47.8
11	430216093142901	07-09-96	1300	do.	<1.0	1	95	19	-8.79	-59.1
12	430532092305401	07-08-96	1415	do.	<1.0	1	600	28	-7.71	-50.2
13	430947092590101	07-09-96	1000	do.	<1.0	1	110	20	-8.35	-55.4
14	421944092471701	07-01-96	1145	do.	1.0	1	240	21	-8.03	-54.8
			1150	replicate	<1.0	1	240	22	-8.16	-53.8
15	422524092353101	06-25-96	1300	regular	<1.0	1	740	28	-7.08	-43.9
16	422631092454801	07-02-96	1330	do.	<1.0	1	460	28	-8.14	-52.8
17	422723092470701	07-02-96	1030	do.	<1.0	1	170	23	-7.30	-47.8
18	431614092275401	07-17-96	1010	do.	<1.0	1	--	--	-7.83	-51.5
19	413652092035801	06-12-96	1225	do.	2.0	1	500	27	-8.51	-57.0
20	414056091325201	06-05-96	1137	do.	<1.0	1	200	22	-7.04	-44.8
21	420206091244901	06-20-96	1100	do.	2.0	1	140	18	-7.18	-44.5
			1105	replicate	2.0	1	130	18	-7.20	-44.6
22	412030091113801	06-10-96	1050	regular	<1.0	1	170	18	-7.30	-47.2
23	413401091010901	06-11-96	1140	do.	<1.0	1	120	17	-6.99	-43.8
24	414153090350801	06-06-96	1130	do.	2.0	1	300	30	-7.11	-43.4
25	415231092295301	06-19-96	1430	do.	<1.0	1	530	27	-7.09	-45.6

Table 23. Concentrations of radiochemicals and stable isotopes in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Tritium, total (pCi/L)	Tritium, precision estimate (pCi/L)	Radon-222, total (pCi/L)	Radon-222, precision estimate (pCi/L)	Oxygen 18/16 ratio	Hydrogen 2/1 ratio
26	421030092340001	06-25-96	1030	regular	<1.0	1	1,100	33	-7.90	-52.4
27	421120092190501	06-24-96	1040	do.	<1.0	1	180	22	-7.49	-49.0
28	431725093310801	07-10-96	0830	do.	10	1	550	26	-8.53	-57.4
29	433317093175601	07-16-96	1215	do.	27	2	1,000	34	-8.74	-59.1
30	434012093243601	07-16-96	1020	do.	97	6	220	22	-9.01	-62.7
31	433109093004001	07-10-96	1200	do.	<1.0	1	350	22	-8.44	-54.8
32	433323092383201	07-11-96	0940	do.	9.0	1	470	23	-8.55	-55.9
32	433323092383201	07-11-96	0945	replicate	--	--	440	23	--	--
33	434732092545001	07-15-96	1300	regular	<1.0	1	590	29	-8.88	-59.0

Table 24. Selected dissolved pesticide concentrations in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996

[All concentrations are in micrograms per liter. <, less than; E, estimated]

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	2, 6-diethyl-aniline	Aceto-chlor	Ala-chlor	Atrazine	Azinphos-methyl	Ben-fluralin	Butylate	Carbaryl	Carbo-furan	Chlor-pyrifos
1	420424092175101	06-19-96	1140	regular	<0.003	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002	<0.003	<0.003	<0.004
2	421157091554201	06-18-96	1540	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
3	423056092054601	06-26-96	1220	do.	<.003	<.002	<.002	.01	<.001	<.002	<.002	<.003	<.003	<.004
4	423940092102801	06-26-96	1015	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
5	421850091574001	06-18-96	1030	do.	<.003	<.002	<.002	.22	<.001	<.002	<.002	<.003	<.003	<.004
6	422329091455101	06-27-96	1025	do.	<.003	<.002	<.002	.10	<.001	<.002	<.002	<.003	<.003	<.004
7	423328092464901	07-01-96	1430	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
8	425158092402301	07-03-96	1025	blank	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
			1045	regular	<.003	<.002	<.002	.02	<.001	<.002	<.002	<.003	<.003	<.004
9	425757092503001	07-03-96	1420	do.	<.003	<.002	<.002	.03	<.001	<.002	<.002	<.003	<.003	<.004
10	415600091033701	06-17-96	1055	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
11	430216093142901	07-09-96	1300	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
12	430532092305401	07-08-96	1355	blank	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
			1415	regular	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
13	430947092590101	07-09-96	1000	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
14	421944092471701	07-01-96	1145	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
			1150	replicate	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
15	422524092353101	06-25-96	1300	regular	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
16	422631092454801	07-02-96	1330	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
17	422723092470701	07-02-96	1030	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
18	431614092275401	07-17-96	1010	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
			1015	replicate	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
19	413652092035801	06-12-96	1225	regular	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
20	414056091325201	06-05-96	1137	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
21	420206091244901	06-20-96	1100	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
			1105	replicate	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
22	412030091113801	06-10-96	1050	regular	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
23	413401091010901	06-11-96	1140	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
24	414153090350801	06-06-96	1130	do.	<.003	<.002	<.002	.01	<.001	<.002	<.002	<.003	<.003	<.004
25	415231092295301	06-19-96	1430	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004

Table 24. Selected dissolved pesticide concentrations in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	2, 6-diethyl-aniline	Aceto-chlor	Ala-chlor	Atrazine	Azinphos-methyl	Ben-fluralin	Butylate	Carbaryl	Carbo-furan	Chlor-pyrifos
26	421030092340001	06-25-96	1030	regular	<0.003	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002	<0.003	<0.003	<0.004
27	421120092190501	06-24-96	1020	blank	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
			1040	regular	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
28	431725093310801	07-10-96	0830	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
29	433317093175601	07-16-96	1215	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
30	434012093243601	07-16-96	1020	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
31	433109093004001	07-10-96	1200	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
32	433323092383201	07-11-96	0940	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
			0945	replicate	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
33	434732092545001	07-15-96	1240	blank	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004
			1300	regular	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004

Table 24. Selected dissolved pesticide concentrations in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Cyan-azine	Dacthal	Deethyl-atrazine	Diazinon	Dieldrin	Disul-foton	EPTC	Ethal-fluralin	Ethopro-phos	Fonofos
1	420424092175101	06-19-96	1140	regular	<0.004	<0.002	<0.002	<0.002	<0.001	<0.017	<0.002	<0.004	<0.003	<0.003
2	421157091554201	06-18-96	1540	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
3	423056092054601	06-26-96	1220	do.	<.004	<.002	E.01	<.002	<.001	<.017	<.002	<.004	<.003	<.003
4	423940092102801	06-26-96	1015	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
5	421850091574001	06-18-96	1030	do.	<.004	<.002	E.33	<.002	<.001	<.017	<.002	<.004	<.003	<.003
6	422329091455101	06-27-96	1025	do.	<.004	<.002	E.08	<.002	<.001	<.017	<.002	<.004	<.003	<.003
7	423328092464901	07-01-96	1430	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
8	425158092402301	07-03-96	1025	blank	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
			1045	regular	<.004	<.002	E.02	<.002	<.001	<.017	<.002	<.004	<.003	<.003
9	425757092503001	07-03-96	1420	do.	<.004	<.002	E.02	<.002	<.001	<.017	<.002	<.004	<.003	<.003
10	415600091033701	06-17-96	1055	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
11	430216093142901	07-09-96	1300	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
12	430532092305401	07-08-96	1355	blank	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
			1415	regular	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
13	430947092590101	07-09-96	1000	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
14	421944092471701	07-01-96	1145	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
			1150	replicate	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
15	422524092353101	06-25-96	1300	regular	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
16	422631092454801	07-02-96	1330	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
17	422723092470701	07-02-96	1030	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
18	431614092275401	07-17-96	1010	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
			1015	replicate	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
19	413652092035801	06-12-96	1225	regular	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
20	414056091325201	06-05-96	1137	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
21	420206091244901	06-20-96	1100	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
			1105	replicate	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
22	412030091113801	06-10-96	1050	regular	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
23	413401091010901	06-11-96	1140	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
24	414153090350801	06-06-96	1130	do.	<.004	<.002	E.01	<.002	<.001	<.017	<.002	<.004	<.003	<.003
25	415231092295301	06-19-96	1430	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003

Table 24. Selected dissolved pesticide concentrations in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Cyan-azine	Dacthal	Deethyl-atrazine	Diazinon	Dieldrin	Disul-foton	EPTC	Ethal-fluralin	Ethopro-phos	Fonofos
26	421030092340001	06-25-96	1030	regular	<0.004	<0.002	<0.002	<0.002	<0.001	<0.017	<0.002	<0.004	<0.003	<0.003
27	421120092190501	06-24-96	1020	blank	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
			1040	regular	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
28	431725093310801	07-10-96	0830	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
29	433317093175601	07-16-96	1215	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
30	434012093243601	07-16-96	1020	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
31	433109093004001	07-10-96	1200	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
32	433323092383201	07-11-96	0940	do.	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
			0945	replicate	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
33	434732092545001	07-15-96	1240	blank	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003
			1300	regular	<.004	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003

Table 24. Selected dissolved pesticide concentrations in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Lindane	Linuron	Mala-thion	Metol-achlor	Metri-buzin	Molin-ate	Naprop-amide	Parathion	Para-thion-methyl	Pebulate
1	420424092175101	06-19-96	1140	regular	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003	<0.004	<0.006	<0.004
2	421157091554201	06-18-96	1540	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
3	423056092054601	06-26-96	1220	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
4	423940092102801	06-26-96	1015	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
5	421850091574001	06-18-96	1030	do.	<.004	<.002	<.005	.009	<.004	<.004	<.003	<.004	<.006	<.004
6	422329091455101	06-27-96	1025	do.	<.004	<.002	<.005	.007	<.004	<.004	<.003	<.004	<.006	<.004
7	423328092464901	07-01-96	1430	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
8	425158092402301	07-03-96	1025	blank	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
			1045	regular	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
9	425757092503001	07-03-96	1420	do.	<.004	<.002	<.005	.013	<.004	<.004	<.003	<.004	<.006	<.004
10	415600091033701	06-17-96	1055	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
11	430216093142901	07-09-96	1300	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
12	430532092305401	07-08-96	1355	blank	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
			1415	regular	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
13	430947092590101	07-09-96	1000	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
14	421944092471701	07-01-96	1145	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
			1150	replicate	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
15	422524092353101	06-25-96	1300	regular	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
16	422631092454801	07-02-96	1330	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
17	422723092470701	07-02-96	1030	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
18	431614092275401	07-17-96	1010	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
			1015	replicate	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
19	413652092035801	06-12-96	1225	regular	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
20	414056091325201	06-05-96	1137	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
21	420206091244901	06-20-96	1100	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
			1105	replicate	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
22	412030091113801	06-10-96	1050	regular	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
23	413401091010901	06-11-96	1140	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
24	414153090350801	06-06-96	1130	do.	<.004	<.002	<.005	.006	<.004	<.004	<.003	<.004	<.006	<.004
25	415231092295301	06-19-96	1430	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004

Table 24. Selected dissolved pesticide concentrations in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Lindane	Linuron	Mala-thion	Metol-achlor	Metri-buzin	Molin-ate	Naprop-amide	Parathion	Para-thion-methyl	Pebulate
26	421030092340001	06-25-96	1030	regular	<0.004	<0.002	<0.005	<0.002	<0.004	<0.004	<0.003	<0.004	<0.006	<0.004
27	421120092190501	06-24-96	1020	blank	<.004	<.002	<.005	E.004	<.004	<.004	<.003	<.004	<.006	<.004
			1040	regular	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
28	431725093310801	07-10-96	0830	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
29	433317093175601	07-16-96	1215	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
30	434012093243601	07-16-96	1020	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
31	433109093004001	07-10-96	1200	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
32	433323092383201	07-11-96	0940	do.	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
			0945	replicate	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
33	434732092545001	07-15-96	1240	blank	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004
			1300	regular	<.004	<.002	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004

Table 24. Selected dissolved pesticide concentrations in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Pendi-methalin	Phorate	Pro-meton	Prop-achlor	Prop-anil	Prop-argite	Propyz-amide	Simazine	Tebu-thiuron	Terbacil
1	420424092175101	06-19-96	1140	regular	<0.004	<0.002	<0.018	<0.007	<0.004	<0.013	<0.003	<0.005	<0.010	<0.007
2	421157091554201	06-18-96	1540	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
3	423056092054601	06-26-96	1220	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
4	423940092102801	06-26-96	1015	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
5	421850091574001	06-18-96	1030	do.	<.004	<.002	E.008	<.007	<.004	<.013	<.003	<.005	<.010	<.007
6	422329091455101	06-27-96	1025	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
7	423328092464901	07-01-96	1430	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
8	425158092402301	07-03-96	1025	blank	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
			1045	regular	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
9	425757092503001	07-03-96	1420	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
10	415600091033701	06-17-96	1055	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
11	430216093142901	07-09-96	1300	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
12	430532092305401	07-08-96	1355	blank	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
			1415	regular	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
13	430947092590101	07-09-96	1000	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
14	421944092471701	07-01-96	1145	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
14	421944092471701	07-01-96	1150	replicate	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
15	422524092353101	06-25-96	1300	regular	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
16	422631092454801	07-02-96	1330	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
17	422723092470701	07-02-96	1030	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
18	431614092275401	07-17-96	1010	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
			1015	replicate	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
19	413652092035801	06-12-96	1225	regular	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
20	414056091325201	06-05-96	1137	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
21	420206091244901	06-20-96	1100	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
			1105	replicate	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
22	412030091113801	06-10-96	1050	regular	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
23	413401091010901	06-11-96	1140	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
24	414153090350801	06-06-96	1130	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
25	415231092295301	06-19-96	1430	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007

Table 24. Selected dissolved pesticide concentrations in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Pendi-methalin	Phorate	Pro-meton	Prop-achlor	Prop-anil	Prop-argite	Propyz-amide	Simazine	Tebu-thiuron	Terbacil
26	421030092340001	06-25-96	1030	regular	<0.004	<0.002	<0.018	<0.007	<0.004	<0.013	<0.003	<0.005	<0.010	<0.007
27	421120092190501	06-24-96	1020	blank	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
			1040	regular	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
28	431725093310801	07-10-96	0830	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
29	433317093175601	07-16-96	1215	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
30	434012093243601	07-16-96	1020	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
31	433109093004001	07-10-96	1200	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
32	433323092383201	07-11-96	0940	do.	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
			0945	replicate	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
33	434732092545001	07-15-96	1240	blank	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007
			1300	regular	<.004	<.002	<.018	<.007	<.004	<.013	<.003	<.005	<.010	<.007

Table 24. Selected dissolved pesticide concentrations in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Terbufos	Thio-bencarb	Triallate	Tri-fluralin	alpha-HCH	cis-Per-methrin	p,p′-DDE
1	420424092175101	06-19-96	1140	regular	<0.013	<0.002	<0.001	<0.002	<0.002	<0.005	<0.006
2	421157091554201	06-18-96	1540	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
3	423056092054601	06-26-96	1220	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
4	423940092102801	06-26-96	1015	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
5	421850091574001	06-18-96	1030	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
6	422329091455101	06-27-96	1025	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
7	423328092464901	07-01-96	1430	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
8	425158092402301	07-03-96	1025	blank	<.013	<.002	<.001	<.002	<.002	<.005	<.006
			1045	regular	<.013	<.002	<.001	<.002	<.002	<.005	<.006
9	425757092503001	07-03-96	1420	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
10	415600091033701	06-17-96	1055	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
11	430216093142901	07-09-96	1300	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
12	430532092305401	07-08-96	1355	blank	<.013	<.002	<.001	<.002	<.002	<.005	<.006
			1415	regular	<.013	<.002	<.001	<.002	<.002	<.005	<.006
13	430947092590101	07-09-96	1000	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
14	421944092471701	07-01-96	1145	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
			1150	blank	<.013	<.002	<.001	<.002	<.002	<.005	<.006
15	422524092353101	06-25-96	1300	regular	<.013	<.002	<.001	<.002	<.002	<.005	<.006
16	422631092454801	07-02-96	1330	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
17	422723092470701	07-02-96	1030	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
18	431614092275401	07-17-96	1010	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
			1015	replicate	<.013	<.002	<.001	<.002	<.002	<.005	<.006
19	413652092035801	06-12-96	1225	regular	<.013	<.002	<.001	<.002	<.002	<.005	<.006
20	414056091325201	06-05-96	1137	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
21	420206091244901	06-20-96	1100	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
			1105	replicate	<.013	<.002	<.001	<.002	<.002	<.005	<.006
22	412030091113801	06-10-96	1050	regular	<.013	<.002	<.001	<.002	<.002	<.005	<.006
23	413401091010901	06-11-96	1140	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
24	414153090350801	06-06-96	1130	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
25	415231092295301	06-19-96	1430	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006

Table 24. Selected dissolved pesticide concentrations in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Terbufos	Thio-bencarb	Triallate	Tri-fluralin	alpha-HCH	cis-Per-methrin	p,p'-DDE
26	421030092340001	06-25-96	1030	regular	<0.013	<0.002	<0.001	<0.002	<0.002	<0.005	<0.006
27	421120092190501	06-24-96	1020	blank	<.013	<.002	<.001	<.002	<.002	<.005	<.006
27	421120092190501	06-24-96	1040	regular	<.013	<.002	<.001	<.002	<.002	<.005	<.006
28	431725093310801	07-10-96	0830	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
29	433317093175601	07-16-96	1215	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
30	434012093243601	07-16-96	1020	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
31	433109093004001	07-10-96	1200	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
32	433323092383201	07-11-96	0940	do.	<.013	<.002	<.001	<.002	<.002	<.005	<.006
32	433323092383201	07-11-96	0945	replicate	<.013	<.002	<.001	<.002	<.002	<.005	<.006
33	434732092545001	07-15-96	1240	blank	<.013	<.002	<.001	<.002	<.002	<.005	<.006
33	434732092545001	07-15-96	1300	regular	<.013	<.002	<.001	<.002	<.002	<.005	<.006

Table 25. Concentrations of selected dissolved pesticide surrogates in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996

[µg/L, micrograms per liter]

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Diazinon, surrogate (µg/L)	Terbuthylazine, surrogate (µg/L)	alpha-HCH-d6, surrogate (µg/L)
1	420424092175101	06-19-96	1140	regular	96.3	116	104
2	421157091554201	06-18-96	1540	do.	99.9	120	104
3	423056092054601	06-26-96	1220	do.	97.3	114	102
4	423940092102801	06-26-96	1015	do.	99.0	115	104
5	421850091574001	06-18-96	1030	do.	98.8	114	109
6	422329091455101	06-27-96	1025	do.	100	116	109
7	423328092464901	07-01-96	1430	do.	89.3	118	103
8	425158092402301	07-03-96	1025	blank	93.8	113	105
			1045	regular	86.7	111	101
9	425757092503001	07-03-96	1420	do.	77.2	103	101
10	415600091033701	06-17-96	1055	do.	98.9	115	108
11	430216093142901	07-09-96	1300	do.	88.1	106	101
12	430532092305401	07-08-96	1355	blank	87.7	106	100
			1415	regular	74.1	95.7	89.7
13	430947092590101	07-09-96	1000	do.	92.8	111	106
14	421944092471701	07-01-96	1145	do.	95.7	115	107
			1150	replicate	97.8	118	104
15	422524092353101	06-25-96	1300	regular	90.4	112	103
16	422631092454801	07-02-96	1330	do.	99.4	114	104
17	422723092470701	07-02-96	1030	do.	100	105	111
18	431614092275401	07-17-96	1010	do.	102	108	98.0
			1015	replicate	103	110	99.8
19	413652092035801	06-12-96	1225	regular	105	123	102
20	414056091325201	06-05-96	1137	do.	109	103	90.5
21	420206091244901	06-20-96	1100	do.	95.5	111	108
			1105	replicate	94.4	114	106
22	412030091113801	06-10-96	1050	regular	79.4	95.3	87.9
23	413401091010901	06-11-96	1140	do.	101	122	101
24	414153090350801	06-06-96	1130	do.	116	107	92.6

Table 25. Concentrations of selected pesticide surrogates in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Diazinon, surrogate (μg/L)	Terbuthylazine, surrogate (μg/L)	alpha-HCH-d6, surrogate (μg/L)
25	415231092295301	06-19-96	1430	regular	94.0	115	102
26	421030092340001	06-25-96	1030	do.	105	125	113
27	421120092190501	06-24-96	1020	blank	104	118	108
			1040	regular	93.4	113	104
28	431725093310801	07-10-96	0830	do.	89.6	111	100
29	433317093175601	07-16-96	1215	do.	102	110	100
30	434012093243601	07-16-96	1020	do.	94.3	104	91.9
31	433109093004001	07-10-96	1200	do.	96.8	108	109
32	433323092383201	07-11-96	0940	do.	94.9	111	105
			0945	replicate	89.6	109	101
33	434732092545001	07-15-96	1240	blank	96.4	112	103
			1300	regular	107	120	104

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996

[All concentrations are in micrograms per liter; <, less than indicated value; E, estimated; --, no data collected]

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	1, 1, 1, 2-Tetra-chloro-ethane	1, 1, 1-Tri-chloro-ethane	1, 1, 2, 2-Tetra-chloro-ethane	1, 1, 2-Tri-chloro-ethane	1, 1, 2-Trichloro-trifluoro-ethane	1, 1-Di-chloro-ethane	1, 1-Di-chloro-ethylene	1, 1-Di-chloro-propene	1, 2, 3, 4-Tetra-methyl-benzene
1	420424092175101	06-19-96	1139	regular	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.1	<0.05	<0.05
2	421157091554201	06-18-96	1539	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
3	423056092054601	06-26-96	1219	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
4	423940092102801	06-26-96	1014	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
5	421850091574001	06-18-96	1029	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
6	422329091455101	06-27-96	1024	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
7	423328092464901	07-01-96	1429	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
8	425158092402301	07-03-96	1024	blank	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
			1044	regular	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
9	425757092503001	07-03-96	1419	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
10	415600091033701	06-17-96	1054	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
11	430216093142901	07-09-96	1259	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
12	430532092305401	07-08-96	1354	blank	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
			1414	regular	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
13	430947092590101	07-09-96	0959	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
14	421944092471701	07-01-96	1144	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
			1149	replicate	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
15	422524092353101	06-25-96	1259	regular	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
16	422631092454801	07-02-96	1329	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
17	422723092470701	07-02-96	1029	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
18	431614092275401	07-17-96	1009	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
			1014	replicate	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
19	413652092035801	06-12-96	1224	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
20	414056091325201	06-05-96	1136	regular	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
21	420206091244901	06-20-96	1059	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
			1104	replicate	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
22	412030091113801	06-10-96	1049	regular	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
23	413401091010901	06-11-96	1139	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
24	414153090350801	06-06-96	1129	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	1, 1, 1, 2-Tetra-chloro-ethane	1, 1, 1-Tri-chloro-ethane	1, 1, 2, 2-Tetra-chloro-ethane	1, 1, 2-Tri-chloro-ethane	1, 1, 2-Trichloro-trifluoro-ethane	1, 1-Di-chloro-ethane	1, 1-Di-chloro-ethylene	1, 1-Di-chloro-propene	1, 2, 3, 4-Tetra-methyl-benzene
25	415231092295301	06-19-96	1429	regualr	<0.10	<0.10	<0.2	<0.2	<0.10	<0.10	<0.2	<0.10	<0.10
26	421030092340001	06-25-96	1029	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
27	421120092190501	06-24-96	1019	blank	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
			1039	regular	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
28	431725093310801	07-10-96	0829	do.	<.50	<.50	< 1	< 1	<.50	<.50	< 1	<.50	<.50
29	433317093175601	07-16-96	1214	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
30	434012093243601	07-16-96	1019	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
31	433109093004001	07-10-96	1159	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
32	433323092383201	07-11-96	0939	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
			0944	replicate	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
33	434732092545001	07-15-96	1237	blank	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
			1239	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
			1259	regular	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996–Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	1, 2, 3, 5-Tetra-methyl-benzene	1, 2, 3-Tri-chloro-benzene	1, 2, 3-Tri-chloro-propane	1, 2, 3-Tri-methyl-benzene	1, 2, 4-Tri-chloro-benzene	1, 2, 4-Tri-methyl-benzene	1,2-Di-bromo-3-chloro-propane	1, 2-Dibromo-ethane	1,2-Di-chloro-benzene
1	420424092175101	06-19-96	1139	regular	<0.05	<0.2	<0.2	<0.05	<0.2	<0.05	<0.5	<0.1	<0.05
2	421157091554201	06-18-96	1539	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
3	423056092054601	06-26-96	1219	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
4	423940092102801	06-26-96	1014	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
5	421850091574001	06-18-96	1029	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
6	422329091455101	06-27-96	1024	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
7	423328092464901	07-01-96	1429	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
8	425158092402301	07-03-96	1024	blank	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
			1044	regular	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
9	425757092503001	07-03-96	1419	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
10	415600091033701	06-17-96	1054	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
11	430216093142901	07-09-96	1259	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
12	430532092305401	07-08-96	1354	blank	<.05	<.2	<.2	<.05	<.2	E.04	<.5	<.1	<.05
			1414	regular	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
13	430947092590101	07-09-96	0959	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
14	421944092471701	07-01-96	1144	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
			1149	replicate	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
15	422524092353101	06-25-96	1259	regular	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
16	422631092454801	07-02-96	1329	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
17	422723092470701	07-02-96	1029	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
18	431614092275401	07-17-96	1009	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
			1014	replicate	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
19	413652092035801	06-12-96	1224	regular	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
20	414056091325201	06-05-96	1136	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
21	420206091244901	06-20-96	1059	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
			1104	replicate	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
22	412030091113801	06-10-96	1049	regular	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
23	413401091010901	06-11-96	1139	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
24	414153090350801	06-06-96	1129	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
25	415231092295301	06-19-96	1429	do.	<.10	<.4	<.4	<.10	<.4	<.10	< 1.0	<.2	<.10

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996–Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	1, 2, 3, 5-Tetra-methyl-benzene	1, 2, 3-Tri-chloro-benzene	1, 2, 3-Tri-chloro-propane	1, 2, 3-Tri-methyl-benzene	1, 2, 4-Tri-chloro-benzene	1, 2, 4-Tri-methyl-benzene	1,2-Di-bromo-3-chloro-propane	1, 2-Dibromo-ethane	1,2-Di-chloro-benzene
26	421030092340001	06-25-96	1029	regular	<0.05	<0.2	<0.2	<0.05	<0.2	<0.05	<0.5	<0.1	<0.05
27	421120092190501	06-24-96	1019	blank	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
			1039	regular	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
28	431725093310801	07-10-96	0829	do.	<.50	< 2.0	< 2.0	<.50	< 2.0	<.50	< 5.0	< 1.0	<.50
29	433317093175601	07-16-96	1214	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
30	434012093243601	07-16-96	1019	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
31	433109093004001	07-10-96	1159	do.	<.05	<.2	<.2	E.04	<.2	.21	<.5	<.1	<.05
32	433323092383201	07-11-96	0939	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
			0944	replicate	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
33	434732092545001	07-15-96	1237	blank	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
			1239	do.	<.05	<.2	<.2	E.009	<.2	.14	<.5	<.1	<.05
			1259	regular	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	1, 2-Dichloro-ethane	1, 2-Dichloro-propane	1, 3, 5-Tri-methyl-benzene	1, 3-Di-chloro-benzene	1, 3-Di-chloro-propane	1, 4-Bromo-fluoro-benzene (surrogate)	1-Di-chloro-benzene	2, 2-Di-chloro-propane	2-Butanone
1	420424092175101	06-19-96	1139	regular	<0.05	<0.05	<0.05	<0.05	<0.05	99	<0.05	<0.05	<5
2	421157091554201	06-18-96	1539	do.	<.05	<.05	<.05	<.05	<.05	101	<.05	<.05	<5
3	423056092054601	06-26-96	1219	do.	<.05	<.05	<.05	<.05	<.05	88	<.05	<.05	<5
4	423940092102801	06-26-96	1014	do.	<.05	<.05	<.05	<.05	<.05	85	<.05	<.05	<5
5	421850091574001	06-18-96	1029	do.	<.05	<.05	<.05	<.05	<.05	105	<.05	<.05	<5
6	422329091455101	06-27-96	1024	do.	<.05	<.05	<.05	<.05	<.05	87	<.05	<.05	<5
7	423328092464901	07-01-96	1429	do.	<.05	<.05	<.05	<.05	<.05	87	<.05	<.05	<5
8	425158092402301	07-03-96	1024	blank	<.05	<.05	<.05	<.05	<.05	86	<.05	<.05	18
			1044	regular	<.05	<.05	<.05	<.05	<.05	85	<.05	<.05	<5
9	425757092503001	07-03-96	1419	do.	<.05	<.05	<.05	<.05	<.05	87	<.05	<.05	<5
10	415600091033701	06-17-96	1054	do.	<.05	<.05	<.05	<.05	<.05	104	<.05	<.05	<5
11	430216093142901	07-09-96	1259	do.	<.05	<.05	<.05	<.05	<.05	88	<.05	<.05	<5
12	430532092305401	07-08-96	1354	blank	<.05	<.05	<.05	<.05	<.05	86	<.05	<.05	20
			1414	regular	<.05	<.05	<.05	<.05	<.05	84	<.05	<.05	<5
13	430947092590101	07-09-96	0959	do.	<.05	<.05	<.05	<.05	<.05	88	<.05	<.05	<5
14	421944092471701	07-01-96	1144	do.	<.05	<.05	<.05	<.05	<.05	88	<.05	<.05	<5
			1149	replicate	<.05	<.05	<.05	<.05	<.05	89	<.05	<.05	<5
15	422524092353101	06-25-96	1259	regular	<.05	<.05	<.05	<.05	<.05	94	<.05	<.05	<5
16	422631092454801	07-02-96	1329	do.	<.05	<.05	<.05	<.05	<.05	88	<.05	<.05	<5
17	422723092470701	07-02-96	1029	do.	<.05	<.05	<.05	<.05	<.05	87	<.05	<.05	<5
18	431614092275401	07-17-96	1009	do.	<.05	<.05	<.05	<.05	<.05	88	<.05	<.05	<5
			1014	replicate	<.05	<.05	<.05	<.05	<.05	89	<.05	<.05	<5
19	413652092035801	06-12-96	1224	regular	<.05	<.05	<.05	<.05	<.05	81	<.05	<.05	<5
20	414056091325201	06-05-96	1136	do.	<.05	<.05	<.05	<.05	<.05	90	<.05	<.05	<5
21	420206091244901	06-20-96	1059	do.	<.05	<.05	<.05	<.05	<.05	100	<.05	<.05	<5
			1104	replicate	<.05	<.05	<.05	<.05	<.05	100	<.05	<.05	<5
22	412030091113801	06-10-96	1049	regular	<.05	<.05	<.05	<.05	<.05	81	<.05	<.05	<5
23	413401091010901	06-11-96	1139	do.	<.05	<.05	<.05	<.05	<.05	78	<.05	<.05	<5
24	414153090350801	06-06-96	1129	do.	<.05	<.05	<.05	<.05	<.05	80	<.05	<.05	<5
25	415231092295301	06-19-96	1429	do.	<.10	<.10	<.10	<.10	<.10	95	<.10	<.10	

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	1, 2-Dichloroethane	1, 2-Dichloropropane	1, 3, 5-Trimethylbenzene	1, 3-Dichlorobenzene	1, 3-Dichloropropane	1, 4-Bromofluorobenzene (surrogate)	1-Dichlorobenzene	2, 2-Dichloropropane	2-Butanone
26	421030092340001	06-25-96	1029	regular	<0.05	<0.05	<0.05	<0.05	<0.05	95	<0.05	<0.05	<5
27	421120092190501	06-24-96	1019	blank	<.05	<.05	<.05	<.05	<.05	96	<.05	<.05	<5
			1039	regular	<.05	<.05	<.05	<.05	<.05	95	<.05	<.05	<5
28	431725093310801	07-10-96	0829	do.	<.50	<.50	<.50	<.50	<.50	89	<.50	<.50	<5
29	433317093175601	07-16-96	1214	do.	<.05	<.05	<.05	<.05	<.05	98	<.05	<.05	<5
30	434012093243601	07-16-96	1019	do.	<.05	<.05	<.05	<.05	<.05	99	<.05	<.05	<5
31	433109093004001	07-10-96	1159	do.	<.05	<.05	E.07	<.05	<.05	84	<.05	<.05	<5
32	433323092383201	07-11-96	0939	do.	<.05	<.05	<.05	<.05	<.05	97	<.05	<.05	<5
			0944	replicate	<.05	<.05	<.05	<.05	<.05	78	<.05	<.05	<5
33	434732092545001	07-15-96	1237	blank	<.05	<.05	<.05	<.05	<.05	95	<.05	<.05	<5
			1239	do.	<.05	<.05	<.05	<.05	<.05	97	<.05	<.05	47
			1259	regular	<.05	<.05	<.05	<.05	<.05	100	<.05	<.05	<5

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	2-Chloro-toluene	2-Hexanone	3-Chloro-1-propene	4-Chloro-toluene	4-Iso-propyl-1-methyl-benzene	4-Methyl-2-pentanone	Acetone	Acrylo-nitrile
1	420424092175101	06-19-96	1139	regular	<0.05	<5	<0.1	<0.05	<0.05	<5	<5	<2
2	421157091554201	06-18-96	1539	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
3	423056092054601	06-26-96	1219	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
4	423940092102801	06-26-96	1014	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
5	421850091574001	06-18-96	1029	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
6	422329091455101	06-27-96	1024	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
7	423328092464901	07-01-96	1429	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
8	425158092402301	07-03-96	1024	blank	<.05	<5	<.1	<.05	<.05	<5	7.2	<2
			1044	regular	<.05	<5	<.1	<.05	<.05	<5	<5	<2
9	425757092503001	07-03-96	1419	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
10	415600091033701	06-17-96	1054	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
11	430216093142901	07-09-96	1259	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
12	430532092305401	07-08-96	1354	blank	<.05	<5	<.1	<.05	<.05	<5	5.3	<2
			1414	regular	<.05	<5	<.1	<.05	<.05	<5	<5	<2
13	430947092590101	07-09-96	0959	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
14	421944092471701	07-01-96	1144	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
			1149	replicate	<.05	<5	<.1	<.05	<.05	<5	<5	<2
15	422524092353101	06-25-96	1259	regular	<.05	<5	<.1	<.05	<.05	<5	<5	<2
16	422631092454801	07-02-96	1329	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
17	422723092470701	07-02-96	1029	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
18	431614092275401	07-17-96	1009	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
			1014	replicate	<.05	<5	<.1	<.05	<.05	<5	<5	<2
19	413652092035801	06-12-96	1224	regular	<.05	<5	<.1	<.05	<.05	<5	<5	<2
20	414056091325201	06-05-96	1136	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
21	420206091244901	06-20-96	1059	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
			1104	replicate	<.05	<5	<.1	<.05	<.05	<5	<5	<2
22	412030091113801	06-10-96	1049	regular	<.05	<5	<.1	<.05	<.05	<5	<5	<2
23	413401091010901	06-11-96	1139	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
24	414153090350801	06-06-96	1129	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	2-Chloro-toluene	2-Hexanone	3-Chloro-1-propene	4-Chloro-toluene	4-Iso-propyl-1-methyl-benzene	4-Methyl-2-pentanone	Acetone	Acrylo-nitrile
25	415231092295301	06-19-96	1429	regular	<0.10	<10	<0.2	<0.10	<0.10	<10	<10	<4
26	421030092340001	06-25-96	1029	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
27	421120092190501	06-24-96	1019	blank	<.05	<5	<.1	<.05	<.05	<5	<5	<2
			1039	regular	<.05	<5	<.1	<.05	<.05	<5	<5	<2
28	431725093310801	07-10-96	0829	do.	<.50	<50	<1.0	<.50	<.50	<50	<50	<20
29	433317093175601	07-16-96	1214	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
30	434012093243601	07-16-96	1019	do.	<.05	<5	<.1	<.05	<.05	<5	1.5	<2
31	433109093004001	07-10-96	1159	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
32	433323092383201	07-11-96	0939	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
			0944	replicate	<.05	<5	<.1	<.05	<.05	<5	<5	<2
33	434732092545001	07-15-96	1237	blank	<.05	<5	<.1	<.05	<.05	<5	2.0	<2
			1239	do.	<.05	<5	<.1	<.05	<.05	<5	9.7	<2
			1259	regular	<.05	<5	<.1	<.05	<.05	<5	<5	<2

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Benzene	Bromo-benzene	Bromo-chloro-methane	Bromo-dichloro-methane	Bromo-form	Bromo-methane	Butyl-benzene	Carbon disulfide	Chloro-benzene
1	420424092175101	06-19-96	1139	regular	<.05	<0.05	<0.1	<0.1	<0.2	<0.1	<0.05	<0.05	<0.05
2	421157091554201	06-18-96	1539	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
3	423056092054601	06-26-96	1219	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
4	423940092102801	06-26-96	1014	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
5	421850091574001	06-18-96	1029	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
6	422329091455101	06-27-96	1024	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
7	423328092464901	07-01-96	1429	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
8	425158092402301	07-03-96	1024	blank	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
			1044	regular	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
9	425757092503001	07-03-96	1419	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
10	415600091033701	06-17-96	1054	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
11	430216093142901	07-09-96	1259	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
12	430532092305401	07-08-96	1354	blank	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
			1414	regular	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
13	430947092590101	07-09-96	0959	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
14	421944092471701	07-01-96	1144	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
			1149	replicate	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
15	422524092353101	06-25-96	1259	regular	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
16	422631092454801	07-02-96	1329	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
17	422723092470701	07-02-96	1029	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	.30	<.05
18	431614092275401	07-17-96	1009	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
			1014	replicate	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
19	413652092035801	06-12-96	1224	regular	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
20	414056091325201	06-05-96	1136	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
21	420206091244901	06-20-96	1059	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
			1104	replicate	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
22	412030091113801	06-10-96	1049	regular	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
23	413401091010901	06-11-96	1139	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
24	414153090350801	06-06-96	1129	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
25	415231092295301	06-19-96	1429	do.	<.10	<.10	<.20	<.20	<.4	<.2	<.10	<.10	<.10

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Benzene	Bromo-benzene	Bromo-chloro-methane	Bromo-dichloro-methane	Bromo-form	Bromo-methane	Butyl-benzene	Carbon disulfide	Chloro-benzene
26	421030092340001	06-25-96	1029	regular	<0.05	<0.10	<0.2	<0.2	<0.2	<0.1	<0.05	<0.05	<0.05
27	421120092190501	06-24-96	1019	blank	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
			1039	regular	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
28	431725093310801	07-10-96	0829	do.	<.50	<.50	<1.0	<1.0	<2.0	<1.0	<.50	<.50	<.50
29	433317093175601	07-16-96	1214	do.	<.05	<.50	<1.0	<1.0	<.2	<.1	<.05	<.50	<.05
30	434012093243601	07-16-96	1019	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.50	<.05
31	433109093004001	07-10-96	1159	do.	.13	<.05	<.1	<.1	<.2	<.1	<.05	<.50	<.05
32	433323092383201	07-11-96	0939	do.	--	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
			0944	replicate	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
33	434732092545001	07-15-96	1237	blank	E.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
			1239	do.	.12	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
			1259	regular	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.50	<.05

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Chloro-methane	Dibromo-chloro-methane	Di-bromo-methane	Chloro-ethane	Chloro-form	Dichloro-difluoro-methane	Dichloro-methane	Diethyl ether	Di-isopropyl ether
1	420424092175101	06-19-96	1139	regular	<0.2	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1
2	421157091554201	06-18-96	1539	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
3	423056092054601	06-26-96	1219	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
4	423940092102801	06-26-96	1014	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
5	421850091574001	06-18-96	1029	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
6	422329091455101	06-27-96	1024	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
7	423328092464901	07-01-96	1429	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
8	425158092402301	07-03-96	1024	blank	<.2	<.1	<.1	<.1	E.08	<.2	.26	<.1	<.1
			1044	regular	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
9	425757092503001	07-03-96	1419	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
10	415600091033701	06-17-96	1054	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
11	430216093142901	07-09-96	1259	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
12	430532092305401	07-08-96	1354	blank	<.2	<.1	<.1	<.1	E.08	<.2	E.18	<.1	<.1
			1414	regular	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
13	430947092590101	07-09-96	0959	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
14	421944092471701	07-01-96	1144	do.	<.2	<.1	<.1	<.1	E.05	<.2	E.10	<.1	<.1
			1149	replicate	<.2	<.1	<.1	<.1	E.05	<.2	<.1	<.1	<.1
15	422524092353101	06-25-96	1259	regular	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
16	422631092454801	07-02-96	1329	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
17	422723092470701	07-02-96	1029	do.	<.2	<.1	<.1	<.1	<.05	<.2	E.12	<.1	<.1
18	431614092275401	07-17-96	1009	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
			1014	replicate	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
19	413652092035801	06-12-96	1224	regular	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
20	414056091325201	06-05-96	1136	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
21	420206091244901	06-20-96	1059	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
			1104	replicate	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
22	412030091113801	06-10-96	1049	regular	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
23	413401091010901	06-11-96	1139	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
24	414153090350801	06-06-96	1129	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
25	415231092295301	06-19-96	1429	do.	<.2	<.2	<.2	<.2	<.10	<.4	<.2	<.2	<.2

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Chloro-methane	Dibromo-chloro-methane	Di-bromo-methane	Chloro-ethane	Chloro-form	Dichloro-difluoro-methane	Dichloro-methane	Diethyl ether	Di-isopropyl ether
26	421030092340001	06-25-96	1029	regular	<0.2	<0.1	<0.1	<0.1	<0.05	<0.2	<0.1	<0.1	<0.1
27	421120092190501	06-24-96	1019	blank	<.2	<.1	<.1	<.1	E.07	<.2	.59	<.1	<.1
			1039	regular	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
28	431725093310801	07-10-96	0829	do.	<2.0	<1.0	<1.0	<1.0	<.50	<2.0	<1.0	<1.0	<1.0
29	433317093175601	07-16-96	1214	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
30	434012093243601	07-16-96	1019	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
31	433109093004001	07-10-96	1159	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
32	433323092383201	07-11-96	0939	do.	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
			0944	replicate	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1
33	434732092545001	07-15-96	1237	blank	<.2	<.1	<.1	<.1	E.05	E.01	E.18	<.1	<.1
			1239	do.	<.2	<.1	<.1	<.1	.16	<.2	E.15	<.1	<.1
			1259	regular	<.2	<.1	<.1	<.1	<.05	<.2	<.1	<.1	<.1

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Ethyl meth-acrylate	Ethyl tert-butyl ether	Ethyl-benzene	Hexa-chloro-buta-diene	Hexa-chloro-ethane	Iso-propyl-benzene	Methyl acrylate	Methyl acrylo-nitrile	Methyl iodide
1	420424092175101	06-19-96	1139	regular	<1	<0.1	<0.05	<0.2	<0.05	<0.05	<2	<2	<0.05
2	421157091554201	06-18-96	1539	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
3	423056092054601	06-26-96	1219	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
4	423940092102801	06-26-96	1014	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
5	421850091574001	06-18-96	1029	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
6	422329091455101	06-27-96	1024	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
7	423328092464901	07-01-96	1429	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
8	425158092402301	07-03-96	1024	blank	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
			1044	regular	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
9	425757092503001	07-03-96	1419	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
10	415600091033701	06-17-96	1054	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
11	430216093142901	07-09-96	1259	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
12	430532092305401	07-08-96	1354	blank	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
			1414	regular	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
13	430947092590101	07-09-96	0959	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
14	421944092471701	07-01-96	1144	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
			1149	replicate	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
15	422524092353101	06-25-96	1259	regular	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
16	422631092454801	07-02-96	1329	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
17	422723092470701	07-02-96	1029	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
18	431614092275401	07-17-96	1009	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
			1014	replicate	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
19	413652092035801	06-12-96	1224	regular	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
20	414056091325201	06-05-96	1136	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
21	420206091244901	06-20-96	1059	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
			1104	replicate	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
22	412030091113801	06-10-96	1049	regular	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
23	413401091010901	06-11-96	1139	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
24	414153090350801	06-06-96	1129	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
25	415231092295301	06-19-96	1429	do.	<2	<.2	<.10	<.4	<.10	<.10	<4	<4	<.10

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Ethyl meth-acrylate	Ethyl tert-butyl ether	Ethyl-benzene	Hexa-chloro-buta-diene	Hexa-chloro-ethane	Iso-propyl-benzene	Methyl acrylate	Methyl acrylo-nitrile	Methyl iodide
26	421030092340001	06-25-96	1029	regular	<1	<.1	<0.05	<0.2	<0.05	<0.05	<2	<2	<0.05
27	421120092190501	06-24-96	1019	blank	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
			1039	regular	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
28	431725093310801	07-10-96	0829	do.	<10	<1.0	<.50	<2.0	<.50	<.50	<20	<20	<.50
29	433317093175601	07-16-96	1214	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
30	434012093243601	07-16-96	1019	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
31	433109093004001	07-10-96	1159	do.	<1	<.1	E.07	<.2	<.05	<.05	<2	<2	<.05
32	433323092383201	07-11-96	0939	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
			0944	replicate	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
33	434732092545001	07-15-96	1237	blank	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
			1239	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
			1259	regular	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Methyl meth-acrylate	Naph-thalene	Propyl-benzene	Styrene	Tetra-chloro-ethylene	Tetra-chloro-methane	Tetra-hydro-furan	Toluene	Trichloro-ethylene
1	420424092175101	06-19-96	1139	regular	<1	<0.2	<0.05	<0.05	0.14	<0.05	<5	0.12	<0.05
2	421157091554201	06-18-96	1539	do.	<1	<.2	<.05	<.05	E.08	<.05	<5	.10	<.05
3	423056092054601	06-26-96	1219	do.	<1	<.2	<.05	<.05	.22	<.05	<5	.10	<.05
4	423940092102801	06-26-96	1014	do.	<1	<.2	<.05	<.05	E.07	<.05	<5	<.05	<.05
5	421850091574001	06-18-96	1029	do.	<1	<.2	<.05	<.05	.15	<.05	<5	.13	<.05
6	422329091455101	06-27-96	1024	do.	<1	<.2	<.05	<.05	.12	<.05	<5	E.09	<.05
7	423328092464901	07-01-96	1429	do.	<1	<.2	<.05	<.05	E.01	<.05	<5	<.05	<.05
8	425158092402301	07-03-96	1024	blank	<1	<.2	<.05	<.05	.60	<.05	<5	.41	<.05
			1044	regular	<1	<.2	<.05	<.05	.21	<.05	<5	.13	<.05
9	425757092503001	07-03-96	1419	do.	<1	<.2	<.05	<.05	E.08	<.05	<5	E.08	<.05
10	415600091033701	06-17-96	1054	do.	<1	<.2	<.05	<.05	.14	<.05	<5	.10	<.05
11	430216093142901	07-09-96	1259	do.	<1	<.2	<.05	<.05	.13	<.05	<5	E.07	<.05
12	430532092305401	07-08-96	1354	blank	<1	<.2	<.05	<.05	.29	<.05	<5	.43	<.05
			1414	regular	<1	<.2	<.05	<.05	E.07	<.05	<5	E.05	<.05
13	430947092590101	07-09-96	0959	do.	<1	<.2	<.05	<.05	.12	<.05	<5	E.05	<.05
14	421944092471701	07-01-96	1144	do.	<1	<.2	<.05	<.05	.24	<.05	<5	.13	<.05
			1149	replicate	<1	<.2	<.05	<.05	E.04	<.05	<5	E.05	<.05
15	422524092353101	06-25-96	1259	regular	<1	<.2	<.05	<.05	.14	<.05	<5	E.09	<.05
16	422631092454801	07-02-96	1329	do.	<1	<.2	<.05	<.05	<.05	<.05	<5	E.05	<.05
17	422723092470701	07-02-96	1029	do.	<1	<.2	<.05	<.05	.38	<.05	<5	.31	<.05
18	431614092275401	07-17-96	1009	do.	<1	<.2	<.05	<.05	.14	<.05	<5	E.05	<.05
			1014	replicate	<1	<.2	<.05	<.05	.15	<.05	<5	E.08	<.05
19	413652092035801	06-12-96	1224	regular	<1	<.2	<.05	<.05	E.09	<.05	<5	.12	<.05
20	414056091325201	06-05-96	1136	do.	<1	<.2	<.05	<.05	<.05	<.05	<5	<.05	<.05
21	420206091244901	06-20-96	1059	do.	<1	<.2	<.05	<.05	.10	<.05	<5	.13	<.05
			1104	replicate	<1	<.2	<.05	<.05	E.09	<.05	<5	.12	<.05
22	412030091113801	06-10-96	1049	regular	<1	<.2	<.05	<.05	E.03	<.05	1.3	<.05	<.05
23	413401091010901	06-11-96	1139	do.	<1	<.2	<.05	<.05	E.03	<.05	<5	<.05	<.05
24	414153090350801	06-06-96	1129	do.	<1	<.2	<.05	<.05	<.05	<.05	<5	<.05	<.05
25	415231092295301	06-19-96	1429	do.	<2	<.4	<.10	<.10	.23	<.10	<10	.21	<.10

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Methyl meth-acrylate	Naph-thalene	Propyl-benzene	Styrene	Tetra-chloro-ethylene	Tetra-chloro-methane	Tetra-hydro-furan	Toluene	Trichloro-ethylene
26	421030092340001	06-25-96	1029	regular	<1	<0.2	<0.05	<0.05	0.14	<0.05	<5	E0.09	<0.05
27	421120092190501	06-24-96	1019	blank	<1	<.2	<.05	<.05	.29	<.05	<5	.15	<.05
			1039	regular	<1	<.2	<.05	<.05	.23	<.05	<5	E.09	<.05
28	431725093310801	07-10-96	0829	do.	<10	<2.0	<.50	<.50	<.50	<.50	<50	<.50	<.50
29	433317093175601	07-16-96	1214	do.	<1	<.2	<.05	<.05	.19	<.05	<5	E.07	<.05
30	434012093243601	07-16-96	1019	do.	<1	<.2	<.05	<.05	.20	<.05	<5	E.09	<.05
31	433109093004001	07-10-96	1159	do.	<1	<.2	<.05	<.05	E.08	<.05	<5	<.05	<.05
32	433323092383201	07-11-96	0939	do.	<1	<.2	<.05	<.05	E.08	<.05	<5	<.05	<.05
			0944	replicate	<1	<.2	<.05	<.05	E.07	<.05	<5	<.05	<.05
33	434732092545001	07-15-96	1237	blank	<1	<.2	<.05	<.05	.19	<.05	<5	.28	<.05
			1239	do.	<1	<.2	<.05	<.05	.45	<.05	<5	.76	<.05
			1259	regular	<1	<.2	<.05	<.05	.19	<.05	<5	E.07	<.05

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Trichloro-fluoro-methane	Vinyl acetate	Vinyl bromide	Vinyl chloride	cis-1, 2-Di-chloro-ethylene	cis-1, 3-Di-chloro-propene	m- and p-xylene	o-ethyl toluene	o-xylene
1	420424092175101	06-19-96	1139	regular	<0.10	<5	<0.10	<0.10	<0.05	<0.10	<0.05	<0.05	<0.05
2	421157091554201	06-18-96	1539	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
3	423056092054601	06-26-96	1219	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
4	423940092102801	06-26-96	1014	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
5	421850091574001	06-18-96	1029	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
6	422329091455101	06-27-96	1024	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
7	423328092464901	07-01-96	1429	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
8	425158092402301	07-03-96	1024	blank	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
			1044	regular	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
9	425757092503001	07-03-96	1419	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
10	415600091033701	06-17-96	1054	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
11	430216093142901	07-09-96	1259	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
12	430532092305401	07-08-96	1354	blank	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
			1414	regular	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
13	430947092590101	07-09-96	0959	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
14	421944092471701	07-01-96	1144	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
			1149	replicate	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
15	422524092353101	06-25-96	1259	regular	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
16	422631092454801	07-02-96	1329	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
17	422723092470701	07-02-96	1029	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
18	431614092275401	07-17-96	1009	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
			1014	replicate	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
19	413652092035801	06-12-96	1224	regular	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
20	414056091325201	06-05-96	1136	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
21	420206091244901	06-20-96	1059	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
			1104	replicate	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
22	412030091113801	06-10-96	1049	regular	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
23	413401091010901	06-11-96	1139	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
24	414153090350801	06-06-96	1129	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
25	415231092295301	06-19-96	1429	do.	<.20	<10	<.20	<.20	<.10	<.20	<.10	<.10	<.10

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Trichloro-fluoro-methane	Vinyl acetate	Vinyl bromide	Vinyl chloride	cis-1, 2-Di-chloro-ethylene	cis-1, 3-Di-chloro-propene	m- and p-xylene	o-ethyl toluene	o-xylene
26	421030092340001	06-25-96	1029	regular	<0.10	<5	<0.10	<0.10	<0.05	<0.10	<0.05	<0.05	<0.05
27	421120092190501	06-24-96	1019	blank	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
			1039	regular	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
28	431725093310801	07-10-96	0829	do.	<1.0	<50	<1.0	<1.0	<.50	<1.0	<.50	<.50	<.50
29	433317093175601	07-16-96	1214	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
30	434012093243601	07-16-96	1019	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
31	433109093004001	07-10-96	1159	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
32	433323092383201	07-11-96	0939	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
			0944	replicate	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
33	434732092545001	07-15-96	1237	blank	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05
			1239	do.	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	E.06
			1259	regular	<.10	<5	<.10	<.10	<.05	<.10	<.05	<.05	<.05

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	sec-butyl-benzene	tert-butyl methyl ether	tert-butyl-benzene	tert-pentyl methyl ether	trans-1,2-dichloro-ethylene	trans-1,3-dichloro-propene	trans-1,4-dichloro-2-butene	1, 2-di-chloro-ethane-d4 (surrogate)	Toluene-d8 (surrogate)
1	420424092175101	06-19-96	1139	regular	<0.05	<0.1	<0.05	<0.1	<0.05	<0.1	<5	112	95
2	421157091554201	06-18-96	1539	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	103	97
3	423056092054601	06-26-96	1219	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	104	92
4	423940092102801	06-26-96	1014	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	108	96
5	421850091574001	06-18-96	1029	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	100	97
6	422329091455101	06-27-96	1024	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	104	100
7	423328092464901	07-01-96	1429	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	107	98
8	425158092402301	07-03-96	1024	blank	<.05	<.1	<.05	<.1	<.05	<.1	<5	110	99
			1044	regular	<.05	<.1	<.05	<.1	<.05	<.1	<5	111	99
9	425757092503001	07-03-96	1419	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	112	99
10	415600091033701	06-17-96	1054	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	111	92
11	430216093142901	07-09-96	1259	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	112	102
12	430532092305401	07-08-96	1354	blank	<.05	<.1	<.05	<.1	<.05	<.1	<5	110	98
			1414	regular	<.05	<.1	<.05	<.1	<.05	<.1	<5	116	97
13	430947092590101	07-09-96	0959	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	113	98
14	421944092471701	07-01-96	1144	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	111	96
			1149	replicate	<.05	<.1	<.05	<.1	<.05	<.1	<5	111	97
15	422524092353101	06-25-96	1259	regular	<.05	<.1	<.05	<.1	<.05	<.1	<5	100	101
16	422631092454801	07-02-96	1329	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	107	95
17	422723092470701	07-02-96	1029	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	104	102
18	431614092275401	07-17-96	1009	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	108	91
			1014	replicate	<.05	<.1	<.05	<.1	<.05	<.1	<5	111	93
19	413652092035801	06-12-96	1224	regular	<.05	<.1	<.05	<.1	<.05	<.1	<5	103	97
20	414056091325201	06-05-96	1136	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	99	96
21	420206091244901	06-20-96	1059	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	105	96
			1104	replicate	<.05	<.1	<.05	<.1	<.05	<.1	<5	109	98
22	412030091113801	06-10-96	1049	regular	<.05	<.1	<.05	<.1	<.05	<.1	<5	103	96
23	413401091010901	06-11-96	1139	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	102	94
24	414153090350801	06-06-96	1129	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	104	100
25	415231092295301	06-19-96	1429	do.	<.10	<.2	<.10	<.2	<.10	<.2	<10	106	96

Table 26. Concentrations of volatile organic compounds in samples from wells completed in the Silurian-Devonian and Upper Carbonate aquifers, 1996—Continued

Map number (fig. 2)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	sec-butyl-benzene	tert-butyl methyl ether	tert-butyl-benzene	tert-pentyl methyl ether	trans-1,2-dichloro-ethylene	trans-1,3-dichloro-propene	trans-1,4-dichloro-2-butene	1, 2-di-chloro-ethane-d4 (surrogate)	Toluene-d8 (surrogate)
26	421030092340001	06-25-96	1029	regular	<0.05	<0.1	<0.05	<0.1	<0.05	<0.1	<5	104	97
27	421120092190501	06-24-96	1019	blank	<.05	<.1	<.05	<.1	<.05	<.1	<5	108	99
			1039	regular	<.05	<.1	<.05	<.1	<.05	<.1	<5	108	100
28	431725093310801	07-10-96	0829	do.	<.50	<1.0	<.50	<1.0	<.50	<1.0	<50	117	100
29	433317093175601	07-16-96	1214	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	107	94
30	434012093243601	07-16-96	1019	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	111	97
31	433109093004001	07-10-96	1159	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	115	96
32	433323092383201	07-11-96	0939	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	100	99
			0944	replicate	<.05	<.1	<.05	<.1	<.05	<.1	<5	109	92
33	434732092545001	07-15-96	1237	blank	<.05	<.1	<.05	<.1	<.05	<.1	<5	110	98
			1239	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	118	103
			1259	regular	<.05	<.1	<.05	<.1	<.05	<.1	<5	117	100

Table 27. Miscellaneous onsite determinations in samples from wells in the Iowa River alluvial aquifer, 1996

[μS/cm, microsiemens per centimeter at 25 degrees Celsius; °C, degrees Celsius; mg/L, milligrams per liter; %, percent]

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Turbidity	Specific conductance (μS/cm)	pH (standard units)	Water temperature (°C)	Oxygen, dissolved (mg/L)	Dissolved oxygen saturation (%)	Alkalinity (mg/L as $CaCO_3$)	Bicarbonate concentration (mg/L as HCO_3)	Carbonate concentration (mg/L as CO_3)
1	415211092164101	07-23-96	1200	regular	--	1,280	7.0	12.0	0.1	1	236	288	0
2	415211092164102	07-23-96	1100	do.	--	890	6.7	12.0	.1	1	232	283	0
3	414816092053401	07-31-96	1320	do.	12	444	7.1	11.0	.1	1	184	225	0
4	414816092053402	07-31-96	1140	do.	2.0	414	6.4	12.0	.3	2	134	164	0
5	414816092053403	07-31-96	1030	do.	3.0	401	6.4	12.5	.1	1	181	221	0
6	414818092055401	08-06-96	1010	do.	32	681	6.8	11.5	.1	0	274	334	0
7	414818092055402	08-06-96	0910	do.	6.0	480	6.3	12.0	.1	0	159	194	0
8	414818092055403	08-05-96	1015	do.	5.0	419	6.3	13.0	.1	1	132	161	0
9	414828092014201	08-14-96	1000	do.	11	705	6.8	11.0	.1	1	300	366	0
10	414900092073801	08-01-96	1200	do.	1.0	449	6.9	11.0	0	0	186	227	0
11	414907092083001	07-30-96	1540	do.	8.0	483	7.1	11.5	.1	1	212	259	0
12	414907092083004	07-30-96	1245	do.	22	385	6.0	17.0	.3	3	103	1,130	0
13	414907092083003	07-30-96	1410	do.	110	457	6.9	14.0	.2	2	195	238	0
14	414930092093801	08-01-96	0920	do.	2.0	475	7.0	11.0	.1	1	163	199	0
15	415020092094001	07-25-96	1130	do.	8.0	554	6.9	12.5	7.7	74	166	233	0
16	415020092094003	07-29-96	0930	do.	71	767	6.7	14.0	.5	5	247	301	0
17	415020092094004	07-25-96	1010	do.	120	447	6.3	14.0	.6	6	184	225	0
18	415020092094010	07-29-96	1110	do.	7.0	694	7.1	11.0	2.9	27	308	376	0
19	415039092164001	08-13-96	0940	do.	0	642	6.7	11.0	1.1	10	292	356	0
20	415045092145601	08-08-96	0930	do.	0	589	7.0	11.0	6.5	60	190	232	0
21	415052092120301	08-07-96	0930	do.	4.0	668	6.8	10.5	.1	1	239	292	0
22	415105092132501	08-07-96	1110	do.	2.0	562	7.0	11.0	0	0	188	229	0
23	415105092135201	08-08-96	1140	do.	3.0	451	7.2	10.5	.1	1	153	187	0

Table 28. Nutrient concentrations in samples from wells in the Iowa River alluvial aquifer, 1996

[mg/L, milligrams per liter; <, less than]

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Nitrogen ammonia, dissolved (mg/L)	Nitrogen, nitrite, dissolved (mg/L)	Nitrogen ammonia plus organic, dissolved (mg/L)	Nitrite plus nitrate (mg/L)	Phosphorus, total (mg/L)	Orthophos-phorus total as P (mg/L)	Dissolved organic carbon (mg/L)
1	415211092164101	07-23-96	1200	regular	0.23	0.02	0.20	0.06	0.12	0.04	1.2
2	415211092164102	07-23-96	1100	do.	.09	<.01	<.20	.06	.12	.16	2.1
3	414816092053401	07-31-96	1320	do.	.29	<.01	.30	.11	.02	.05	2.3
4	414816092053402	07-31-96	1140	do.	.02	.03	<.20	3.1	.04	.05	2.2
5	414816092053403	07-31-96	1030	do.	.04	.02	<.20	.21	.02	.05	2.5
6	414818092055401	08-06-96	1010	do.	.07	.02	<.20	<.05	.08	.08	.7
			1015	replicate	.10	.02	<.20	<.05	<.01	.01	1.0
7	414818092055402	08-06-96	0910	regular	.06	.02	<.20	.06	.05	.02	.9
8	414818092055403	08-05-96	1015	do.	.05	.01	<.20	.11	<.01	.01	1.1
9	414828092014201	08-14-96	1000	do.	.13	.01	<.20	.05	.07	.06	1.2
10	414900092073801	08-01-96	1200	do.	.06	<.01	<.20	<.05	.11	.08	.8
			1205	replicate	.06	<.01	<.20	<.05	.03	.05	.8
11	414907092083001	07-30-96	1540	regular	.08	<.01	<.20	.09	.01	.08	1.2
12	414907092083004	07-30-96	1245	do.	.05	<.01	<.20	8.1	.13	.18	1.7
13	414907092083003	07-30-96	1410	do.	.05	<.01	<.20	.09	<.01	.01	1.5
14	414930092093801	08-01-96	0920	do.	.25	<.01	.30	.07	.05	.09	.9
15	415020092094001	07-25-96	1130	do.	.04	<.01	<.20	18	.08	.12	2.8
16	415020092094003	07-29-96	0930	do.	.04	.03	.30	10	.07	.10	3.2
17	415020092094004	07-25-96	1010	do.	.05	.03	<.20	1.7	.10	.16	670
18	415020092094010	07-29-96	1110	do.	.04	<.01	.20	6.7	.09	.11	.6
19	415039092164001	08-13-96	0940	do.	.03	.01	<.20	.32	.06	.09	1.6
			0945	replicate	.03	<.01	<.20	.32	.06	.09	1.5
20	415045092145601	08-08-96	0930	regular	.02	<.01	<.20	17	.11	.16	1.0
21	415052092120301	08-07-96	0910	blank	.02	<.01	<.20	.07	<.01	.01	.9
			0930	regular	.13	<.01	<.20	.06	.03	.02	1.5
22	415105092132501	08-07-96	1110	do.	.52	<.01	.60	.07	.30	.35	1.6
23	415105092135201	08-08-96	1140	do.	.02	<.01	<.20	.12	<.01	.04	.9

Table 29. Major ion concentrations in samples from wells in the Iowa River alluvial aquifer, 1996

[mg/L, milligrams per liter; µg/L, micrograms per liter; <, less than; --, missing data]

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Calcium (mg/L as Ca)	Magnesium (mg/L as Mg)	Sodium (mg/L as Na)	Potassium (mg/L as K)	Chloride (mg/L as Cl)	Sulfate (mg/L as SO_4)	Fluoride (mg/L as F)	Silica (mg/L as SiO_2)	Bromide (mg/L at Br)	Iron (µg/L as Fe)	Manganese (µg/L as Mn)
1	415211092164101	07-23-96	1200	regular	180	63	20	1.7	22	470	0.4	24	0.08	3,700	550
2	415211092164102	07-23-96	1100	do.	120	43	11	1.4	18	240	.7	17	.06	4	650
3	414816092053401	07-31-96	1320	do.	59	16	8.8	1.2	22	27	.2	23	.10	1,200	240
4	414816092053402	07-31-96	1140	do.	55	16	5.1	1.8	9.2	56	.2	14	.02	<3	2
5	414816092053403	07-31-96	1030	do.	62	15	3.4	.6	2.1	35	.3	13	<.01	4	18
6	414818092055401	08-06-96	1010	do.	95	28	7.9	1.7	9.0	89	.2	18	.06	4,900	800
			1015	replicate	97	28	8.1	1.7	9.6	90	.2	18	.08	5,000	830
7	414818092055402	08-06-96	0910	regular	61	20	5.7	1.0	9.0	72	.1	16	.04	5,500	940
8	414818092055403	08-05-96	1015	do.	52	18	5.6	.9	9.4	63	.1	17	.04	2,700	440
9	414828092014201	08-14-96	1000	do.	97	30	9.4	1.3	12	79	.2	19	.13	2,100	230
10	414900092073801	08-01-96	1200	do.	63	18	5.9	.8	4.7	49	.2	21	.03	1,700	410
			1205	replicate	63	18	5.8	.8	4.6	49	.2	21	.04	1,700	410
11	414907092083001	07-30-96	1540	regular	64	20	7.7	1.0	4.0	43	.2	21	.05	720	220
12	414907092083004	07-30-96	1245	do.	51	11	5.9	1.8	7.9	44	.2	11	.05	8	260
13	414907092083003	07-30-96	1410	do.	63	17	6.1	1.1	8.3	39	.2	17	.04	1,200	700
14	414930092093801	08-01-96	0920	do.	63	19	8.0	.5	10	73	.3	22	.04	1,500	430
			1130	do.	71	23	2.9	.8	24	20	.2	22	.06	14	<1
16	415020092094003	07-29-96	0930	do.	100	36	5.2	2.6	42	70	.2	14	.06	4	830
17	415020092094004	07-25-96	1010	do.	63	14	4.7	4.2	7.5	28	.1	16	.01	4	68
18	415020092094010	07-29-96	1110	do.	92	32	8.6	1.0	11	41	.2	23	.08	140	5
19	415039092164001	08-13-96	0940	do.	79	30	12	.4	22	21	.2	21	.07	<3	1
			0945	replicate	78	30	12	.7	22	21	.2	21	.07	<3	<1
20	415045092145601	08-08-96	0930	regular	75	23	8.8	1.3	15	34	.2	23	.05	<3	<1
21	415052092120301	08-07-96	0910	blank	1.5	.07	2.6	<.1	<.10	<.10	<.1	14	<.01	100	4
21	415052092120301	08-07-96	0930	regular	93	25	12	1.1	14	100	.2	17	.05	830	1,100
22	415105092132501	08-07-96	1110	do.	71	24	8.0	2.2	13	97	1.0	23	.04	2,100	220
23	415105092135201	08-08-96	1140	do.	54	21	6.7	1.1	13	67	.2	11	.04	<3	540

Table 30. Concentrations of radiochemicals and stable isotopes in samples from wells in the Iowa River alluvial aquifer, 1996

[pCi/L, picocuries per liter; --, no data]

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Tritium, total (pCi/L)	Tritium, precision estimate (pCi/L)	Radon-222, total (pCi/L)	Radon-222, precision estimate (pCi/L)	Oxygen 18/16 ratio	Hydrogen 2/1 ratio
1	415211092164101	07-23-96	1200	regular	55	3.0	140	17	-7.28	-46.8
2	415211092164102	07-23-96	1100	do.	43	3.0	490	23	-6.93	-46.7
3	414816092053401	07-31-96	1320	do.	40	3.0	280	20	-8.42	-53.9
4	414816092053402	07-31-96	1140	do.	26	2.0	250	20	-9.30	-59.3
5	414816092053403	07-31-96	1030	do.	34	2.0	350	22	-6.56	-43.2
6	414818092055401	08-06-96	1010	do.	79	5.0	290	20	-7.84	-49.8
7	414818092055402	08-06-96	0910	do.	66	5.0	270	20	-7.65	-48.7
8	414818092055403	08-05-96	1015	do.	54	3.0	410	24	-7.72	-50.2
9	414828092014201	08-14-96	1000	do.	85	5.0	450	23	-7.46	-48.3
10	414900092073801	08-01-96	1200	do.	86	5.0	230	19	-7.44	-46.3
11	414907092083001	07-30-96	1540	do.	110	6.0	520	26	-7.71	-49.5
12	414907092083004	07-30-96	1245	do.	33	2.0	480	26	-8.20	-51.8
13	414907092083003	07-30-96	1410	do.	52	3.0	200	21	-7.98	-51.8
14	414930092093801	08-01-96	0920	do.	78	5.0	600	25	-7.29	-46.7
15	415020092094001	07-25-96	1130	do.	37	3.0	300	20	-7.10	-45.3
16	415020092094003	07-29-96	0930	do.	31	2.0	190	19	-8.11	-51.6
17	415020092094004	07-25-96	1010	do.	30	2.0	220	19	-8.96	-58.8
18	415020092094010	07-29-96	1110	do.	56	3.0	430	24	-7.85	-49.4
19	415039092164001	08-13-96	0940	do.	43	3.0	150	18	-7.31	-48.2
20	415045092145601	08-08-96	0930	do.	55	4.0	400	23	-7.75	-49.1
21	415052092120301	08-07-96	0930	do.	49	3.0	270	20	-7.79	-50.0
22	415105092132501	08-07-96	1110	do.	62	4.0	--	--	-7.45	-47.4
23	415105092135201	08-08-96	1140	do.	36	3.0	160	18	-6.60	-42.9

Table 31. Selected dissolved pesticide concentrations in samples from wells in the Iowa River alluvial aquifer, 1996

[All concentrations are in micrograms per liter; <, less than indicated value; E, estimated]

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	2, 6-diethyl-aniline	Aceta-chlor	Ala-chlor	Atra-zine	Azin-phos-methyl	Ben-fluralin	Butylate	Carbaryl	Carbo-furan	Chlor-pyrifos	Cyan-azine
1	415211092164101	07-23-96	1200	regular	<0.003	<0.002	<0.002	<0.001	<0.001	<0.002	<0.002	<0.003	<0.003	<0.004	<0.004
2	415211092164102	07-23-96	1100	do.	<.003	<.002	<.002	.031	<.001	<.002	<.002	<.003	<.003	<.004	<.004
3	414816092053401	07-31-96	1320	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004
4	414816092053402	07-31-96	1140	do.	<.003	<.002	<.002	.043	<.001	<.002	<.002	<.003	<.003	<.004	<.004
5	414816092053403	07-31-96	1030	do.	<.003	<.002	<.002	.034	<.001	<.002	<.002	<.003	<.003	<.004	<.004
6	414818092055401	08-06-96	1010	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004
			1015	replicate	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004
7	414818092055402	08-06-96	0910	regular	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004
8	414818092055403	08-05-96	1015	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004
9	414828092014201	08-14-96	1000	do.	.008	.014	<.002	.036	<.001	<.002	<.002	<.003	<.003	<.004	.021
10	414900092073801	08-01-96	1200	do.	.004	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004
			1205	replicate	.004	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004
11	414907092083001	07-30-96	1540	regular	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004
12	414907092083004	07-30-96	1245	do.	<.003	<.002	<.002	.540	<.001	<.002	<.002	<.003	<.003	<.004	.017
13	414907092083003	07-30-96	1410	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004
14	414930092093801	08-01-96	0920	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004
15	415020092094001	07-25-96	1130	do.	<.003	<.002	<.002	.470	<.001	<.002	<.002	<.003	<.003	<.004	<.004
16	415020092094003	07-29-96	0930	do.	<.003	<.002	<.002	.008	<.001	<.002	<.002	<.003	<.003	<.004	<.004
17	415020092094004	07-25-96	1010	do.	<.003	.005	<.002	.048	<.001	<.002	<.002	<.003	<.003	<.004	.011
18	415020092094010	07-29-96	1110	do.	<.003	<.002	<.002	.033	<.001	<.002	<.002	<.003	<.003	<.004	<.004
19	415039092164001	08-13-96	0940	do.	<.003	<.002	<.002	.051	<.001	<.002	<.002	<.003	<.003	<.004	<.004
			0945	replicate	<.003	<.002	<.002	.047	<.001	<.002	<.002	<.003	<.003	<.004	<.004
20	415045092145601	08-08-96	0930	regular	<.003	<.002	<.002	.085	<.001	<.002	<.002	<.003	<.003	<.004	<.004
21	415052092120301	08-07-96	0910	blank	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004
			0930	regular	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004
22	415105092132501	08-07-96	1110	do.	E.004	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004
23	415105092135201	08-08-96	1140	do.	<.003	<.002	<.002	<.001	<.001	<.002	<.002	<.003	<.003	<.004	<.004

Table 31. Selected dissolved pesticide concentrations in samples from wells in the Iowa River alluvial aquifer, 1996—Continued

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Dacthal	Deethyl-atrazine	Dia-zinon	Dieldrin	Disul-foton	EPTC	Ethal-fluralin	Ethopro-phos	Fonofos	Lindane	Linuron
1	415211092164101	07-23-96	1200	regular	<0.002	<0.002	<0.002	<0.001	<0.017	<0.002	<0.004	<0.003	<0.003	<0.004	<0.002
2	415211092164102	07-23-96	1100	do.	<.002	E.004	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
3	414816092053401	07-31-96	1320	do.	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
4	414816092053402	07-31-96	1140	do.	<.002	E.026	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
5	414816092053403	07-31-96	1030	do.	<.002	E.022	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
6	414818092055401	08-06-96	1010	do.	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
			1015	replicate	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
7	414818092055402	08-06-96	0910	regular	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
8	414818092055403	08-05-96	1015	do.	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
9	414828092014201	08-14-96	1000	do.	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
10	414900092073801	08-01-96	1200	do.	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
			1205	replicate	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
11	414907092083001	07-30-96	1540	regular	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
12	414907092083004	07-30-96	1245	do.	<.002	E.190	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
13	414907092083003	07-30-96	1410	do.	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
14	414930092093801	08-01-96	0920	do.	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
15	415020092094001	07-25-96	1130	do.	<.002	E.210	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
16	415020092094003	07-29-96	0930	do.	<.002	E.008	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
17	415020092094004	07-25-96	1010	do.	<.002	E.016	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
18	415020092094010	07-29-96	1110	do.	<.002	E.009	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
19	415039092164001	08-13-96	0940	do.	<.002	E.023	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
			0945	replicate	<.002	E.025	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
20	415045092145601	08-08-96	0930	regular	<.002	E.170	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
21	415052092120301	08-07-96	0910	blank	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
			0930	regular	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
22	415105092132501	08-07-96	1110	do.	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002
23	415105092135201	08-08-96	1140	do.	<.002	<.002	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002

Table 31. Selected dissolved pesticide concentrations in samples from wells in the Iowa River alluvial aquifer, 1996—Continued

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Mala-thion	Metol-achlor	Metri-buzin	Molin-ate	Naprop-amide	Para-thion	Para-thion-methyl	Pebulate	Pendi-methalin	Phorate	Pro-meton
1	415211092164101	07-23-96	1200	regular	<0.005	<0.002	<0.004	<0.004	<0.003	<0.004	<0.006	<0.004	<0.004	<0.002	<0.018
2	415211092164102	07-23-96	1100	do.	<.005	E.003	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
3	414816092053401	07-31-96	1320	do.	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
4	414816092053402	07-31-96	1140	do.	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
5	414816092053403	07-31-96	1030	do.	<.005	.004	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
6	414818092055401	08-06-96	1010	do.	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
			1015	replicate	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
7	414818092055402	08-06-96	0910	regular	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
8	414818092055403	08-05-96	1015	do.	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
9	414828092014201	08-14-96	1000	do.	<.005	.03	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
10	414900092073801	08-01-96	1200	do.	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
			1205	replicate	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
11	414907092083001	07-30-96	1540	regular	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
12	414907092083004	07-30-96	1245	do.	<.005	.01	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
13	414907092083003	07-30-96	1410	do.	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
14	414930092093801	08-01-96	0920	do.	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
15	415020092094001	07-25-96	1130	do.	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
16	415020092094003	07-29-96	0930	do.	<.005	E.003	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
17	415020092094004	07-25-96	1010	do.	<.005	.17	.22	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
18	415020092094010	07-29-96	1110	do.	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
19	415039092164001	08-13-96	0940	do.	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
			0945	replicate	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
20	415045092145601	08-08-96	0930	regular	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
21	415052092120301	08-07-96	0910	blank	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
			0930	regular	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
22	415105092132501	08-07-96	1110	do.	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018
23	415105092135201	08-08-96	1140	do.	<.005	<.002	<.004	<.004	<.003	<.004	<.006	<.004	<.004	<.002	<.018

Table 31. Selected dissolved pesticide concentrations in samples from wells in the Iowa River alluvial aquifer, 1996—Continued

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Prop-achlor	Prop-anil	Prop-argite	Propy-zamide	Sim-azine	Tebu-thiuron	Terbacil	Ter-bufos	Thio-bencarb	Tri-allate	Tri-fluralin
1	415211092164101	07-23-96	1200	regular	<0.007	<0.004	<0.013	<0.003	<0.005	<0.010	<0.007	<0.013	<0.002	<0.001	<0.002
2	415211092164102	07-23-96	1100	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
3	414816092053401	07-31-96	1320	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
4	414816092053402	07-31-96	1140	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
5	414816092053403	07-31-96	1030	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
6	414818092055401	08-06-96	1010	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
			1015	replicate	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
7	414818092055402	08-06-96	0910	regular	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
8	414818092055403	08-05-96	1015	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
9	414828092014201	08-14-96	1000	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
10	414900092073801	08-01-96	1200	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
			1205	replicate	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
11	414907092083001	07-30-96	1540	regular	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
12	414907092083004	07-30-96	1245	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
13	414907092083003	07-30-96	1410	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
14	414930092093801	08-01-96	0920	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
15	415020092094001	07-25-96	1130	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
16	415020092094003	07-29-96	0930	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
17	415020092094004	07-25-96	1010	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
18	415020092094010	07-29-96	1110	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
19	415039092164001	08-13-96	0940	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
			0945	replicate	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
20	415045092145601	08-08-96	0930	regular	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
21	415052092120301	08-07-96	0910	blank	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
			0930	regular	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
22	415105092132501	08-07-96	1110	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002
23	415105092135201	08-08-96	1140	do.	<.007	<.004	<.013	<.003	<.005	<.010	<.007	<.013	<.002	<.001	<.002

Table 31. Selected dissolved pesticide concentrations in samples from wells in the Iowa River alluvial aquifer, 1996—Continued

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	alpha-HCH	cis-Permethrin	p,p'-DDE
1	415211092164101	07-23-96	1200	regular	<0.002	<0.005	<0.006
2	415211092164102	07-23-96	1100	do.	<.002	<.005	<.006
3	414816092053401	07-31-96	1320	do.	<.002	<.005	<.006
4	414816092053402	07-31-96	1140	do.	<.002	<.005	<.006
5	414816092053403	07-31-96	1030	do.	<.002	<.005	<.006
6	414818092055401	08-06-96	1010	do.	<.002	<.005	<.006
			1015	replicate	<.002	<.005	<.006
7	414818092055402	08-06-96	0910	regular	<.002	<.005	<.006
8	414818092055403	08-05-96	1015	do.	<.002	<.005	<.006
9	414828092014201	08-14-96	1000	do.	<.002	<.005	<.006
10	414900092073801	08-01-96	1200	do.	<.002	<.005	<.006
			1205	replicate	<.002	<.005	<.006
11	414907092083001	07-30-96	1540	regular	<.002	<.005	<.006
12	414907092083004	07-30-96	1245	do.	<.002	<.005	<.006
13	414907092083003	07-30-96	1410	do.	<.002	<.005	<.006
14	414930092093801	08-01-96	0920	do.	<.002	<.005	<.006
15	415020092094001	07-25-96	1130	do.	<.002	<.005	<.006
16	415020092094003	07-29-96	0930	do.	<.002	<.005	<.006
17	415020092094004	07-25-96	1010	do.	<.002	<.005	<.006
18	415020092094010	07-29-96	1110	do.	<.002	<.005	<.006
19	415039092164001	08-13-96	0940	do.	<.002	<.005	<.006
			0945	replicate	<.002	<.005	<.006
20	415045092145601	08-08-96	0930	regular	<.002	<.005	<.006
21	415052092120301	08-07-96	0910	blank	<.002	<.005	<.006
			0930	regular	<.002	<.005	<.006
22	415105092132501	08-07-96	1110	do.	<.002	<.005	<.006
23	415105092135201	08-08-96	1140	do.	<.002	<.005	<.006

Table 32. Concentrations of selected dissolved pesticide surrogates in samples from wells in the Iowa River alluvial aquifer, 1996

[All concentrations are in micrograms per liter]

Map number (fig. 3)	Station identification	Diazinon (surrogate)	Terbuthyl-azine (surrogate)	alpha-HCH-d6 (surrogate)
1	415211092164101	104	107	88.9
2	415211092164102	104	106	94.2
3	414816092053401	95.6	110	92.9
4	414816092053402	103	109	103
5	414816092053403	109	112	104
6	414818092055401	106	109	90.7
		97.8	107	86.7
7	414818092055402	103	111	92.4
8	414818092055403	108	111	102
9	414828092014201	86.6	95.7	77.9
10	414900092073801	100	110	94.3
		95.9	105	90.5
11	414907092083001	102	114	101
12	414907092083004	109	111	107
13	414907092083003	105	113	99.1
14	414930092093801	105	113	90.6
15	415020092094001	99.8	106	97.4
16	415020092094003	110	103	97.1
17	415020092094004	105	107	99.3
18	415020092094010	102	103	93.2
19	415039092164001	106	112	101
		108	116	99.6
20	415045092145601	106	118	102
21	415052092120301	106	109	93.3
		100	109	95.5
22	415105092132501	93.5	105	87.9
23	415105092135201	111	117	103

Table 33. Concentrations of volatile organic compounds in samples from wells in the Iowa River alluvial aquifer, 1996

[All concentrations are in micrograms per liter. <, less than indicated value; E, estimate]

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	1, 1, 1, 2-Tetrachloroethane	1, 1, 1-Trichloroethane	1, 1, 2, 2-Tetrachloroethane	1, 1, 2-Trichloroethane	1, 1, 2-Trichlorotrifluoroethane	1, 1-Dichloroethane	1, 1-Dichloroethylene	1, 1-Dichloropropene	1, 2, 3, 4-Tetramethylbenzene
1	415211092164101	07-23-96	1159	regular	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.1	<0.05	<0.05
2	415211092164102	07-23-96	1059	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
3	414816092053401	07-31-96	1319	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
4	414816092053402	07-31-96	1139	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
5	414816092053403	07-31-96	1029	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
6	414818092055401	08-06-96	1009	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
			1014	replicate	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
7	414818092055402	08-06-96	0909	regular	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
8	414818092055403	08-05-96	1014	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
9	414828092014201	08-14-96	0930	blank	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
			0935	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
			0940	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
			0959	regular	<.20	<.20	<.4	<.4	<.20	<.20	<.4	<.20	<.20
10	414900092073801	08-01-96	1159	do.	<.20	<.20	<.4	<.4	<.20	<.20	<.4	<.20	<.20
			1204	replicate	<.20	<.20	<.4	<.4	<.20	<.20	<.4	<.20	<.20
11	414907092083001	07-30-96	1539	regular	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
12	414907092083004	07-30-96	1244	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
13	414907092083003	07-30-96	1409	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
14	414930092093801	08-01-96	0919	do.	<.20	<.20	<.4	<.4	<.20	<.20	<.4	<.20	<.20
15	415020092094001	07-25-96	1129	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
16	415020092094003	07-29-96	0929	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
17	415020092094004	07-25-96	1009	do.	<.05	<.05	<.1	<.1	E.07	<.05	<.1	<.05	<.05
18	415020092094010	07-29-96	1109	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
19	415039092164001	08-13-96	0939	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
			0944	replicate	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
20	415045092145601	08-08-96	0929	regular	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
21	415052092120301	08-07-96	0909	blank	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
			0929	regular	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
22	415105092132501	08-07-96	1109	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05
23	415105092135201	08-08-96	1139	do.	<.05	<.05	<.1	<.1	<.05	<.05	<.1	<.05	<.05

Table 33. Concentrations of volatile organic compounds in samples from wells in the Iowa River alluvial aquifer, 1996—Continued

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	1, 2, 3, 5-Tetra-methyl-benzene	1, 2, 3-Trichloro-benzene	1, 2, 3-Trichloro-propane	1, 2, 3-Trimethyl-benzene	1, 2, 4-Trichloro-benzene	1, 2, 4-Trimethyl-benzene	1,2-Dibromo-3-chloro-propane	1, 2-Dibromo-ethane	1,2-Dichloro-benzene
1	415211092164101	07-23-96	1159	regular	<0.05	<0.2	<0.2	<0.05	<0.2	<0.05	<0.5	<0.1	<0.05
2	415211092164102	07-23-96	1059	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
3	414816092053401	07-31-96	1319	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
4	414816092053402	07-31-96	1139	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
5	414816092053403	07-31-96	1029	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
6	414818092055401	08-06-96	1009	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
			1014	replicate	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
7	414818092055402	08-06-96	0909	regular	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
8	414818092055403	08-05-96	1014	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
9	414828092014201	08-14-96	0930	blank	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
			0935	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
			0940	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
			0959	regular	<.20	<.8	<.8	<.20	<.8	<.20	< 2.0	<.4	<.20
10	414900092073801	08-01-96	1159	do.	<.20	<.8	<.8	<.20	<.8	<.20	< 2.0	<.4	<.20
			1204	replicate	<.20	<.8	<.8	<.20	<.8	<.20	< 2.0	<.4	<.20
11	414907092083001	07-30-96	1539	regular	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
12	414907092083004	07-30-96	1244	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
13	414907092083003	07-30-96	1409	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
14	414930092093801	08-01-96	0919	do.	<.20	<.8	<.8	<.20	<.8	<.20	< 2.0	<.4	<.20
15	415020092094001	07-25-96	1129	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
16	415020092094003	07-29-96	0929	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
17	415020092094004	07-25-96	1009	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
18	415020092094010	07-29-96	1109	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
19	415039092164001	08-13-96	0939	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
			0944	replicate	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
20	415045092145601	08-08-96	0929	regular	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
21	415052092120301	08-07-96	0909	blank	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
			0929	regular	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
22	415105092132501	08-07-96	1109	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05
23	415105092135201	08-08-96	1139	do.	<.05	<.2	<.2	<.05	<.2	<.05	<.5	<.1	<.05

Table 33. Concentrations of volatile organic compounds in samples from wells in the Iowa River alluvial aquifer, 1996—Continued

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	1, 2-Dichloro-ethane	1, 2-Dichloro-propane	1, 3, 5-Trimethyl-benzene	1, 3-Dichloro-benzene	1, 3-Dichloro-propane	1, 4-Bromofluoro-benzene (surrogate)	1,3-Dichloro-benzene	2, 2-Dichloro-propane	2-Butanone
1	415211092164101	07-23-96	1159	regular	<0.05	<0.05	<0.05	<0.05	<0.05	89	<0.05	<0.05	<5
2	415211092164102	07-23-96	1059	do.	<.05	<.05	<.05	<.05	<.05	88	<.05	<.05	<5
3	414816092053401	07-31-96	1319	do.	<.05	<.05	<.05	<.05	<.05	90	<.05	<.05	<5
4	414816092053402	07-31-96	1139	do.	<.05	<.05	<.05	<.05	<.05	82	<.05	<.05	<5
5	414816092053403	07-31-96	1029	do.	<.05	<.05	<.05	<.05	<.05	90	<.05	<.05	<5
6	414818092055401	08-06-96	1009	do.	<.05	<.05	<.05	<.05	<.05	77	<.05	<.05	<5
			1014	replicate	<.05	<.05	<.05	<.05	<.05	75	<.05	<.05	<5
7	414818092055402	08-06-96	0909	regular	<.05	<.05	<.05	<.05	<.05	75	<.05	<.05	<5
8	414818092055403	08-05-96	1014	do.	<.05	<.05	<.05	<.05	<.05	83	<.05	<.05	<5
9	414828092014201	08-14-96	0930	blank	<.05	<.05	<.05	<.05	<.05	79	<.05	<.05	<5
			0935	do.	<.05	<.05	<.05	<.05	<.05	77	<.05	<.05	<5
			0940	do.	<.05	<.05	<.05	<.05	<.05	76	<.05	<.05	<5
			0959	regular	<.20	<.20	<.20	<.20	<.20	69	<.20	<.20	<20
10	414900092073801	08-01-96	1159	do.	<.20	<.20	<.20	<.20	<.20	81	<.20	<.20	<20
			1204	replicate	<.20	<.20	<.20	<.20	<.20	79	<.20	<.20	<20
11	414907092083001	07-30-96	1539	regular	<.05	<.05	<.05	<.05	<.05	83	<.05	<.05	<5
12	414907092083004	07-30-96	1244	do.	<.05	<.05	<.05	<.05	<.05	83	<.05	<.05	<5
13	414907092083003	07-30-96	1409	do.	<.05	<.05	<.05	<.05	<.05	81	<.05	<.05	<5
14	414930092093801	08-01-96	0919	do.	<.20	<.20	<.20	<.20	<.20	80	<.20	<.20	<20
15	415020092094001	07-25-96	1129	do.	<.05	<.05	<.05	<.05	<.05	91	<.05	<.05	<5
16	415020092094003	07-29-96	0929	do.	<.05	<.05	<.05	<.05	<.05	91	<.05	<.05	<5
17	415020092094004	07-25-96	1009	do.	<.05	<.05	<.05	<.05	<.05	86	<.05	<.05	<5
18	415020092094010	07-29-96	1109	do.	<.05	<.05	<.05	<.05	<.05	89	<.05	<.05	<5
19	415039092164001	08-13-96	0939	do.	<.05	<.05	<.05	<.05	<.05	73	<.05	<.05	<5
			0944	replicate	<.05	<.05	<.05	<.05	<.05	71	<.05	<.05	<5
20	415045092145601	08-08-96	0929	regular	<.05	<.05	<.05	<.05	<.05	97	<.05	<.05	<5
21	415052092120301	08-07-96	0909	blank	<.05	<.05	<.05	<.05	<.05	75	<.05	<.05	<5
			0929	regular	<.05	<.05	<.05	<.05	<.05	71	<.05	<.05	<5
22	415105092132501	08-07-96	1109	do.	<.05	<.05	<.05	<.05	<.05	75	<.05	<.05	<5
23	415105092135201	08-08-96	1139	do.	<.05	<.05	<.05	<.05	<.05	99	<.05	<.05	<5

Table 33. Concentrations of volatile organic compounds in samples from wells in the Iowa River alluvial aquifer, 1996—Continued

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	2-Chloro-toluene	2-Hexanone	3-Chloro-1-propene	4-Chloro-toluene	4-Isopropyl-1-methyl-benzene	4-Methyl-2-pentanone	Acetone	Acrylo-nitrile
1	415211092164101	07-23-96	1159	regular	<0.05	<5	<0.1	<.05	<.05	<5	<5	<2
2	415211092164102	07-23-96	1059	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
3	414816092053401	07-31-96	1319	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
4	414816092053402	07-31-96	1139	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
5	414816092053403	07-31-96	1029	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
6	414818092055401	08-06-96	1009	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
			1014	replicate	<.05	<5	<.1	<.05	<.05	<5	<5	<2
7	414818092055402	08-06-96	0909	regular	<.05	<5	<.1	<.05	<.05	<5	<5	<2
8	414818092055403	08-05-96	1014	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
9	414828092014201	08-14-96	0930	blank	<.05	<5	<.1	<.05	<.05	<5	<5	<2
			0935	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
			0940	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
			0959	regular	<.20	<20	<.4	<.20	<.20	<20	11	<8
10	414900092073801	08-01-96	1159	do.	<.20	<20	<.4	<.20	<.20	<20	<20	<8
			1204	replicate	<.20	<20	<.4	<.20	<.20	<20	<20	<8
11	414907092083001	07-30-96	1539	regular	<.05	<5	<.1	<.05	<.05	<5	<5	<2
12	414907092083004	07-30-96	1244	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
13	414907092083003	07-30-96	1409	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
14	414930092093801	08-01-96	0919	do.	<.20	<20	<.4	<.20	<.20	<20	<20	<8
15	415020092094001	07-25-96	1129	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
16	415020092094003	07-29-96	0929	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
17	415020092094004	07-25-96	1009	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
18	415020092094010	07-29-96	1109	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
19	415039092164001	08-13-96	0939	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
			0944	replicate	<.05	<5	<.1	<.05	<.05	<5	<5	<2
20	415045092145601	08-08-96	0929	regular	<.05	<5	<.1	<.05	<.05	<5	<5	<2
21	415052092120301	08-07-96	0909	blank	<.05	<5	<.1	<.05	<.05	<5	<5	<2
			0929	regular	<.05	<5	<.1	<.05	<.05	<5	<5	<2
22	415105092132501	08-07-96	1109	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2
23	415105092135201	08-08-96	1139	do.	<.05	<5	<.1	<.05	<.05	<5	<5	<2

Table 33. Concentrations of volatile organic compounds in samples from wells in the Iowa River alluvial aquifer, 1996—Continued

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Benzene	Bromo-benzene	Bromo-chloro-methane	Bromo-dichloro-methane	Bromo-form	Bromo-methane	Butyl-benzene	Carbon disulfide	Chloro-benzene
1	415211092164101	07-23-96	1159	regular	<0.05	<0.05	<0.1	<0.1	<0.2	<0.1	<0.05	<0.05	<0.05
2	415211092164102	07-23-96	1059	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
3	414816092053401	07-31-96	1319	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	.23	<.05
4	414816092053402	07-31-96	1139	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
5	414816092053403	07-31-96	1029	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	.39	<.05
6	414818092055401	08-06-96	1009	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	1.4	<.05
			1014	replicate	<.05	<.05	<.1	<.1	<.2	<.1	<.05	5.3	<.05
7	414818092055402	08-06-96	0909	regular	<.05	<.05	<.1	<.1	<.2	<.1	<.05	6.2	<.05
8	414818092055403	08-05-96	1014	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	6.7	<.05
9	414828092014201	08-14-96	0930	blank	<.05	<.05	<.1	<.1	<.2	<.1	<.05	2.9	<.05
			0935	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	3.7	<.05
			0940	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	.11	<.05
			0959	regular	<.20	<.20	<.4	<.4	<.8	<.4	<.20	E2.9	<.20
10	414900092073801	08-01-96	1159	do.	<.20	<.20	<.4	<.4	<.8	<.4	<.20	3.0	<.20
			1204	replicate	<.20	<.20	<.4	<.4	<.8	<.4	<.20	.67	<.20
11	414907092083001	07-30-96	1539	regular	<.05	<.05	<.1	<.1	<.2	<.1	<.05	2.3	<.05
12	414907092083004	07-30-96	1244	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	E.07	<.05
13	414907092083003	07-30-96	1409	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	2.8	<.05
14	414930092093801	08-01-96	0919	do.	<.20	<.20	<.4	<.4	<.8	<.4	<.20	5.8	<.20
15	415020092094001	07-25-96	1129	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
16	415020092094003	07-29-96	0929	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	.83	<.05
17	415020092094004	07-25-96	1009	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	<.05	<.05
18	415020092094010	07-29-96	1109	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	3.4	<.05
19	415039092164001	08-13-96	0939	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	E7.3	<.05
			0944	replicate	<.05	<.05	<.1	<.1	<.2	<.1	<.05	E6.2	<.05
20	415045092145601	08-08-96	0929	regular	<.05	<.05	<.1	<.1	<.2	<.1	<.05	E4.4	<.05
21	415052092120301	08-07-96	0909	blank	<.05	<.05	<.1	<.1	<.2	<.1	<.05	E2.1	<.05
			0929	regular	<.05	<.05	<.1	<.1	<.2	<.1	<.05	E1.4	<.05
22	415105092132501	08-07-96	1109	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	E6.9	<.05
23	415105092135201	08-08-96	1139	do.	<.05	<.05	<.1	<.1	<.2	<.1	<.05	E1.5	<.05

Table 33. Concentrations of volatile organic compounds in samples from wells in the Iowa River alluvial aquifer, 1996—Continued

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Chloro-ethane	Chloro-form	Chloro-methane	Dibromo-chloro-methane	Dibromo-methane	Dichloro-difluoro-methane	Dichloro-methane	Diethyl ether	Di-isopropyl ether
1	415211092164101	07-23-96	1159	regular	<0.1	<0.05	<0.28	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1
2	415211092164102	07-23-96	1059	do.	<.1	<.05	<.28	<.1	<.1	<.2	<.1	<.1	<.1
3	414816092053401	07-31-96	1319	do.	<.1	<.05	<.28	<.1	<.1	<.2	<.1	<.1	<.1
4	414816092053402	07-31-96	1139	do.	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
5	414816092053403	07-31-96	1029	do.	<.1	<.05	<.28	<.1	<.1	<.2	<.1	<.1	<.1
6	414818092055401	08-06-96	1009	do.	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
			1014	replicate	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
7	414818092055402	08-06-96	0909	regular	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
8	414818092055403	08-05-96	1014	do.	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
9	414828092014201	08-14-96	0930	blank	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
			0935	do.	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
			0940	do.	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
			0959	regular	<.4	<.20	<.8	<.4	<.4	<.8	<1.9	<.4	<.4
10	414900092073801	08-01-96	1159	do.	<.4	<.20	<.8	<.4	<.4	<.8	E.25	<.4	<.4
			1204	replicate	<.4	<.20	<.8	<.4	<.4	<.8	<.4	E.29	<.4
11	414907092083001	07-30-96	1539	regular	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
12	414907092083004	07-30-96	1244	do.	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
13	414907092083003	07-30-96	1409	do.	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
14	414930092093801	08-01-96	0919	do.	<.4	<.20	<.8	<.4	<.4	<.8	E.27	<.4	<.4
15	415020092094001	07-25-96	1129	do.	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
16	415020092094003	07-29-96	0929	do.	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
17	415020092094004	07-25-96	1009	do.	<.1	<.05	<.3	<.1	<.1	<.2	<.1	<.1	<.1
18	415020092094010	07-29-96	1109	do.	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
19	415039092164001	08-13-96	0939	do.	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
			0944	replicate	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
20	415045092145601	08-08-96	0929	regular	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
21	415052092120301	08-07-96	0909	blank	<.1	E.07	<.2	<.1	<.1	<.2	E.11	<.1	<.1
			0929	regular	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
22	415105092132501	08-07-96	1109	do.	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1
23	415105092135201	08-08-96	1139	do.	<.1	<.05	<.2	<.1	<.1	<.2	<.1	<.1	<.1

Table 33. Concentrations of volatile organic compounds in samples from wells in the Iowa River alluvial aquifer, 1996—Continued

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Ethyl meth-acrylate	Ethyl tertbutyl ether	Ethyl-benzene	Hexa-chloro-butadiene	Hexa-chloro-ethane	Isopropyl-benzene	Methyl acrylate	Methyl acrylo-nitrile	Methyl iodide
1	415211092164101	07-23-96	1159	regular	<1	<0.1	<0.05	<0.2	<0.05	<0.05	<2	<2	<0.05
2	415211092164102	07-23-96	1059	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
3	414816092053401	07-31-96	1319	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
4	414816092053402	07-31-96	1139	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
5	414816092053403	07-31-96	1029	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
6	414818092055401	08-06-96	1009	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
			1014	replicate	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
7	414818092055402	08-06-96	0909	regular	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
8	414818092055403	08-05-96	1014	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
9	414828092014201	08-14-96	0930	blank	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
			0935	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
			0940	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
			0959	regular	<4	<.4	<.20	<.8	<.20	<.20	<8	<8	<.20
10	414900092073801	08-01-96	1159	do.	<4	<.4	<.20	<.8	<.20	<.20	<8	<8	<.20
			1204	replicate	<4	<.4	<.20	<.8	<.20	<.20	<8	<8	<.20
11	414907092083001	07-30-96	1539	regular	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
12	414907092083004	07-30-96	1244	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
13	414907092083003	07-30-96	1409	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
14	414930092093801	08-01-96	0919	do.	<4	<.4	<.20	<.8	<.20	<.20	<8	<8	<.20
15	415020092094001	07-25-96	1129	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
16	415020092094003	07-29-96	0929	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
17	415020092094004	07-25-96	1009	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
18	415020092094010	07-29-96	1109	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
19	415039092164001	08-13-96	0939	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
			0944	replicate	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
20	415045092145601	08-08-96	0929	regular	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
21	415052092120301	08-07-96	0909	blank	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
			0929	regular	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
22	415105092132501	08-07-96	1109	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05
23	415105092135201	08-08-96	1139	do.	<1	<.1	<.05	<.2	<.05	<.05	<2	<2	<.05

Table 33. Concentrations of volatile organic compounds in samples from wells in the Iowa River alluvial aquifer, 1996—Continued

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Methyl meth-acrylate	Naph-thalene	Propyl-benzene	Styrene	Tetra-chloro-ethylene	Tetra-chloro-methane	Tetra-hydro-furan	Toluene	Trichloro-ethylene
1	415211092164101	07-23-96	1159	regular	<1	<0.2	<0.05	<0.05	<0.05	<0.05	<5	E0.07	<0.05
2	415211092164102	07-23-96	1059	do.	<1	<.2	<.05	<.05	<.05	<.05	<5	<.05	<.05
3	414816092053401	07-31-96	1319	do.	<1	<.2	<.05	<.05	E.07	<.05	<5	<.05	<.05
4	414816092053402	07-31-96	1139	do.	<1	<.2	<.05	<.05	E.03	<.05	<5	<.05	<.05
5	414816092053403	07-31-96	1029	do.	<1	<.2	<.05	<.05	.13	<.05	<5	E.06	<.05
6	414818092055401	08-06-96	1009	do.	<1	<.2	<.05	<.05	<.05	<.05	<5	<.05	<.05
			1014	replicate	<1	<.2	<.05	<.05	.10	<.05	<5	<.05	<.05
7	414818092055402	08-06-96	0909	regular	<1	<.2	<.05	<.05	<.05	<.05	<5	<.05	<.05
8	414818092055403	08-05-96	1014	do.	<1	<.2	<.05	<.05	E.05	<.05	<5	<.05	<.05
9	414828092014201	08-14-96	0930	blank	<1	<.2	<.05	<.05	<.05	<.05	<5	<.05	<.05
			0935	do.	<1	<.2	<.05	<.05	E.09	<.05	<5	<.05	<.05
			0940	do.	<1	<.2	<.05	<.05	<.05	<.05	<5	<.05	<.05
			0959	regular	<4	<.8	<.20	<.20	<.20	<.20	<20	<.20	<.20
10	414900092073801	08-01-96	1159	do.	<4	<.8	<.20	<.20	<.20	<.20	<20	<.20	<.20
			1204	replicate	<4	<.8	<.20	<.20	<.20	<.20	<20	<.20	<.20
11	414907092083001	07-30-96	1539	regular	<1	<.2	<.05	<.05	E.05	<.05	<5	<.05	<.05
12	414907092083004	07-30-96	1244	do.	<1	<.2	<.05	<.05	E.09	<.05	<5	E.05	<.05
13	414907092083003	07-30-96	1409	do.	<1	<.2	<.05	<.05	.12	<.05	<5	<.05	<.05
14	414930092093801	08-01-96	0919	do.	<4	<.8	<.20	<.20	<.20	<.20	<20	<.20	<.20
15	415020092094001	07-25-96	1129	do.	<1	<.2	<.05	<.05	<.05	<.05	<5	<.05	<.05
16	415020092094003	07-29-96	0929	do.	<1	<.2	<.05	<.05	E.07	<.05	<5	E.05	<.05
17	415020092094004	07-25-96	1009	do.	<1	<.2	<.05	<.05	E.05	<.05	<5	E.06	<.05
18	415020092094010	07-29-96	1109	do.	<1	<.2	<.05	<.05	<.05	<.05	<5	<.05	<.05
19	415039092164001	08-13-96	0939	do.	<1	<.2	<.05	<.05	<.05	<.05	<5	<.05	<.05
			0944	replicate	<1	<.2	<.05	<.05	<.05	<.05	<5	<.05	<.05
20	415045092145601	08-08-96	0929	regular	<1	<.2	<.05	<.05	E.26	<.05	<5	.11	<.05
21	415052092120301	08-07-96	0909	blank	<1	<.2	<.05	<.05	.14	<.05	<5	.10	<.05
			0929	regular	<1	<.2	<.05	<.05	<.05	<.05	<5	<.05	<.05
22	415105092132501	08-07-96	1109	do.	<1	<.2	<.05	<.05	<.05	<.05	<5	<.05	<.05
23	415105092135201	08-08-96	1139	do.	<1	<.2	<.05	<.05	E.09	<.05	<5	E.05	<.05

Table 33. Concentrations of volatile organic compounds in samples from wells in the Iowa River alluvial aquifer, 1996—Continued

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Trichloro-fluoro-methane	Vinyl acetate	Vinyl bromide	Vinyl chloride	cis-1, 2-Dichloro-ethylene	cis-1, 3-Dichloro-propene	m- and p-xylene	o-ethyl toluene	o-xylene
1	415211092164101	07-23-96	1159	regular	<0.1	<5	<0.1	<0.1	<0.05	<0.1	<0.05	<0.05	<0.05
2	415211092164102	07-23-96	1059	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
3	414816092053401	07-31-96	1319	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
4	414816092053402	07-31-96	1139	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
5	414816092053403	07-31-96	1029	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
6	414818092055401	08-06-96	1009	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
			1014	replicate	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
7	414818092055402	08-06-96	0909	regular	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
8	414818092055403	08-05-96	1014	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
9	414828092014201	08-14-96	0930	blank	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
			0935	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
			0940	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
			0959	regular	<.4	<20	<.4	<.4	<.20	<.4	<.20	<.20	<.20
10	414900092073801	08-01-96	1159	do.	<.4	<20	<.4	<.4	<.20	<.4	<.20	<.20	<.20
			1204	replicate	<.4	<20	<.4	<.4	<.20	<.4	<.20	<.20	<.20
11	414907092083001	07-30-96	1539	regular	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
12	414907092083004	07-30-96	1244	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
13	414907092083003	07-30-96	1409	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
14	414930092093801	08-01-96	0919	do.	<.4	<20	<.4	<.4	<.20	<.4	<.20	<.20	<.20
15	415020092094001	07-25-96	1129	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
16	415020092094003	07-29-96	0929	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
17	415020092094004	07-25-96	1009	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
18	415020092094010	07-29-96	1109	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
19	415039092164001	08-13-96	0939	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
			0944	replicate	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
20	415045092145601	08-08-96	0929	regular	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
21	415052092120301	08-07-96	0909	blank	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
			0929	regular	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
22	415105092132501	08-07-96	1109	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05
23	415105092135201	08-08-96	1139	do.	<.1	<5	<.1	<.1	<.05	<.1	<.05	<.05	<.05

Table 33. Concentrations of volatile organic compounds in samples from well in the Iowa River alluvial aquifer, 1996—Continued

Map number (fig. 3)	Station identification	Date (month-day-year)	Time (24-hour)	Type of sample	Sec-Butyl-benzene	tert-butyl methyl ether	tert-butyl-benzene	tert-pentyl methyl ether	trans-1,2-Dichloro-ethylene	trans-1,3-Dichloro-propene	trans-1,4-Dichloro-2-butene	1, 2-Di-chloro-ethane-d4 (surrogate)	Toluene-d8 (surrogate)
1	415211092164101	07-23-96	1159	regular	<0.05	<0.1	<0.05	<0.1	<0.05	<0.1	<5	110	96
2	415211092164102	07-23-96	1059	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	107	99
3	414816092053401	07-31-96	1319	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	102	95
4	414816092053402	07-31-96	1139	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	104	99
5	414816092053403	07-31-96	1029	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	105	98
6	414818092055401	08-06-96	1009	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	106	89
			1014	replicate	<.05	<.1	<.05	<.1	<.05	<.1	<5	102	89
7	414818092055402	08-06-96	0909	regular	<.05	<.1	<.05	<.1	<.05	<.1	<5	106	90
8	414818092055403	08-05-96	1014	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	106	91
9	414828092014201	08-14-96	0930	blank	<.05	<.1	<.05	<.1	<.05	<.1	<5	104	92
			0935	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	103	93
			0940	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	102	91
			0959	regular	<.20	<.4	<.20	<.4	<.20	<.4	<2	112	97
10	414900092073801	08-01-96	1159	do.	<.20	<.4	<.20	<.4	<.20	<.4	<2	107	97
			1204	replicate	<.20	<.4	<.20	<.4	<.20	<.4	<2	102	98
11	414907092083001	07-30-96	1539	regular	<.05	<.1	<.05	<.1	<.05	<.1	<5	106	96
12	414907092083004	07-30-96	1244	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	107	100
13	414907092083003	07-30-96	1409	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	100	93
14	414930092093801	08-01-96	0919	do.	<.20	<.4	<.20	<.4	<.20	<.4	<2	109	97
15	415020092094001	07-25-96	1129	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	105	99
16	415020092094003	07-29-96	0929	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	109	100
17	415020092094004	07-25-96	1009	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	110	91
18	415020092094010	07-29-96	1109	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	108	100
19	415039092164001	08-13-96	0939	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	111	93
			0944	replicate	<.05	<.1	<.05	<.1	<.05	<.1	<5	108	94
20	415045092145601	08-08-96	0929	regular	<.05	<.1	<.05	<.1	<.05	<.1	<5	109	96
21	415052092120301	08-07-96	0909	blank	<.05	<.1	<.05	<.1	<.05	<.1	<5	112	92
			0929	regular	<.05	<.1	<.05	<.1	<.05	<.1	<5	107	94
22	415105092132501	08-07-96	1109	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	109	91
23	415105092135201	08-08-96	1139	do.	<.05	<.1	<.05	<.1	<.05	<.1	<5	109	96