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Data Analysis Considerations for Pesticides Determined by National Water Quality Laboratory Schedule 2437

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Foreword

Sustaining the quality of the Nation's water resources and the health of our diverse ecosystems depends on the availability of sound water-resources data and information to develop effective, science-based policies. Effective management of water resources also brings more certainty and efficiency to important economic sectors. Taken together, these actions lead to immediate and long-term economic, social, and environmental benefits that make a difference to the lives of the almost 400 million people projected to live in the United States by 2050.

In 1991, Congress established the National Water-Quality Assessment (NAWQA) to address where, when, why, and how the Nation's water quality has changed, or is likely to change in the future, in response to human activities and natural factors. Since then, NAWQA has been a leading source of scientific data and knowledge used by national, regional, state, and local agencies to develop science-based policies and management strategies to improve and protect water resources used for drinking water, recreation, irrigation, energy development, and ecosystem needs (https://water.usgs.gov/nawqa/applications/). Plans for the third decade of NAWQA (2013–23) address priority water-quality issues and science needs identified by NAWQA stakeholders, such as the Advisory Committee on Water Information and the National Research Council, and are designed to meet increasing challenges related to population growth, increasing needs for clean water, and changing land-use and weather patterns.

Understanding the occurrence and distribution of pesticides in the Nation's waters is a priority water-quality issue. Pesticides in drinking water and aquatic ecosystems have the potential to adversely affect human health and aquatic life. This report provides information necessary to interpret pesticide concentrations determined by a new analytical method developed by the U.S. Geological Survey National Water Quality Laboratory (NWQL). This new method, known as NWQL schedule 2437, has been used by NAWQA to determine pesticide concentrations in water-quality samples since 2013. A total of 1,323 quality-control samples and paired environmental samples collected in groundwater and surface water are analyzed in this report along with laboratory quality-control samples to document information critical to interpreting pesticide results and assessing analytical method performance in the laboratory.

We hope this publication will provide you with insights and information to meet your water-resource needs and will foster increased citizen awareness and involvement in the protection and restoration of our Nation's waters. The information in this report is intended primarily for those interested or involved in resource management and protection, conservation, regulation, and policymaking at the regional and national levels.

Dr. Donald W. Cline
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Table 4 is also available as a downloadable file at https://doi.org/10.3133/sir20185007.

Conversion Factors

International System of Units to U.S. customary units

Multiply	By	To obtain
	Volume	
liter (L)	33.82	ounce, fluid (fl. oz)
liter (L)	2.113	pint (pt)
liter (L)	1.057	quart (qt)
liter (L)	0.2642	gallon (gal)
liter (L)	61.02	cubic inch (in^3)
	Mass	
gram (g)	0.03527	ounce, avoirdupois (oz)

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:

$$°F = (1.8 \times °C) + 32.$$

Temperature in degrees Fahrenheit (°F) may be converted to degrees Celsius (°C) as follows:

$$°C = (°F - 32) / 1.8.$$

Supplemental Information

Concentrations of chemical constituents in water are given in nanograms per liter (ng/L).

Abbreviations

CSRL	calibration standard reporting level
FMS	field matrix spike
GC/MS	gas chromatography/mass spectrometry
HRL	higher reporting level
IRL	interim reporting level
LRS	laboratory reagent spike
MDL	method detection level
MRB	major river basin
NAWQA	National Water-Quality Assessment Project
NWQL	National Water Quality Laboratory
NWQN	National Water-Quality Network for Rivers and Streams
OBSP	Organic Blind Sample Project
PCODE	parameter code, a USGS 5-digit code unique to each parameter
QC	quality-control
RL	reporting level
RRL	raised reporting level
RLDQC	reporting level determined by DQCALC software
RSQA	Regional Stream Quality Assessment
USGS	U.S. Geological Survey
VQC	value qualifier code

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Abstract

In 2013, the U.S. Geological Survey National Water Quality Laboratory (NWQL) made a new method available for the analysis of pesticides in filtered water samples: laboratory schedule 2437. Schedule 2437 is an improvement on previous analytical methods because it determines the concentrations of 225 fungicides, herbicides, insecticides, and associated degradates in one method at similar or lower concentrations than previously available methods. Additionally, the pesticides included in schedule 2437 were strategically identified in a prioritization analysis that assessed the likelihood of occurrence, prevalence of use, and potential toxicity. When the NWQL reports pesticide concentrations for analytes in schedule 2437, the laboratory also provides supplemental information useful to data users for assessing method performance and understanding data quality. That supplemental information is discussed in this report, along with an initial analysis of analytical recovery of pesticides in water-quality samples analyzed by schedule 2437 during 2013–2015. A total of 523 field matrix spike samples and their paired environmental samples and 277 laboratory reagent spike samples were analyzed for this report (1,323 samples total). These samples were collected in the field as part of the U.S. Geological Survey National Water-Quality Assessment groundwater and surface-water studies and as part of the NWQL quality-control program. This report reviews how pesticide samples are processed by the NWQL, addresses how to obtain all the data necessary to interpret pesticide concentrations, explains the circumstances that result in a reporting level change or the occurrence of a raised reporting level, and describes the calculation and assessment of recovery. This report also discusses reasons why a data user might choose to exclude data in an interpretive analysis and outlines the approach used to identify the potential for decreased data quality in the assessment of method recovery. The information provided in this report is essential to understanding pesticide data determined by schedule 2437 and should be reviewed before interpretation of these data.

Introduction

In 2013, the U.S. Geological Survey (USGS) National Water Quality Laboratory (NWQL) implemented a newly developed analytical method for routine determination of pesticide concentrations. Method O–2437–15, used for NWQL laboratory schedule 2437 (hereafter referred to as "schedule 2437"), is a liquid chromatography-tandem mass spectrometry method developed in collaboration with the USGS National Water Quality Program National Water-Quality Assessment (NAWQA) Project. Schedule 2437 measures the concentration of 225 pesticide compounds, including 109 pesticides and 116 pesticide degradates (hereafter referred to as "pesticides") (Sandstrom and others, 2015). Pesticide usage has varied with changes in regulation, development of new chemicals, price, pest pressure, and other factors (Atwood and Paisley-Jones, 2017; U.S. Geological Survey, 2017a). The pesticides determined by schedule 2437 were chosen for inclusion in method development based on their probability of occurrence, prevalence of use, and potential toxicity (Norman and others, 2012). This method improves upon past analytical methods because it accurately determines the concentrations of more pesticides at low concentrations in a single sample. Schedule 2437 also includes many pesticides of interest to federal and state agencies, water resource managers, environmental groups, and other stakeholders.

The purpose of NAWQA is to characterize the quality of the Nation's streams and groundwater and to track changes in water quality over time. One goal of the project is to inform local, State, Tribal, and National stakeholders and the public on the status of the Nation's water (Rowe and others, 2013). NAWQA supports these goals with large-scale and temporally intensive water-quality sampling, including collection of samples for the analysis of pesticides. The pesticide concentrations measured in these samples are used in many ways: to determine overall occurrence and distribution of pesticides in the Nation's water (Deacon and others, 2015), for comparison to aquatic and human-health benchmarks (Nowell and others, 2018;

Stone and others, 2014; Gilliom and others, 2006), to assess changes in surface-water and groundwater conditions over time (Oelsner and others, 2017; Ryberg and Gilliom, 2015, Toccalino and others, 2014), and to create models for predicting pesticide occurrence when direct measurements are not feasible (Stone and Bucknell, 2014; Stone and others, 2013).

An understanding of the supplemental data available for schedule 2437 results, the occurrence of raised reporting levels, and analytical recovery complement the use of data in each of these interpretive paths. Data users should refer to Sandstrom and others (2015) for information about the development and validation of the analytical method used to determine the pesticides in schedule 2437. This report briefly reviews some of the information in Sandstrom and others (2015) and discusses issues specific to data interpretation that are not included in Sandstrom and others (2015).

A key concept for understanding pesticide concentrations determined by schedule 2437 is the analytical reporting level. A standard laboratory reporting level (RL) is the less-than (<) value reported to data users when the pesticide is not detected (Childress and others, 1999). Typically, this value is set to twice the method detection level (MDL) and is used to control both false positive and false negative error (Childress and others, 1999). Pesticide concentrations in water-quality samples determined by schedule 2437 and other NWQL schedules are frequently less-than or near the RL. NWQL-reported water-quality data, regardless of the constituent, at least occasionally contain raised reporting levels (RRL). An RRL is a less-than value reported at a concentration higher than the RL. RRLs can vary in magnitude above the standard RL and can result from a variety of environmental and analytical circumstances. In pesticide analyses of previously used laboratory schedules, RRLs have been retained in the dataset as nondetects (Oelsner and others, 2017; Martin and Eberle, 2011), treated as missing values and not used in data interpretation (Ryberg and others, 2010), or screened at user-defined levels (Gilliom and others, 2006, Supplemental Technical Information). The treatment of RRLs has implications for data interpretation and should be considered before using schedule 2437 pesticide data. This report includes a discussion of changes to RLs and why they occur, why RRLs occur in schedule 2437 analysis, and describes one approach for screening RRLs in data interpretation.

Another important concept for understanding data quality is analytical recovery (hereafter referred to as "recovery"), which is defined as the measured amount of pesticide in a spiked quality-control (QC) sample expressed as a percentage of the amount spiked, ideally 100 percent (Martin and others, 2009; Martin and Eberle, 2011). Recovery can be calculated from field matrix spike (FMS) samples or measured directly in the analysis of laboratory reagent spike (LRS) samples. Recovery in field matrices is calculated by pairing environmental samples with spiked QC samples. A spiked QC sample is an aliquot of the environmental sample that is spiked with a known quantity of pesticide(s) (Martin and others, 2009). In previous reports, recovery has been calculated and modeled to assess the impact of temporal changes in the performance of an analytical method on a long-term scale (Martin and others, 2009). These temporal changes are incorporated into the analysis of long-term trends in pesticide concentrations and are necessary to understand how water quality changes over time, one of the goals of the NAWQA project.

In addition to identifying temporal trends in method performance, recovery can be useful for determining the presence of analytical bias—that is, a systematic error, such as the consistent measurement of a pesticide at concentrations less than or greater than the known concentration (Sandstrom and others, 2015). Variation in recovery is also important, because the specific characteristics of a pesticide or the matrix of a water sample can increase or decrease the range in calculated recoveries. This report identifies results with the potential for decreased data quality that might affect recovery assessment and discusses reasons why a data user might choose to exclude these results in an interpretive analysis. When interpreting pesticide data determined by any analytical method, it is important to consider any deviations from the standard RL for each pesticide, and the reasons for such RRLs, as well as potential bias and variability in recovery for each pesticide.

Purpose and Scope

The purpose of this report is to review existing information about NWQL schedule 2437 and provide additional supporting information important for evaluating pesticide concentrations determined by this schedule. This report will review the processing steps in schedule 2437 analysis, discuss the presence of sample- and result-level comments and qualifiers, and explain how to obtain all the data necessary to interpret pesticide concentrations, the circumstances that result in an RL change, and the occurrence of an RRL. This report also calculates and assesses recovery for the pesticides determined by schedule 2437 in samples from three NAWQA studies during 2013–15: the National Water-Quality Network for Rivers and Streams (NWQN), Regional Stream Quality Assessment (RSQA) studies, and the NAWQA groundwater network studies. The majority of samples analyzed with schedule 2437 in 2013–15 were collected as part of these studies. It is outside of the scope of this report to provide guidance on how to interpret pesticide results determined using schedule 2437 or to conduct a comprehensive analysis of all QC samples analyzed with schedule 2437.

Data Analysis Considerations

The following section describes how samples analyzed by schedule 2437 are processed in the laboratory, how to obtain the resulting data and supplemental information, and a review of how reporting levels are determined. In addition to this background information, a discussion is provided on how to identify RRLs and the reasons for their occurrence, then one approach is presented for interpreting RRLs through the use of a modified level of resolution. The screening process for using FMS and LRS samples in calculating recovery and the subsequent calculation is described and the approach used to investigate spike solution degradation is also provided.

NWQL Pesticide Sample Processing

One benefit of the method used to determine schedule 2437 over previous analytical methods is that sample filtration is the only preparation necessary prior to analytical determination. Additionally, the pesticide concentrations in up to 75 environmental samples can be determined in each batch processed by the analytical instrument. In addition to the environmental samples, each batch contains blanks, calibration standards, and other laboratory QC samples. The instrument analyzes one batch at a time, in a specific order (table 1). The first two samples analyzed are blanks, to verify the cleanliness of the instrument. These are followed by a series of calibration standards used to develop the calibration curve, which relates the instrument-measured peak intensity area response of each pesticide to concentration and will be applied to the environmental samples within the batch. Instrument blanks then verify that the high-level calibration standards have not contaminated the instrument prior to the analysis of a QC sample. A series of a continuing calibration verification standards, which verify the quantitation of an intermediate-level standard, an instrument blank, and about 15 environmental samples are then analyzed. This process repeats five times with a set of one LRS and one laboratory reagent blank following the first set of environmental samples. After the last set of environmental samples is analyzed, another calibration verification standard is analyzed, followed by an instrument blank, and then three standards to check instrument sensitivity at the end of the batch. The last sample analyzed is a blank for determining if extra cleaning procedures are required prior to analysis of the next batch.

The analysis of multiple QC samples throughout the course of the batch allows the laboratory analyst to check for contamination of the samples, instrument fouling, and overall instrument performance. These data are used by the NWQL to ascertain if laboratory blank contamination was detected and to what degree. In addition, the data are used to set RRLs for an entire batch or selected environmental samples within the batch. These data can also be used to evaluate method performance and to develop an understanding of how the operation of the instrument affects the interpretation of pesticide concentrations.

Obtaining Pesticide Data from the National Water Information System

Results for routine water-quality samples collected by the USGS and analyzed for pesticides are publicly available through the National Water Information System (U.S. Geological Survey, 2017b). Obtaining pesticide (and other analyte) data is best done by following these steps:

- Access the National Water Information System database online at https://waterdata.usgs.gov/nwis;
- Choose Water Quality under the Frequent Searches by Data Category heading;
- Choose to view data from Field/Lab samples;
- Choose the site or location information you wish to use for data retrieval and choose Parameter groupings under the Data Attribute heading;
- Provide the site details, such as site name, site number, or state of interest; and
- Choose Organics, pesticide from the Parameter groupings, and under the Retrieve Water-Quality Samples for Selected Sites heading, choose Tab-separated data with the settings One result per row and Expanded attributes.

The value qualifier code, or VQC (abbreviated “val_qual_tx” in the data file) and laboratory result comment (abbreviated “result_lab_cm_tx”) are especially important in data interpretation, including interpretation of schedule 2437 data. The VQC is assigned by NWQL analysts to communicate to data users circumstances unique to the determination of that sample or pesticide that might affect data interpretation (table 2). The laboratory result comment is an open text field available to NWQL analysts to provide standard comments or their own notes on the pesticide result reported.

In addition to routine water-quality samples, field QC samples are also collected as a regular component of all NAWQA studies. Field QC samples typically include spike, blank, and replicate samples. The FMS and LRS sample data and calculated recoveries that will be discussed in this report are provided in the accompanying data release (Shoda and others, 2017b). Field replicate data are also available for schedule 2437 results for 2013–15 samples (Shoda and others, 2017a). Other field QC data are available to the public by a request to the Water Data Support Team through NWIS.

Table 1. Sequence and purpose of samples analyzed in one batch by schedule 2437.

[ng/L, nanograms per liter; QC, quality-control; See table 8 in Sandstrom and others (2015) for more information on analytical sequence]

Sequence number	Sample type	Sample purpose
1	Blank	Wash blank.
2	Blank	Instrument blank to verify the wash.
3	1 ng/L calibration standard	Instrument calibration.
4	2.5 ng/L calibration standard	Instrument calibration.
5	5 ng/L calibration standard	Instrument calibration.
6	10 ng/L calibration standard	Instrument calibration.
7	25 ng/L calibration standard	Instrument calibration.
8	50 ng/L calibration standard	Instrument calibration.
9	100 ng/L calibration standard	Instrument calibration.
10	250 ng/L calibration standard	Instrument calibration.
11	500 ng/L calibration standard	Instrument calibration.
12	1,000 ng/L calibration standard	Instrument calibration.
13	5,000 ng/L calibration standard	Instrument calibration.
14	10,000 ng/L calibration standard	Instrument calibration.
15	Blank	Instrument blank to check for cross-over contamination from high calibration standards.
16	Blank	Instrument blank to check for cross-over contamination from high calibration standards.
17	QC sample	Third-party check sample.
18	250 ng/L QC sample	Continuing calibration verification.
19	Blank[1]	Instrument blank before analyzing environmental samples.
20–34	15 environmental samples	Sample analysis.
35	Laboratory reagent spike	Laboratory reagent spike.
36	Laboratory reagent blank[1]	Laboratory reagent blank.
37	250 ng/L QC sample	Continuing calibration verification.
38	Blank[1]	Instrument blank before analyzing environmental samples.
39–53	15 environmental samples	Sample analysis.
54	250 ng/L QC sample	Continuing calibration verification.
55	Blank[1]	Instrument blank before analyzing environmental samples.
56–70	15 environmental samples	Sample analysis.
71	250 ng/L QC sample	Continuing calibration verification.
72	Blank[1]	Instrument blank before analyzing environmental samples.
73–87	15 environmental samples	Sample analysis.
88	250 ng/L QC sample	Continuing calibration verification.
89	Blank[1]	Instrument blank before analyzing environmental samples.
90–104	15 environmental samples	Sample analysis.
105	250 ng/L QC sample	Continuing calibration verification.
106	Blank[1]	Instrument blank after analyzing all environmental samples.
107	5 ng/L instrument detection level standard	Standard to check for instrument sensitivity.
108	10 ng/L instrument detection level standard	Standard to check for instrument sensitivity.
109	50 ng/L instrument detection level standard	Standard to check for instrument sensitivity.
110	Blank	Instrument blank to check for any contamination at the end of the batch.

[1]used to assess for contamination of environmental samples

Table 2. Common value qualifier codes (VQC) assigned by the National Water Quality Laboratory

VQC	Definition
c	See result comment.
d	Sample was diluted.
i	Result may be affected by interference.
m	Value is highly variable by this method.
n	Below the reporting level but at or above the detection level.
s	Instrument sensitivity problem.
t	Below the detection level.
v	Analyte detected in laboratory blank.
@	Holding-time violation.
*	Warm when received.

Reporting Levels

Determination of an MDL is based on finding the concentration at which an analytical method can reliably confirm the presence of an analyte in a sample (Williams and others, 2015). As noted previously, the NWQL calculates the RL for an analytical method as two times the MDL (Childress and others, 1999). Pesticides that are not detected in water-quality samples are reported as "less-than" the RL; however, it is possible for pesticides to be detected in samples at concentrations less than the RL. For schedule 2437, results are reported as "estimated" when the measured concentration is less than the RL because the concentration value has an increased uncertainty. For estimated pesticide concentrations, the quantitative value, but not the qualitative nature of the detection, is uncertain (Sandstrom and others, 2015). If a pesticide is detected at or greater than the MDL and less the RL, it is noted with the VQC of "n" (table 2). If the pesticide is detected at less than the MDL, the VQC is noted as "t" (table 2).

Beginning in water year 2013, each pesticide determined by schedule 2437 was assigned an RL known as the interim reporting level (IRL). The IRL is a temporary reporting level that was determined during original method validation. The RL has the potential to change every year as more data are obtained to quantify method detection capability (Childress and others, 1999). For schedule 2437 and beginning with samples analyzed in 2016, IRLs were updated with information from two sources: more data available from the routine operation of the method and a new procedure for the determination of laboratory detection (Williams and others, 2015). In addition to the use of data determined by schedule 2437 in an expanded time period (2013–15), a new software program known as DQCALC was implemented to determine updated IRLs (Williams and others, 2015; ASTM International, 2016). Results reported to the National Water Information System using the new software are identified with the RL type of RLDQC.

Identification of Raised Reporting Levels and Reasons for their Occurrence

The presence of RRLs can create a challenge for data interpretation, because RRLs represent greater uncertainty in the reported result for a pesticide than detections, or values censored at the RL. For example, a pesticide with an RL of 5 that is reported with an RRL of 10 has a range of values that might represent the true pesticide concentration between 0 and 10. A value less-than the RL narrows the potential range of true concentrations from 0 to 5, although both examples represent circumstances in which the pesticide was not detected.

The incidence of RRLs was assessed in water-quality samples collected for NAWQA surface-water and groundwater studies in water years 2013–15, and the NWQL-provided VQCs and laboratory result comments associated with these RRLs were compiled. RRLs can be identified for schedule 2437 data by reviewing the RL associated with each pesticide result and identifying the results that have a < in the remark code field and a result value greater than the RL. The various reasons for these RRLs are summarized in table 3, along with the corresponding VQCs and typical laboratory comments associated with each RRL and guidance for how the RRL values were determined for each reason.

When contamination is detected in one or more laboratory blanks, the 15 environmental samples analyzed directly before and after the blank sample may be qualified with a VQC of "v," depending on the magnitude of the environmental sample detection in relation to the blank detection, as determined by the criteria specified in the USGS Office of Water Quality Technical Memorandum 2012.01 (Myers, 2011). Specifically, an RRL occurs when a pesticide is detected in a blank sample, and the pesticide concentration in the environmental sample is greater than the RL, but less than three times the concentration in the laboratory blank. In this case, the RRL is reported as less than the concentration of the environmental sample. An RRL can also occur due to blank contamination when the pesticide is not detected in the environmental sample, in which case the RRL is reported as less than the concentration detected in the blank sample. At the time of publication (2018), RRLs are also present due to dilution (VQC of "d"). The NWQL is currently reviewing these RRLs, which were reported in error.

Table 3. Reasons for the occurrence of raised reporting levels, background information, value qualifier codes, example laboratory result comments, and guidance for how the raised reporting level value is determined corresponding to each reason.

[RRL, raised reporting level; VQC, value qualifier code; QC, quality control; LC-MS/MS, liquid chromatography-tandem mass spectrometry]

Reason for RRL	Background	VQC	Example laboratory result comment	RRL value
Instrument sensitivity changed during batch analysis	Instrument detection level standards analyzed at the end of the batch are the same concentration as some calibration standards. At the start of the batch, these concentrations could be detected in the calibration standards; however, at the end of the batch, they can no longer be detected in the instrument detection level standards, and therefore instrument sensitivity has changed.	Typically no VQC provided.	"Instrument sensitivity has changed requiring the nondetect value be raised to the lowest enabled calibration standard."	The RRL is reported as less than the concentration of the lowest instrument detection level standard that could be detected at the end of the batch (rows of 107–109 in table 1). If the pesticide cannot be detected at the level of the highest instrument detection level standard, the RRL is set to the level of the most recently analyzed and detected QC sample (typically the continuing calibration verification sample found in row 105 of table 1).
Qualitative peak not confirmed	In the LC–MS/MS output for each pesticide, both a larger, quantitative peak and smaller, qualitative peak in intensity are required to quantify and verify the identity of each pesticide, respectively. In this case, the pesticide cannot be reliably identified due to the qualitative peak being absent or outside acceptable quality-control limits.	Typically no VQC provided.	"Failed qualitative identification acceptance criteria," or "The quantifier to qualifier retention time deviation did not meet the method's acceptance criteria for qualitative identification." The terms "qualitative" or "qual" are typically present in the laboratory result comments.	The RRL is reported as less than the concentration of the quantitative peak.
Interference	The matrix properties of the sample do not allow for the reliable identification of the pesticide through the determination of both a quantitative and a qualitative peak. Matrix properties include the concentrations of naturally occurring organic compounds (for example proteins, sugars, humic acids) or inorganic constituents (metals, salts) in the sample.	i —"result may be affected by interference."	"Compound did not pass identification criteria-interference present-raised report level." The term "interference" is typically present in the laboratory result comments.	The RRL is reported as less than the concentration of the quantitative peak.
Blank contamination	Seven blank samples are analyzed throughout the course of a batch to assess potential contamination while environmental samples are being analyzed (see [1] in table 1). Detection of pesticides in any of these blank samples indicates contamination might have contributed to a pesticide detection in an environmental sample.	v— "analyte detected in laboratory blank."	"Blank contamination."	If a pesticide is detected in the environmental sample at a concentration between the RL and three times the blank concentration, the RRL is reported as less than the concentration detected in the environmental sample. If the pesticide is not detected in the environmental sample, the RRL is reported as less than the concentration detected in the blank sample. Other instances of blank contamination that do not produce an RRL are discussed in Myers (2011).

Recovery Analysis of Samples Analyzed with Schedule 2437

National Water-Quality Assessment Studies and Collection of Quality-Control Samples

Three NAWQA studies contributed data to this report. The NAWQA NWQN was established to determine the status and trends of the Nation's surface-water quality and is a long-term monitoring network consisting of approximately 76 sites, with the number of sites varying slightly each year during 2013–15. The NAWQA RSQA studies are temporally intensive, regionally focused short-term studies conducted in the summers of 2013 (Midwest), 2014 (Southeast), and 2015 (Pacific Northwest), with each region containing approximately 100 sites (U.S. Geological Survey, 2017d). The NAWQA groundwater sites are organized into studies and networks with varying objectives, including studies of principal aquifer, land use, major aquifer, groundwater flow paths, and the enhanced trends network. Across the different groundwater studies and networks, a total of 1,328 wells were sampled in water years 2013–15.

All of the NAWQA studies include collection of routine QC samples, including pesticide spike samples. A spike sample is a sample that has been spiked with known concentrations of analytes (Mueller and others, 2015). As stated in the introduction, FMS samples are regularly collected environmental samples to which a known volume of spike solution has been added. Spike samples are compared with environmental samples collected at the same time to calculate the recovery of an analyte in a field matrix. LRS samples are prepared in a laboratory using laboratory-grade blank water. LRS samples are used to assess analyte recovery in a sample under controlled settings, removing other potentially influential variables (such as matrix effects). Each spike solution is prepared by the NWQL and assigned a lot number; the concentrations of pesticides may vary slightly in different spike lots. The same lot of spike solution is typically used for both LRS samples and FMS samples prepared during the same time period. Data analyzed in this report include both LRS recovery and FMS recovery in groundwater and surface-water samples collected throughout the Nation during water years 2013–15.

Data Preparation and Calculation of Recovery for Field Matrix Spike Samples

Pesticide recovery in this report was determined as the concentration of a pesticide in a spiked sample, from which the concentration in the paired environmental (unspiked) sample has been subtracted, divided by the expected concentration. Recovery calculation is well documented in Sandstrom and others (2015), Mueller and others (2015), Martin and Eberle (2011), and Martin and others (2009), and the methods used to calculate recovery outlined in those reports were followed in this investigation. The 523 groundwater and surface-water paired environmental and FMS samples (1,046 samples total) available for the calculation of recovery for 2013–15 resulted in a total of 116,886 pesticide paired results (233,772 individual pesticide results) (Shoda and others, 2017b). The paired samples are the environmental sample and the FMS sample collected at the same site, on the same date, at the same time. The determination of 225 pesticides in each of the 523 paired samples would result in 117,675 pairs of results. The dataset used in this analysis was slightly smaller because analytical circumstances do not always allow for the determination of every pesticide in a sample. Prior to interpreting recoveries, this investigation omitted the use of some results due to the absence of information needed to calculate spike recovery, poor data quality, circumstances resulting in increased uncertainty of recovery, and other issues, as described in this section.

To calculate FMS sample recovery, a user must first calculate expected pesticide concentrations in an FMS sample. Expected pesticide concentrations are calculated using the concentration of each pesticide in the spike solution, the volume of the spike solution that was added to the sample, and the total sample volume after spiking (Martin and others, 2009; Martin and Eberle, 2011). The concentration of pesticides in the spike solution is referenced to the NWQL-assigned spike lot. For 81 of the 523 field matrix spike samples (15 percent), spike lot information was not provided by the field crew collecting the sample, but when possible, the lot used to spike a sample was assumed based on the sampling date and the spike lots available on that date. In most cases, there was high confidence in this assumption due to the use of standard field practices. However, it was not possible to make a reasonable assumption in all cases with missing spike lot information, due to the availability of multiple lots on the sampling date. Therefore, some paired samples were not included in the analysis due to lack of spike solution concentration information. When the volume of spike solution added to the sample was not provided or the value provided was not 0.1 milliliters, it was assumed to be 0.1 milliliters, based on standard field practices (Sandstrom and Lewis, 2009; Mueller and others, 1997). Upon review of recovery values, if samples with assumed spike solution volumes were found to have recoveries outside of a normal range (see criteria used for spiking error below), it was concluded that the volume assumption was false and the sample was not included in further analysis due to a lack of spike volume information. Expected FMS sample concentrations can be obtained in Shoda and others (2017b) and are usually greater than 100 nanograms per liter. Samples that were inadvertently spiked with an expired spike lot were not included in this analysis. Spike lots past their expiration date have potentially degraded, meaning that the concentrations of pesticides in the spike solution have decreased; therefore, recoveries calculated with these lots have an increased potential to be biased low. Lastly, paired samples were also excluded from analysis when total sample volume of the spiked sample was not provided. This can occur when a spike sample is submitted to the NWQL without being identified as such. Spike samples are the only samples analyzed with schedule 2437 to have their total sample volume determined.

In some circumstances, the paired sample data were acceptable for calculating recovery, but there was reason to exclude certain pesticides within the pair because of increased uncertainty in the calculation of recovery. For example, paired results were not included in the analysis when the concentration in the environmental sample was higher than the expected concentration of the spike. Martin and others (2009, p.6) defined these samples as having "high background concentrations" and discussed the uncertainties they create in the analysis of recovery for pesticides determined by laboratory schedule 2033. For the pesticides in schedule 2437, Sandstrom and others (2015) found that recoveries for some pesticides were very high or very low when the background environmental concentrations were equal to or greater than the expected spike concentration. The eleven pesticides with the largest number of results flagged for high background concentrations comprise 85 percent of all results with this flag (Shoda and others, 2017b). They are: metolachlor (pcode 65090) and two of its degradates (pcodes 68650 and 68651), atrazine (pcode 65065) and three of its degradates (pcodes 68547, 68552, and 68660), three acetochlor degradates (pcodes 68522, 68523, and 68524), and 2,4-D (pcode 68500). High background concentrations of these pesticides in spike samples is expected due to their heavy agricultural use and frequent detection in water-quality samples in past analyses (U.S. Geological Survey, 2017a; Stone and others, 2014; Gilliom and others, 2006).

The presence of certain VQCs and laboratory result comments can indicate poor data quality. As such, environmental and FMS results were screened using VQC and laboratory comment criteria. If the environmental or paired spike result was an RRL due to laboratory blank contamination (noted with a "v" in the VQC field or stated in the laboratory comment), then the result was excluded. If the result was an RRL but there was no VQC to explain the rationale for the RRL, contamination could not be ruled out, and the result was not included in this analysis. There were 154 environmental sample results (0.1 percent of environmental sample results) and 34 spike sample results (0.03 percent of spike sample results) flagged because of an RRL due to blank contamination, and 2 results were flagged for the presence of an RRL with no explanatory VQC (Shoda and others, 2017b). Both of these circumstances were deemed to have increased the uncertainty in the quantitation of the reported result, and thus these results were excluded.

Establishment of a Modified Level of Resolution

In past pesticide studies, when RLs changed over the study period and RRLs were present, all data were screened using the maximum RL for the study period so that less-than values smaller than the maximum RL were accepted for analysis and less-than values larger than the maximum RL were removed from interpretive analysis (Gilliom and others, 2006, Supplemental Technical Information). The presence of a substantial amount of RRLs in this dataset and changes to RLs immediately following this study period due to the adoption of RLDQCs warranted the use of a similar approach. This section describes a set of criteria to screen-out data with insufficient resolution to accurately assess recovery.

For each pesticide, a modified level of resolution in the form of an RL higher than the established IRL was determined and used to omit results from recovery analysis. Although RLDQCs were not used during laboratory analysis of samples collected during 2013–15, they represent an update to IRLs that reflects the most recent review of analytical performance and the implementation of the DQCALC software. In response to the changes in reporting level, a higher reporting level (HRL) was created for each pesticide, which is the larger of the two available reporting levels (IRL and RLDQC). This HRL defined a lower level of analytical resolution over the time period during which samples were analyzed and was used to determine another modified level of resolution: the calibration standard reporting level (CSRL). The CSRL is the value of the first calibration standard larger than the HRL and was used to incorporate more results in the final analysis. The values of the calibration standards are presented in rows 3 through 14 of table 1.

The determination of the HRL and use of the CSRL as a modified level of resolution was adopted in order to increase the amount of meaningful information that could be included in the analysis of recovery. The authors determined that for the purposes of this report, data analysis did not require the highest level of resolution, which might have resulted in omitting all results reported with an RRL above the IRL or RLDQC. By screening data using the CSRL, low-level RRLs are included in data analysis and treated as nondetects. Uncertainty exists in the true determination of low-level RRLs, which might have been either nondetects or low-level detections. The use of low-level RRLs (RRLs below the CSRL) as nondetections in the calculation of recovery could bias results. Use of the CSRL as a threshold for the exclusion of data was considered acceptable, however, because although it allows for some increase in data uncertainty, it also expands the dataset to include more information.

To summarize, the process of determining and applying a suitable level of resolution for this dataset includes five steps: (1) determine the IRL reported for each pesticide; (2) identify the RLDQC, implemented in 2016, for each pesticide; (3) determine the higher of the IRL and RLDQC (HRL); (4) determine the value of the first calibration standard above the HRL; (5) consider RRLs at the level of the CSRL or below suitable to be considered in recovery analysis and omit from data interpretation any results with RRLs above the level of the CSRL for that pesticide.

For FMS samples, 3,954 environmental results (3.4 percent) and 519 spike results (0.4 percent) were flagged for the presence of an RRL above the CSRL and omitted from data interpretation (Shoda and others, 2017b). The pesticide with the most occurrences of RRLs above the CSRL was 1H-1,2,4-Triazole (pcode 68498), which comprised 9 percent and 17 percent of all RRL occurrences for environmental results and spike results, respectively.

When the data needed to do so were available, recovery was calculated for each pair of environmental and spike results. Censored results (that were not omitted as described above) for either the environmental or spike sample were set to zero following Martin and others (2009). Some negative recoveries were calculated. Negative recoveries resulted from greater measured concentrations in environmental samples compared to spike samples. This can occur in the measurement of pesticides with high analytical variability, or when the environmental sample concentration is detected below the RL. In the latter case, the presence of a censored spike value (nondetection) and a noncensored value (detection) in the paired environmental sample result in a negative recovery. Because the pesticide was not detected in the spiked sample, each negative recovery was set to zero.

Before this dataset was used in further analysis, two final screening steps were completed. First, pesticides in which the HRL was greater than the expected spike concentration were excluded. In these circumstances, the method was unable to detect the spike concentration, and presenting these data as nondetects would bias recovery low. Second, samples in which more than half (113 out of 225) of the analytes had recoveries greater than 150 percent or less than 50 percent were assumed to be the result of a spiking error. Spiking errors can result when twice the volume of the spike solution is added to a spike sample (double-spiked), none of the spike solution is added (false spike), or other sample processing errors occur. Data screening based on missing sample information, expired spike lots, specific VQCs and laboratory result comments, the presence of an RRL above the modified level of resolution (CSRL), high background concentrations, HRLs greater than expected spike concentrations, and suspected spiking errors resulted in the removal of 22 percent of the data (Shoda and others, 2017b).

Data Preparation and Calculation of Recovery for Lab Reagent Spike Samples

Routine laboratory QC samples analyzed with schedule 2437 include instrument QC samples and batch QC samples. Instrument QC samples include instrument blanks, calibration standards, third-party check standards, continuing calibration verification standards, and instrument detection level standards (table 1; Sandstrom and others, 2015). The batch QC samples include LRS samples and laboratory reagent blanks and provide information about overall method performance in a control (clean) matrix (Sandstrom and others, 2015).

Recovery of LRS samples is determined differently from FMS recoveries because there is no need to collect paired samples. LRS samples consist of pesticide-free water that is spiked in a manner similar to a field spike, using the same spike solutions (and spike lots) that are used in the field. Because the reagent water is pesticide free, the recovery of an LRS can be determined directly from the concentration measured in the sample. In the review of LRS sample results, nondetection results were treated as zero recovery. It was not necessary to use the modified level of resolution (the CSRL) in the analysis of LRS samples, because RRLs did not occur for these data in water years 2013–15. The LRS dataset also includes results for samples in which it was not possible to measure the pesticide concentration, usually due to an analytical issue, and noted in the laboratory results comments. This resulted in a null value for recovery, which was removed from subsequent analysis.

Investigation of Possible Degradation in Spike Solutions

Beginning on October 1, 2015, the expiration dates for schedule 2437 spike solutions made and certified at the NWQL were reduced from one year to six months after certification. This change was implemented in response to lowered recoveries observed for many organophosphate and sulfonyl urea pesticides in LRS samples spiked with solutions aged more than six months. Additionally, LRS samples analyzed during May–August of 2013 showed decreased recoveries for 17 organophosphates and other pesticides spiked with NWQL spike lot 91219 during the later months of the spike lot's 1-year certification period. Recovery of these pesticides increased, largely meeting laboratory data-quality objectives, when samples were spiked with a freshly made spike solution (lot 91313) in August 2013. These observations, as described by the NWQL, indicated that there was possible degradation in spike solutions, either as a result of the age of the spike lot, or affecting one lot in particular. Before overall conclusions were developed about the performance of schedule 2437 during 2013–15 based on recovery calculations for FMS and LRS samples, this possible degradation was investigated to prevent bias in subsequent analyses.

To determine if aging spike solutions degraded, or if one lot specifically degraded, the recoveries of each pesticide were calculated and plotted by spike lot and spike lot age for each matrix (LRS, groundwater, and surface water). The ages of spike solutions were separated into the earlier time period after certification (12–6 months prior to expiration) and the later time period after certification (6–0 months prior to expiration). The number of individual pairwise tests between these groupings (2 ages of 8 spike lots for 225 pesticides in 3 matrices) resulted in 5,400 spike lot age pairs to compare, and thus performing pairwise comparisons of spike lot age for each spike lot, pesticide and matrix was rejected due to large number of tests. Therefore, plots were initially visually assessed for differences between the earlier and later periods. Because organophosphates were noted in particular as having reduced recoveries, pesticides were then separated by analytical method group and plotted by spike lot and spike lot age for each matrix. Sandstrom and others (2015) used analytical method groups to define pesticides of similar type; the groups primarily represent major groups of pesticides or major groups subdivided into chemical and other classes (table 1–1, appendix 1). Lastly, all pesticides analyzed by schedule 2437 were pooled and plotted by spike lot and spike lot age for each sample matrix.

Differences between the spike lot ages, analytical method groups, and matrices were tested with Levene's test for homogeneity of variance followed by Welch's ANOVA and Games-Howell posthoc tests. All tests were done with the statistical software R (R Development Core Team, 2017). Levene and Games-Howell tests were done with the R package userfriendlyscience (Peters, 2017). The R package called "stats" and the function oneway.test were implemented for the Welch's ANOVA (R Development Core Team, 2017).

Levene's test assesses the equality of variance between groups (Levene, 1960). It was necessary to determine if significant differences existed in the variance between groups so that an appropriate test for differences in means between groups could be determined. The Welch's ANOVA is a global test for differences between means and is an alternative to the traditional ANOVA when Levene's test indicates a violation of the assumption of homogeneity of variance (Welch, 1938). Welch's ANOVA is robust to unequal sample sizes (Kohr and Games, 1974) and nonnormally distributed datasets (Algina and others, 1994). Lastly, when Welch's ANOVA indicated significant differences in the means of multiple groups, the Games-Howell posthoc test was used to determine which groups were significantly different from other groups. The Games-Howell test was designed for making multiple comparisons between groups with unequal variance, unequal sample sizes, and nonnormal distribution (Games and Howell, 1976).

The visual assessment results and the Games-Howell posthoc test results for recoveries grouped by matrix, analytical method group, spike lot, and spike lot age led to the pooling of the two ages and an analysis of differences in recovery and variation in recovery based on spike lot alone. Differences between lots were again visually assessed and tested with Levene's test, Welch's ANOVA, and Games-Howell posthoc tests.

Analysis of Schedule 2437 Recovery

After the data were reviewed and prepared as stated in the previous sections, overall assessment of method recovery was determined by calculating summary statistics for each pesticide, including relative standard deviation. Summary statistics were evaluated to identify pesticides that exhibited bias or high variation in recovery, using NWQL data-quality objectives for method development as a threshold (Sandstrom and others, 2015). Boxplots of recovery for each pesticide and matrix were used along with summary statistics to identify matrix differences. Lastly, bias and variation in recovery due to large-scale surface-water matrix effects were investigated by plotting surface-water recoveries by major river basin (MRB).

Schedule 2437 Pesticide Data Characterization

Characterization of Raised Reporting Levels

In the NWQN in 2013–15, there were 843,991 censored results, of which 105,053 were results reported with RRLs, comprising approximately 11 percent of all the data (censored and uncensored, all environmental samples). Of these 11 percent, RRLs ranged from 1.0001 times larger than the RL to 302 times larger than the RL. The number of RRLs and percentage of RRLs per pesticide also varied in the NWQN during 2013–15. The maximum percentage of RRLs per pesticide was for cyanazine (pcode 66592), with 72 percent of all results being RRLs, and the minimum was for alachlor sulfynilacetic acid (an alachlor degradate; pcode 68524), with 0.05 percent. Additionally, the occurrence of RRLs was unevenly distributed temporally; the maximum of 17,361 RRLs (16.5 percent) was in June and the minimum of 2,940 (2.8 percent) was in November. The treatment of these RRLs will affect data interpretation in different ways. In this example for the NWQN, excluding all RRLs above the RL would maximize the analytical resolution of the dataset, but it would also result in the loss of 11 percent of sample results, which would decrease the quantity of data available for some analytes and time periods and may bias recoveries high because many censored results would be deleted.

Although RRLs did not represent a large overall percentage of the data in either the recovery investigation or the NWQN during 2013–15, the timing of RRL occurrence, and the pesticides and sites affected, can have a significant influence on data interpretation. The magnitudes of RRLs above the RL is another factor that data users should consider. In the calculation of a pesticide detection frequency, for example, one might be more inclined to include all of the RRLs for a pesticide in which overall RRL occurrence was low and the magnitude of RRLs was low, whereas a pesticide in which RRLs were frequently reported with high magnitudes might cast doubt on the validity of using the RRL as a nondetect in a frequency analysis.

Circumstances that create RRLs can be classified into two different categories: cases in which there is uncertainty in the identification of the pesticide and cases in which there is uncertainty in the quantification of the pesticide. Interference, nonconfirmation of the qualitative peak, and change in instrument sensitivity during the batch are circumstances that belong in the uncertainty of identification category (table 3). In these circumstances, the analytical instrument was not able to reliably detect the pesticide due to the factors explained in table 3. In contrast to identification uncertainty, blank contamination is a circumstance in which there is no uncertainty in the presence of a pesticide, but there is uncertainty in the source of the detection. Laboratory blanks can be contaminated, for example, when high concentrations of pesticides in environmental samples are not removed by the routine rinsing of the

chromatography column, tubing, and other equipment between samples, so subsequent samples are contaminated. Uncertainty based on blank contamination can occur on a wide range of levels, from contamination being so small that it does not substantively affect the detected concentration, to blank contamination large enough to result in an RRL orders of magnitude higher than the RL.

The ultimate decision about how to treat results reported with RRLs and the uncertainty that a data user can accept in data interpretation will be dictated by specific study objectives. The use of VQCs and laboratory result comments allows the data user to screen out pesticide results that might have unacceptable uncertainty and (or) might not adequately represent true environmental conditions. The approach used in this report defined a modified level of analytical resolution to distinguish between RRLs that were acceptable for analysis and RRLs deemed to contain too much uncertainty.

Characterization of Recovery

Previous work has shown differences in groundwater and surface-water recovery of pesticides determined by gas chromatography/mass spectrometry (GC/MS) based on matrix effects (Martin and others, 2009). Due to the differences in sample preparation and matrix, LRS recoveries and field recoveries for groundwater and surface-water were assessed separately. The final, robust dataset was used to investigate overall method performance, recovery bias, differences in recovery between LRS and FMS samples, surface-water versus groundwater matrix effects, and regionally specific surface-water matrix effects.

From October 1, 2012, to September 30, 2015, eight spike lots were available; the first lot, 91211, was certified on June 6, 2012, and the last lot, 91518, was certified on July 20, 2015. Each of these lots expired 1 year after their certification (the change in certification period from 1 year to 6 months was implemented on October 1, 2015). The spike samples in the dataset (Shoda and others, 2017b) were unevenly distributed with respect to sampling date, geographic location, sampling matrix, and spike lot. First, there were fewer groundwater samples than surface-water samples overall. The temporal and geographic distribution of spike samples in surface water was skewed, because the RSQA samples were collected only during the summer months in three specific regions of the country (U.S. Geological Survey, 2017d). Additionally, due to the timing of when spike lots were certified in relation to the field and laboratory QC schedules, some lots were used to determine a larger number of spike recoveries. For example, no LRS samples were spiked with lot 91518 between its certification and the end of the water year on September 30, 2015.

There is also variation in the number of recoveries reported for each pesticide. Analytical difficulties occasionally prevent the determination of every pesticide in a sample. Additionally, each spike lot is made independently, and for one spike lot, seven pesticides were not available at the time of production, and so not every pesticide determined by schedule 2437 is present for this one lot (lot 91518). Lastly, some results were dropped from the dataset during the screening process, as noted above, in the "Data Preparation and Calculation of Recovery for Field Matrix Spike Samples" section, and in Shoda and others (2017b).

Results of Spike Solution Degradation Analysis

Boxplots of recovery for each pesticide by spike lot, spike lot age, and matrix were largely inconclusive regarding the presence of, and the reasons for, pesticide degradation in a spike solution (fig. 1–1; appendix 1). Boxplots are explained in figure 1. A visual assessment of these plots did not reveal consistently lower recoveries in samples with spike lots aged more than 6 months. Further, pooling all pesticides into a single group and plotting recovery by spike lot age and matrix showed no consistent differences between the two ages in any matrix (fig. 1–2; appendix 1). The lack of a notable difference in the spike lot-age recovery boxplots in both of these groupings might be due to the high variation in recovery values for certain pesticides and matrices (see next section). Grouping pesticides by analytical method group was the most informative approach (fig. 2). From a visual assessment of boxplots of recovery by spike lot, spike lot age, matrix, and analytical method group, there is no evidence that spike lot age was associated with lower recoveries or more variation in recoveries, as a rule. For the organophosphate group, and the carbamate and thiocarbamate group in both groundwater and surface-water samples in particular, variation in recovery was increased for spike lot 91219, regardless of the time period in which the spike solution was used (fig. 2).

Levene's test for homogeneity of variance between spike lot and age groupings by matrix and analytical method group indicated significant differences in the variation of recovery for each spike lot and age group for every matrix and analytical method group at the level of $p < 0.05$, with the exception of the acetanilide and amide group, and the acid group, in groundwater (fig. 2). Welch's ANOVA revealed that the means of recovery of each unique spike lot and age group were likewise significantly different ($p < 0.05$) for every matrix and analytical method group when there was enough data to test each group, with the exception of miscellaneous pesticides in groundwater. These two global tests indicate that when recoveries are grouped by matrix, analytical method group, spike lot, and spike lot age, many of those groups had a significantly different variance and mean recovery than other groups (fig. 2). This conclusion is the basis for investigation into if those differences are due to the age of the spike lot.

When data for both spike lot ages were present, the difference between ages was tested for each spike lot, analytical group, and matrix using the Games-Howell post hoc test. Out of 48 possible comparisons between the 2 spike lot ages by analytical method group in laboratory reagent spikes, 14 comparisons (29 percent) were found to be significantly different at a level of $p < 0.05$. One out of 27 comparisons (4 percent) was significantly different for groundwater, and 5 out of

45 comparisons (11 percent) were significantly different for surface water. Overall, this statistical test did not show significant differences in recovery by spike lot age for most pesticide groups and matrices. Recoveries grouped by matrix, analytical method group, spike lot, and spike lot age were nonnormally distributed and had unequal variance and unequal sample sizes. These factors made conclusive, consistent testing of differences based on spike lot age challenging; however, the Games-Howell posthoc test is robust to these challenges and was supported by the visual assessments of differences based on age.

Next, spike lot ages were pooled and statistical tests were repeated to evaluate the effects of spike lot on recovery for the different analytical method groups and matrices, and in particular, to test whether the higher variability in spike recovery for selected lots and analytical method groups observed in figure 3 could be supported statistically. The Levene's test results for homogeneity of variance between spike lot, matrix, and analytical method group indicated significant differences in variation of spike lots for every matrix and analytical method group at the level of $p < 0.05$, with the exception of the acetanilide and amide pesticides in groundwater and pesticides with an acid functional group in laboratory reagent spikes and groundwater. Subsequent Welch's ANOVA tests for differences between the mean recoveries based on spike lot revealed significant differences in all matrices and analytical method groups. The differences between specific spike lots was tested with the Games-Howell post hoc test. Posthoc tests indicated many significant differences between specific lots in the different matrices. One meaningful result was that spike lot 91219 was significantly different from all other lots for the following analytical method groups and matrices: the organophosphate group and the carbamate and thiocarbamate group for surface water and groundwater; and the pyrethroid, organochlorine, and phenylpyrazine group in surface water. Although there were occasional other instances in which a single lot was significantly different from all other lots in a matrix, the investigation into spike lot age and spike lot 91219 in particular seemed to indicate that there was a specific issue with this lot. Degradation of this lot soon after certification, or preparation or handling error, might have contributed to its lowered recovery for certain analytical method groups.

A visual assessment of recovery boxplots, supported by the Games-Howell tests, formed the basis of the decisions (1) to pool spike lot ages and (2) to omit data for spike lot 91219 from further analysis. Although not all analytical method groups appeared to be affected, lower mean recoveries and higher variability for multiple analytical method groups indicate that spike lot 91219 was compromised. Without knowledge of the mechanism that caused the lowered recoveries and increased variation in lot 91219, the most conservative approach was adopted, and this lot was deemed to be invalid for assessment of analytical method performance. FMS and LRS samples spiked with lot 91219 were treated as unsuitable for interpretive analysis and removed from further analysis of recovery. These samples represent 22 percent of all FMS samples and 19 percent of all LRS samples for 2013–15.

Overall Method Performance for 2013–15 by Pesticide

The initial 116,886 paired field results available for this analysis, after the screening steps described in previous sections, narrowed the final dataset to 68,670 paired results (59 percent), including 32,443 pairs of FMS and environmental results collected in the NWQN; 27,719 pairs collected for the RSQA studies; and 8,508 pairs collected in NAWQA groundwater networks (Shoda and others, 2017b). After the lighter screening for LRS samples, 50,075 of the initial 62,343 result pairs were available for interpretation (80 percent) (Shoda and others, 2017b).

Not every pesticide analyzed by schedule 2437 had data available for laboratory reagent, groundwater, and surface water in the final dataset used for this recovery assessment (Shoda and others, 2017b). There are four pesticides—cis-Bifenthrin acid/cis-Cyhalothrin acid/cis-Tefluthrin acid (pcode 68553), dacthal monoacid (pcode 68560), dicamba (pcode 68571), and methomyl oxime (pcode 68646)—for which no valid field data were available to assess recovery following the data preparation steps listed above and in the "Data Preparation and Calculation of Recovery for Field Matrix Spike Samples" section, primarily due to HRLs greater than the expected spike concentration. Valid recoveries are available for these pesticides in LRS samples.

The recovery of each pesticide and matrix is displayed in figure 4. Schedule 2437 appears to perform reasonably well; most pesticides recovered near 100 percent and had good agreement in recovery among the matrices. Table 4 (also available as a downloadable file at https://doi.org/10.3133/sir20185007) notes that the relative standard deviations for most pesticides and matrices are small, indicating low variability. There are notable exceptions, however. Sandstrom and others (2015) created data-quality objectives for analytical method development: mean recovery of less than 70 percent or greater than 130 percent (100 percent +/- 30 percent) or variability of greater than 30 percent relative standard deviation was considered unacceptable performance in method validation experiments. These data-quality objectives were suitable for method validation and were applied to both LRS and FMS samples, but might be too conservative to assess the routine operation of this schedule, or the more widespread assessment of field spikes. Despite the potential conservativism of these criteria, the data-quality objectives provided by Sandstrom and others (2015) provide a reference for acceptable method performance. Table 4 highlights values for pesticides and matrices that did not meet these data-quality objectives.

Two pesticides (0.89 percent) in LRS samples, 23 pesticides (10.4 percent) in groundwater, and 24 pesticides (10.9 percent) in surface water had mean recoveries that did not meet data-quality objectives with recoveries less than 70 percent or greater than 130 percent. For all matrices, the bulk of these occurrences are for mean recoveries lower than 70 percent. Eighteen pesticides (8 percent), 50 pesticides (23 percent), and 46 pesticides (21 percent) did not meet

data-quality objectives for relative standard deviation in laboratory reagent spikes, groundwater and surface water, respectively. Relative standard deviations outside of data-quality objectives ranged from 30 percent to 146 percent for all matrices. Overall, 2 (LRS), 20 (groundwater), and 21 (surface water) pesticides fell outside of data-quality objectives for both mean recovery and relative standard deviation. Regardless of matrix, many pesticides also had the presence of at least one outlier recovery value. Twenty-four pesticides in laboratory reagent spikes, 28 in groundwater, and 45 in surface water had at least one recovery greater than 200 percent.

Recovery Bias

Table 4 also highlights pesticides in laboratory reagent spikes, groundwater, and surface water in which the first quartile was greater than 100 percent recovery or the third quartile was less than 100 percent recovery. These distributions indicated that 75 percent of the recoveries calculated for these pesticides in these matrices were either above or below 100 percent recovery (fig. 4). Although these results might not be outside of data-quality objectives, understanding the distribution of recoveries for each pesticide and matrix can be useful in assessing potential bias. Six pesticides (3 percent) in groundwater and 13 pesticides (6 percent) in surface water had a first quartile greater than 100 percent. No pesticides had a first quartile greater than 100 percent for laboratory reagent spikes. However, 45 pesticides (20 percent) in laboratory reagent spikes, 55 (24 percent) in groundwater, and 61 (27 percent) in surface water had a third quartile less than 100 percent. More pesticide recoveries were biased low than biased high in LRS and FMS samples, although many of these biases were small. Considering all matrices, of the 161 occurrences of third quartile values less than 100 percent, 97 of them (60 percent) were greater than 90 percent. The bias observed with the distribution of more mean recoveries less than 70 percent (compared to mean recoveries greater than 130 percent) discussed in the previous paragraph was present in this assessment of first and third quartiles as well; that is, many more pesticides had third quartiles less than 100 percent than had first quartiles above 100 percent, indicating overall that recoveries were biased low.

Field Matrix Effects on Recovery

Evidence of matrix effects (defined in table 3) on recovery can be seen in figure 4 and table 4. Matrix effects can present as an increase or decrease in recovery of FMS samples compared to LRS samples, as seen with the pesticide asulam (fig. 4 AI, p. 45; pcode 68536) or as an increase in the variation in FMS samples, as seen with isoxaflutole (fig. 4 EA, p. 69; pcode 68632). Overall, there was evidence for matrix effects seen in the recoveries of many pesticides analyzed by schedule 2437 (fig. 4). LRS samples had the highest percentage (99 percent) of pesticides with mean recoveries within 70–130 percent and the highest percentage of pesticides (92 percent) with relative standard deviations less than 30 percent, compared to groundwater and surface-water matrix spikes, indicating better performance of the method in LRS samples.

A specific type of matrix effect is the difference in recovery between groundwater and surface-water spike samples. Martin and others (2009) found that recoveries of pesticides determined by GC/MS in surface water were consistently biased higher than recoveries in groundwater. For this analysis, there was a negligible difference in the number of pesticides with mean recoveries less than 70 percent (20 in groundwater and 21 in surface water; with 15 in each matrix represented by the same pesticides), and greater than 130 percent (the same 3 pesticides for each matrix) in groundwater and surface water. The quartile analysis showed that more pesticides in surface water consistently recover both higher (with more pesticides with first quartiles greater than 100 percent) and lower (with more pesticides with third quartiles less than 100 percent) compared to groundwater. There was, however, only a minimal difference in the number of pesticides with relative standard deviations greater than 30 percent, with 50 pesticides in groundwater compared to 46 in surface water. These results indicate a slight tendency towards less variation in recovery per pesticide, across a wider range of recoveries overall for surface water and perhaps higher variability in groundwater recovery. The difference in sample sizes between groundwater and surface-water recoveries made these comparisons difficult to assess and the collection of more groundwater QC data would be needed to investigate matrix effects.

Variation in Recovery by Region

Martin and others (2009) interpreted pesticide recoveries for samples analyzed by GC/MS and identified the potential for a bias in surface-water recoveries due to matrix effects and based on NAWQA study units. Study units are defined by MRBs and aquifers across the Nation (Gilliom and others, 2001) and were implemented in the first two decades of NAWQA. NAWQA sampling design did not incorporate sampling based on study unit in its third decade (beginning in 2013); however, a larger regional grouping can be achieved by analyzing recoveries based on MRB. MRBs are eight large geographical regions used as the basis for surface-water status and trends assessment (Crawford and others, 2006). Surface-water sites in the NWQN and RSQA studies were each assigned to the appropriate MRB, and recovery data were plotted to determine if a matrix effect could be determined by this large-scale grouping. A strong effect of MRB on recoveries was not noticeable in plots of recovery by analytical method group (fig. 1–3; appendix 1). The lowest median recoveries for eight of the nine analytical method groups belonged to the MRBs located in California or Alaska; however, the sample sizes for these groups were one or two orders of magnitude lower than the other MRBs, so more data are needed in these regions to investigate potential matrix effects on recovery.

Schedule 2437 pesticide-specific matrix effects were documented in Sandstrom and others (2015), where low recoveries of some pesticides occurred in samples characterized by high pH values (8.4 to 9.6). Pesticide-specific matrix effects also seemed to occur between MRBs (fig. 5). For example,

metolachlor (pcode 65090) had consistent recovery and variation among MRBs, while acetochlor sulfynilacetic acid (pcode 68524), another pesticide in the acetanilide and amide group, and a degradate of acetochlor (pcode 68520), had shifts in median recoveries and differences in variation between MRBs (fig. 5 EP, p. 162 and fig. 5 Z, p. 106, respectively). The findings of Martin and others (2009), Sandstrom and others (2015), and the apparent occurrence of pesticide-specific effects by MRB indicate that more investigation would be necessary to draw conclusions about how an environmental sample matrix might affect recovery of pesticides analyzed by schedule 2437.

Highly Variable Pesticides

In addition to the pesticides that did not meet the data-quality objectives for recovery variability, some pesticide results were coded with a VQC of "m," meaning that the result is highly variable. The assignment of a VQC of "m" was determined by criteria outlined in Sandstrom and others (2015) and reported by the NWQL for 19 pesticides, regardless of the relative standard deviation of recovery calculated by matrix for the pesticides for this report. These pesticides, listed in table 1–2 of appendix 1, do not have a VQC of "m" associated with every result, but frequently when the result was not reported with a VQC of "m," it was censored at the IRL. More information about these pesticides can be obtained in Sandstrom and others (2015), where they are referred to as qualified analytes.

Further Analysis

There are sources of QC data associated with schedule 2437 that are not discussed in this report. One source is the surrogate data associated with each sample analyzed by schedule 2437. Surrogates are analytes added to the sample to measure sample-level method performance; they are not expected to be present in an environmental sample, but are chemically similar to expected analytes (Sandstrom and others, 2015). The recovery of surrogates is provided with the results for each sample and can act as a measure of analytical performance. Another source of QC data is the USGS Branch of Quality Systems Organic Blind Sample Project (OBSP). The purpose of the OBSP is to monitor, assess, and evaluate analytical results for organic laboratory methods, including schedule 2437, by using blind quality-assurance samples (U.S. Geological Survey, 2017c). Recovery over time, false positives and false negatives, and relations between recovery and concentration are assessed for each pesticide in schedule 2437 through the OBSP. One way the NWQL uses the results of the OBSP is to evaluate the presence of false negatives for each pesticide; these results can factor in the decision to change an RL. Laboratory blanks are another source of QC data that was briefly discussed in the "Identification of Raised Reporting Levels and Reasons for their Occurrence" section. Detections in laboratory blanks can indicate sample-, batch-, or method-level issues with contamination and might warrant the use of a raised censoring level (Nowell and others, 2013) or a minimum RL (Childress and others, 1999).

This report is not intended to be a comprehensive QC analysis of schedule 2437 and does not address the analysis of replicate, laboratory blank, or field blank samples. Replicate samples are two or more samples considered to be identical in composition and analysis (Mueller and others, 2015). Replicate data spanning 2013–15 in the NWQN, RSQA studies, and NAWQA groundwater networks can be obtained in Shoda and others (2017a), which provides an initial summary of replicate samples. Field blank samples are QC samples intended to be free of measureable concentrations of an analyte (Mueller and others, 2015). Laboratory and field blank data require a thorough analysis to determine the occurrence of pesticide detections in blank samples and their possible implications for data interpretation. Pesticide water-quality samples have been analyzed at the NWQL for decades using various other analytical methods. It is outside of the scope of this report to assess or compare those methods with schedule 2437; however, a detailed method comparison was done by Martin and others (2017).

One way that the recovery data discussed in this report can be used is in the development of a recovery correction model to adjust pesticide concentrations to account for temporal changes in performance of the analytical method (Martin and others, 2009). This report and accompanying data release (Shoda and others, 2017b) assess some aspects of method performance during the first 3 years of schedule 2437 routine analysis, however, this short time frame and the variation observed in this time period make it difficult to assess if these data are appropriate for the development of a recovery model. Method performance over time and possible recovery correction could be assessed when more data are available.

Summary

This report presents an investigation into factors that are important to understand when interpreting pesticide data from samples analyzed with National Water Quality Laboratory schedule 2437, including changing reporting levels, raised reporting levels, and spike recovery. The purpose of this report is to provide information on schedule 2437 so that data users know what supporting information is available for reported pesticide results and method performance and the implications of that information on future analyses. Figures and tables are provided that summarize laboratory batch processing, common value qualifier codes, the reasons for raised reporting level occurrence and the value qualifier codes and laboratory results comments associated with each reason, the investigation into the effect of spike lot and spike lot age on recovery, and the recovery of each pesticide by matrix. The information provided in this report is essential to understanding pesticide data determined by schedule 2437 and should be reviewed before interpretation of these data.

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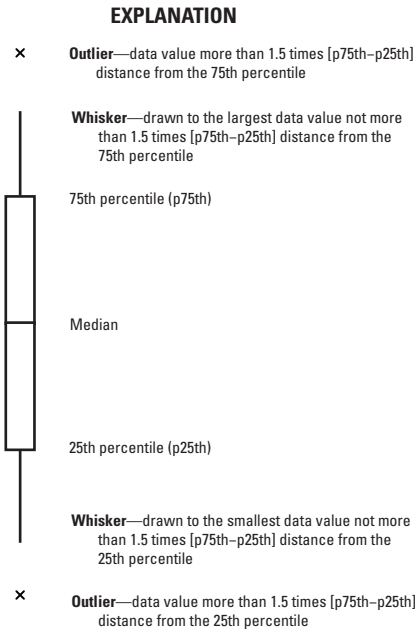


Figure 1. Image showing explanation of a boxplot that is used to depict the distribution of recovery.

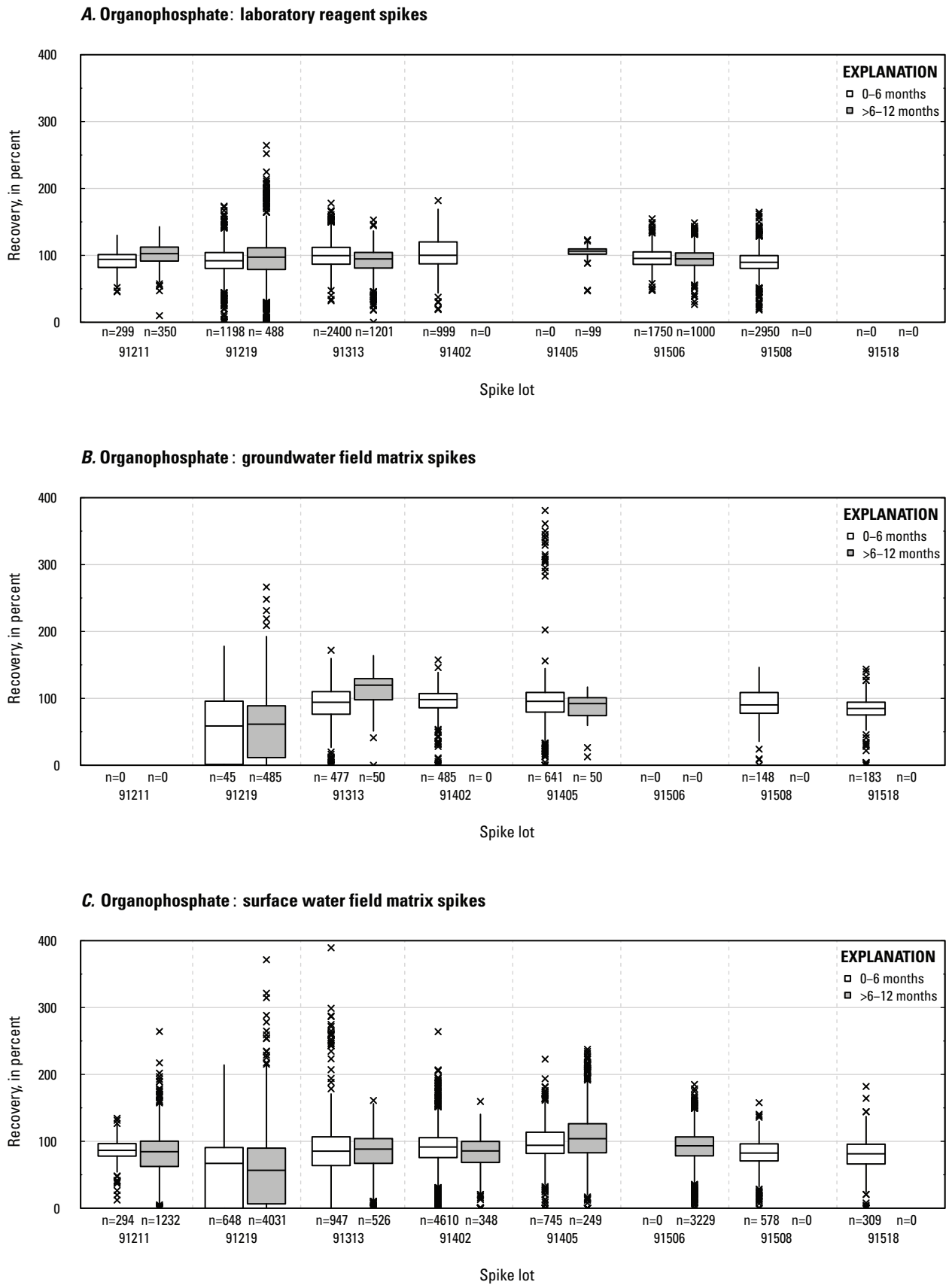
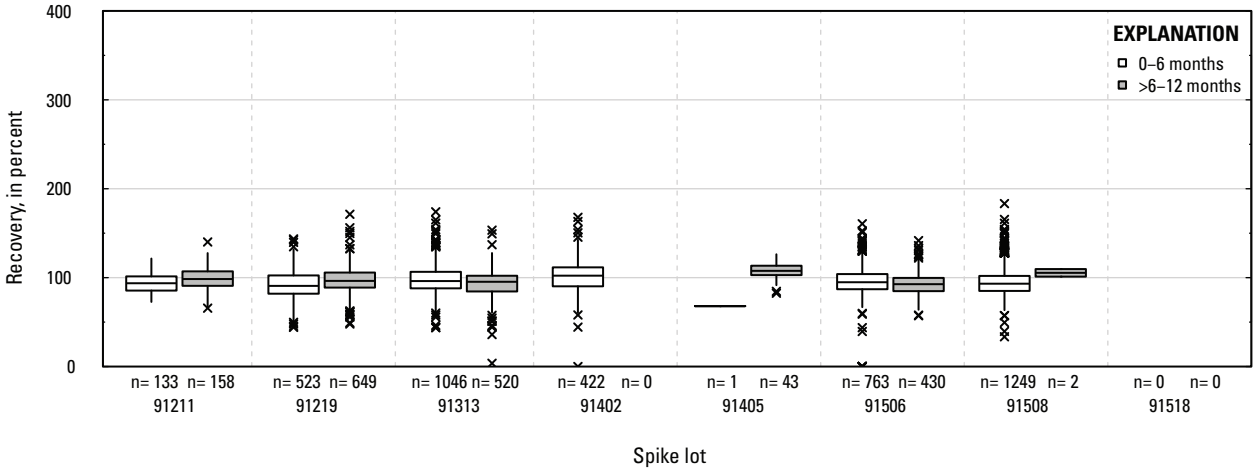
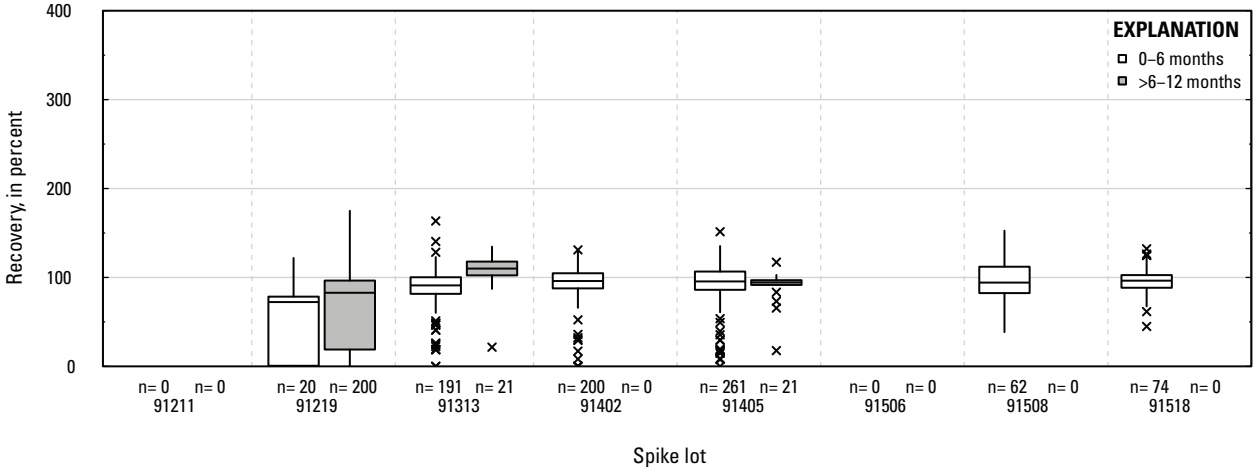


Figure 2. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.

D. **Carbamate and thiocarbamate: laboratory reagent spikes**



E. **Carbamate and thiocarbamate: groundwater field matrix spikes**



F. **Carbamate and thiocarbamate: surface water field matrix spikes**

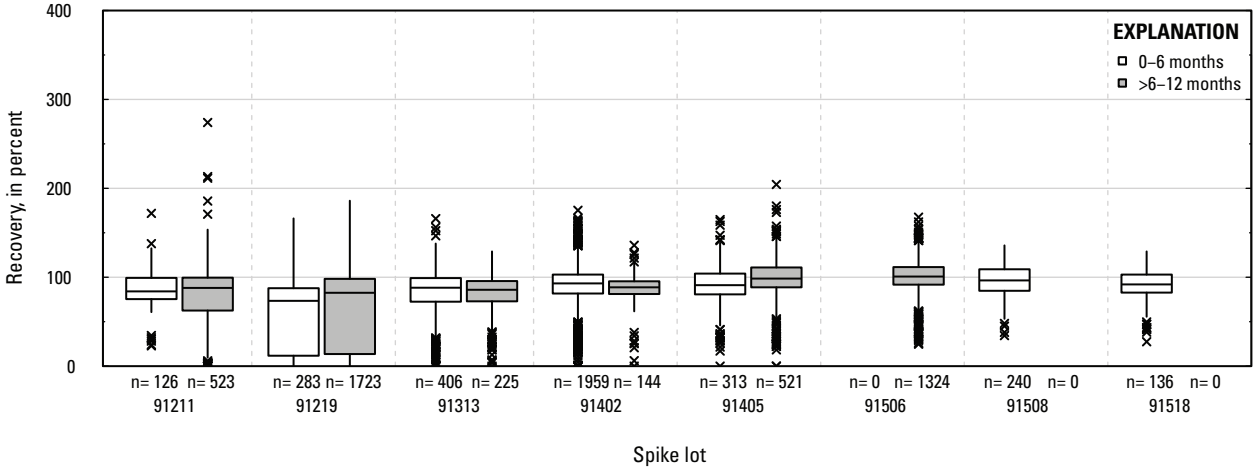
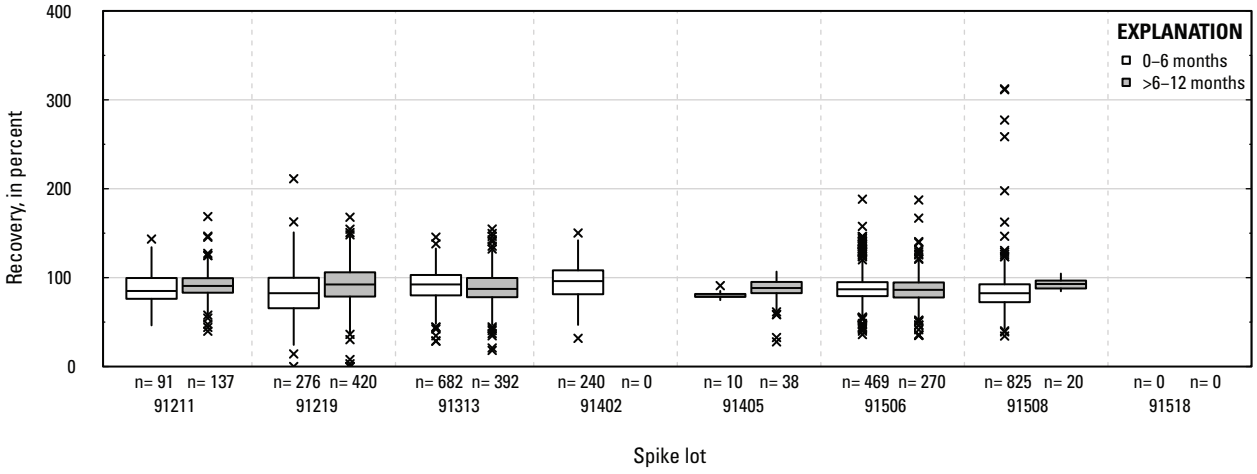
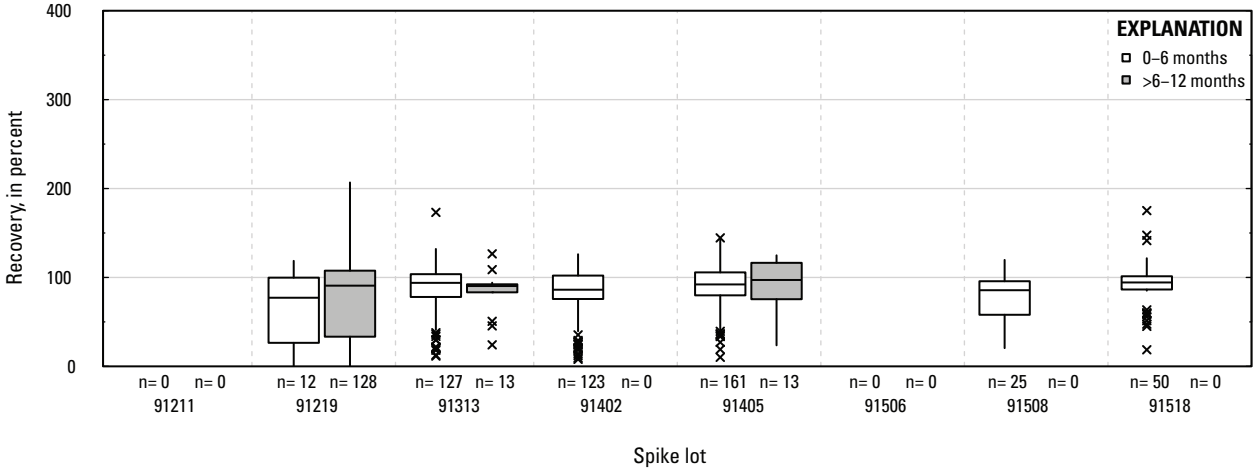


Figure 2. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

G. **Pyrethroid, organochlorine and phenylpyrazine: laboratory reagent spikes**



H. **Pyrethroid, organochlorine and phenylpyrazine: groundwater field matrix spikes**



I. **Pyrethroid, organochlorine and phenylpyrazine: surface water field matrix spikes**

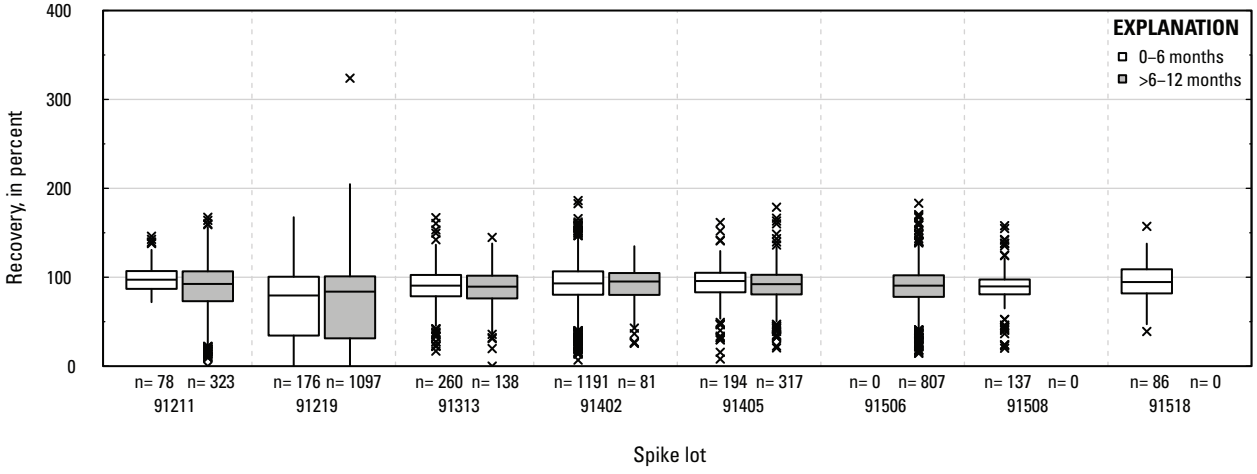
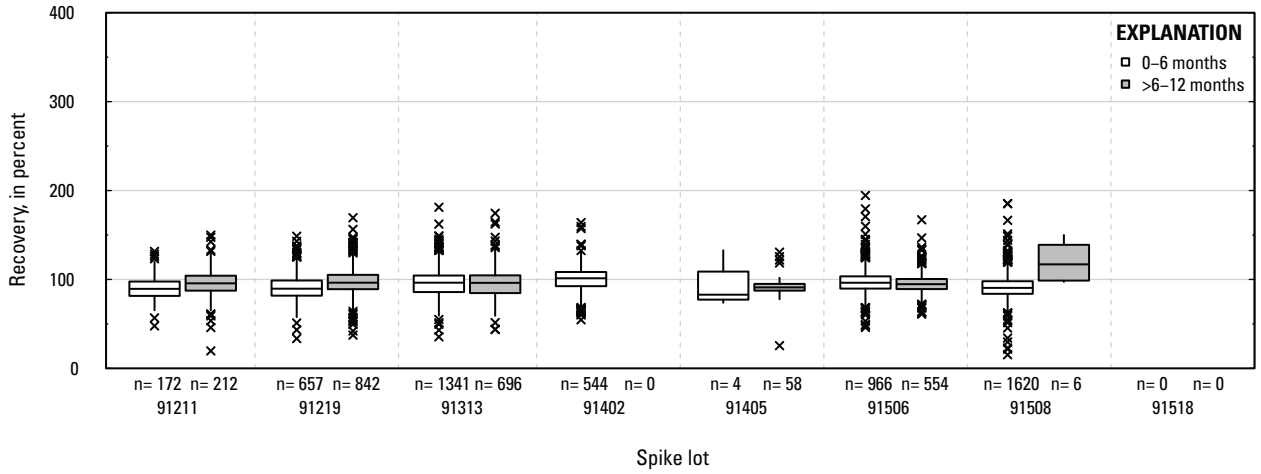
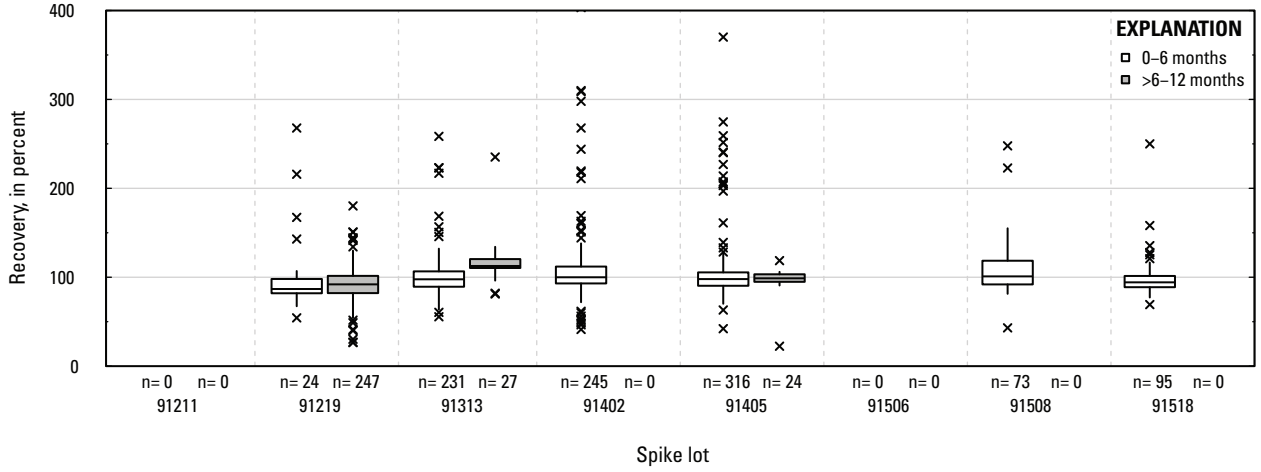


Figure 2. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

***J.* Triazine: laboratory reagent spikes**



***K.* Triazine: groundwater field matrix spikes**



***L.* Triazine: surface water field matrix spikes**

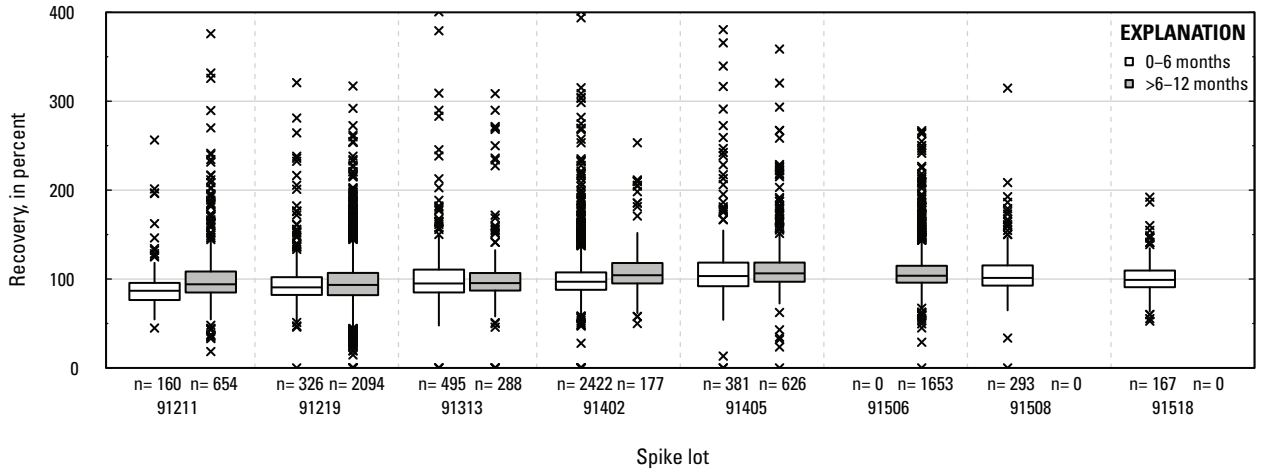
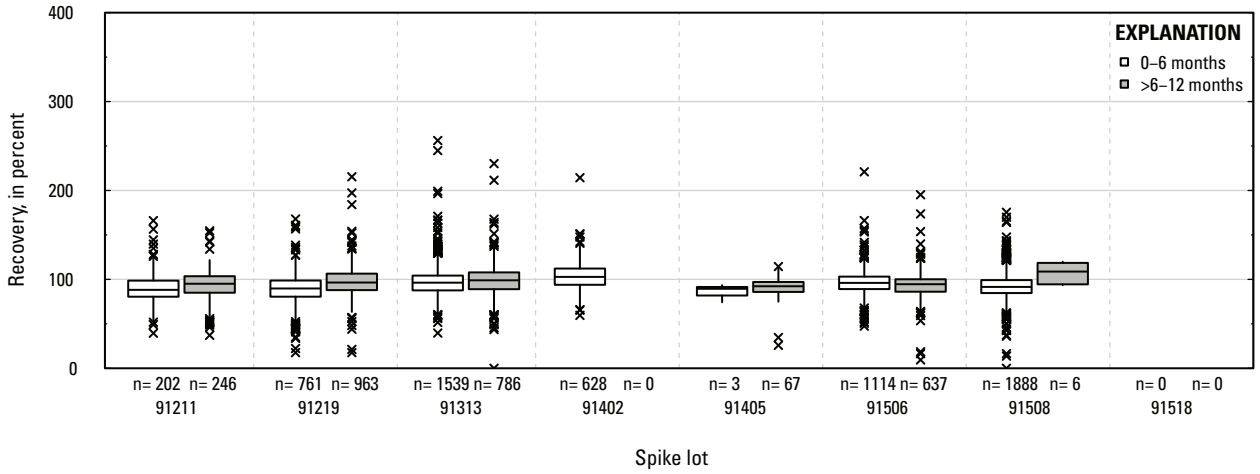
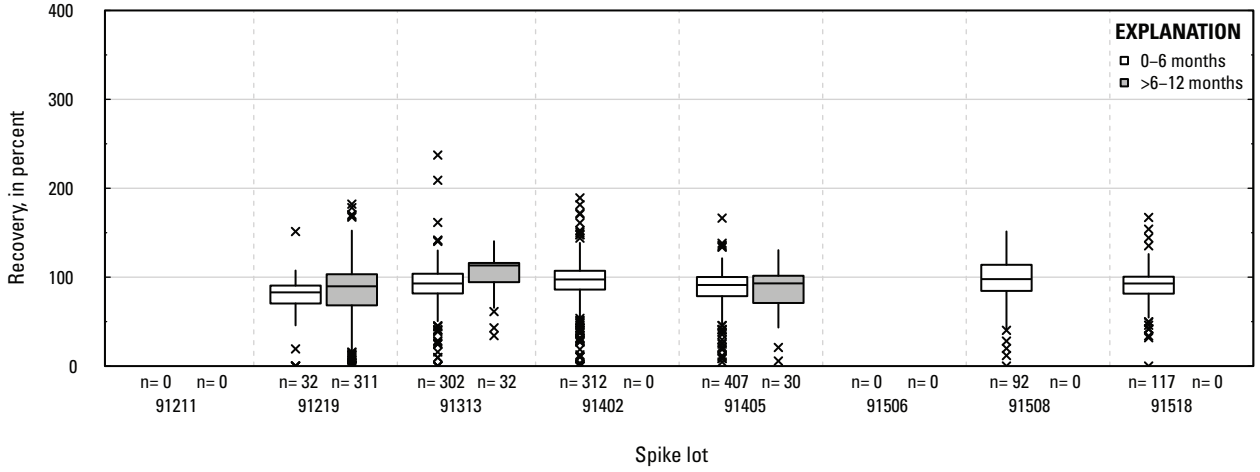


Figure 2. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

M. **Sulfonylurea and urea: laboratory reagent spikes**



N. **Sulfonylurea and urea: groundwater field matrix spikes**



O. **Sulfonylurea and urea: surface water field matrix spikes**

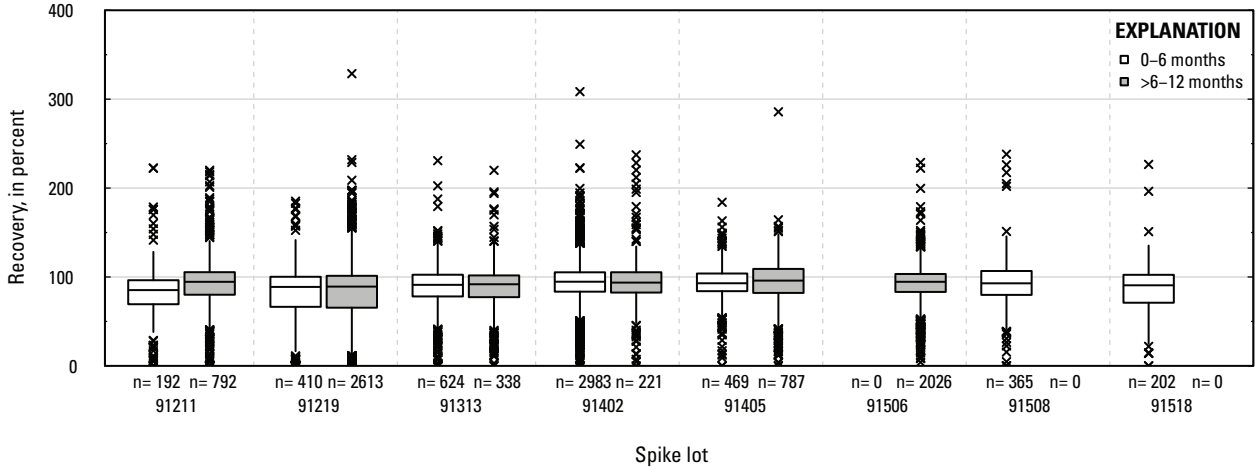
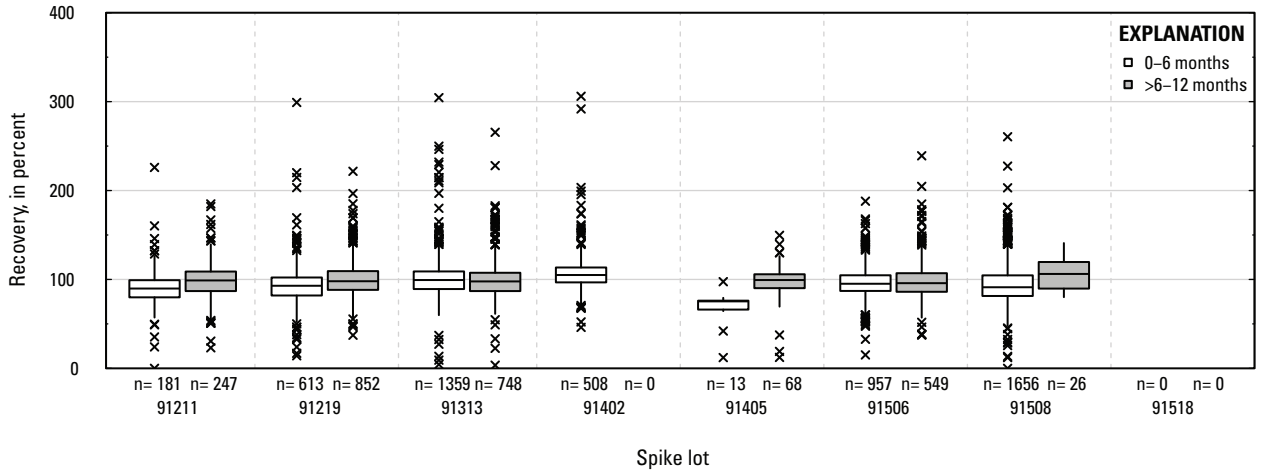
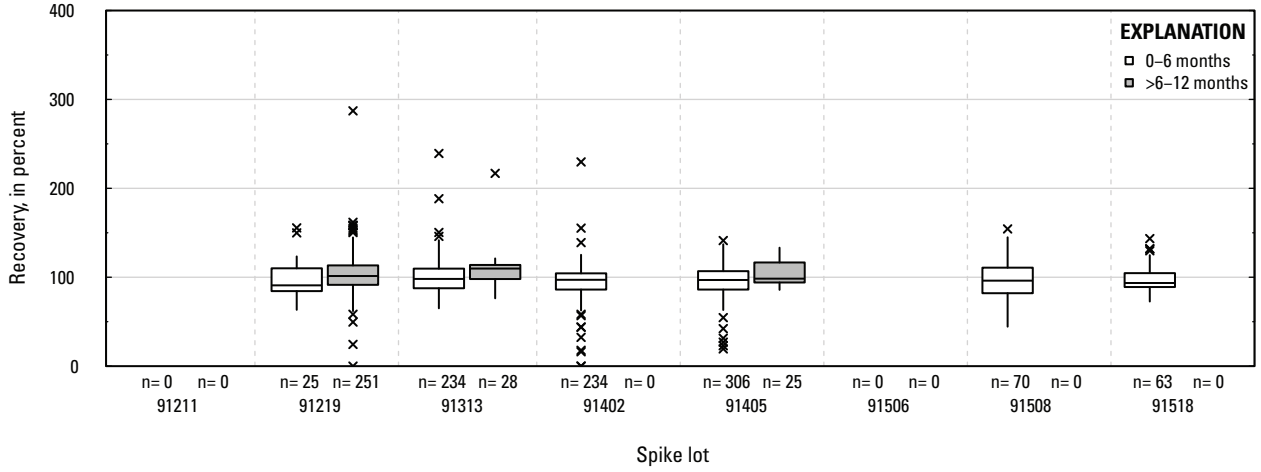


Figure 2. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

P. **Acetanilide and amide: laboratory reagent spikes**



Q. **Acetanilide and amide: groundwater field matrix spikes**



R. **Acetanilide and amide: surface water field matrix spikes**

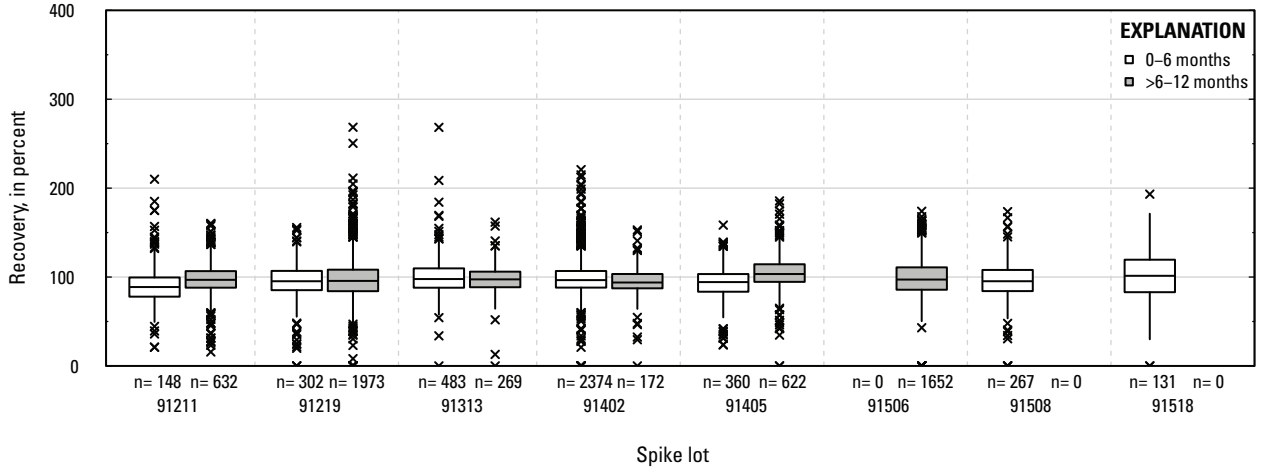
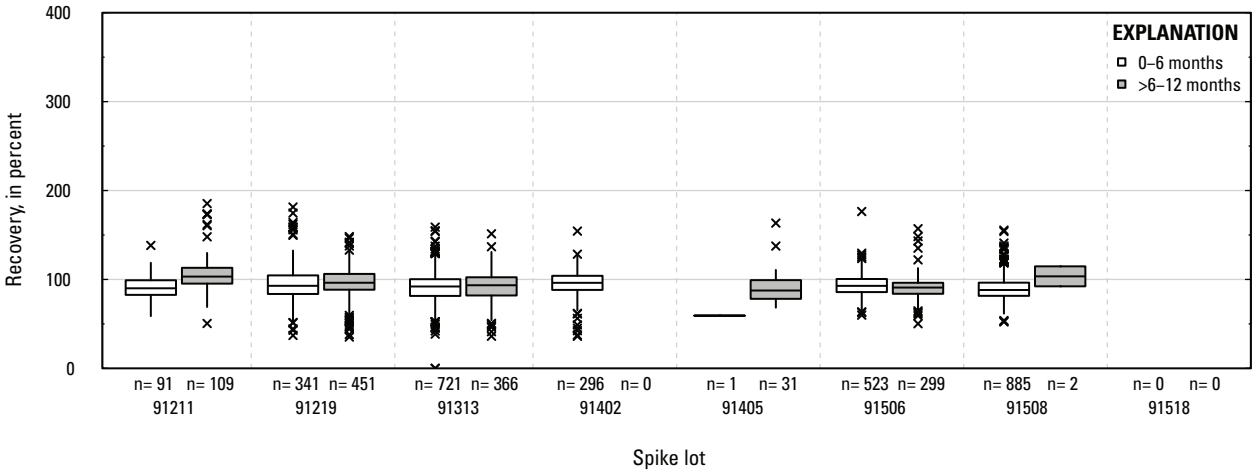
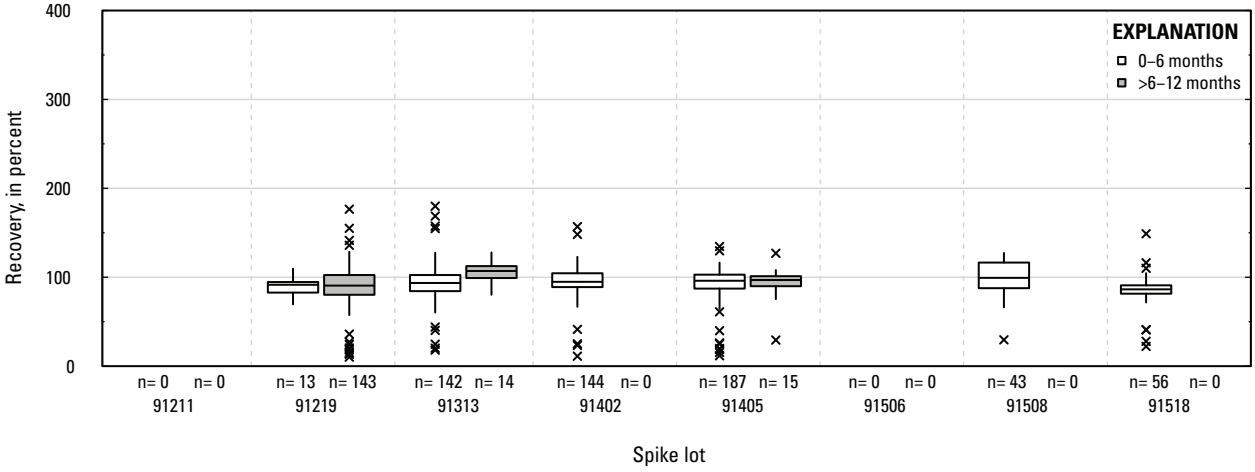


Figure 2. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

S. **Fungicide: laboratory reagent spikes**



T. **Fungicide: groundwater field matrix spikes**



U. **Fungicide: surface water field matrix spikes**

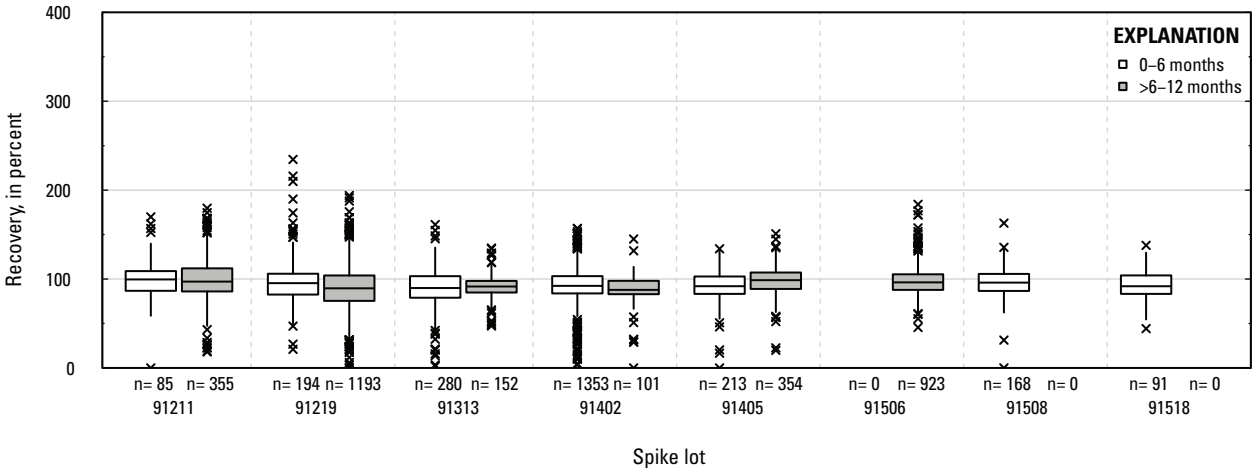
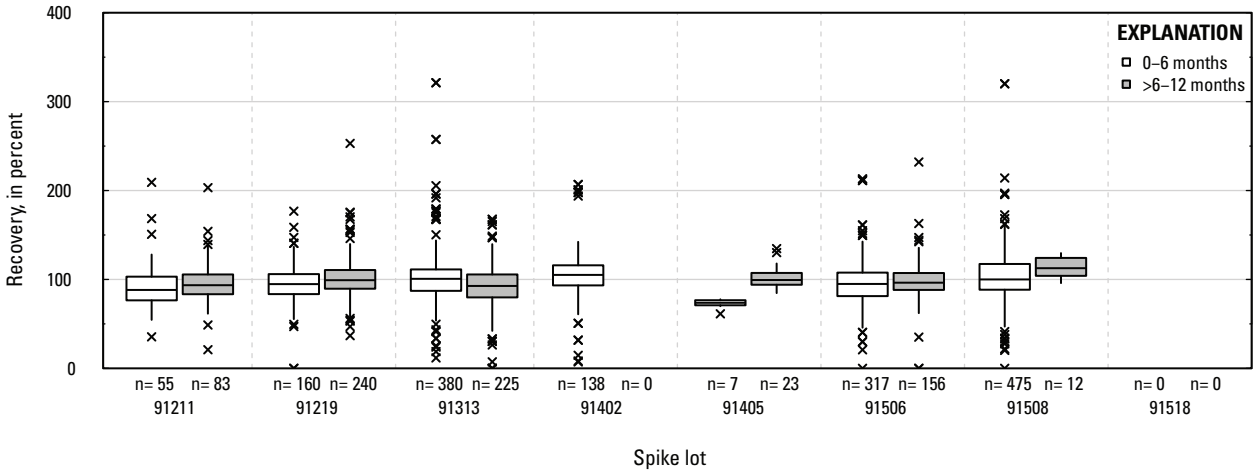
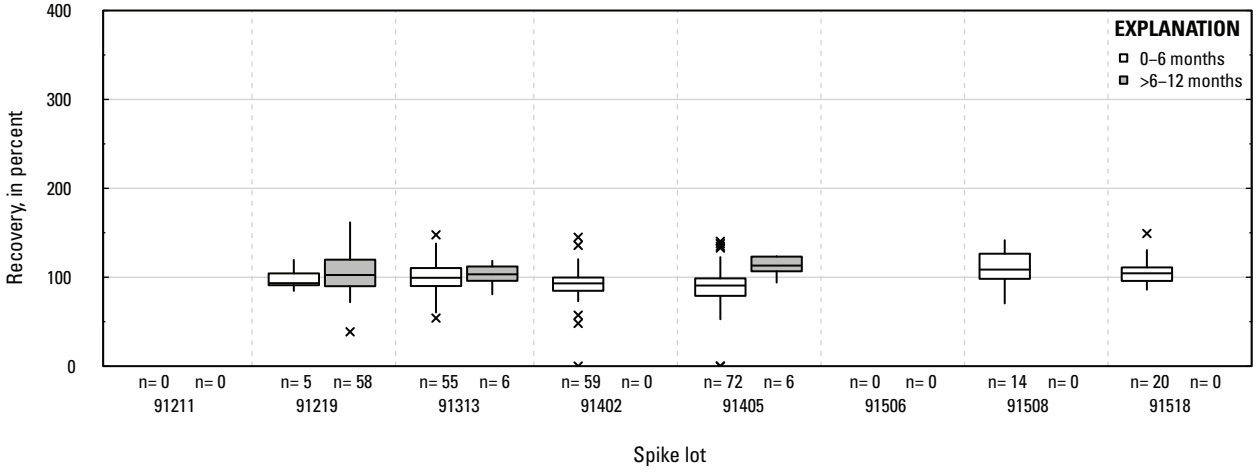


Figure 2. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

***V.* Acid: laboratory reagent spikes**



***W.* Acid: groundwater field matrix spikes**



***X.* Acid: surface water field matrix spikes**

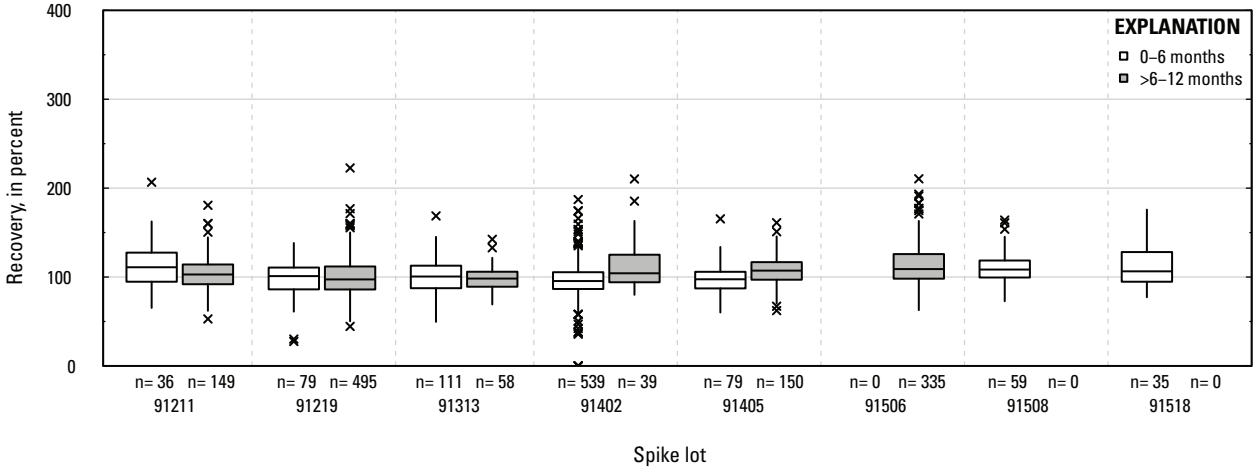
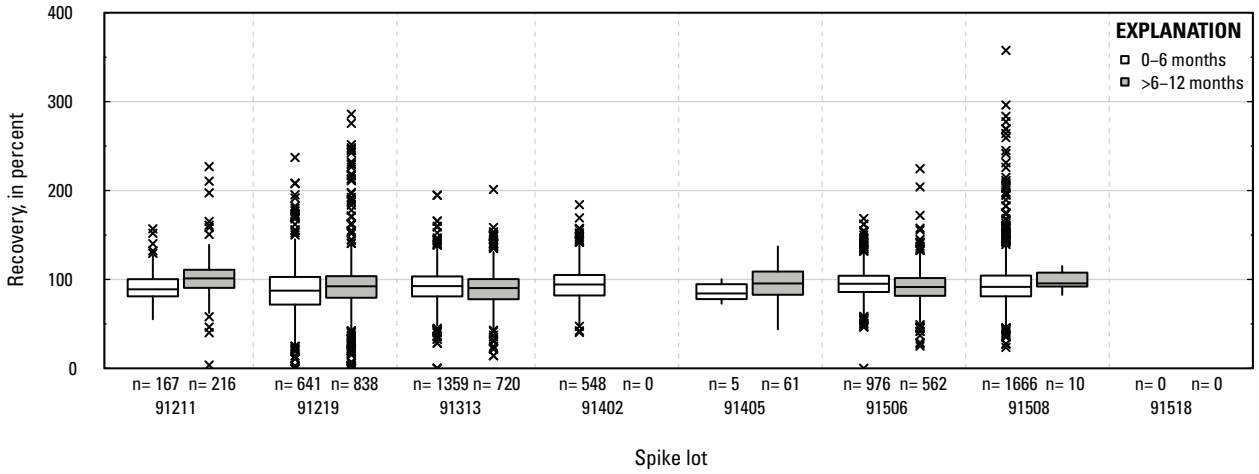
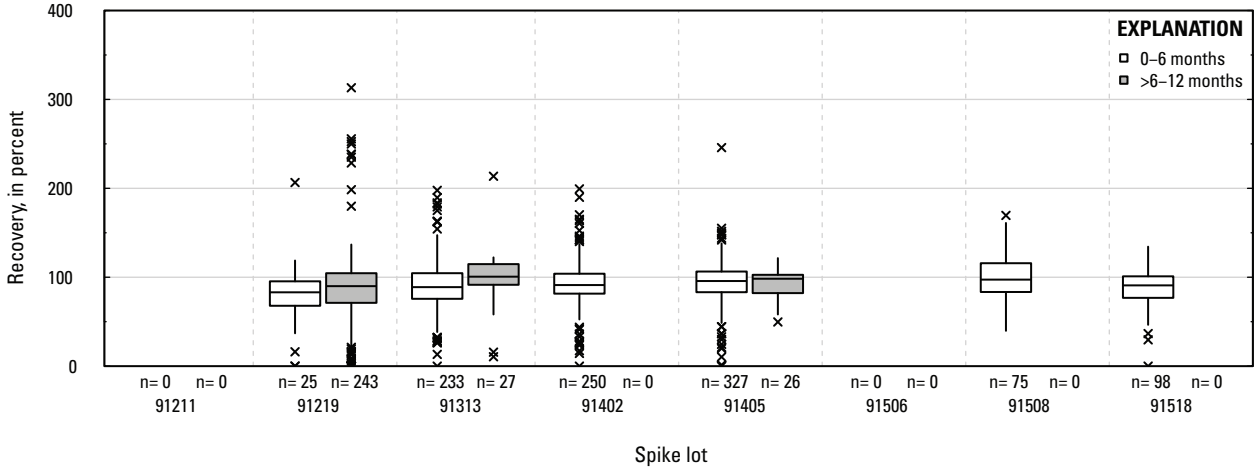


Figure 2. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

Y. **Miscellaneous: laboratory reagent spikes**



Z. **Miscellaneous: ground water field matrix spikes**



AA. **Miscellaneous: surface water field matrix spikes**

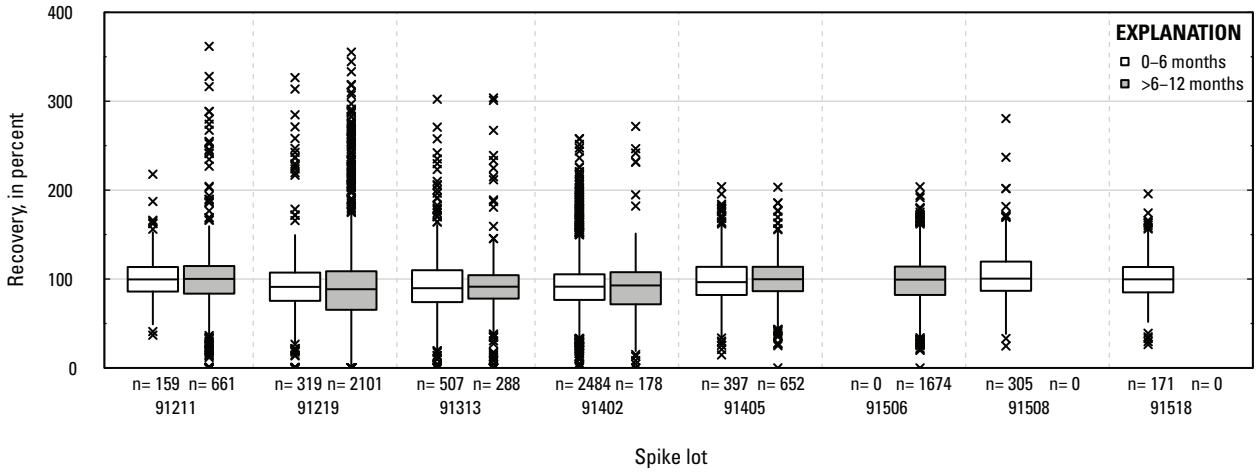


Figure 2. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

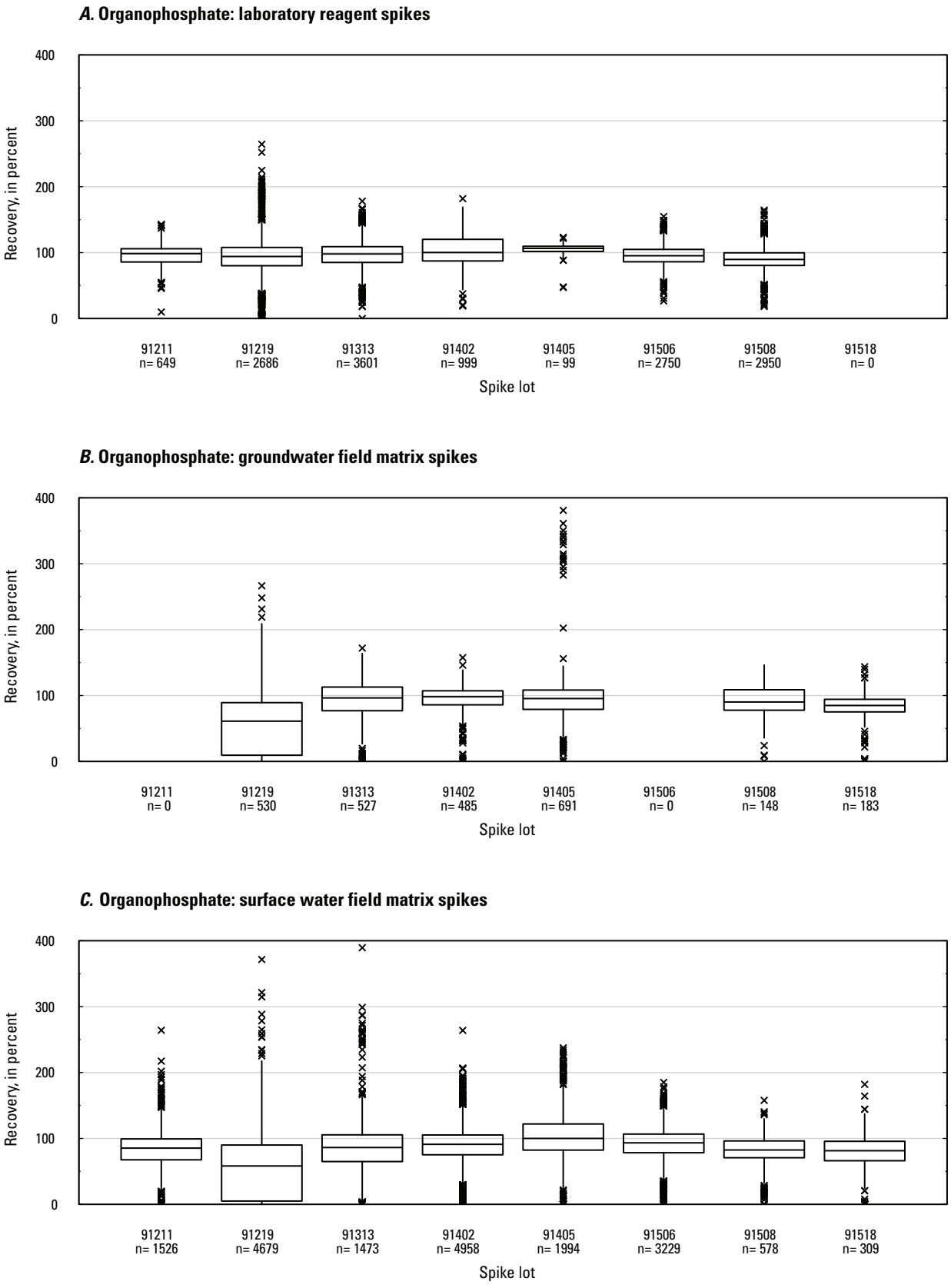
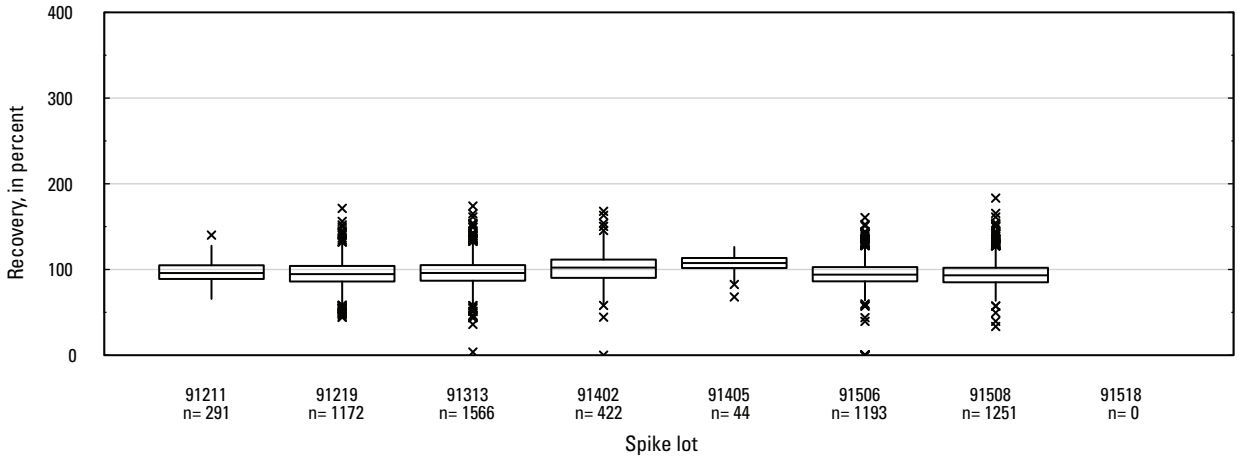
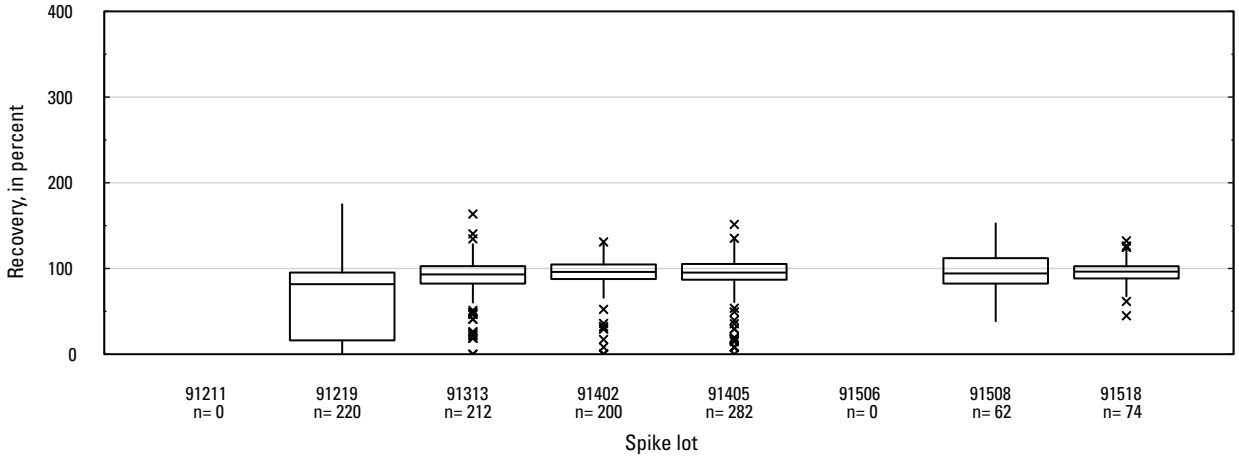


Figure 3. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, and spike lot. Recovery values larger than 400 percent are not shown.

D. **Carbamate and thiocarbamate: laboratory reagent spikes**



E. **Carbamate and thiocarbamate: groundwater field matrix spikes**



F. **Carbamate and thiocarbamate: surface water field matrix spikes**

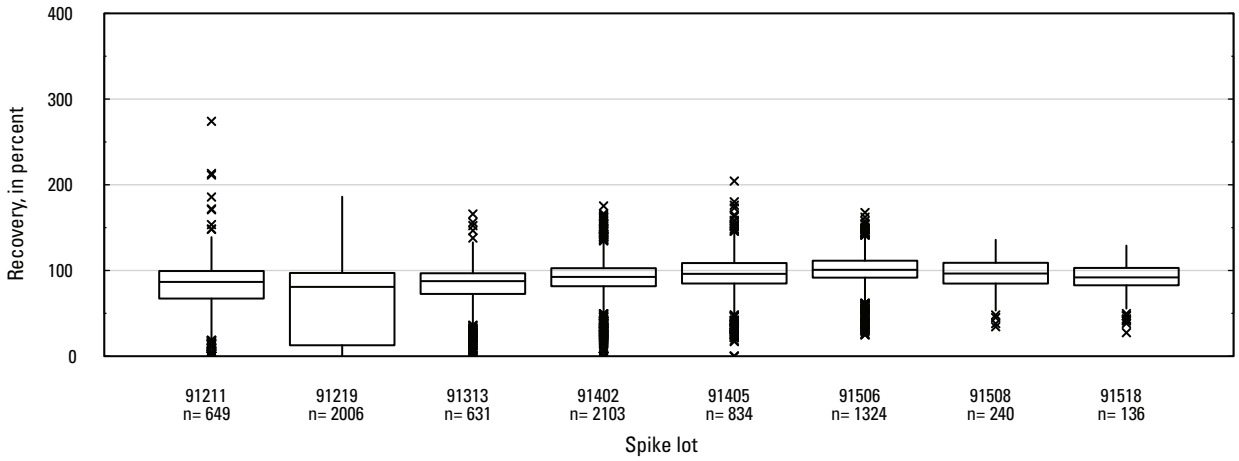
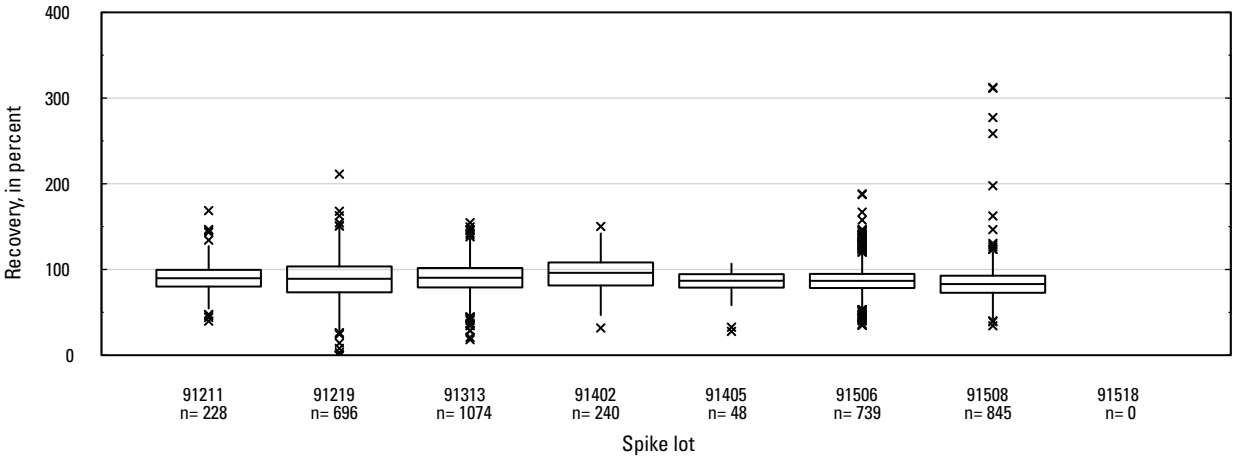
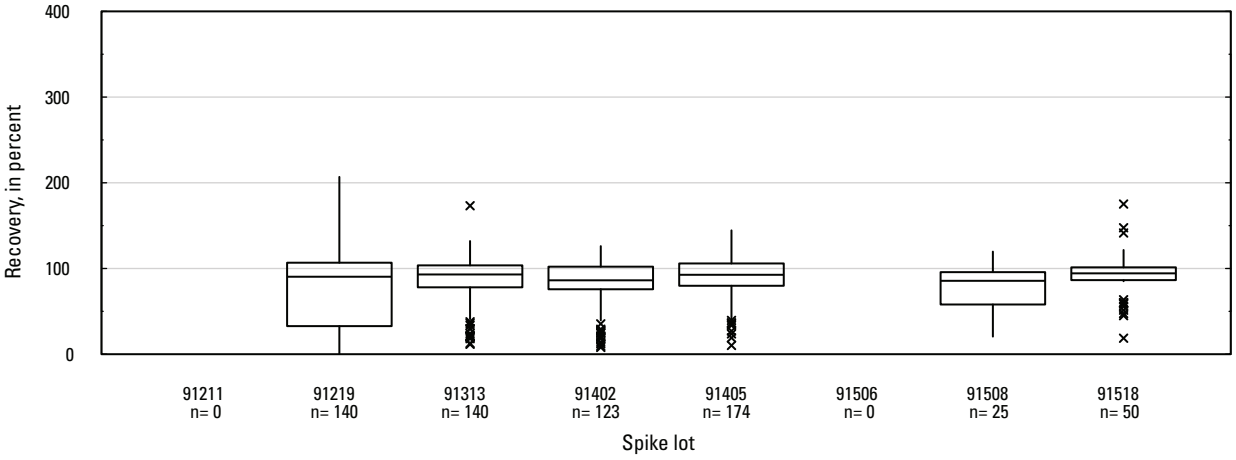


Figure 3. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, and spike lot. Recovery values larger than 400 percent are not shown.—Continued

G. **Pyrethroid, organochlorine and phenylpyrazine: laboratory reagent spikes**



H. **Pyrethroid, organochlorine and phenylpyrazine: groundwater field matrix spikes**



I. **Pyrethroid, organochlorine and phenylpyrazine: surface water field matrix spikes**

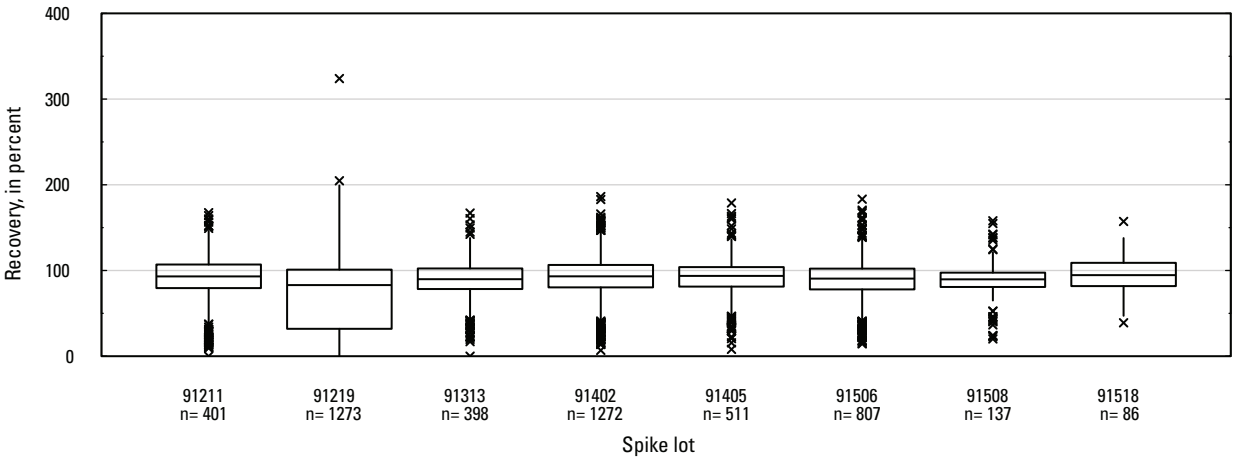
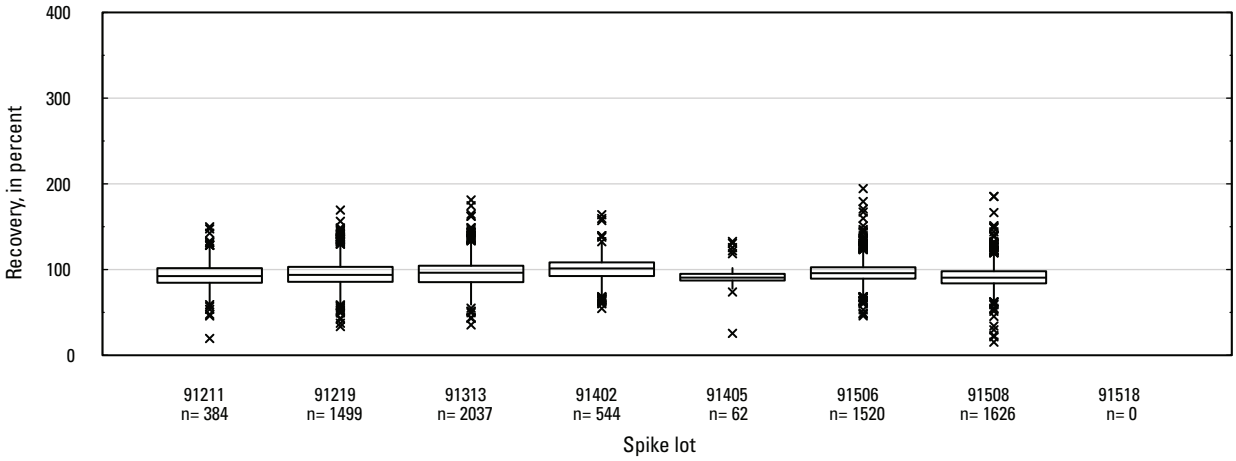
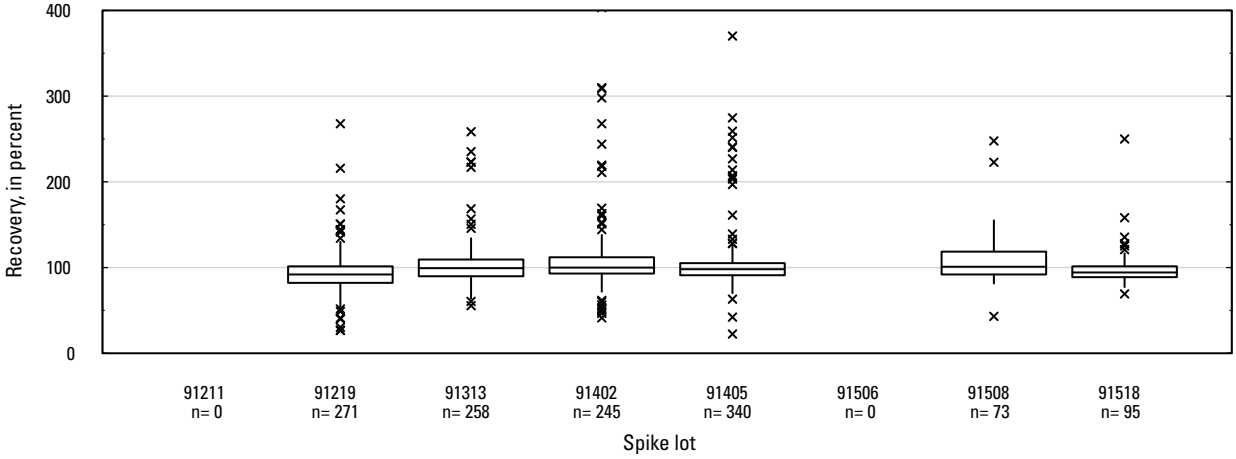


Figure 3. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, and spike lot. Recovery values larger than 400 percent are not shown.—Continued

J. **Triazine: laboratory reagent spikes**



K. **Triazine: groundwater field matrix spikes**



L. **Triazine: surface water field matrix spikes**

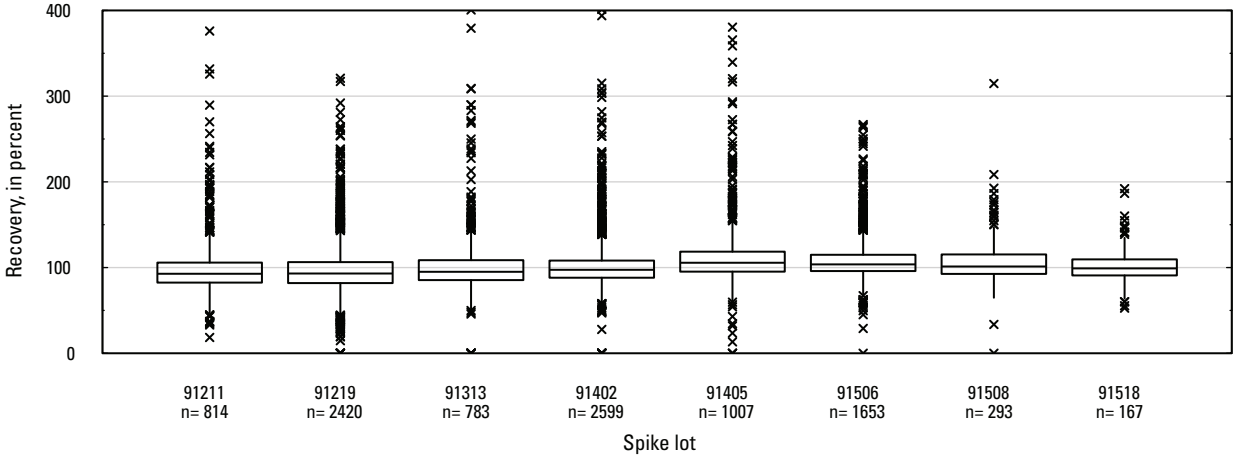
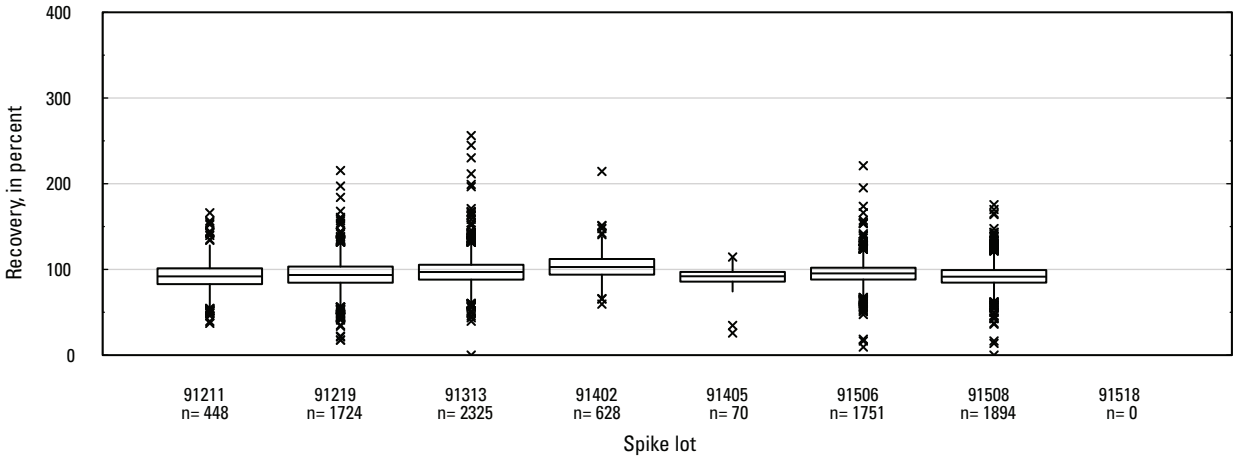
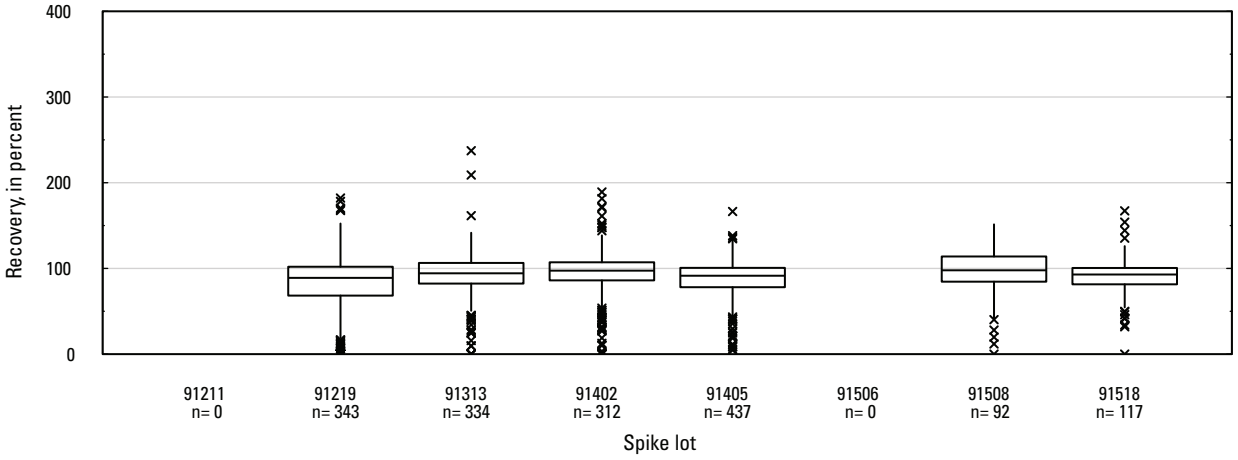


Figure 3. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, and spike lot. Recovery values larger than 400 percent are not shown.—Continued

M. **Sulfonylurea and urea: laboratory reagent spikes**



N. **Sulfonylurea and urea: groundwater field matrix spikes**



O. **Sulfonylurea and urea: surface water field matrix spikes**

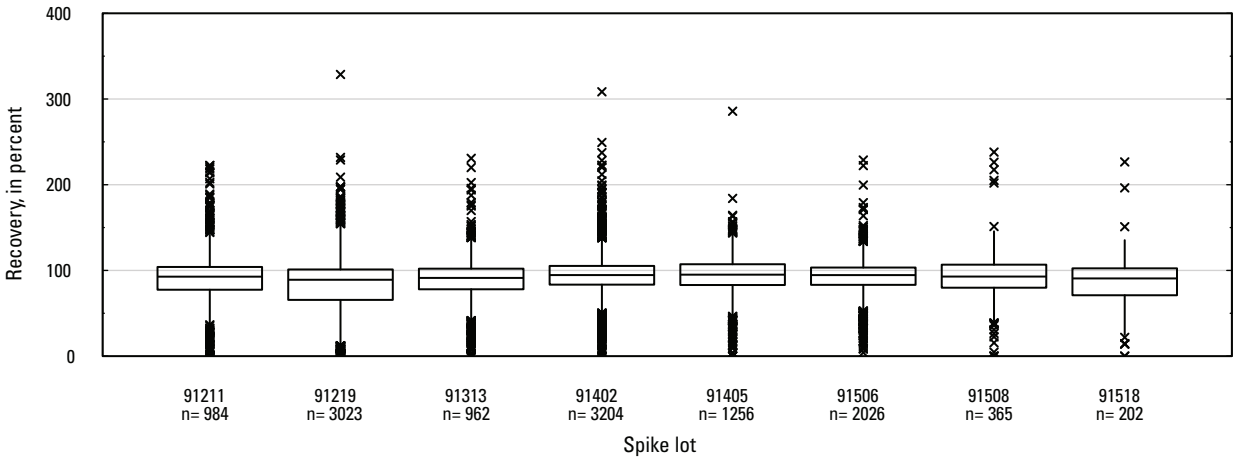
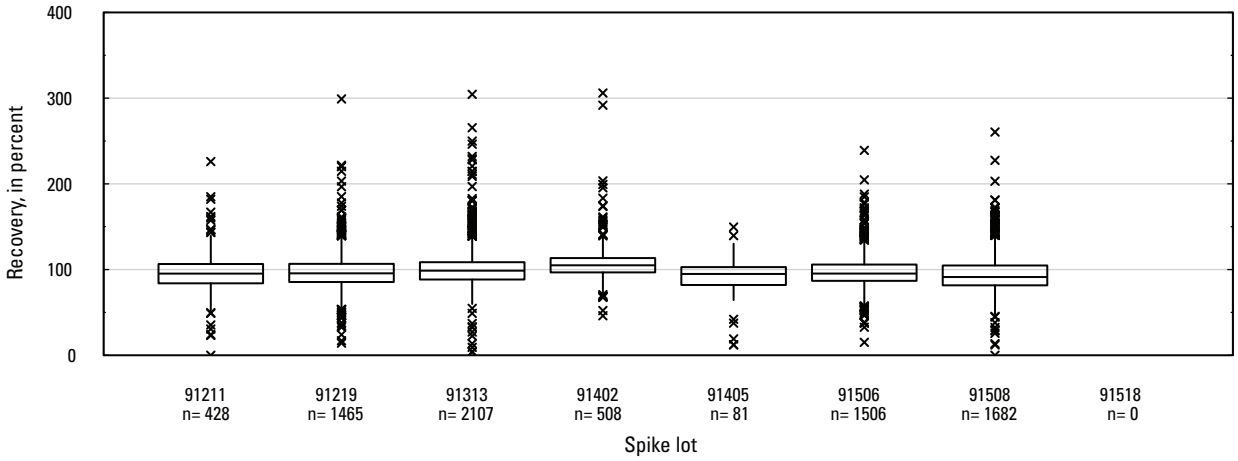
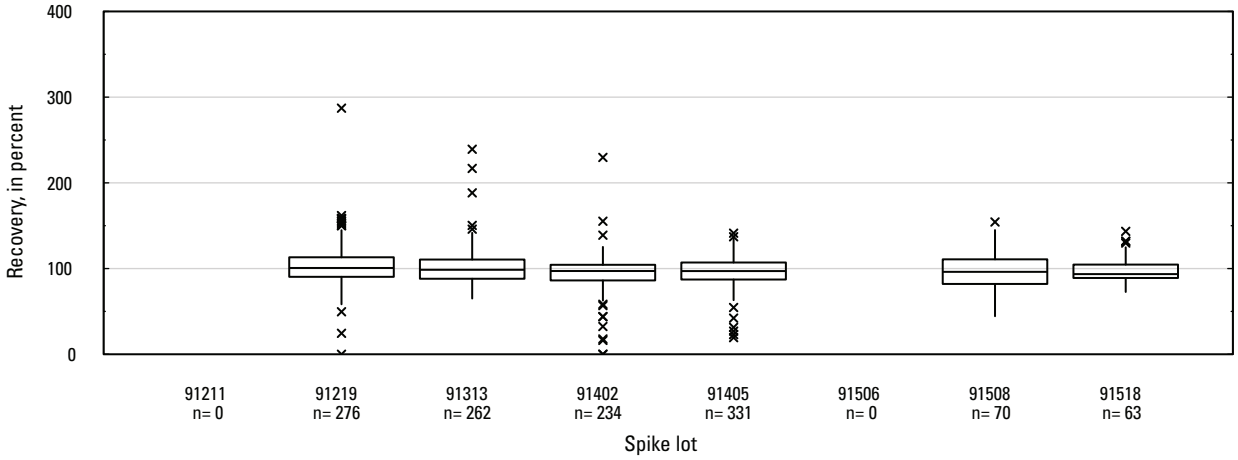


Figure 3. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, and spike lot. Recovery values larger than 400 percent are not shown.—Continued

P. **Acetanilide and amide: laboratory reagent spikes**



Q. **Acetanilide and amide: groundwater field matrix spikes**



R. **Acetanilide and amide: surface water field matrix spikes**

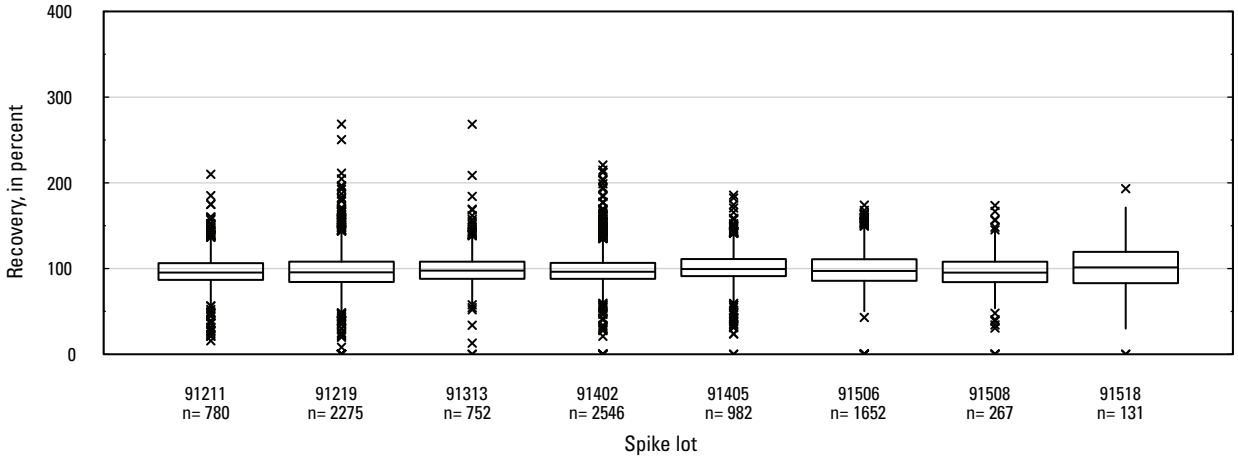
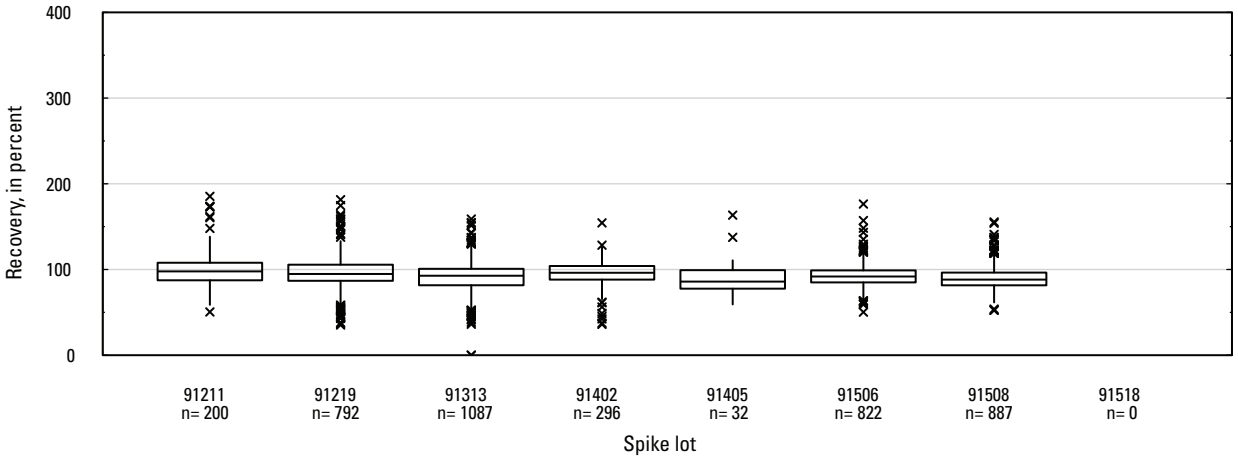
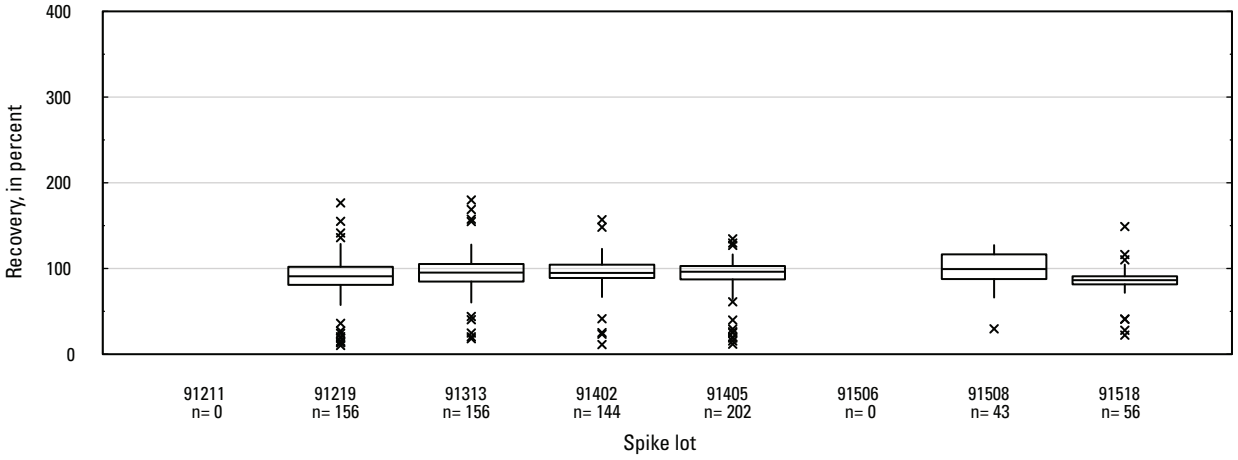


Figure 3. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, and spike lot. Recovery values larger than 400 percent are not shown.—Continued

S. **Fungicides: laboratory reagent spikes**



T. **Fungicides: groundwater field matrix spikes**



U. **Fungicides: surface water field matrix spikes**

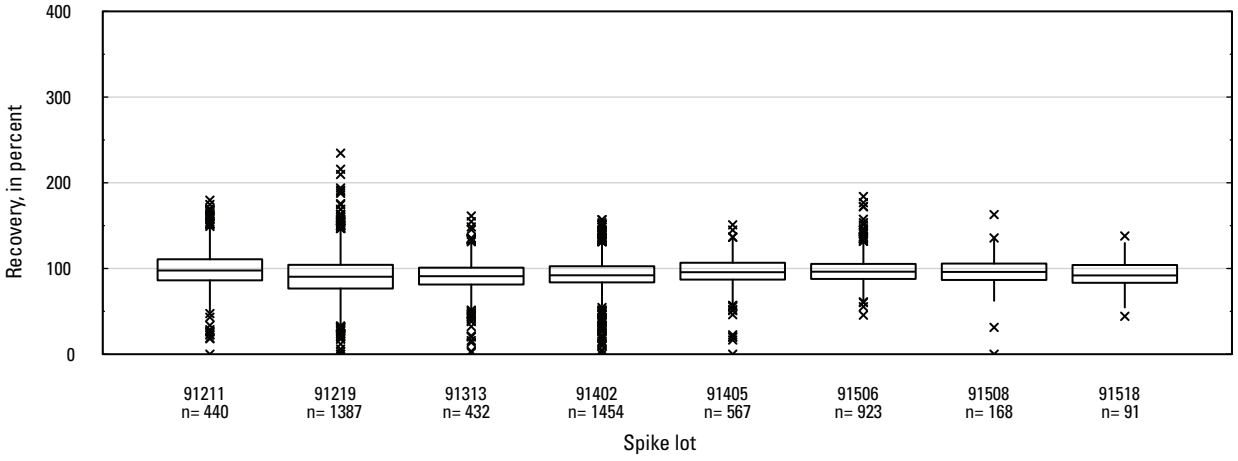
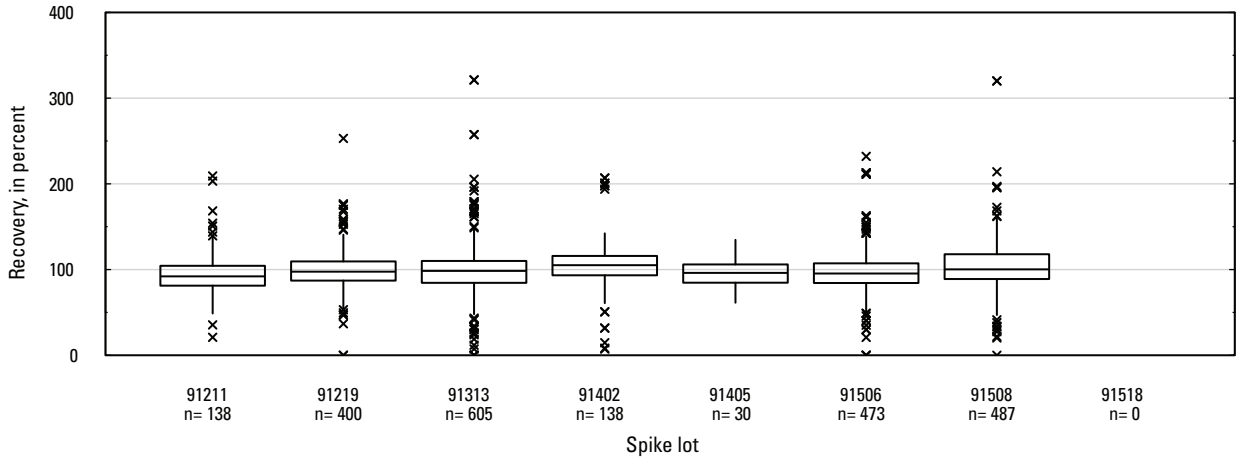
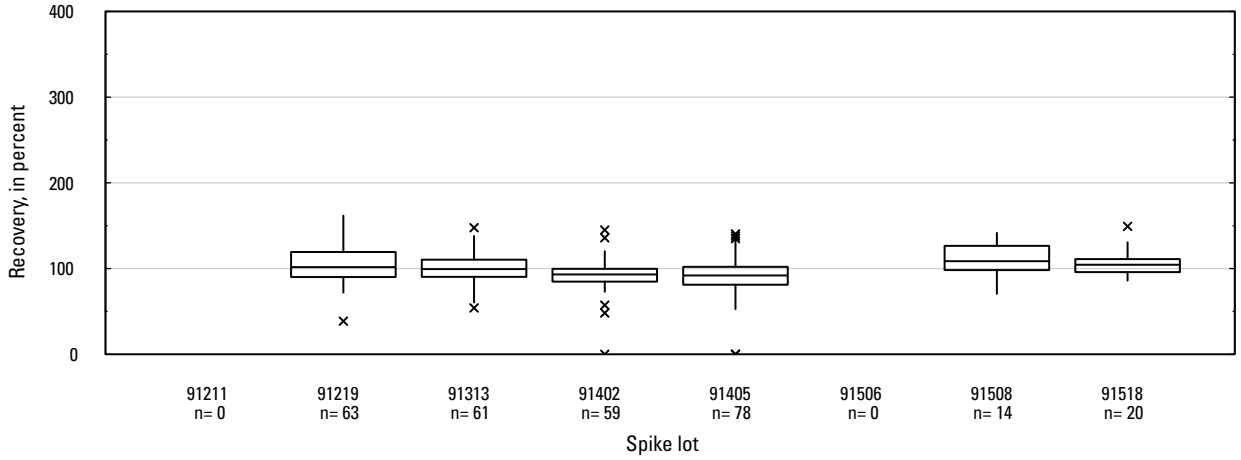


Figure 3. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, and spike lot. Recovery values larger than 400 percent are not shown.—Continued

V. **Acid: laboratory reagent spikes**



W. **Acid: groundwater field matrix spikes**



X. **Acid: surface water field matrix spikes**

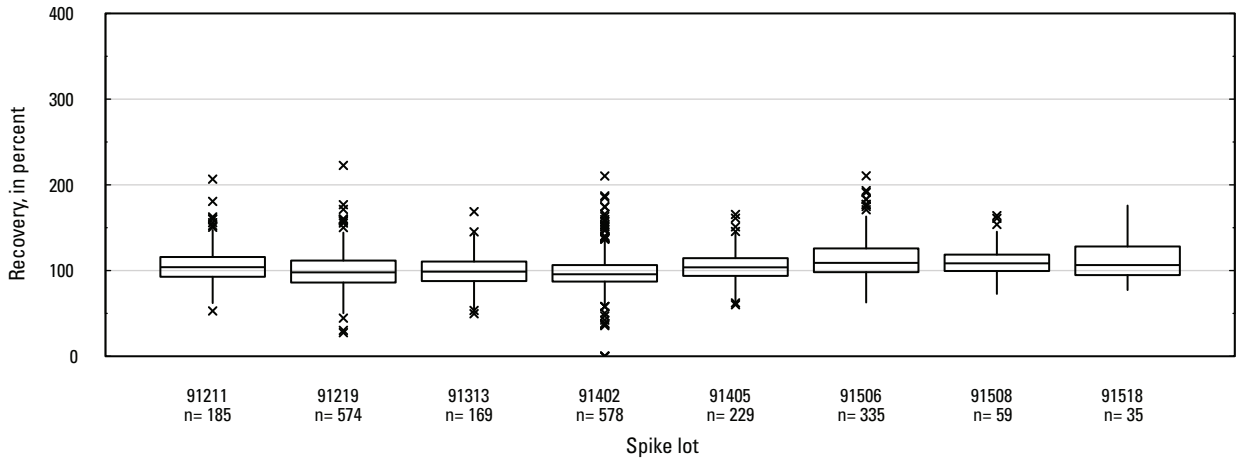
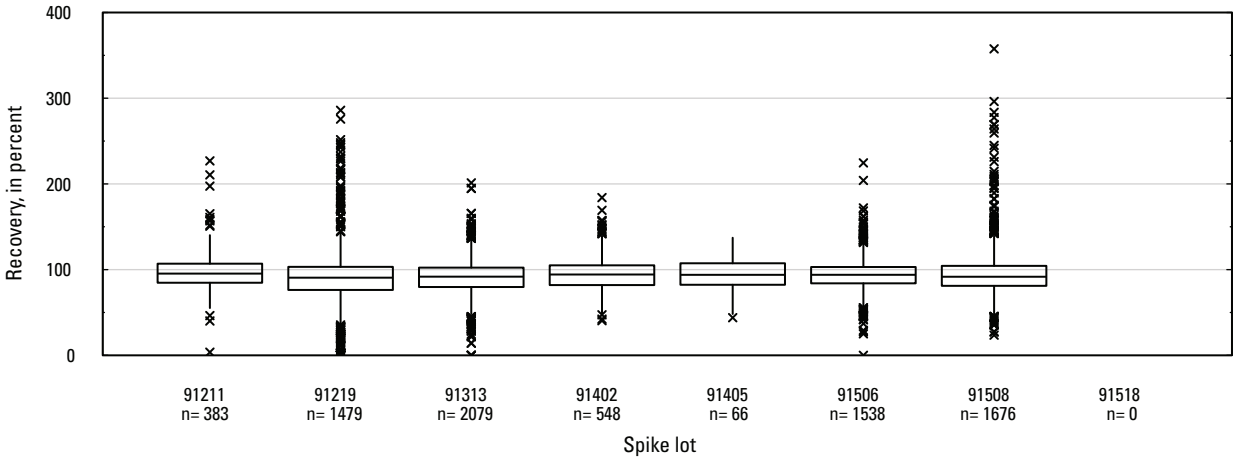
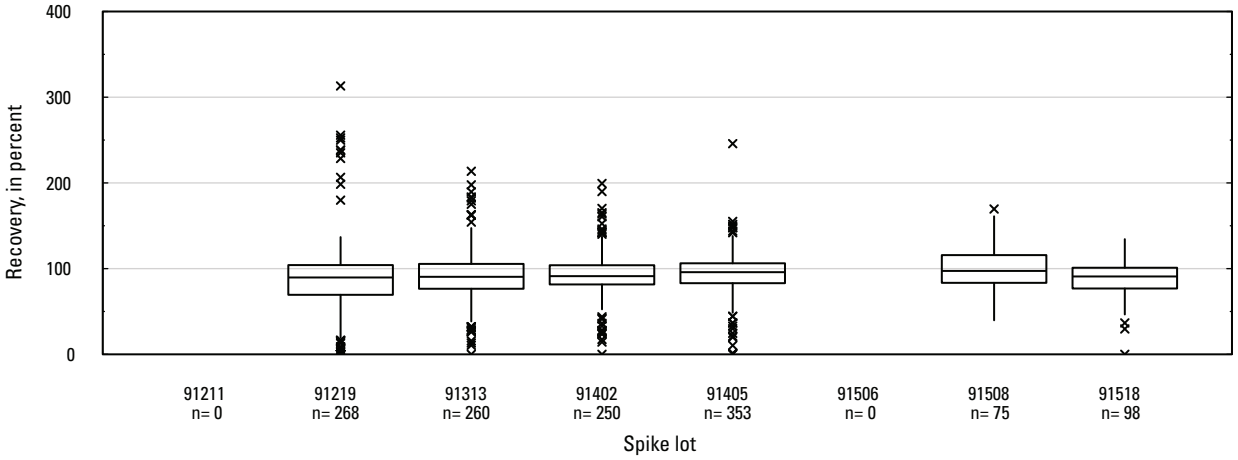


Figure 3. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, and spike lot. Recovery values larger than 400 percent are not shown.—Continued

Y. **Miscellaneous: laboratory reagent spikes**



Z. **Miscellaneous: groundwater field matrix spikes**



AA. **Miscellaneous: surface water field matrix spikes**

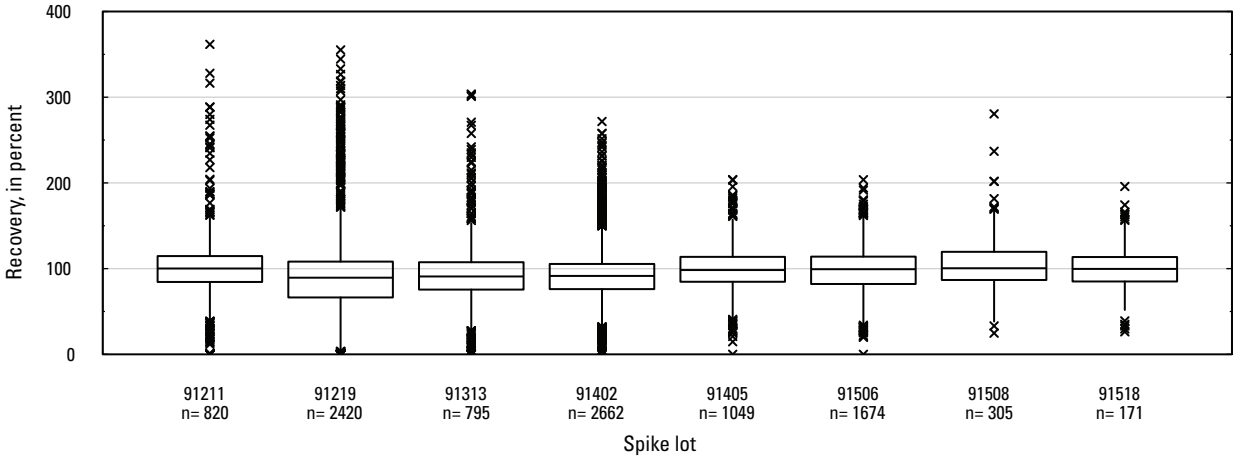


Figure 3. Graph showing distributions of recovery for pesticides in schedule 2437 by analytical method group, matrix, and spike lot. Recovery values larger than 400 percent are not shown.—Continued

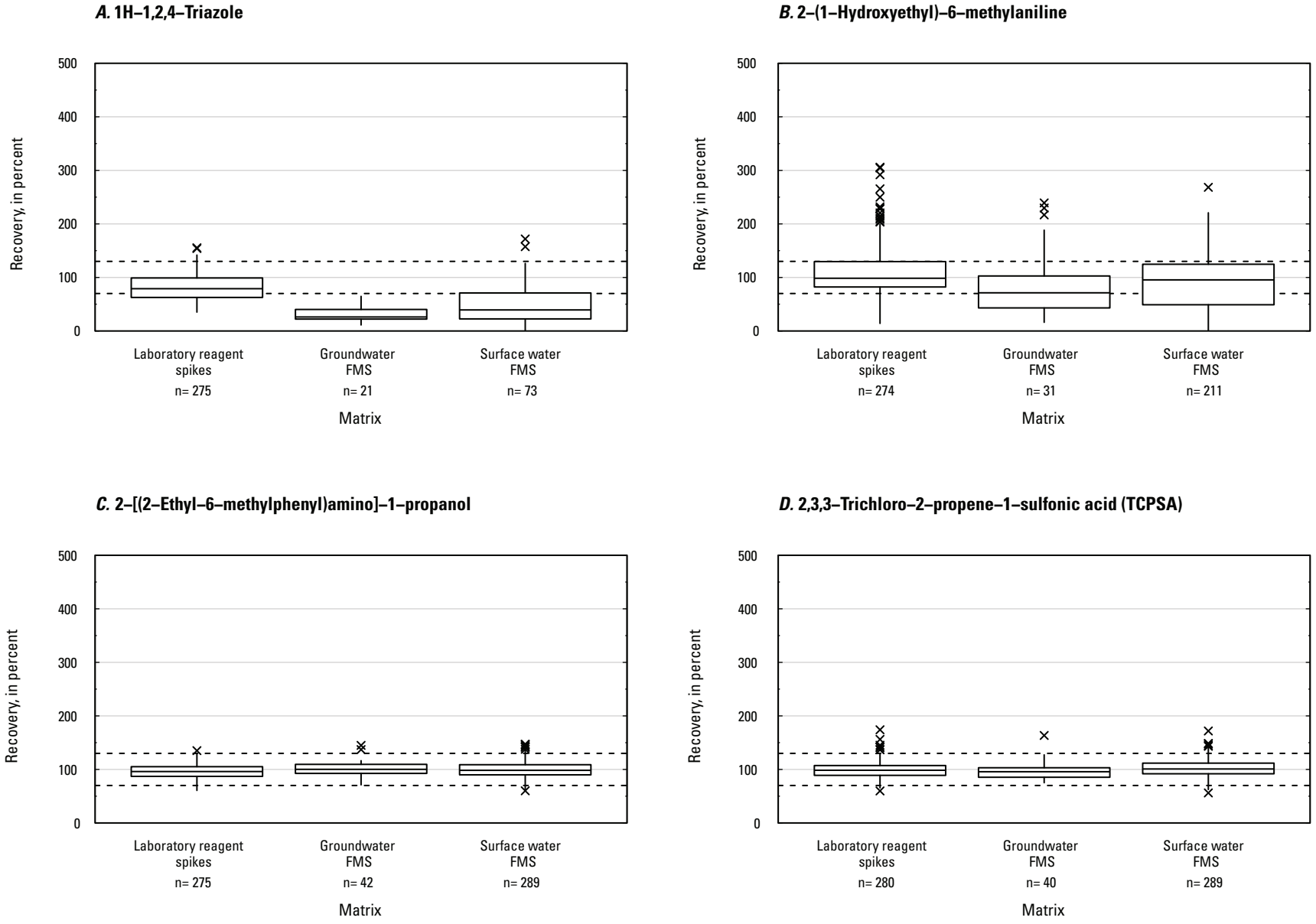


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.

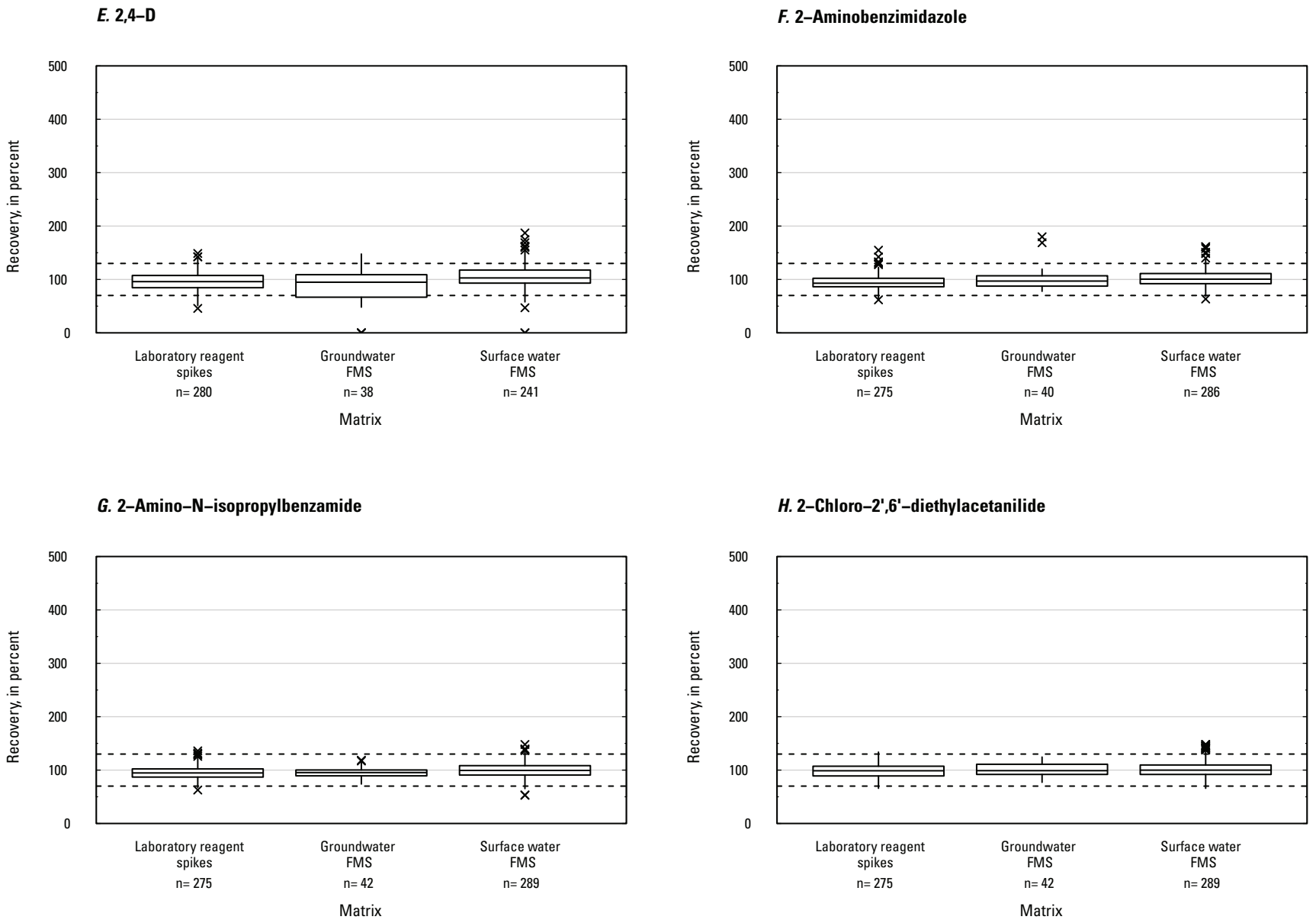


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.—Continued

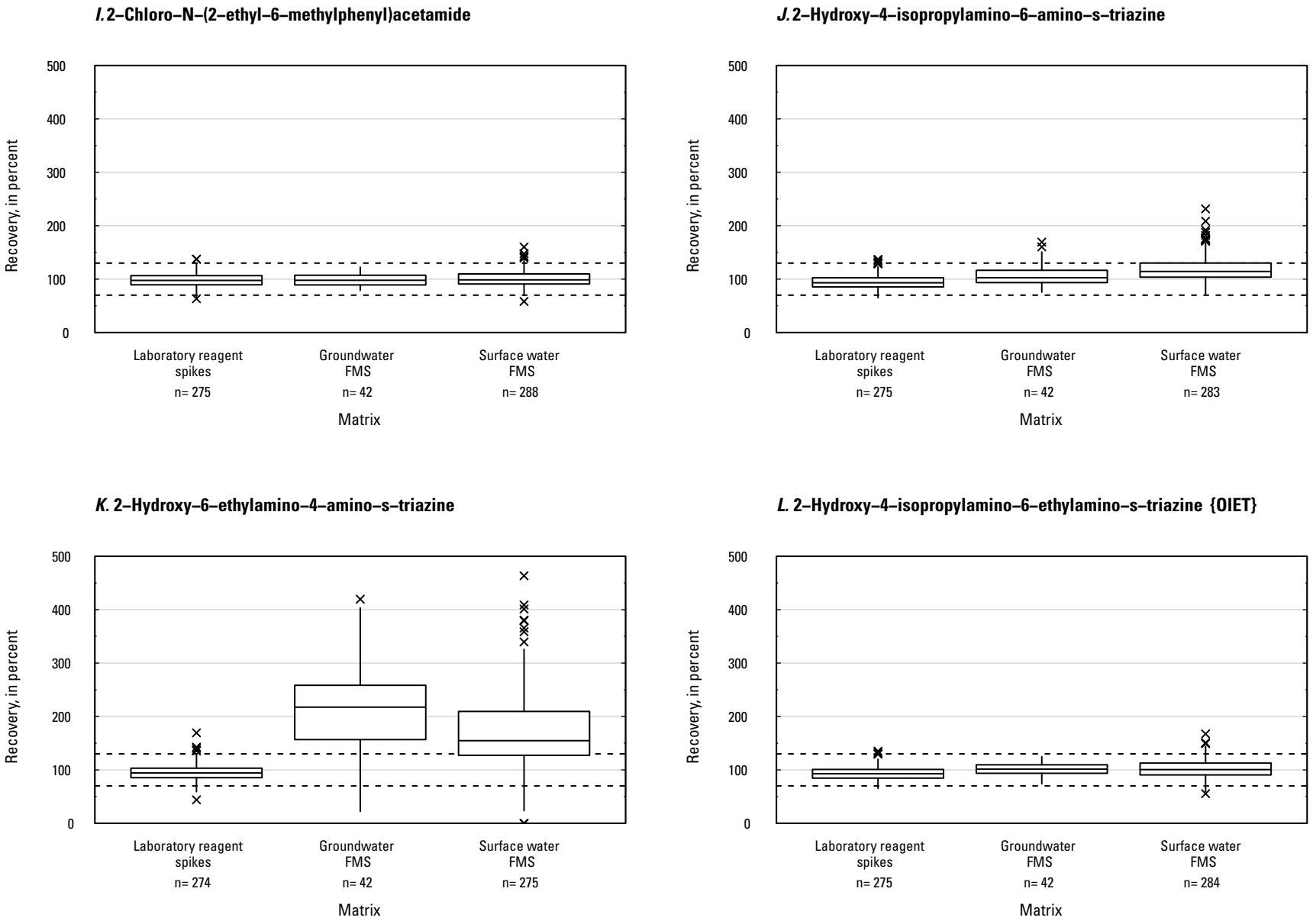


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.—Continued

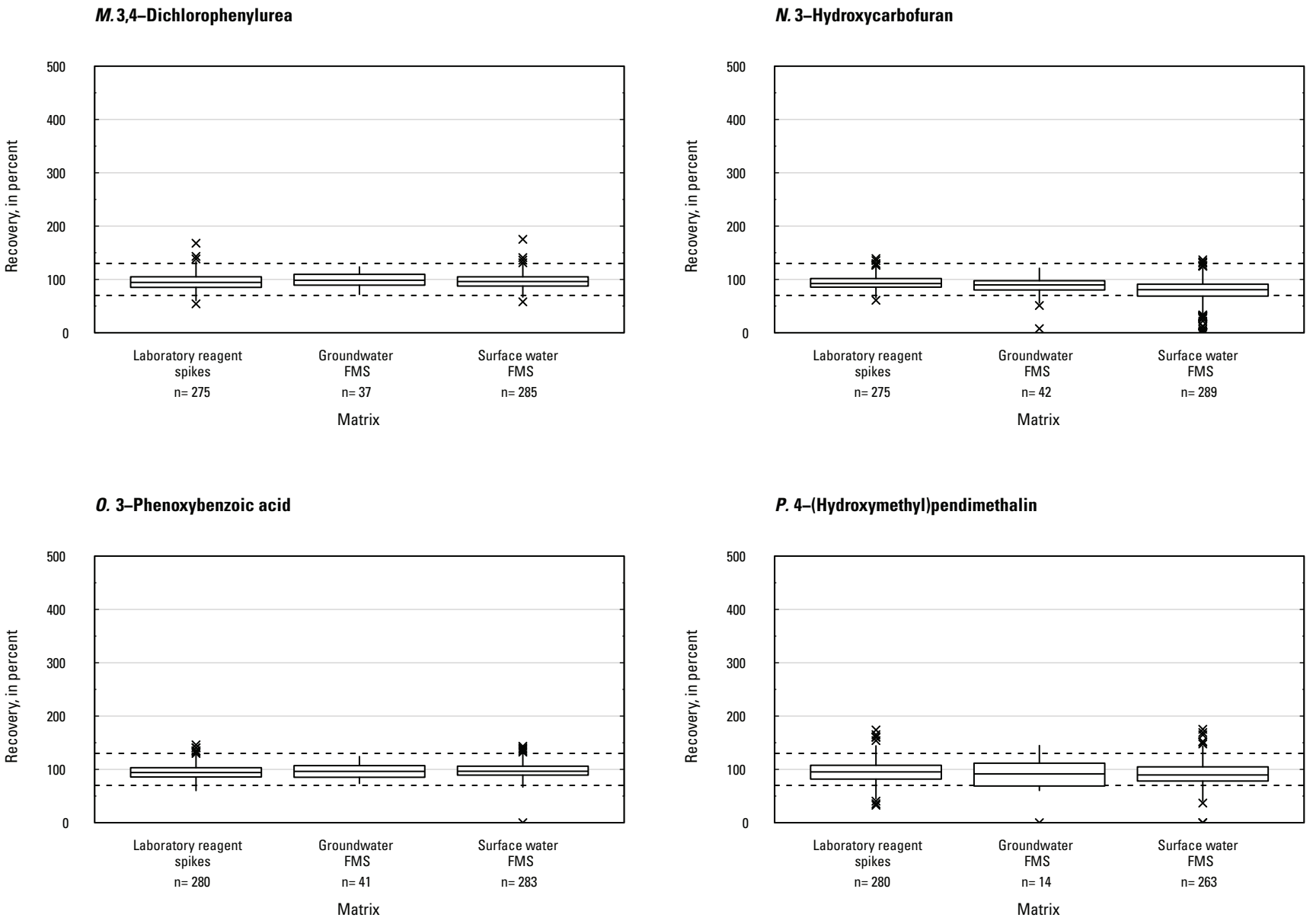


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.—Continued

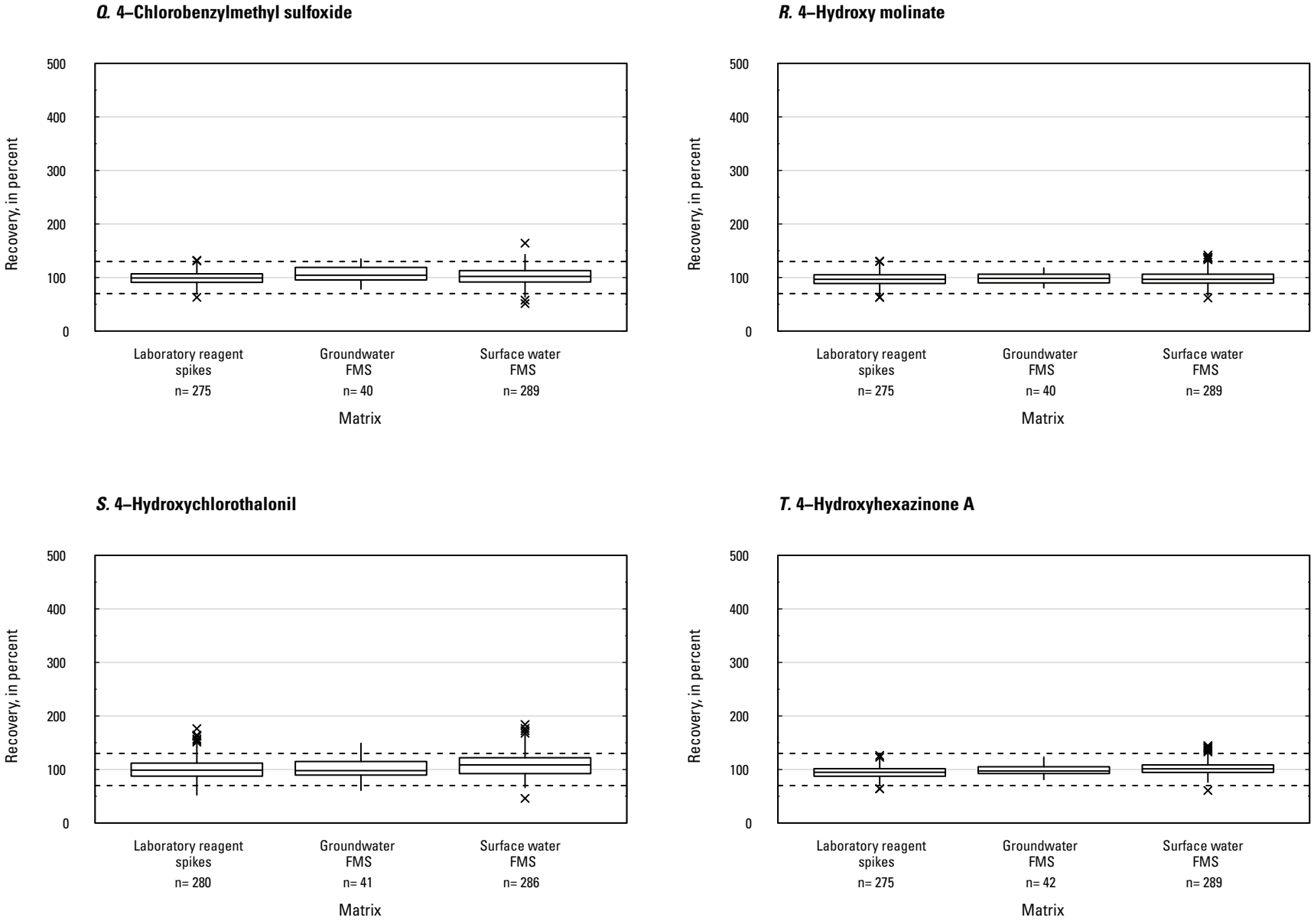


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.—Continued

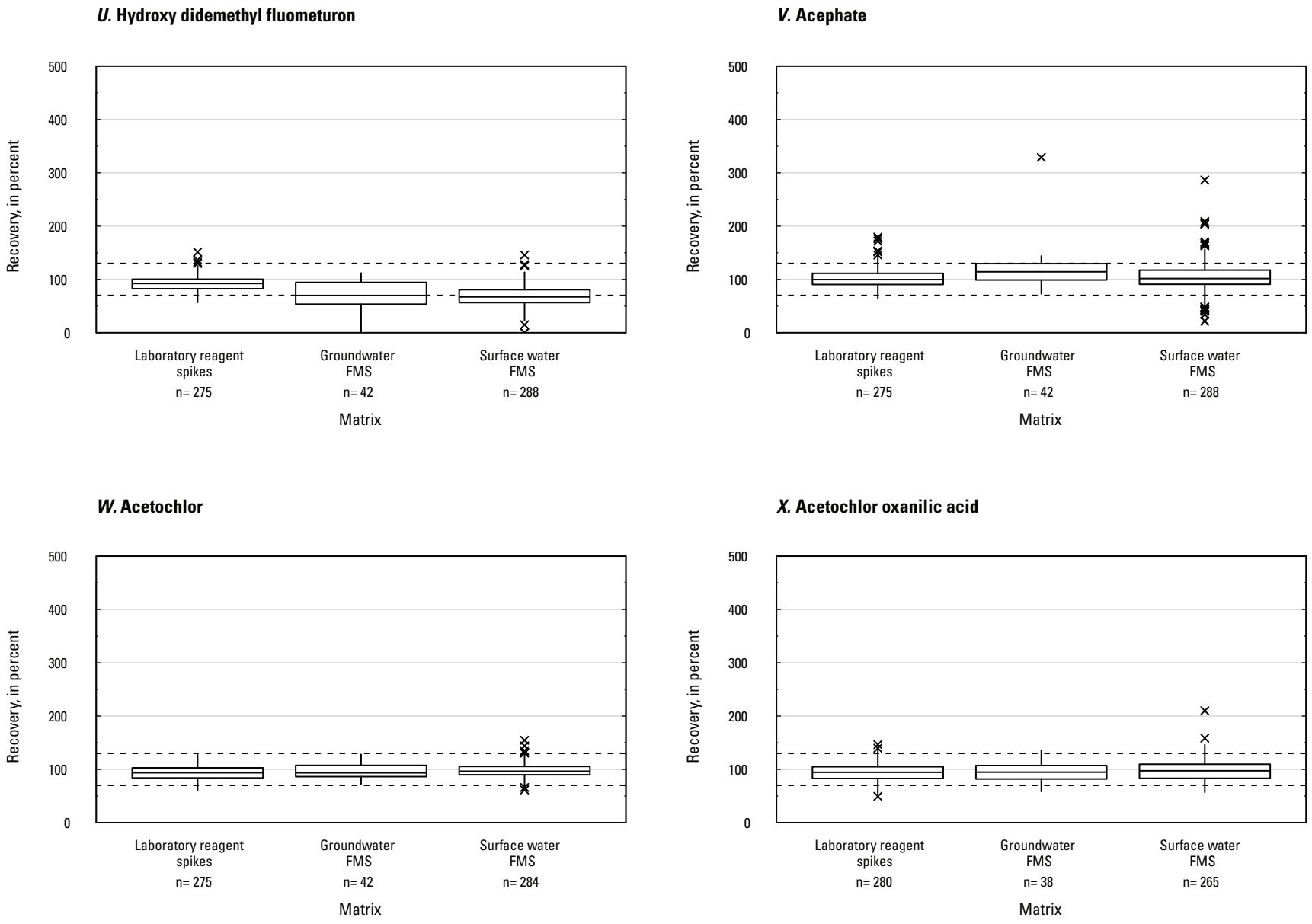


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.—Continued

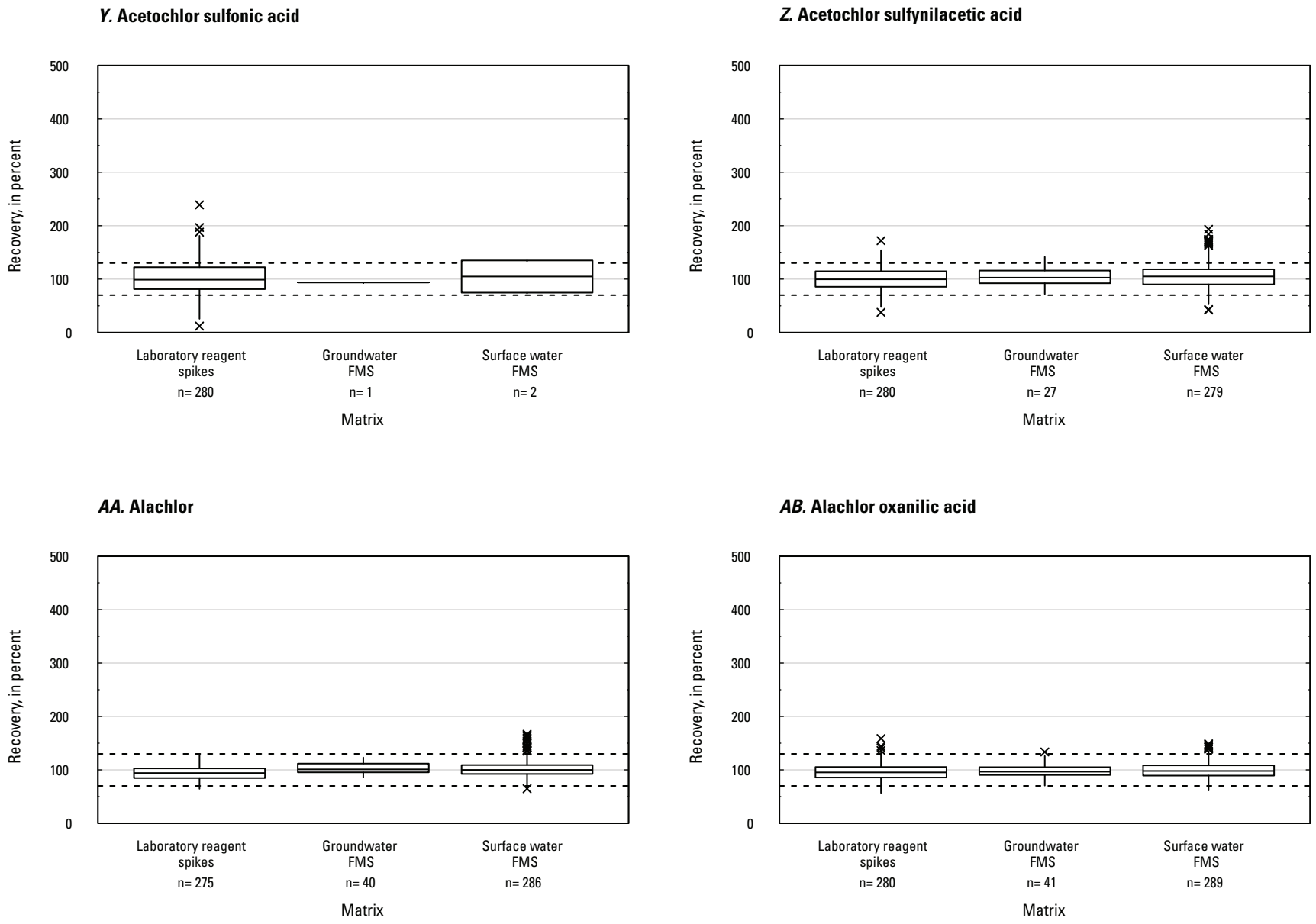
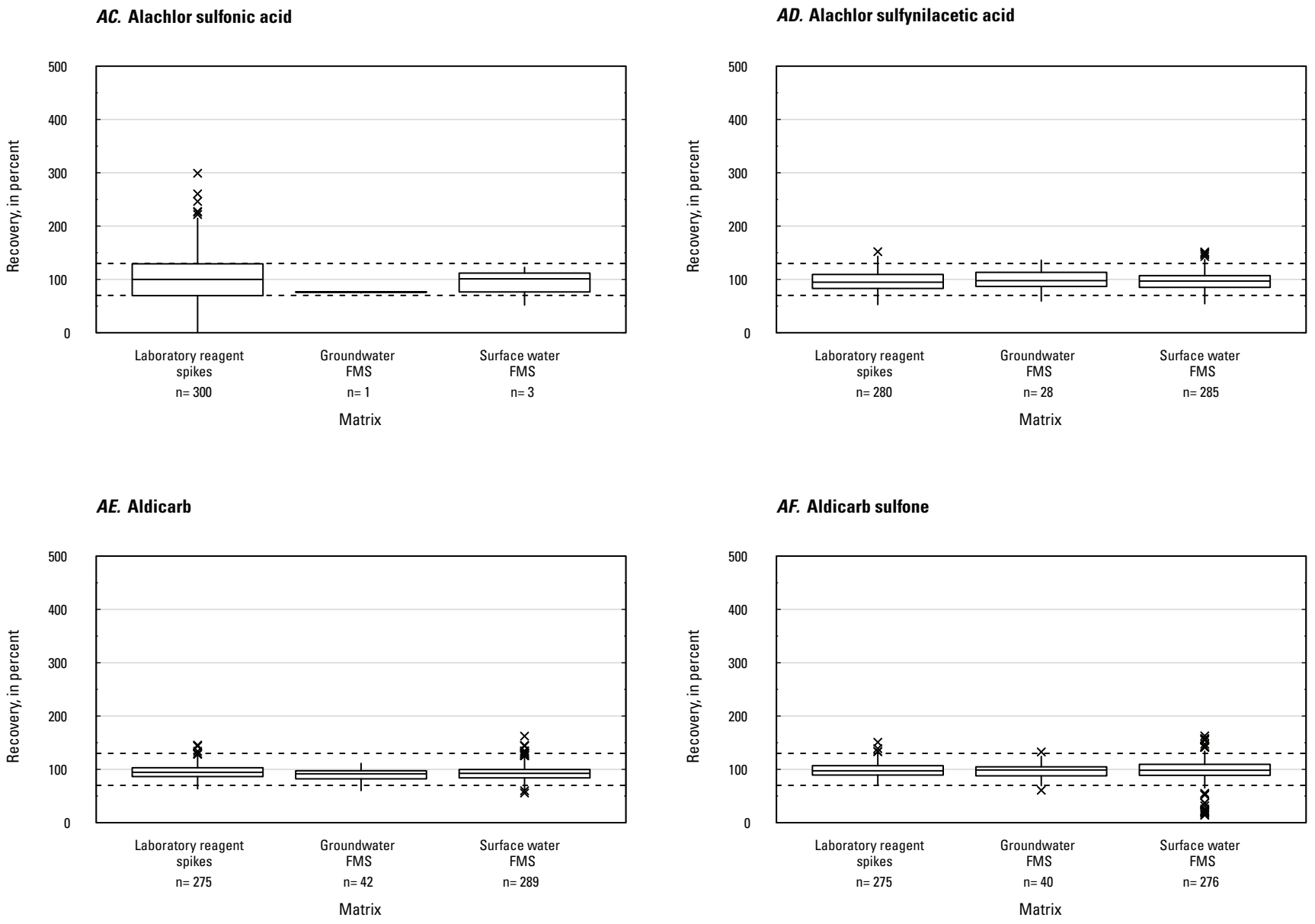


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.—Continued



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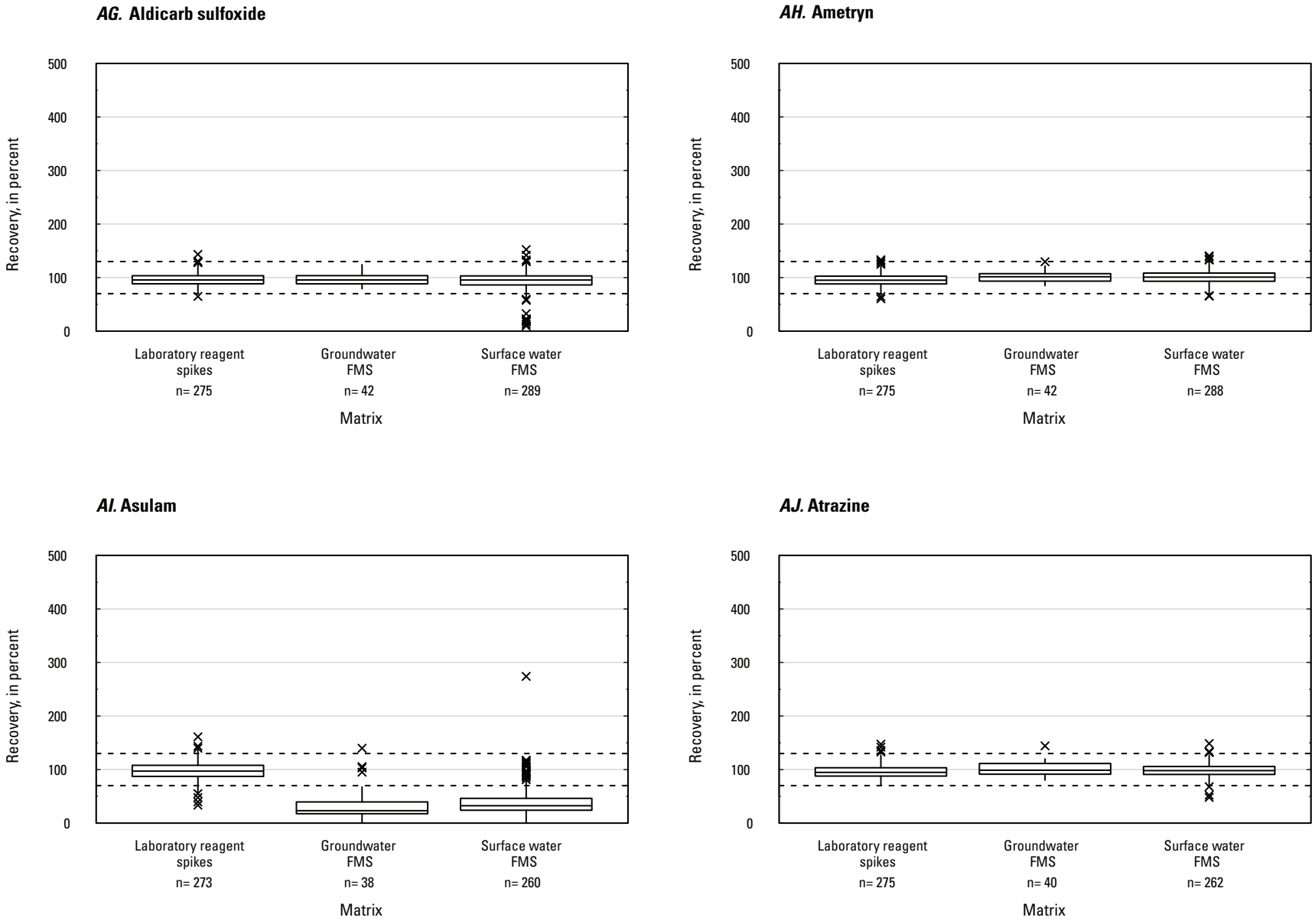

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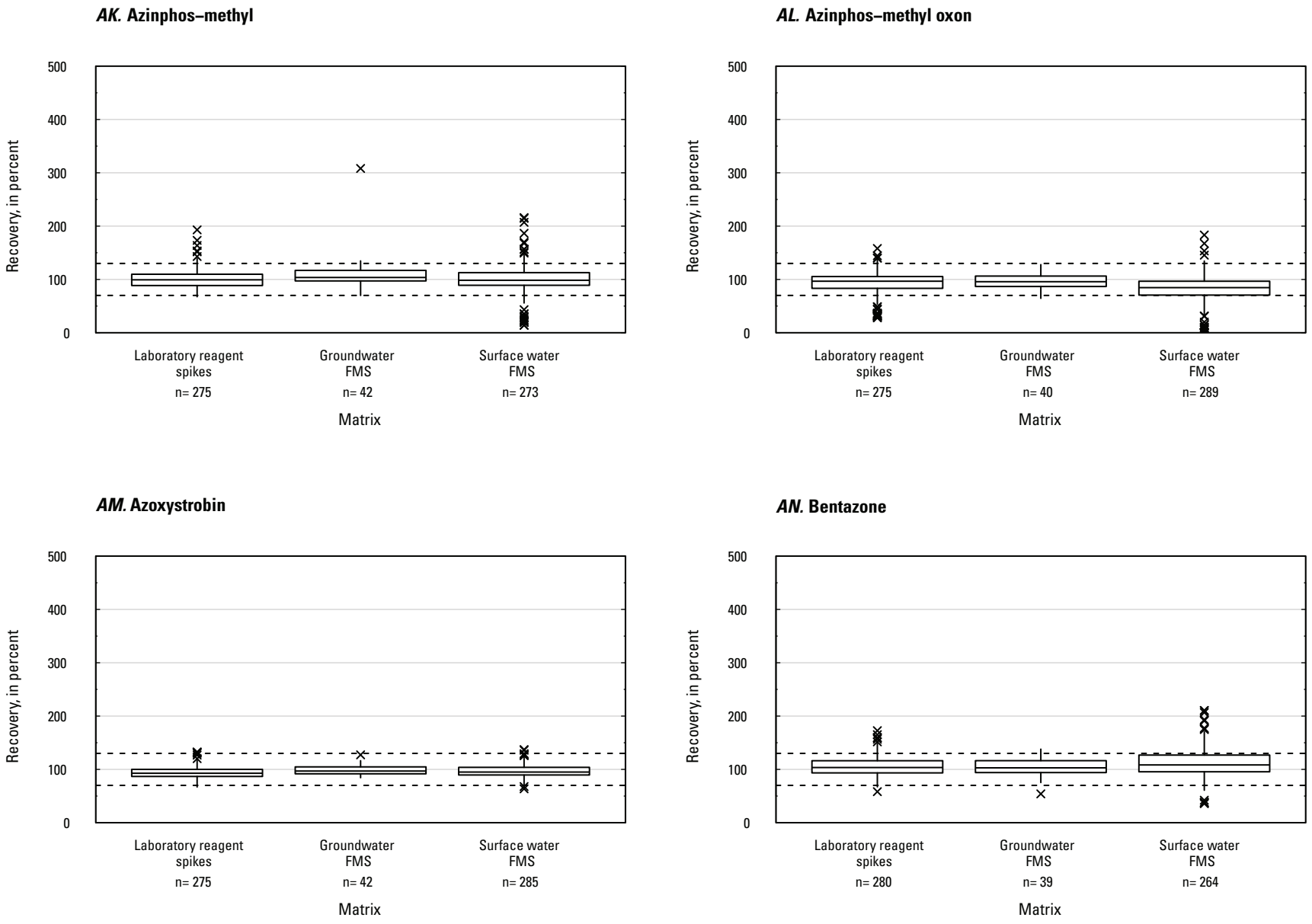

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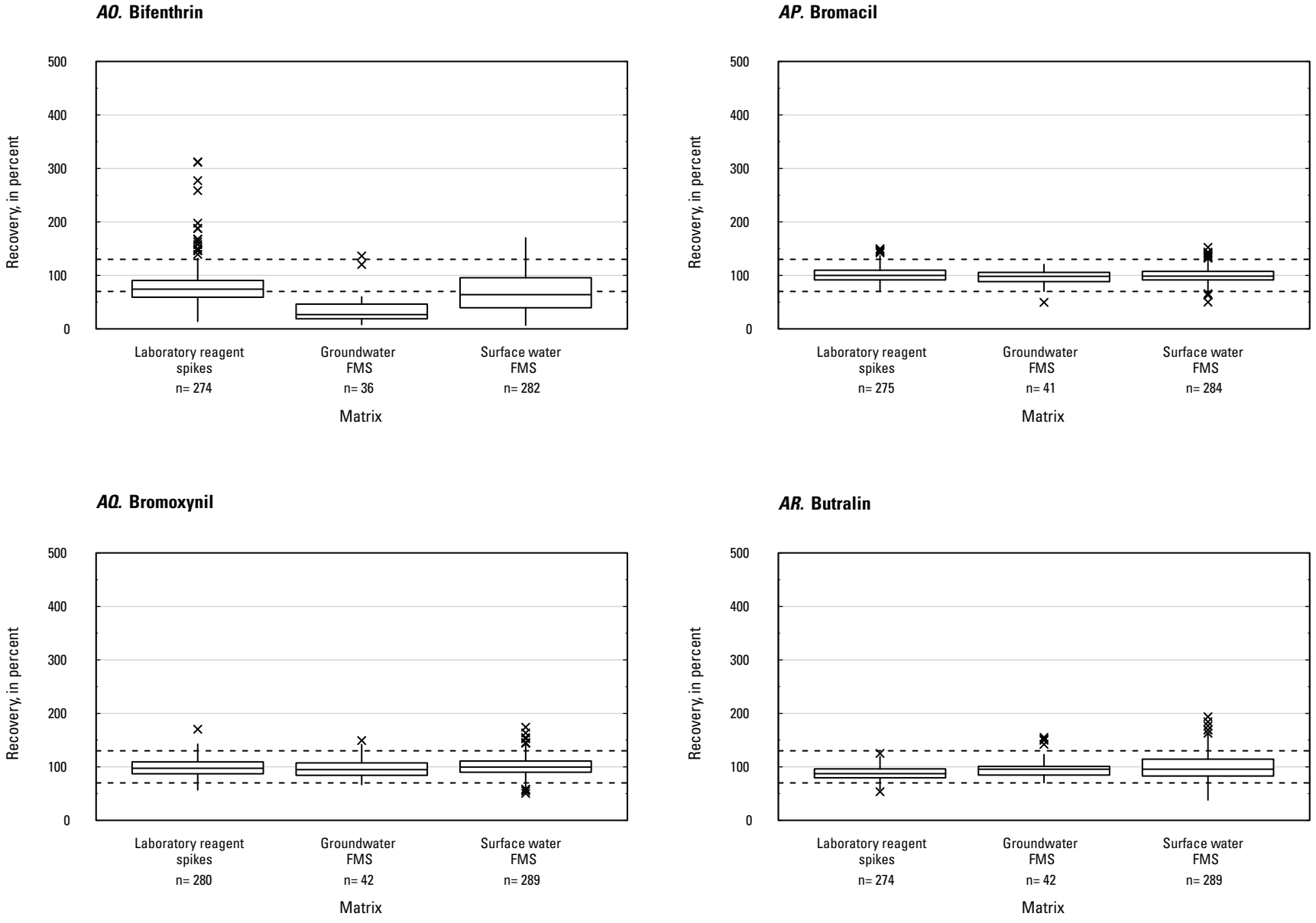

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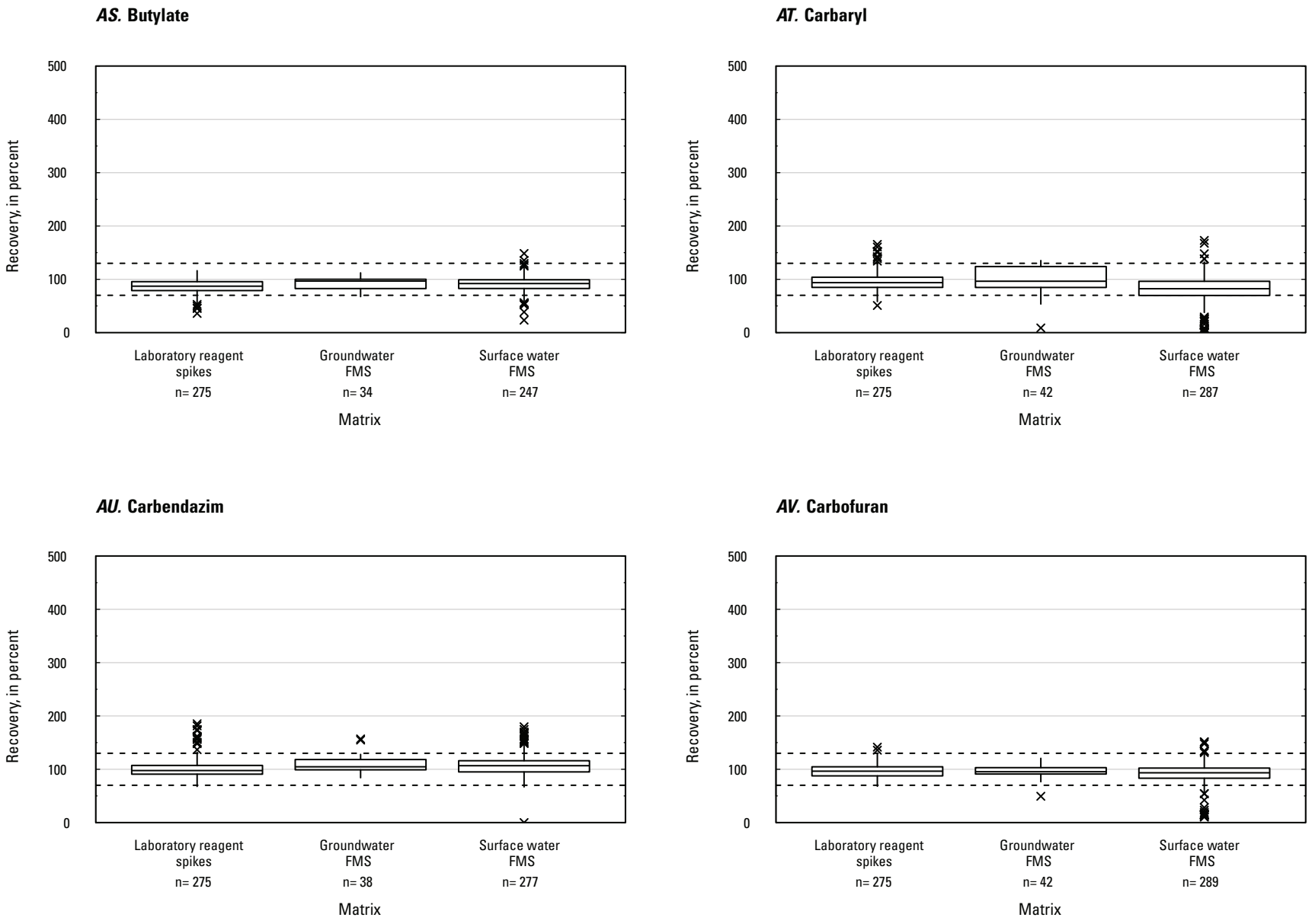

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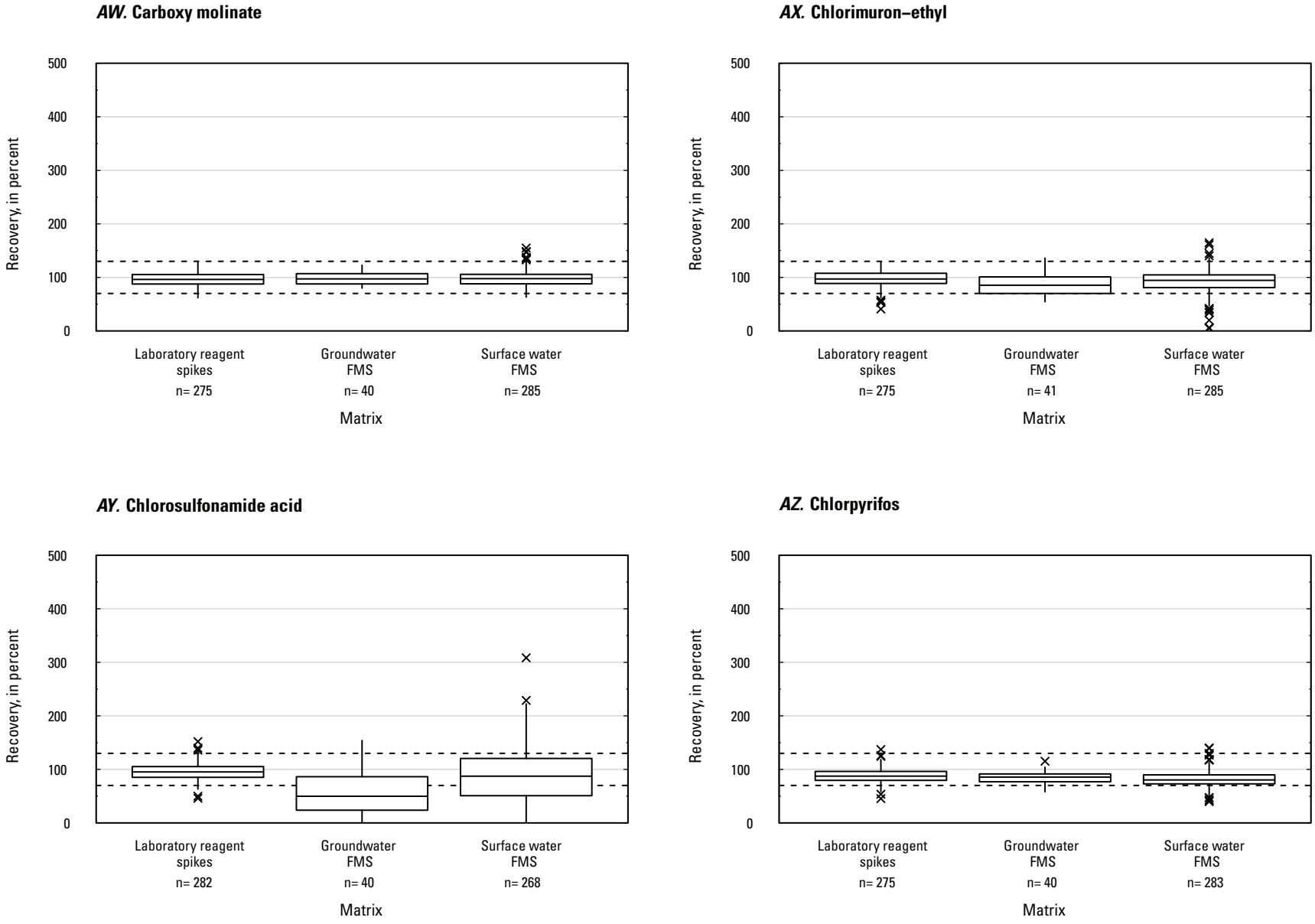

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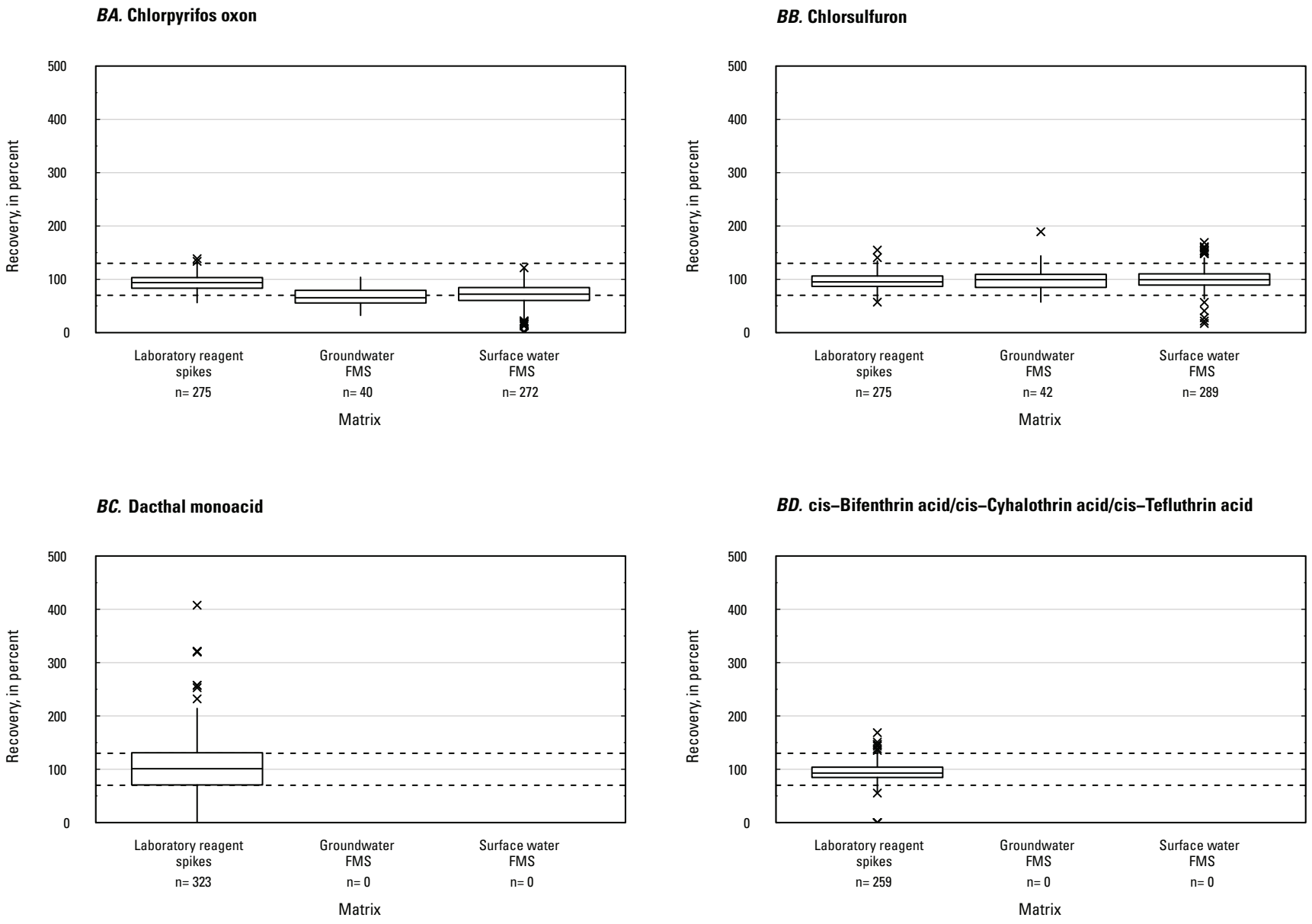

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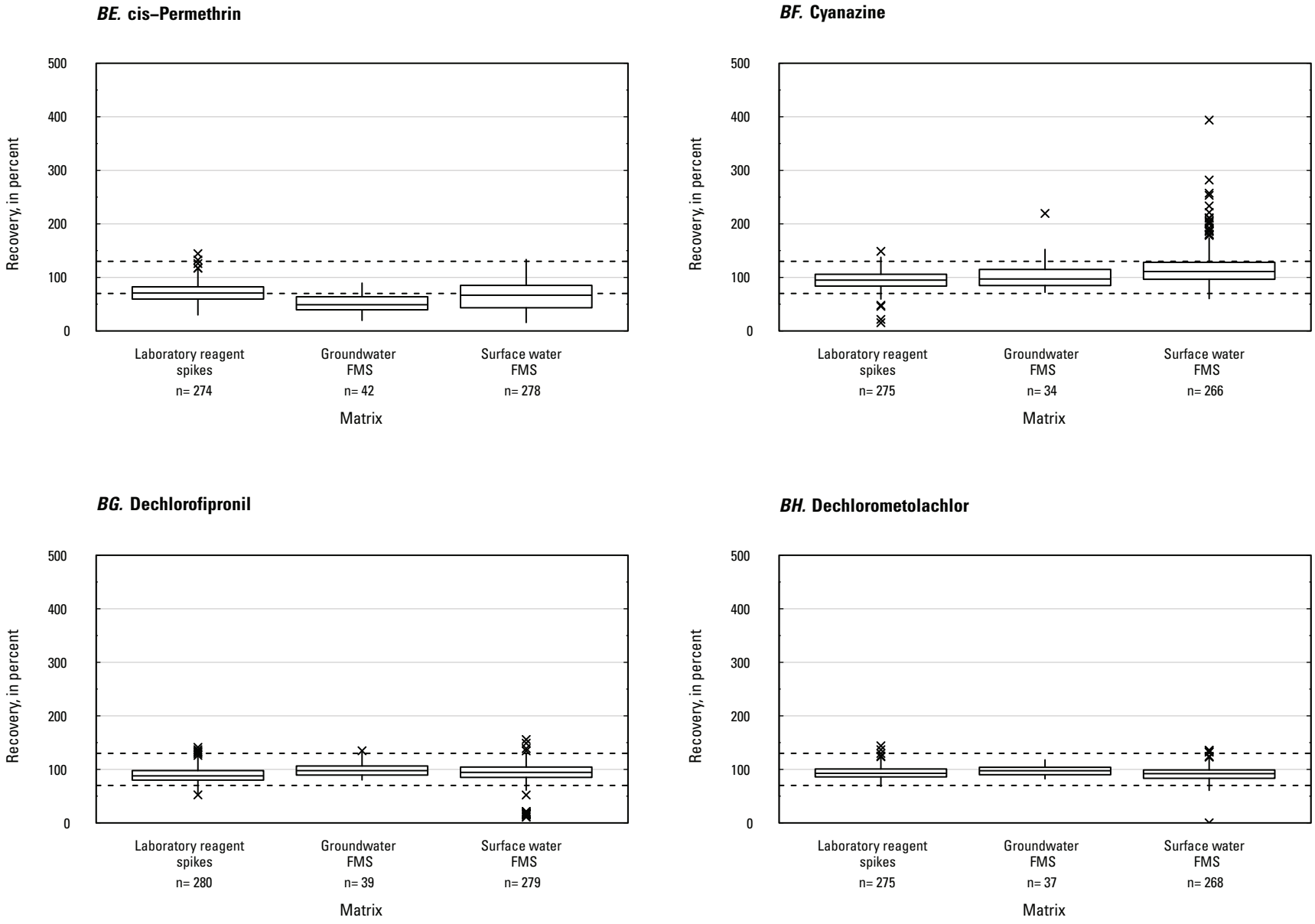

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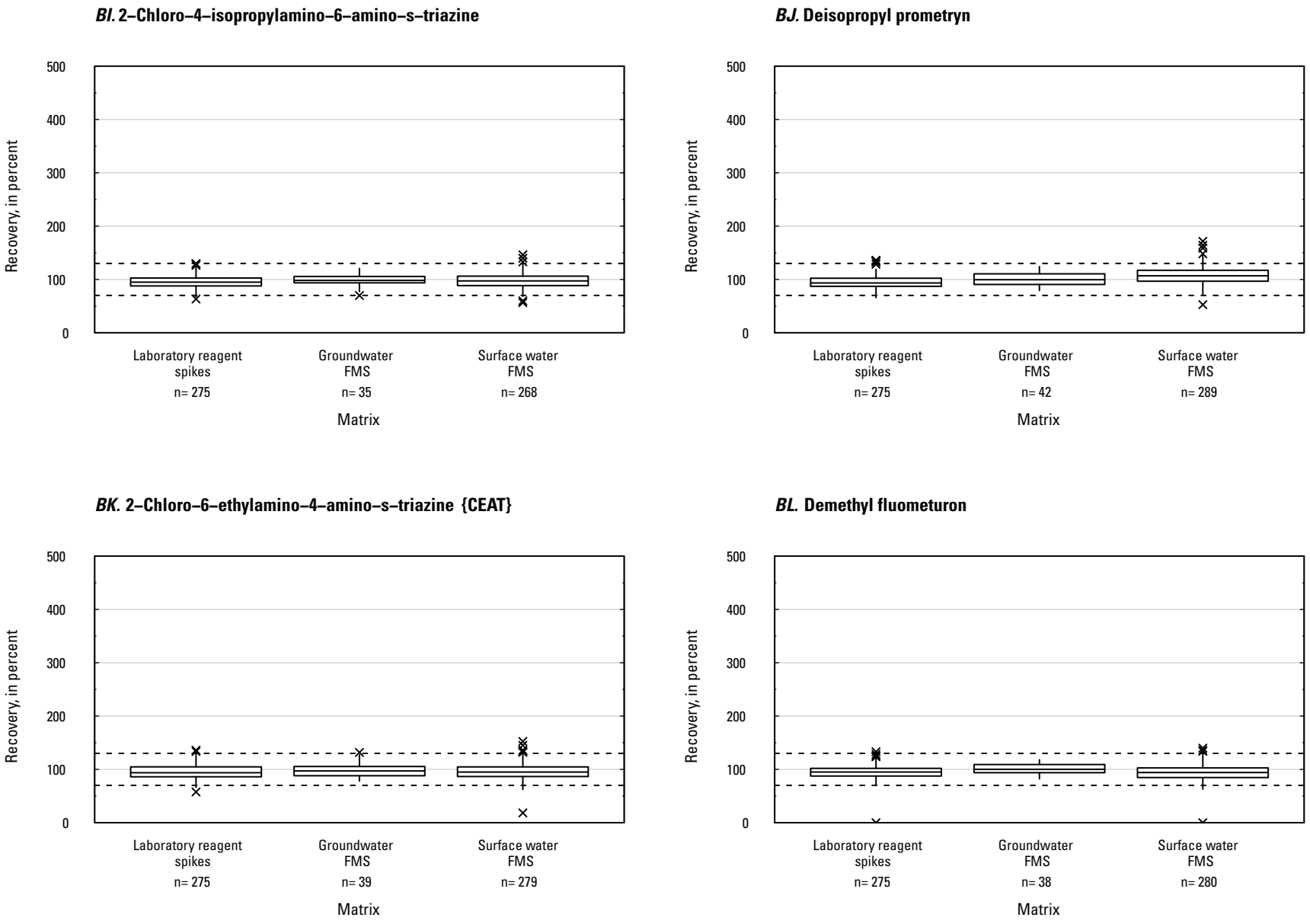

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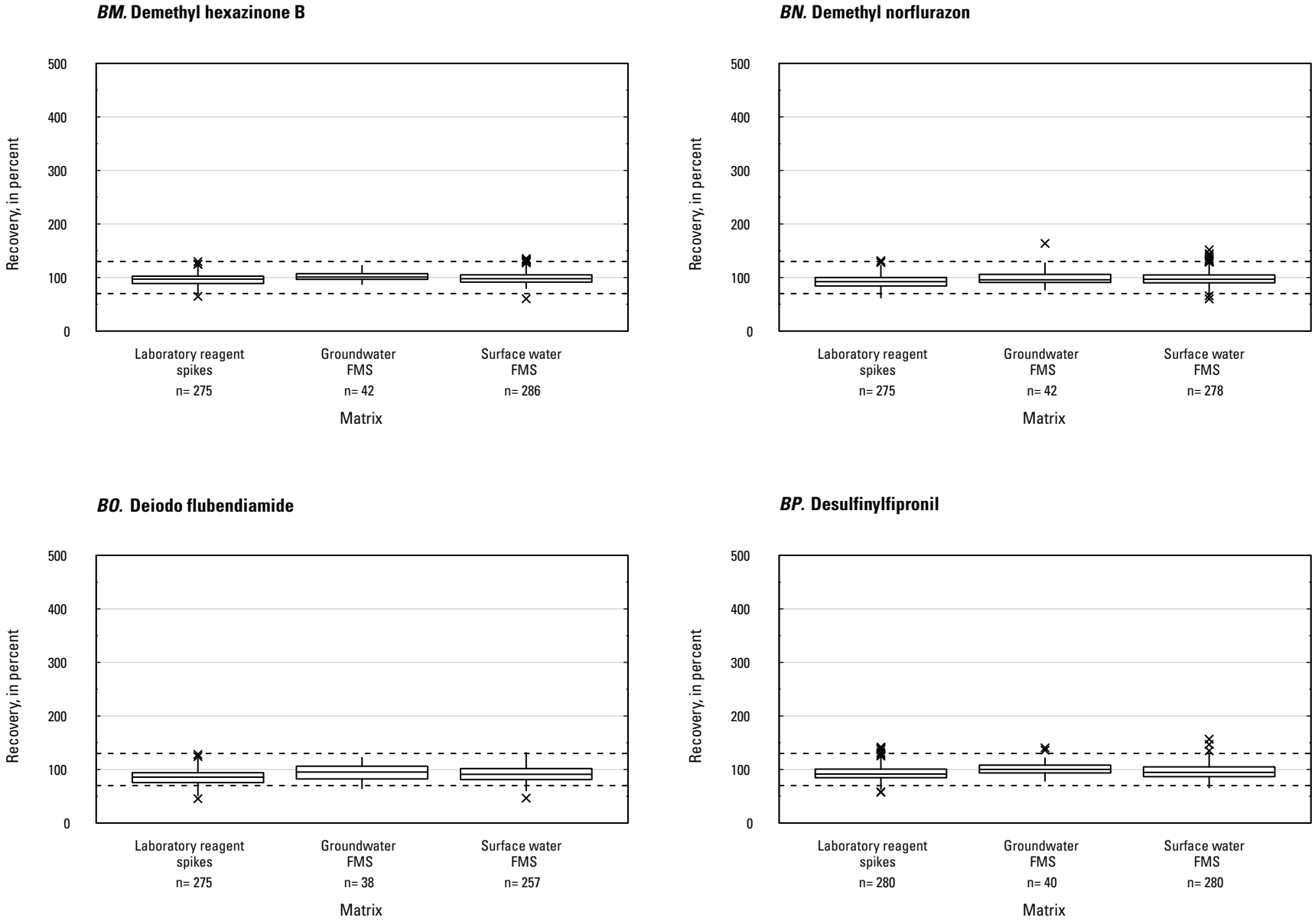

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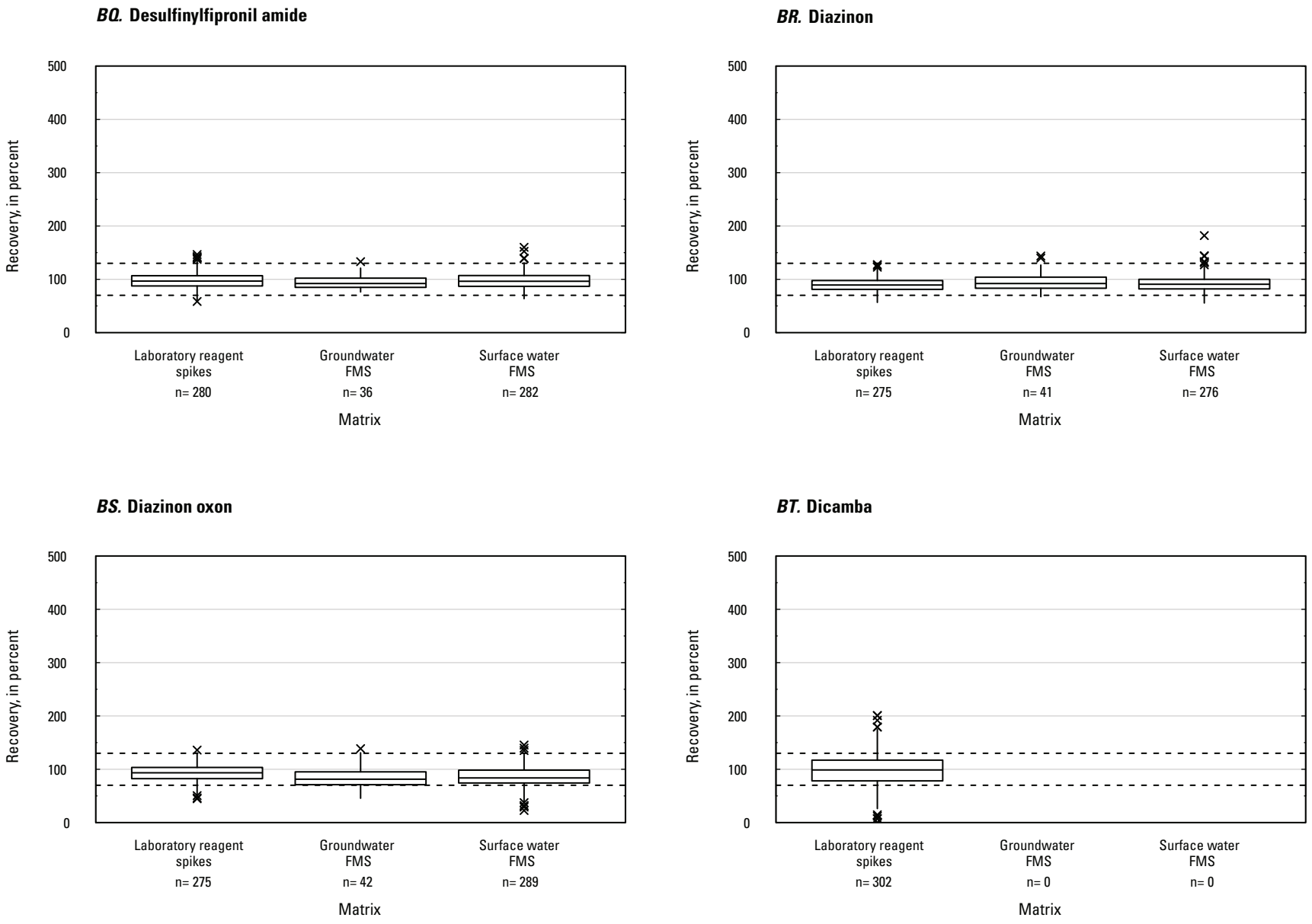

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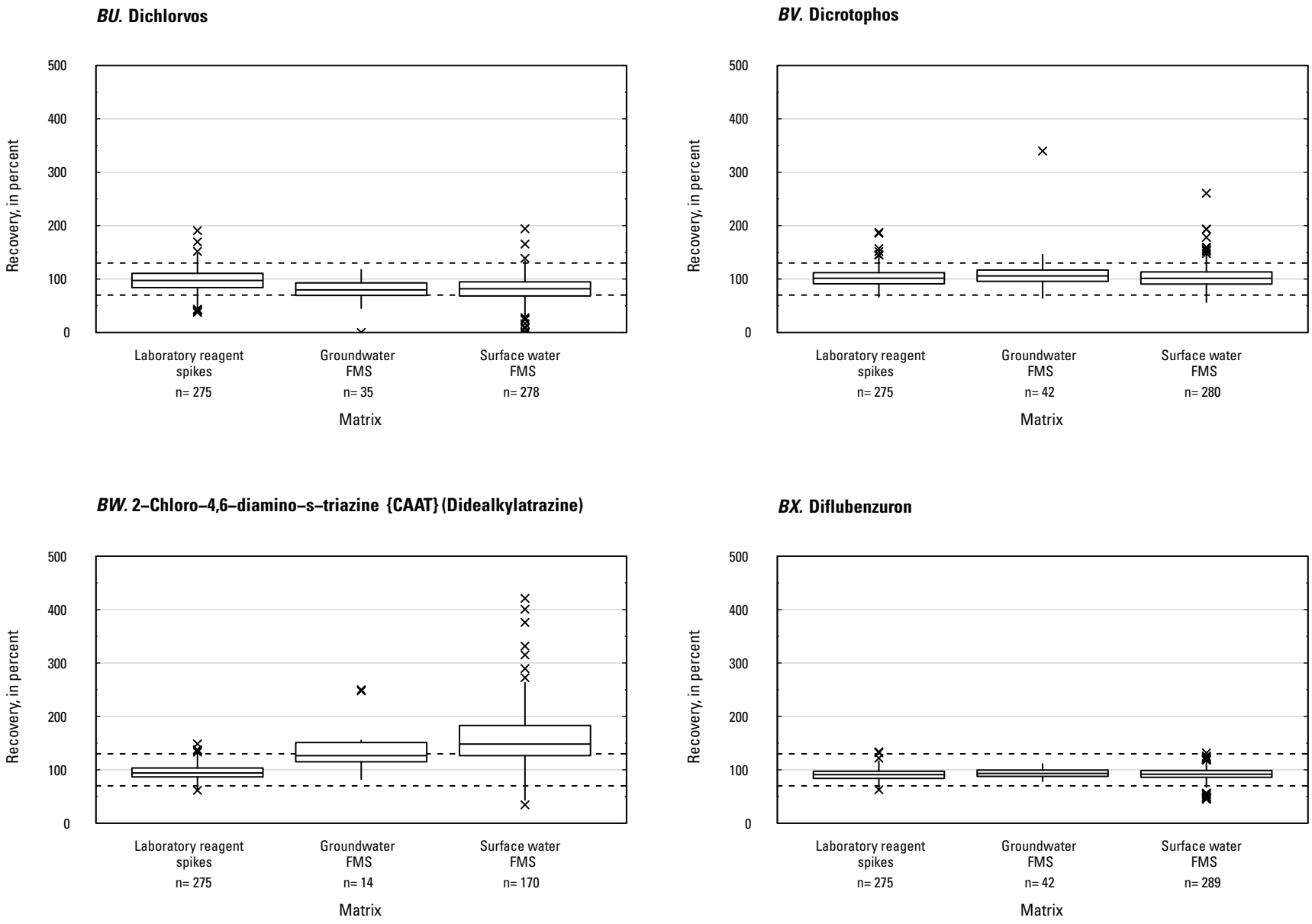

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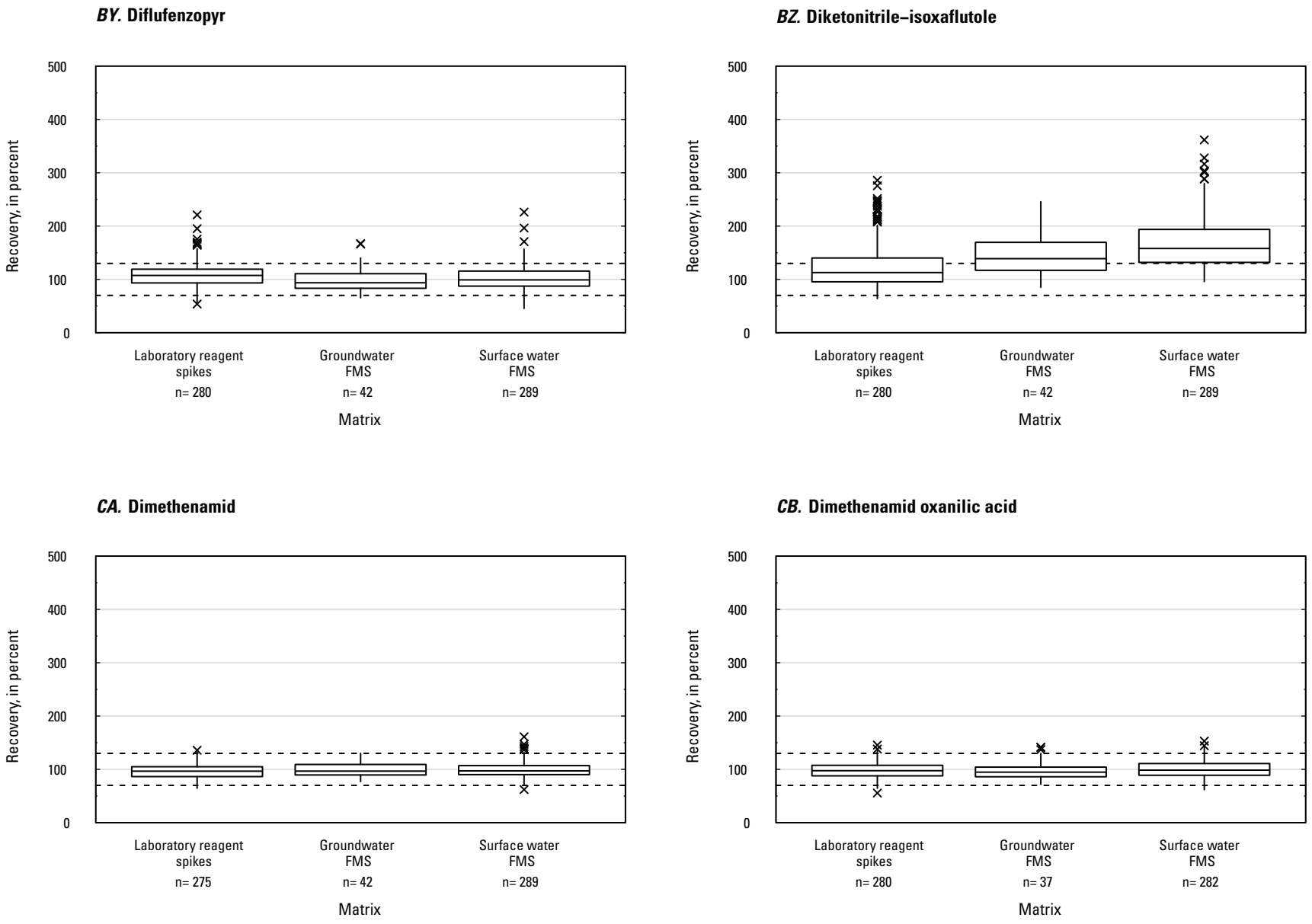

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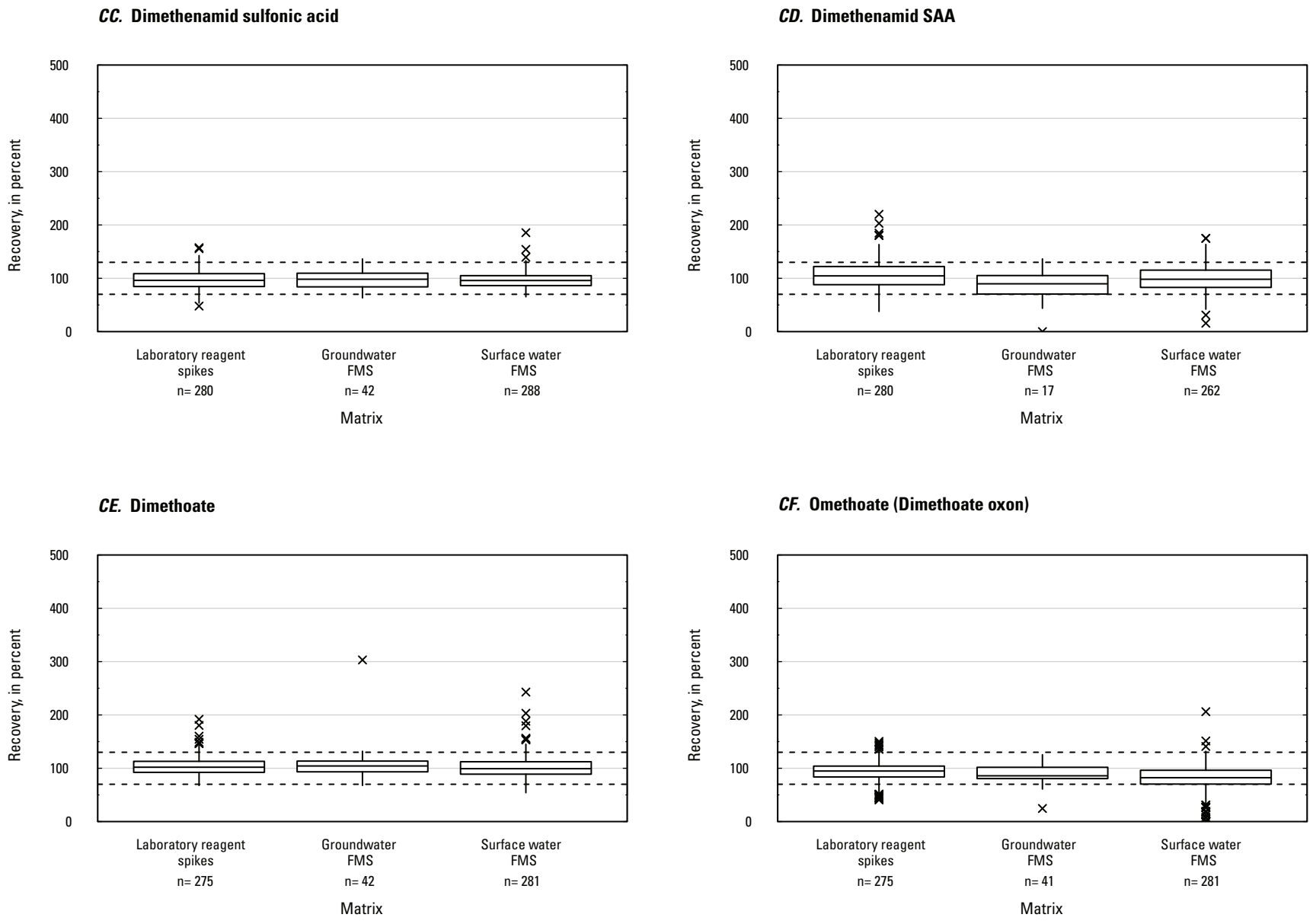

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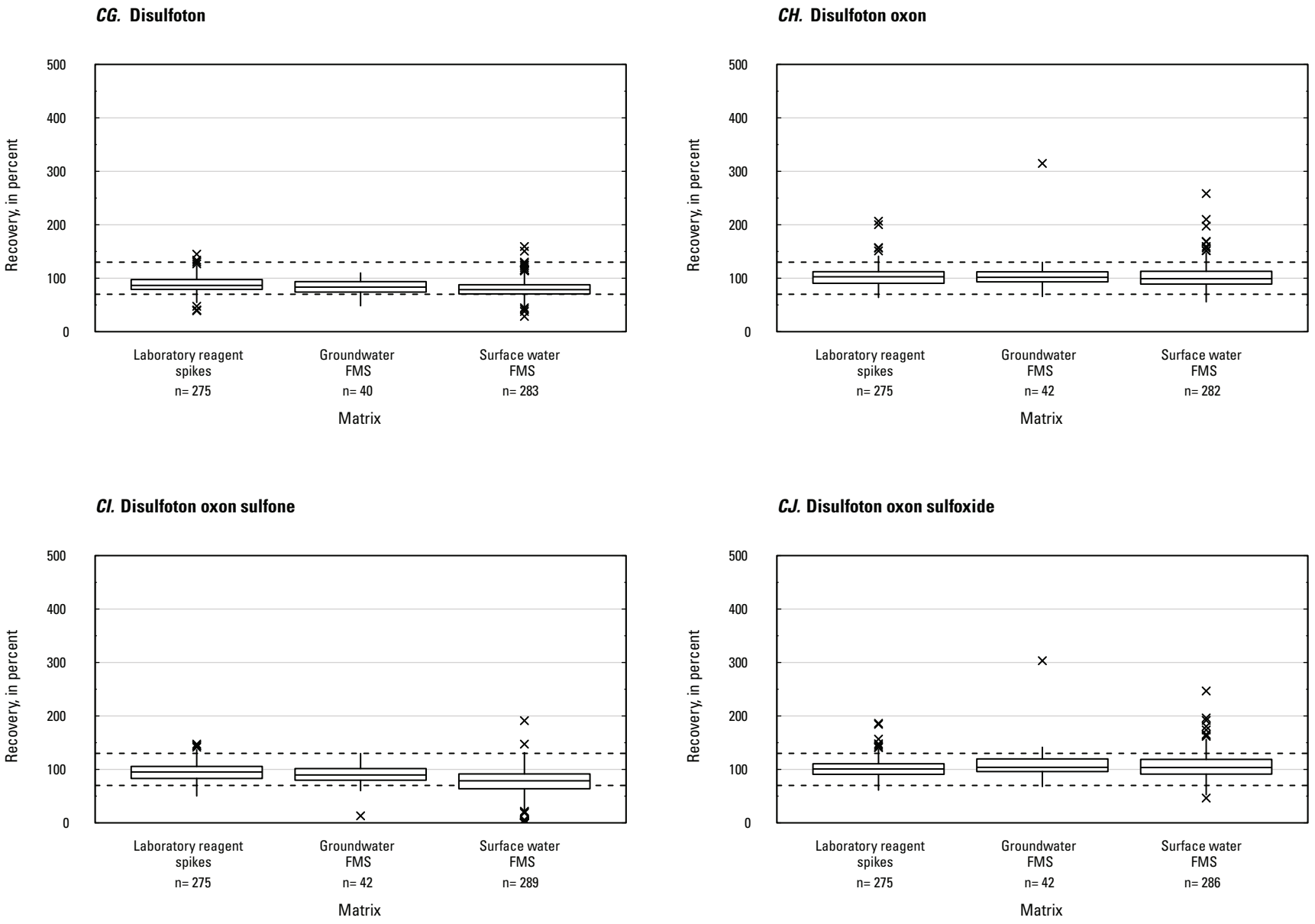

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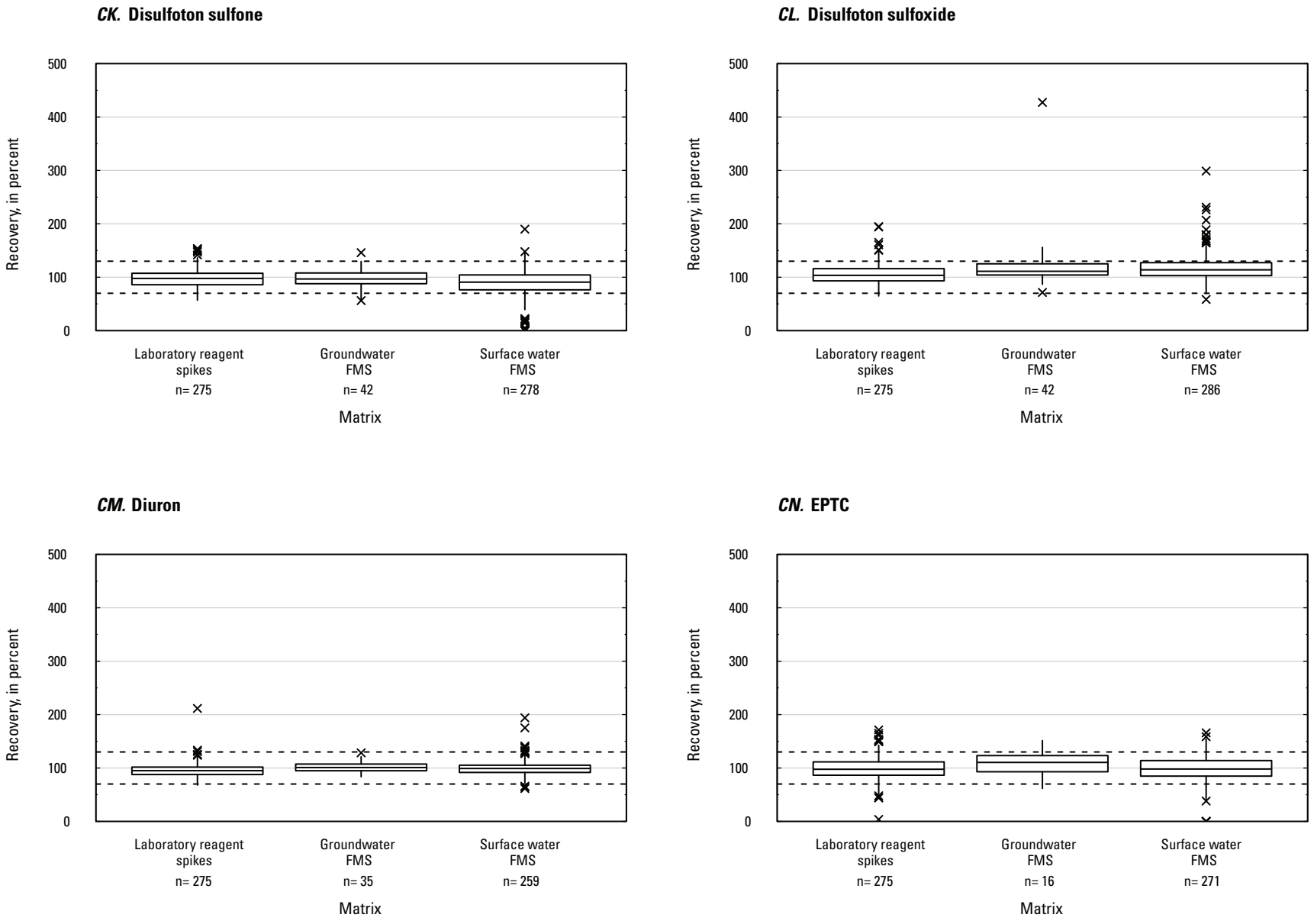

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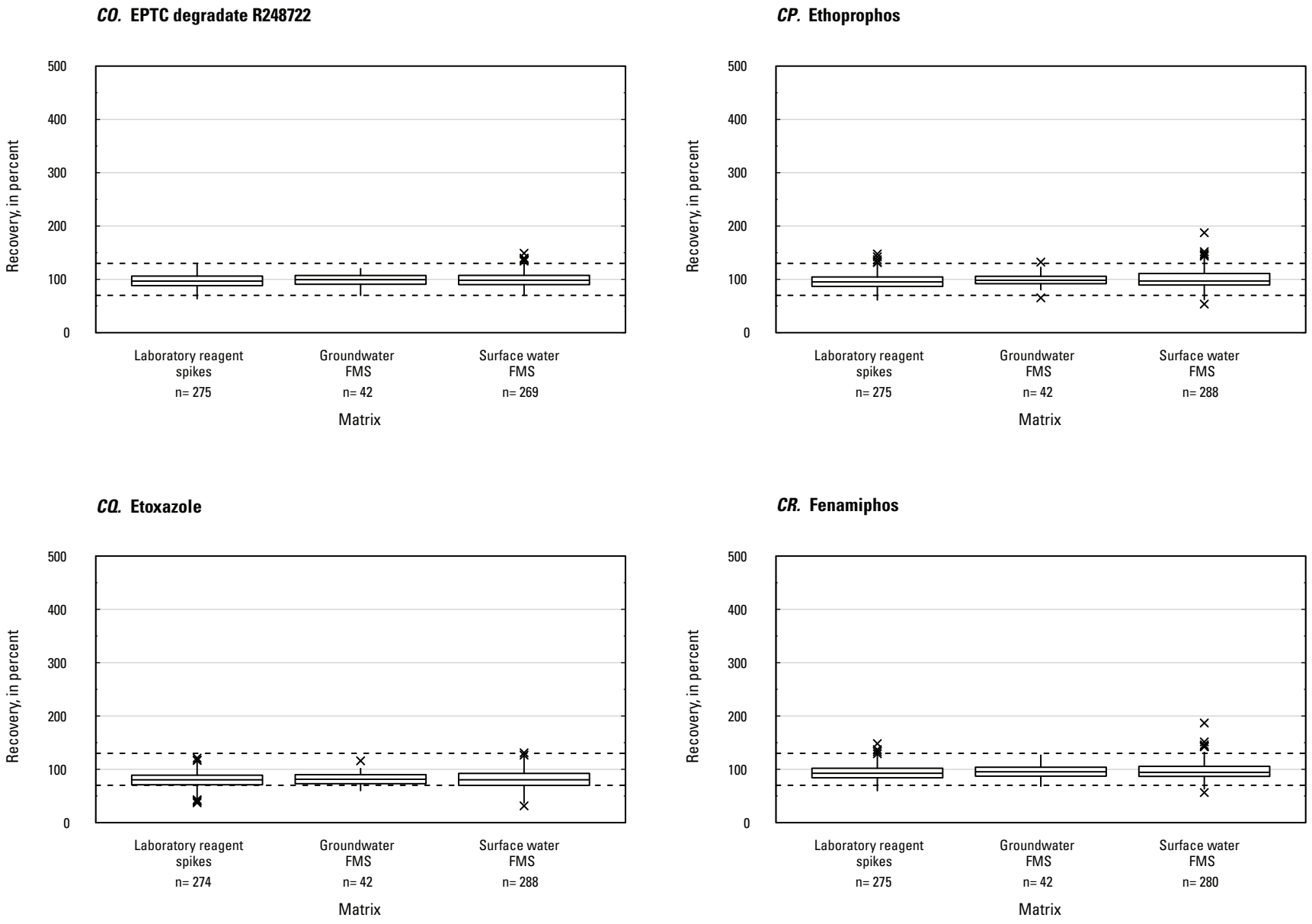

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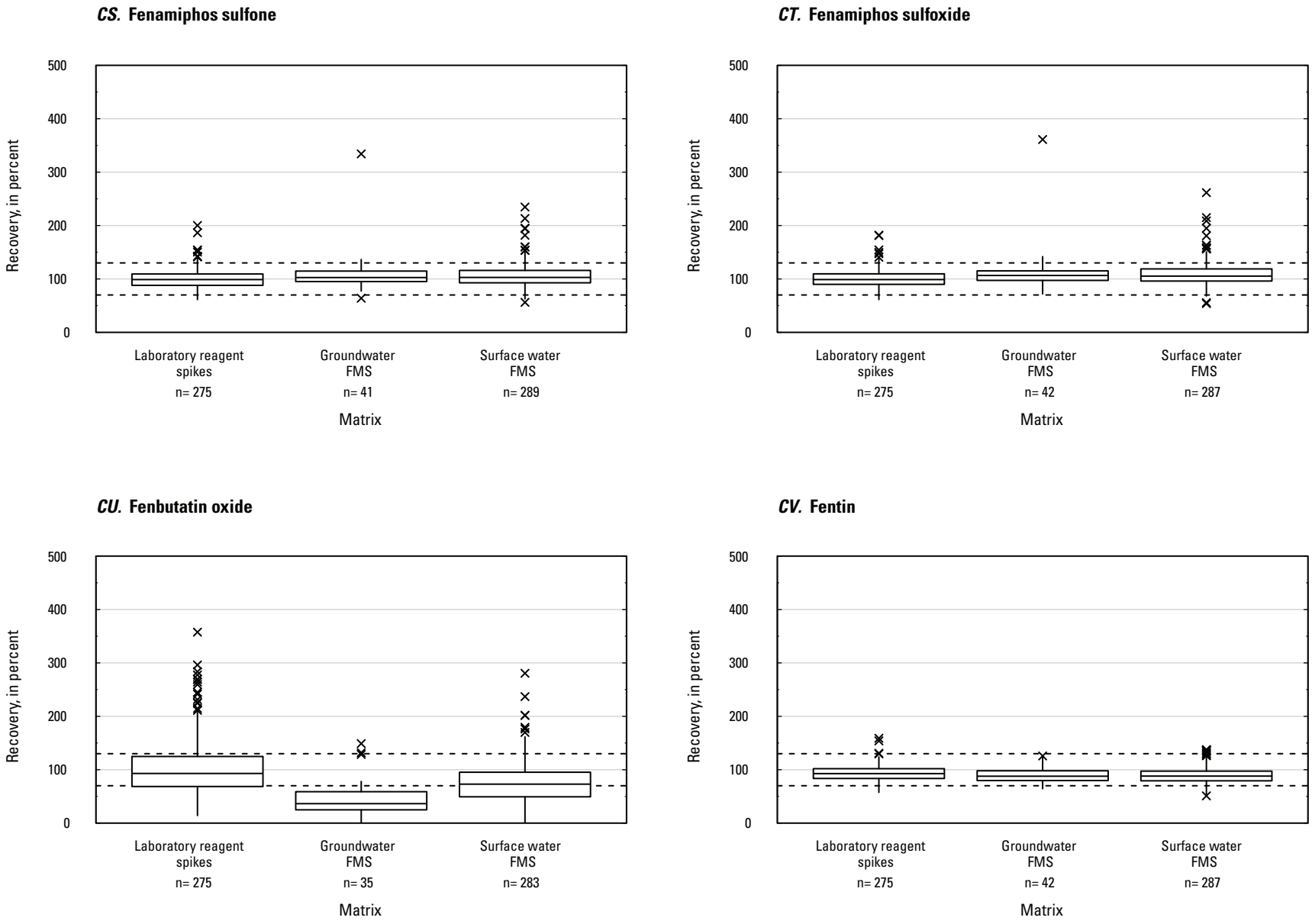

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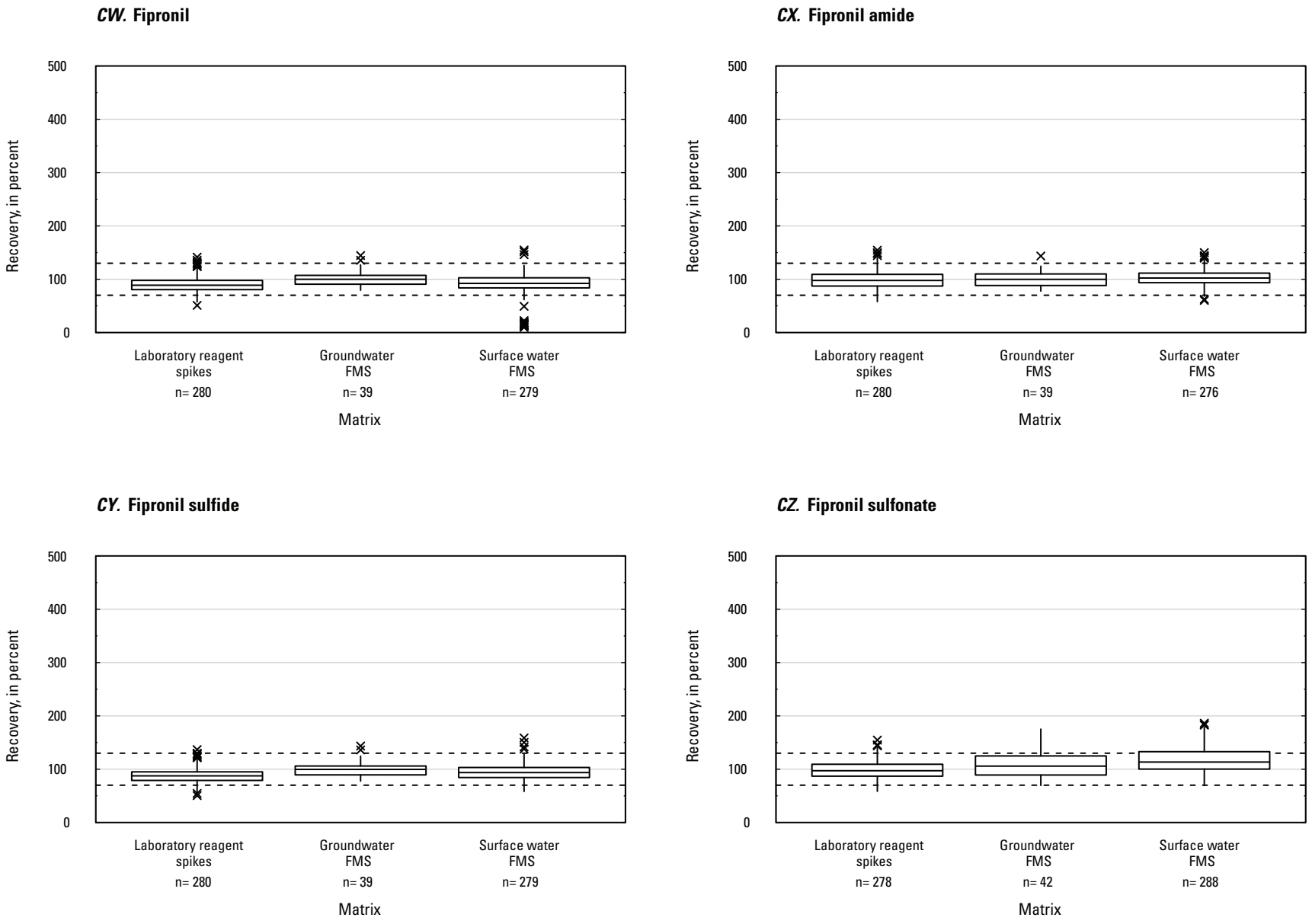

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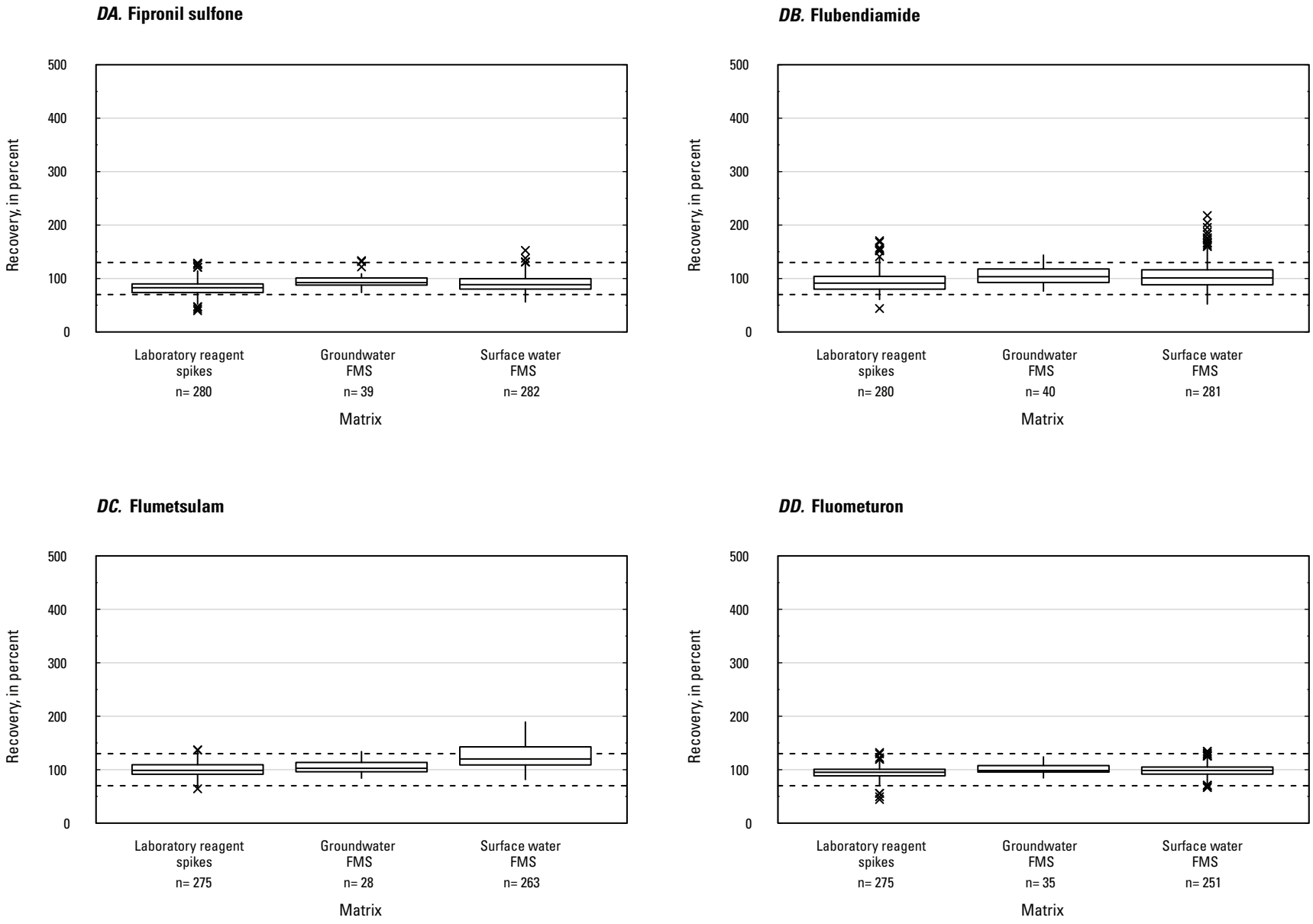

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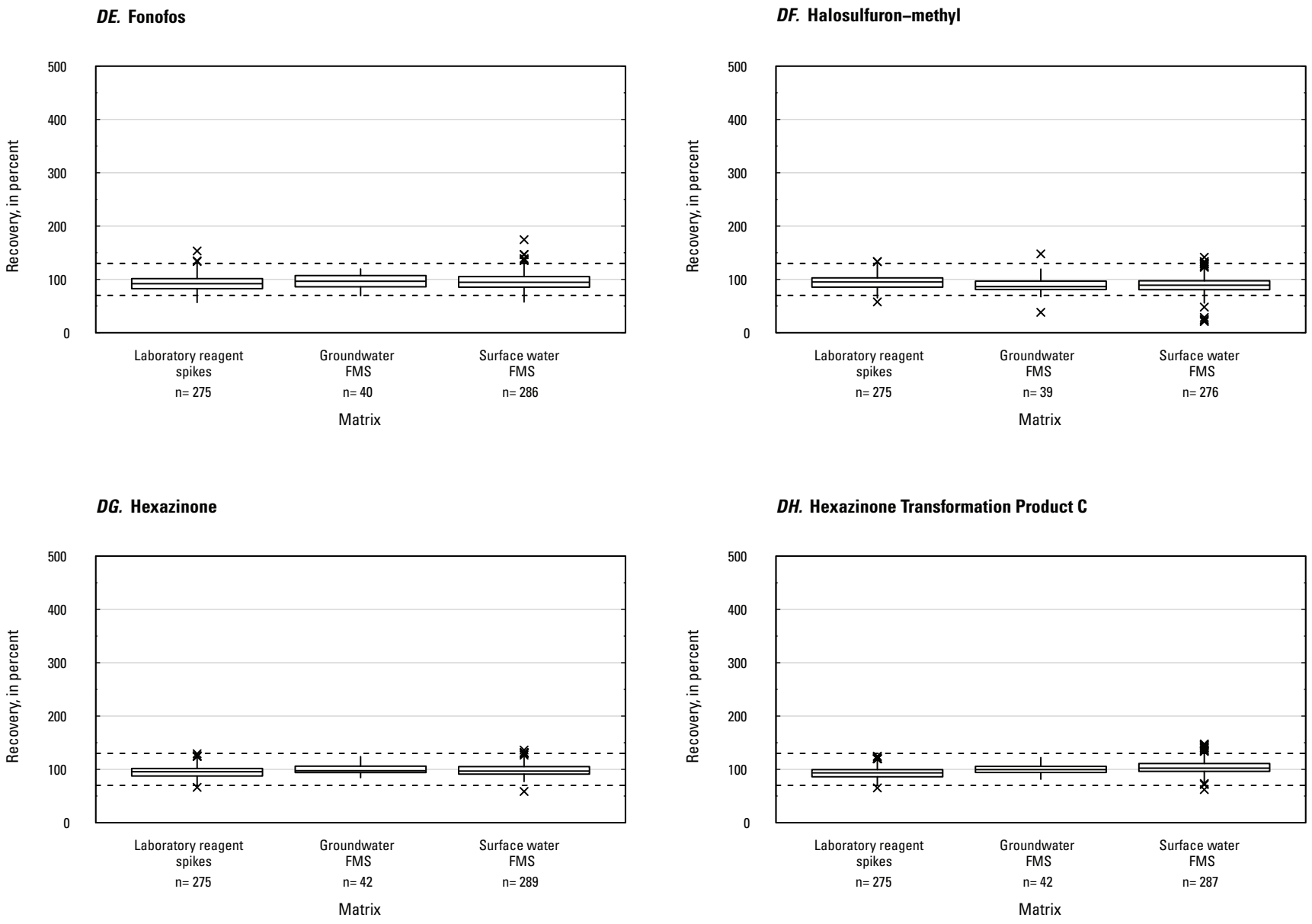

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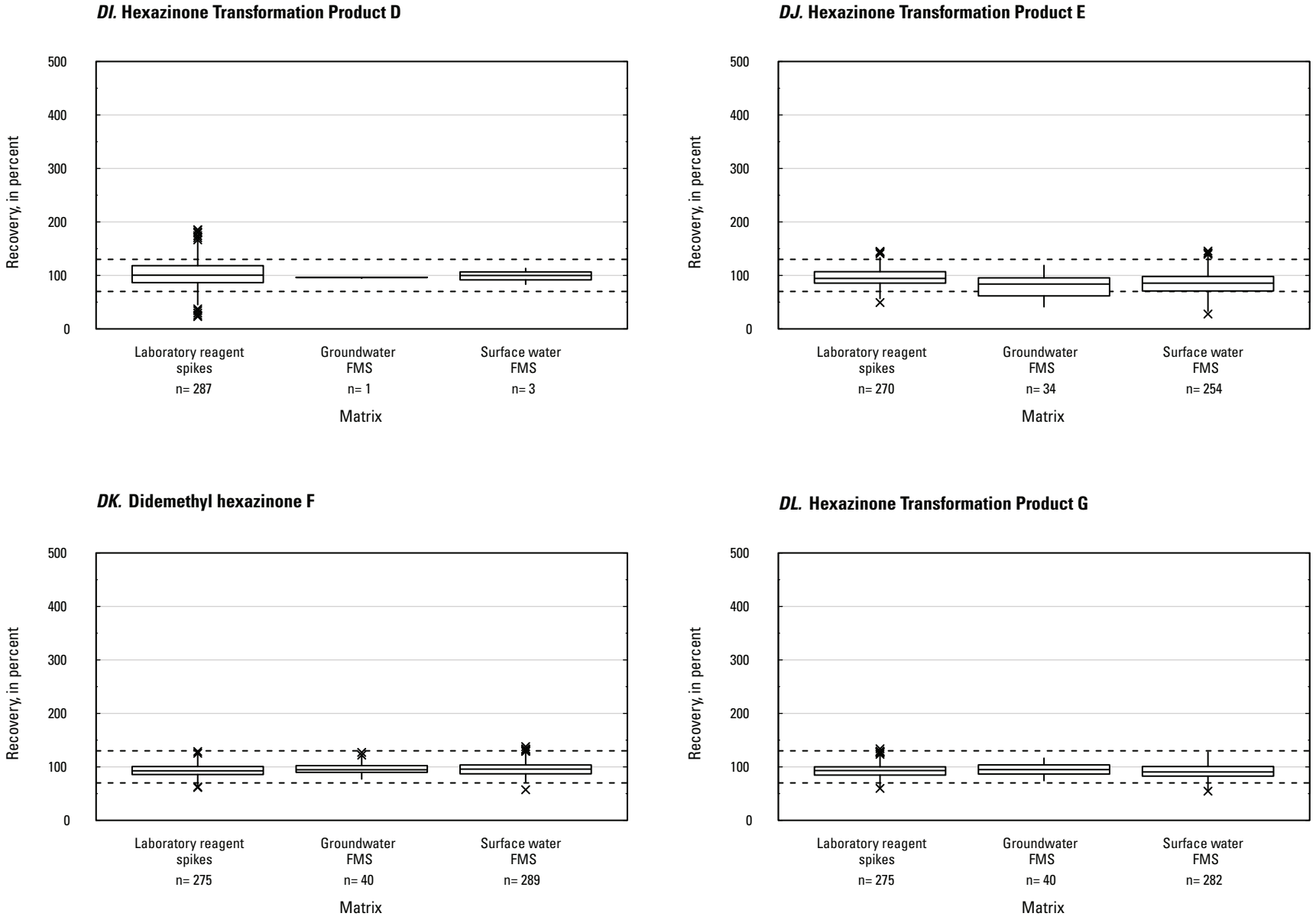

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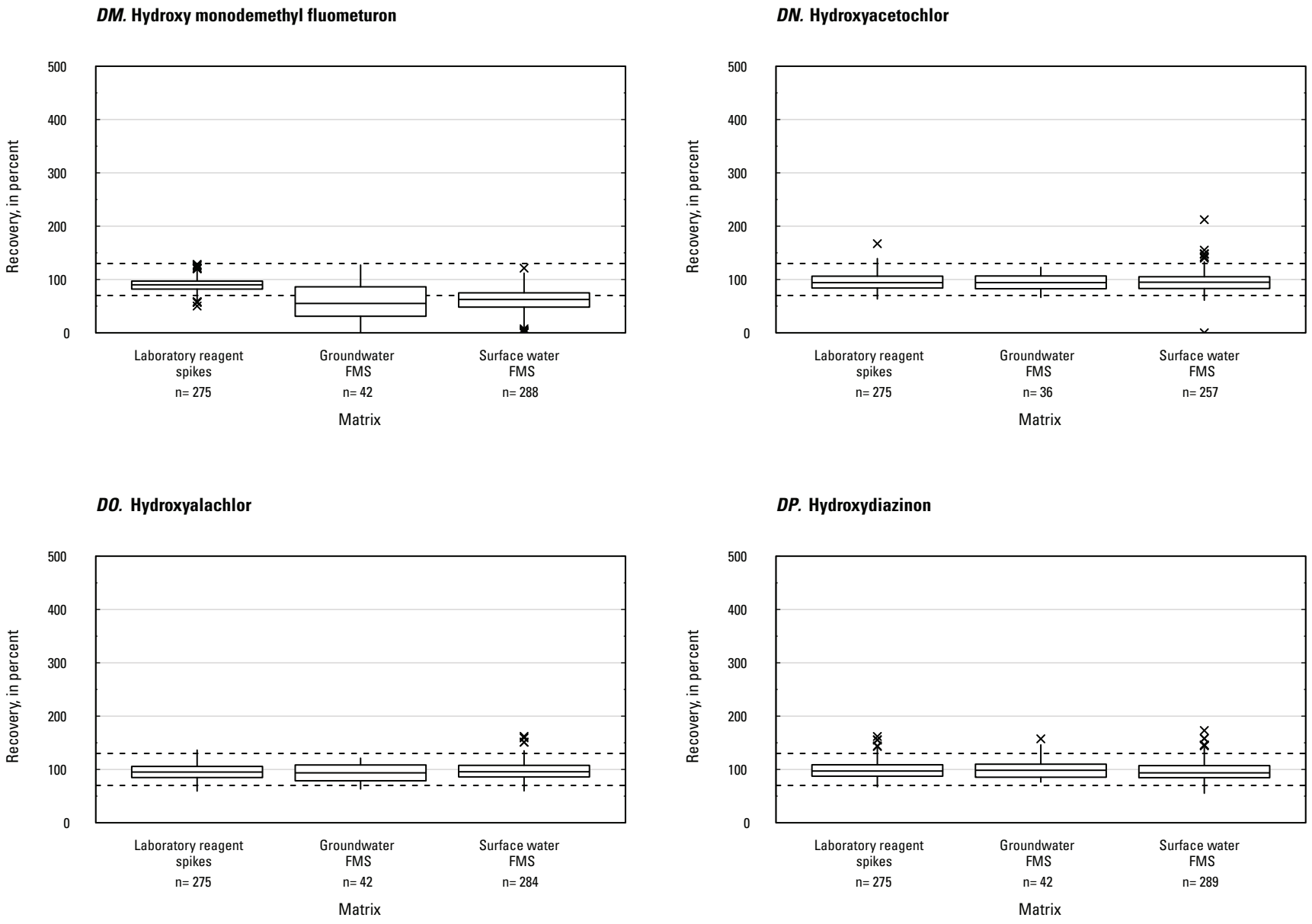

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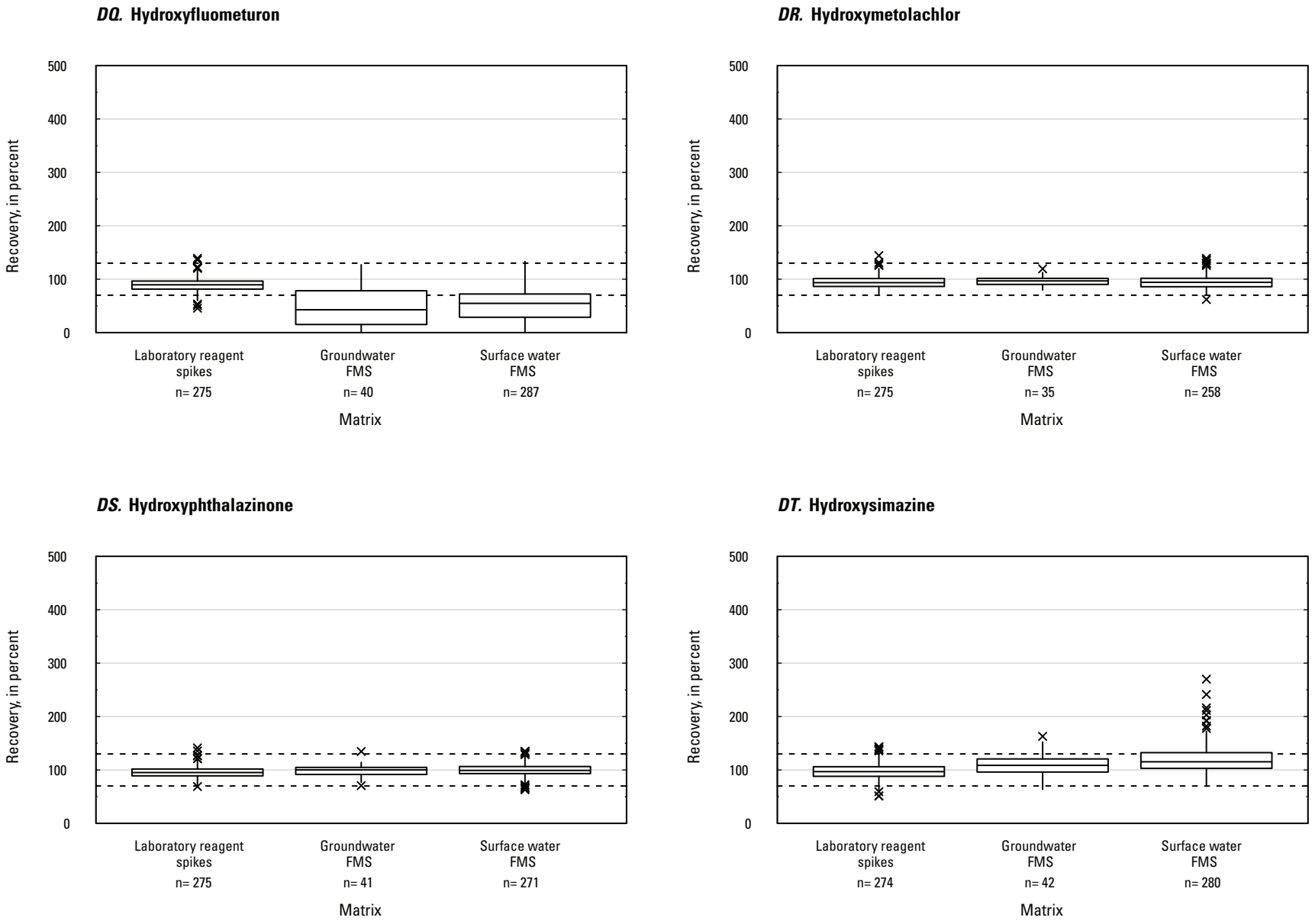

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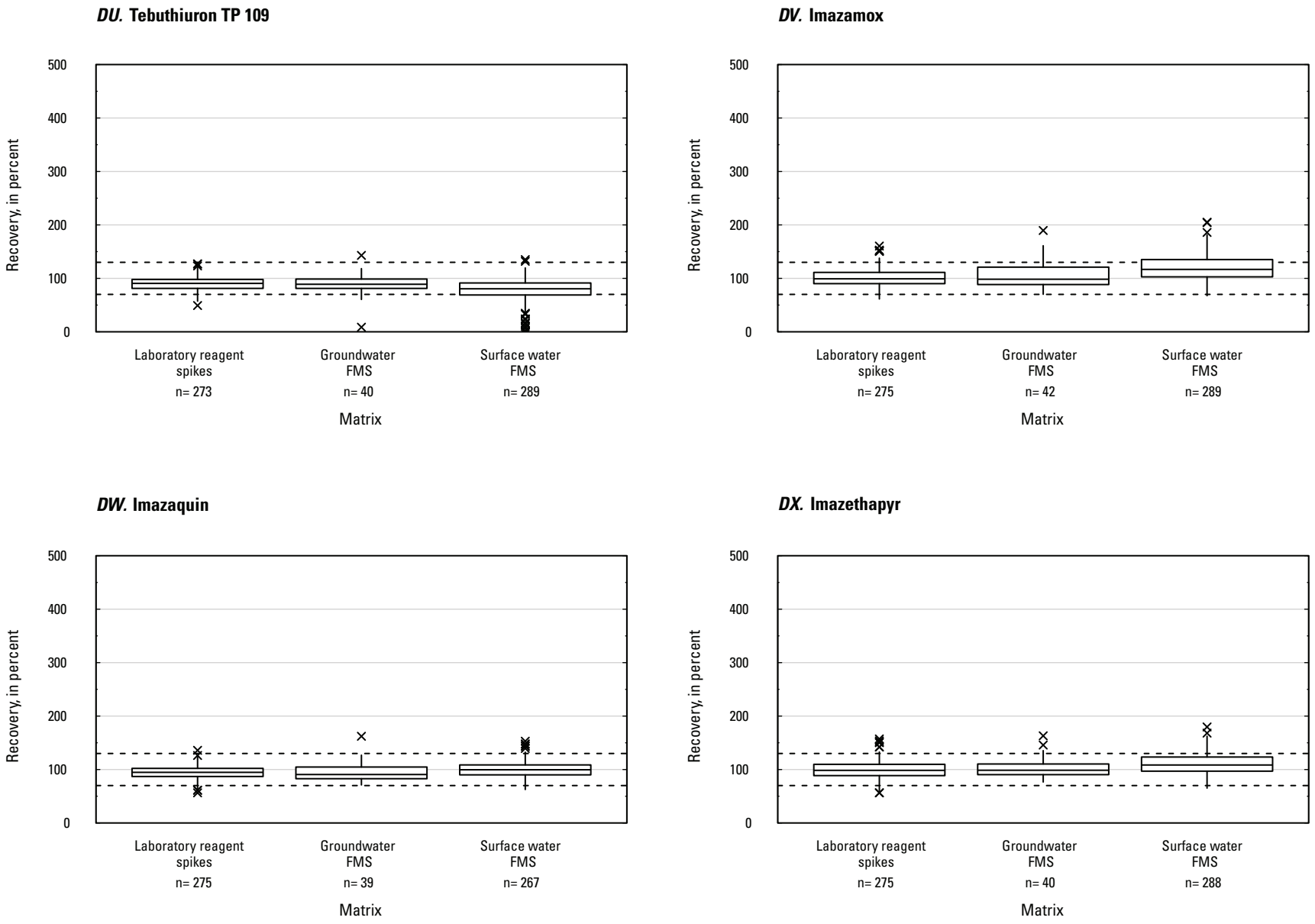

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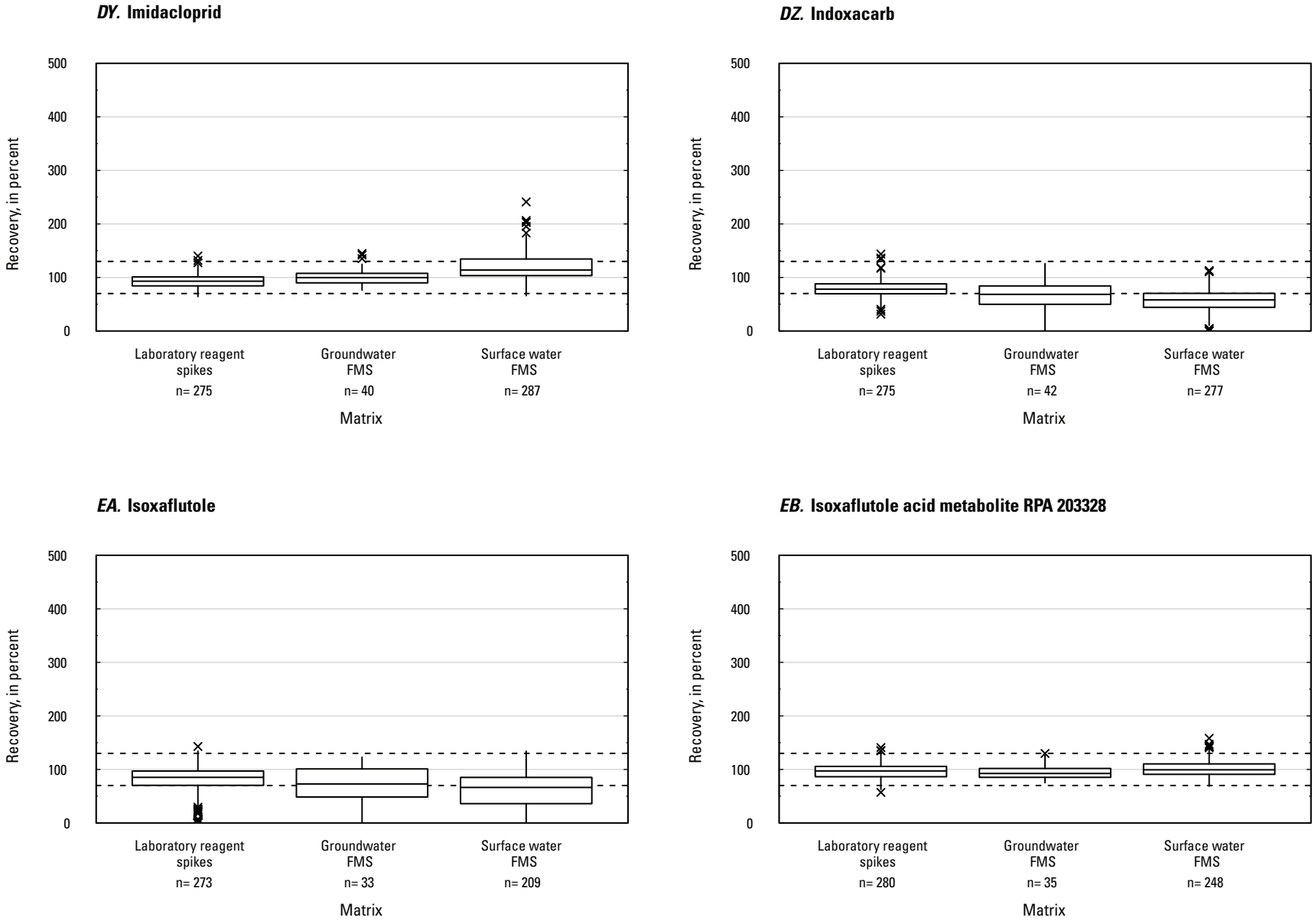

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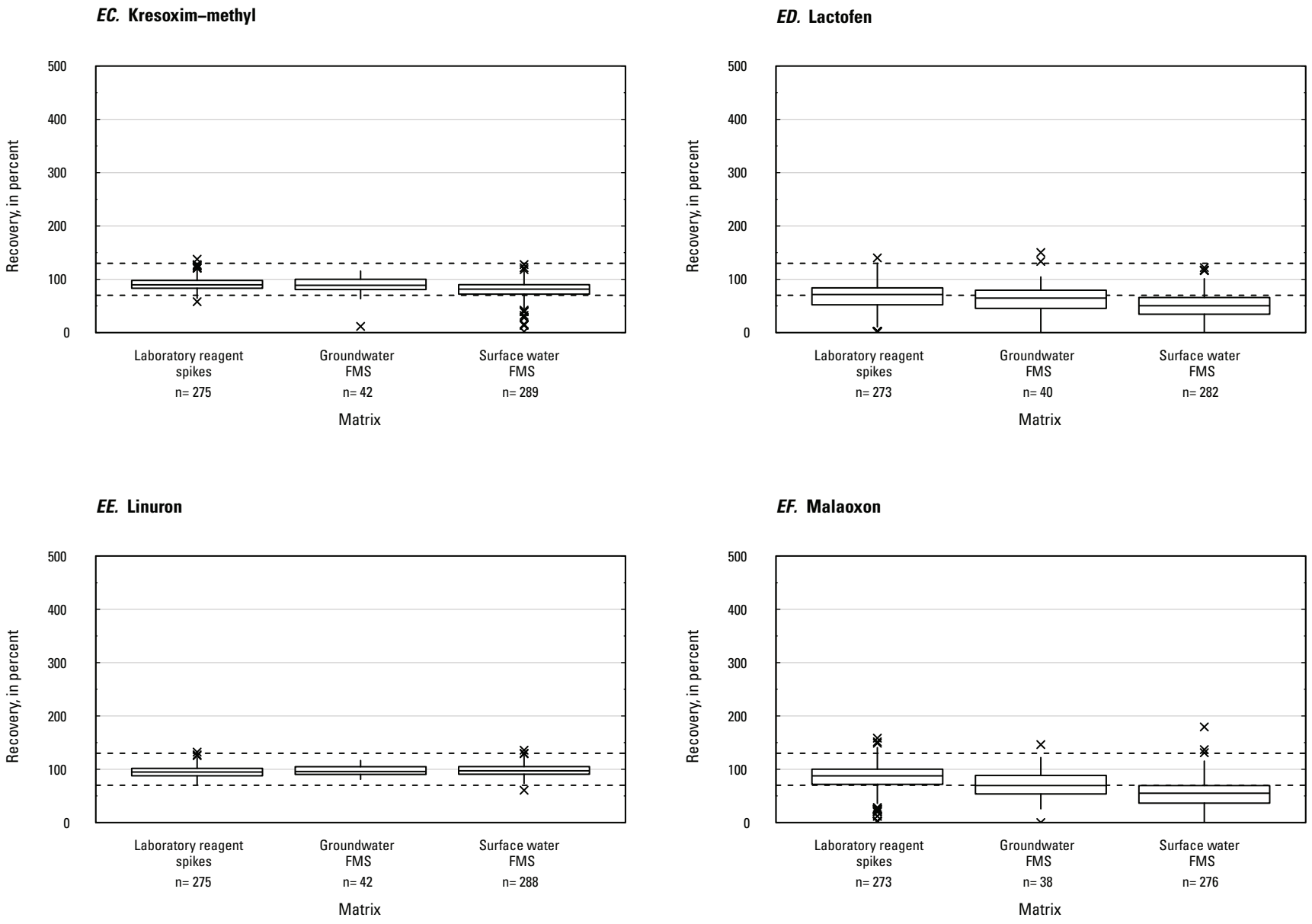

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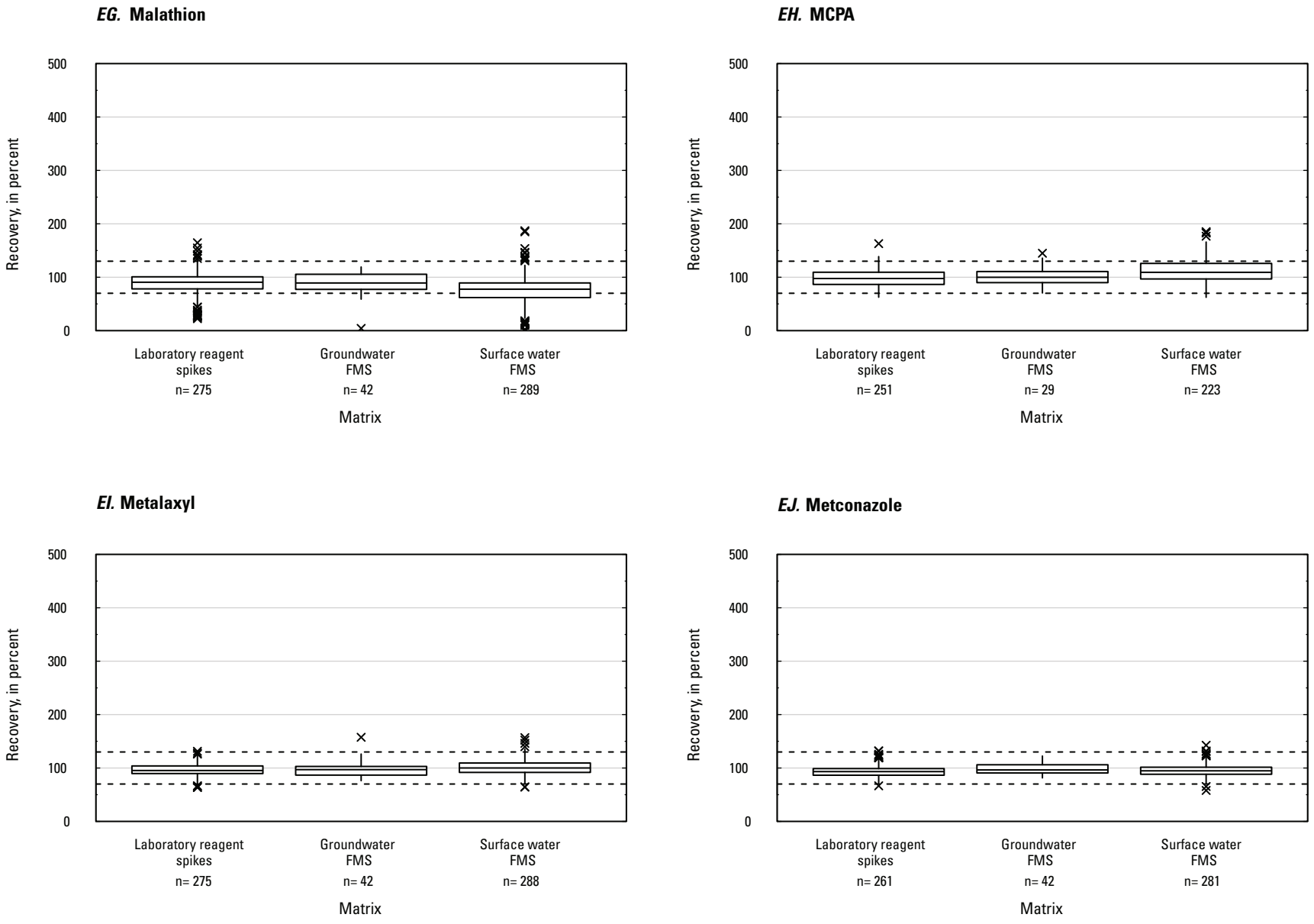

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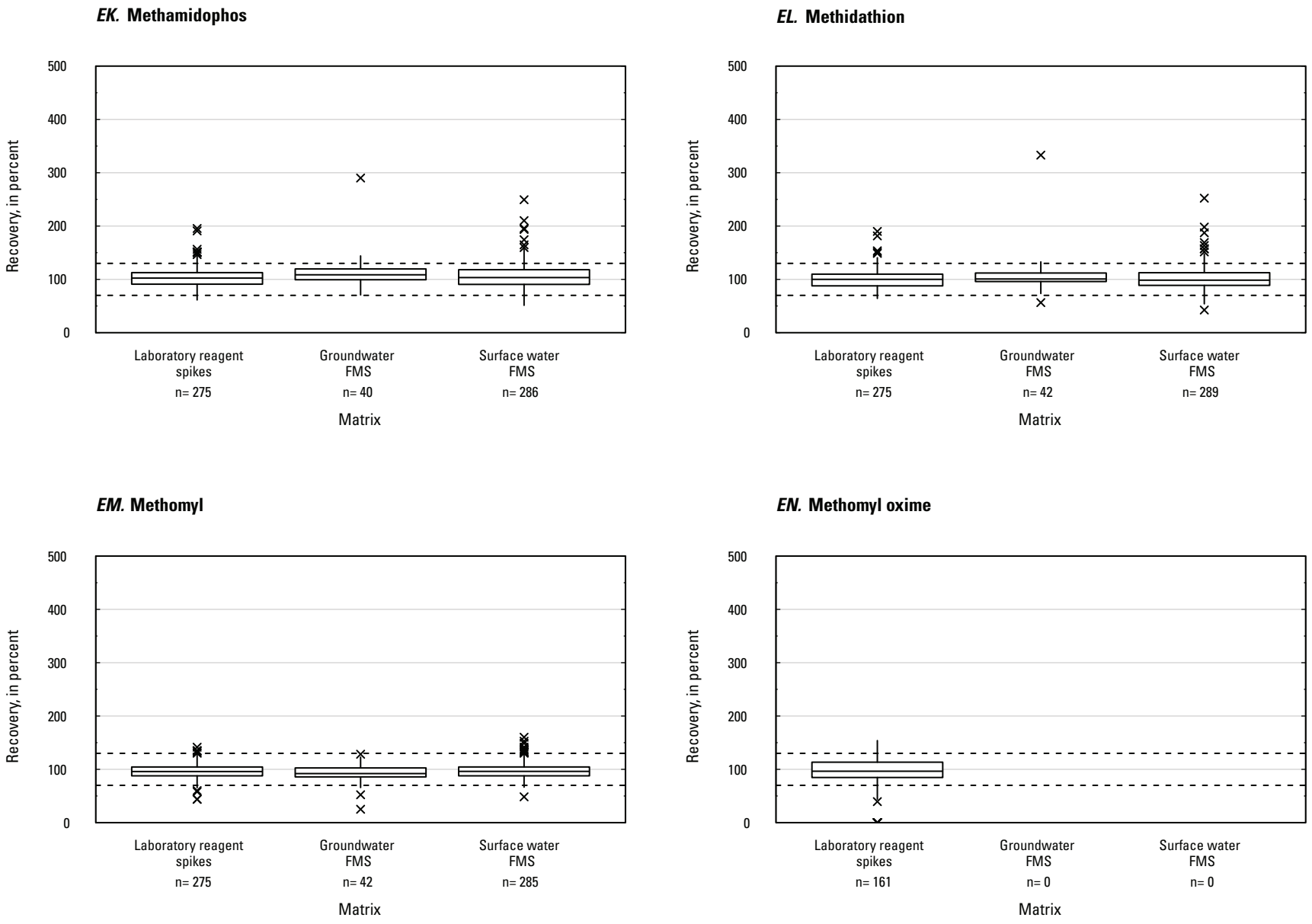

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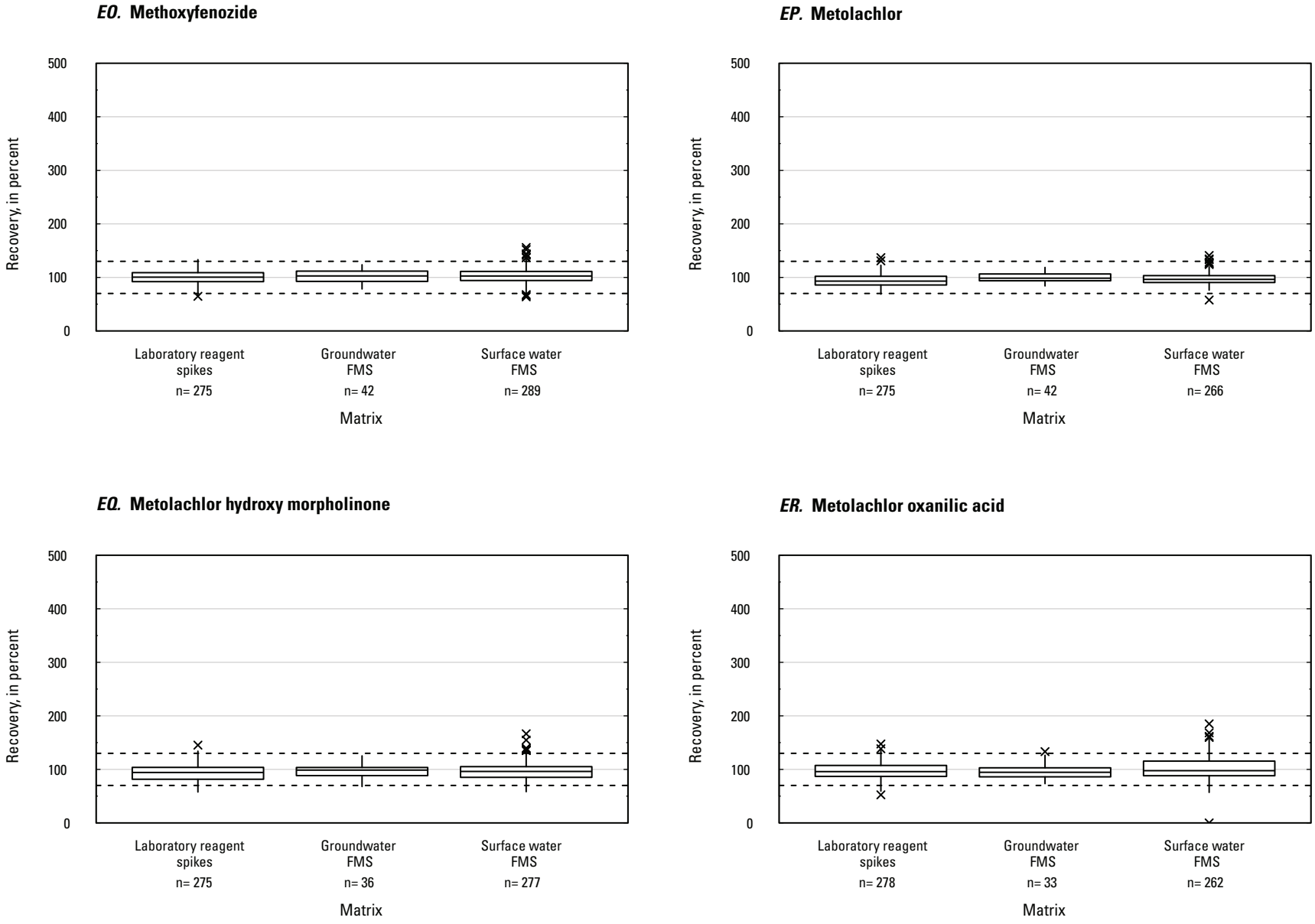

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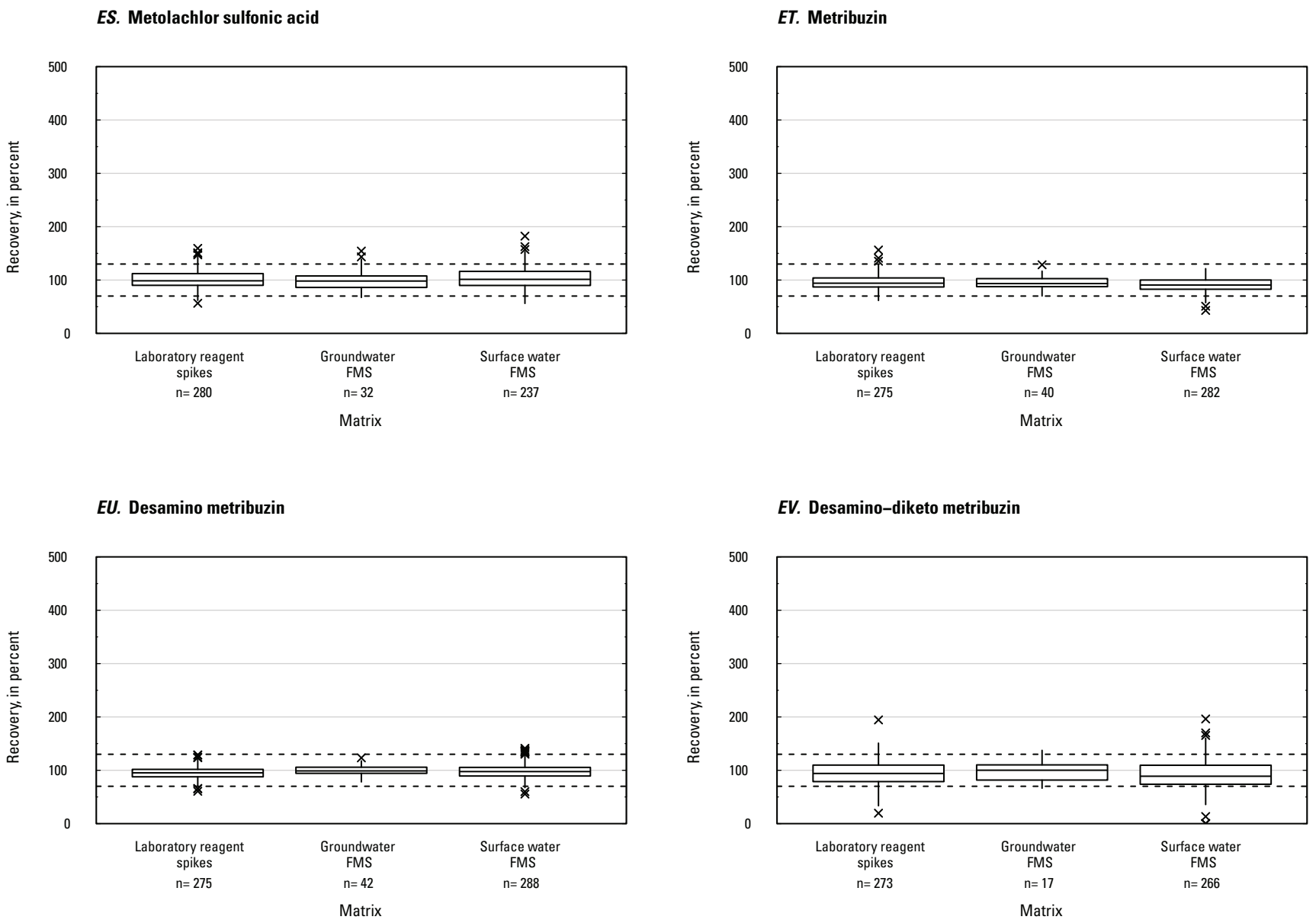

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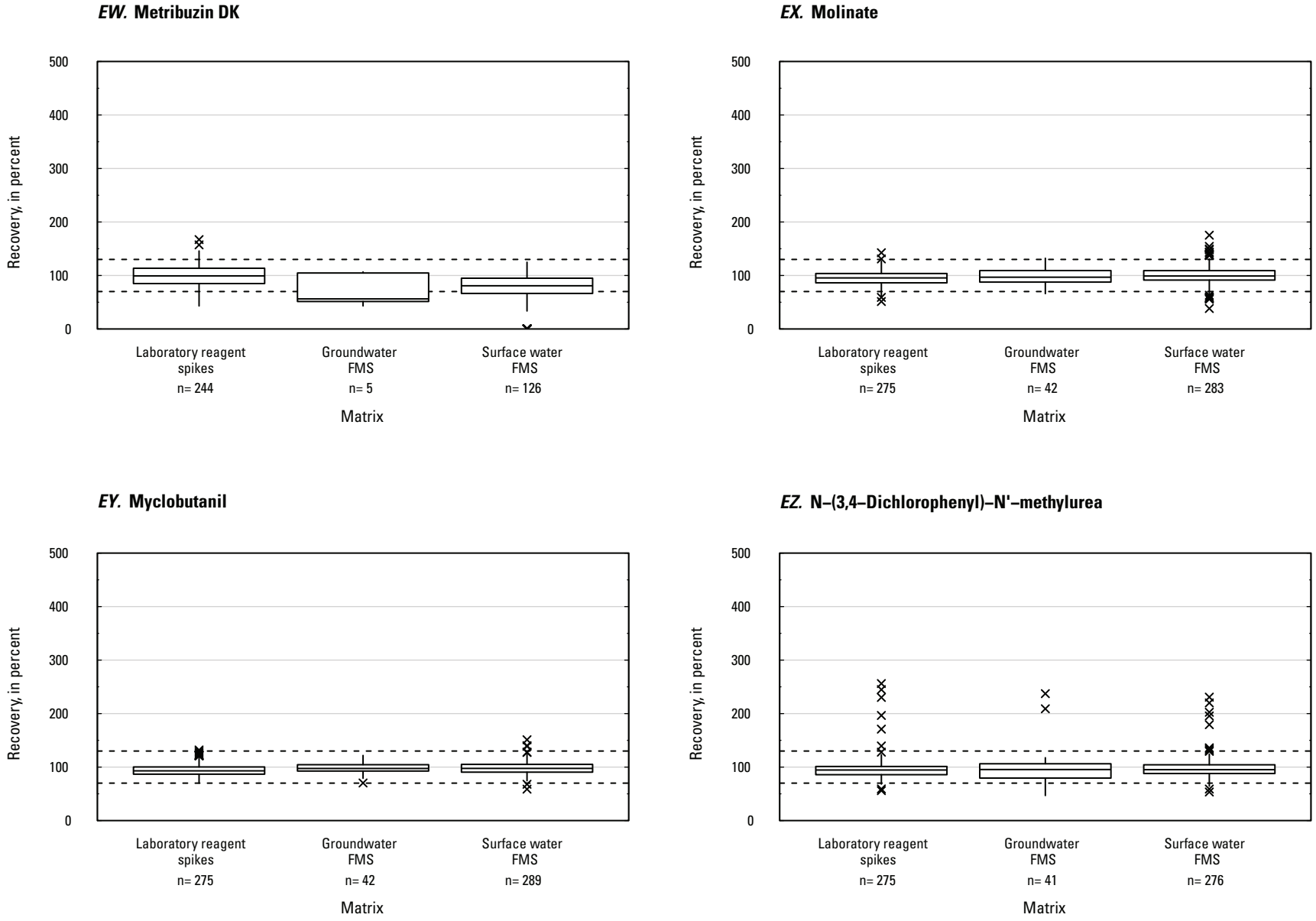

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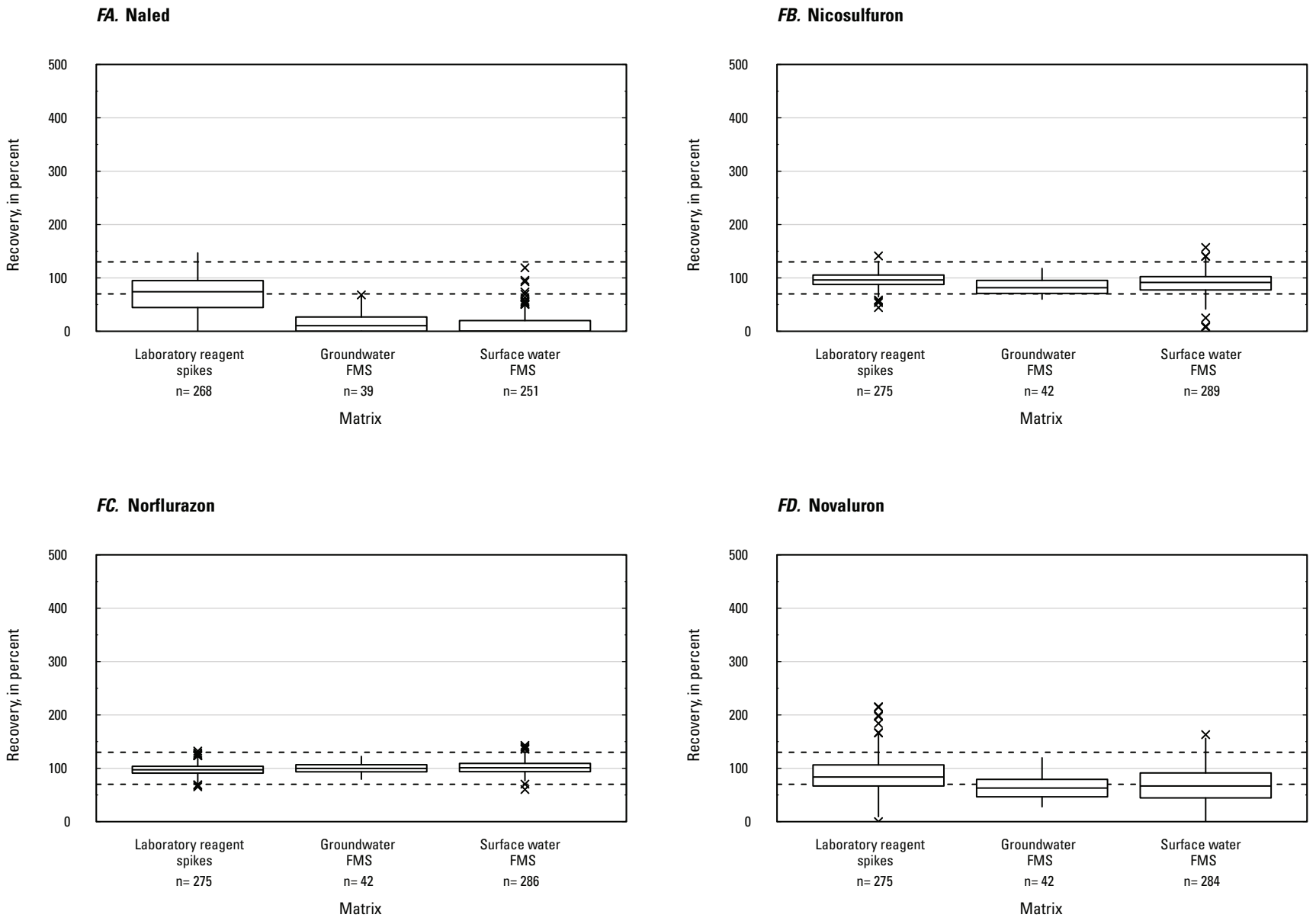

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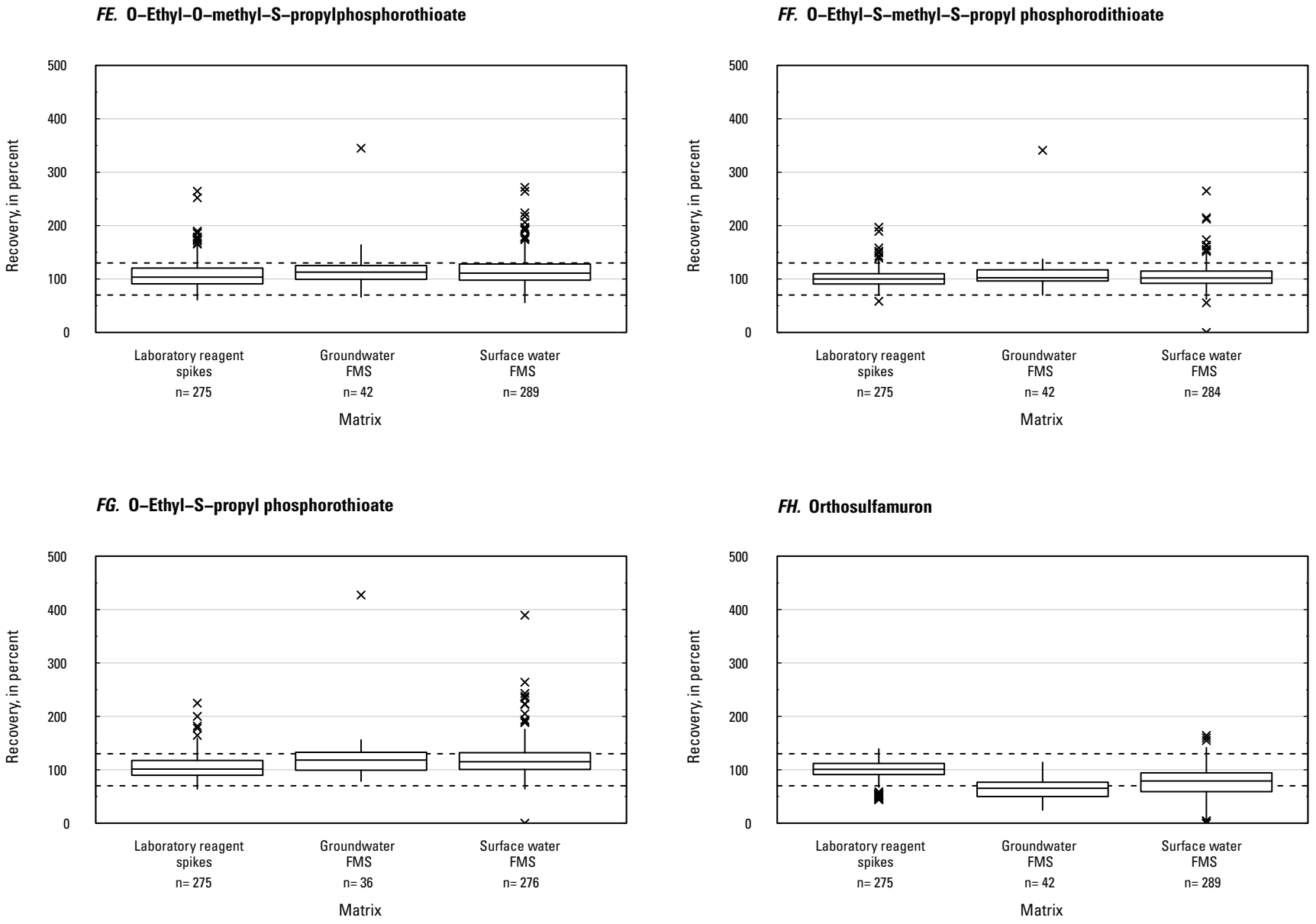

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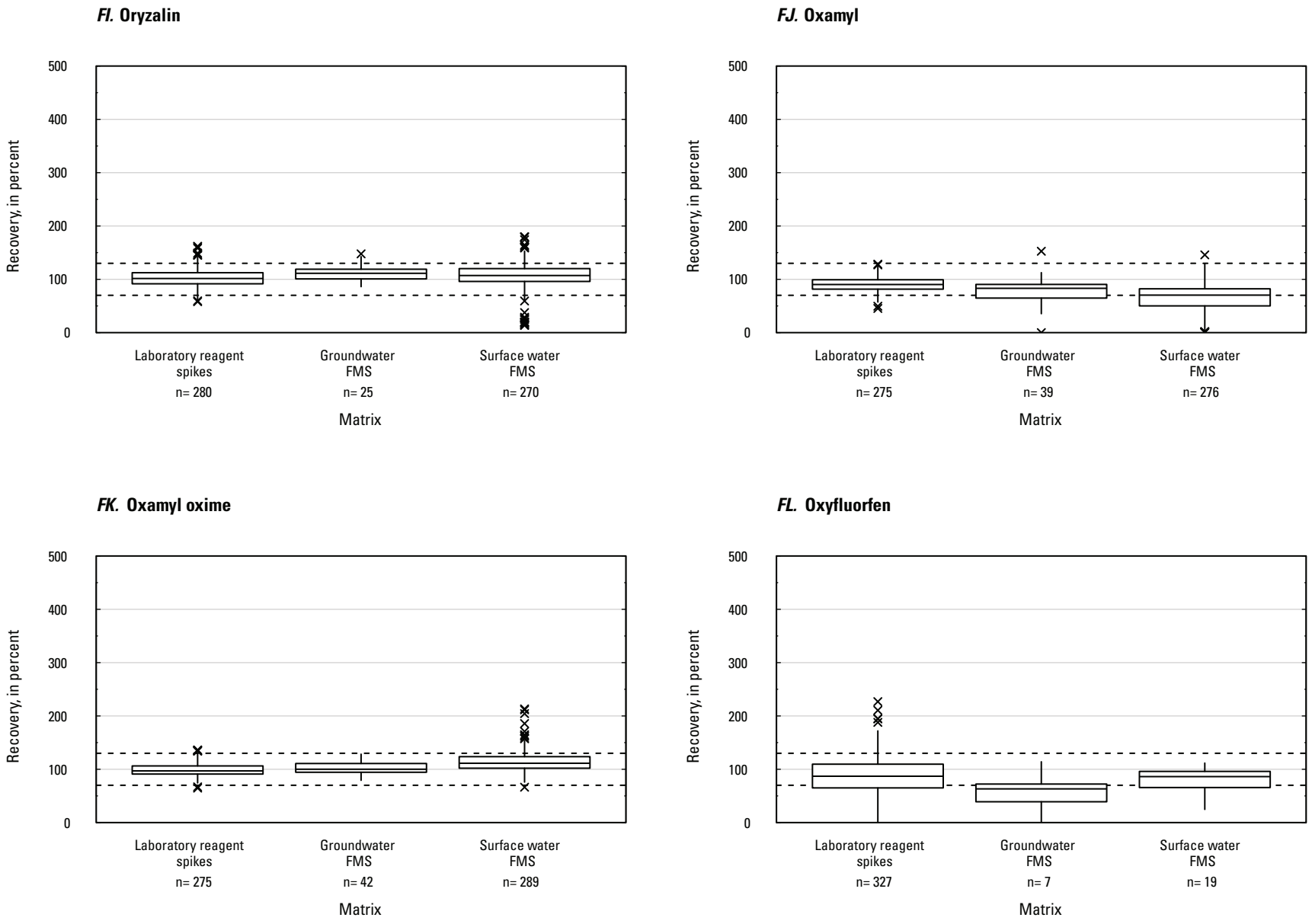

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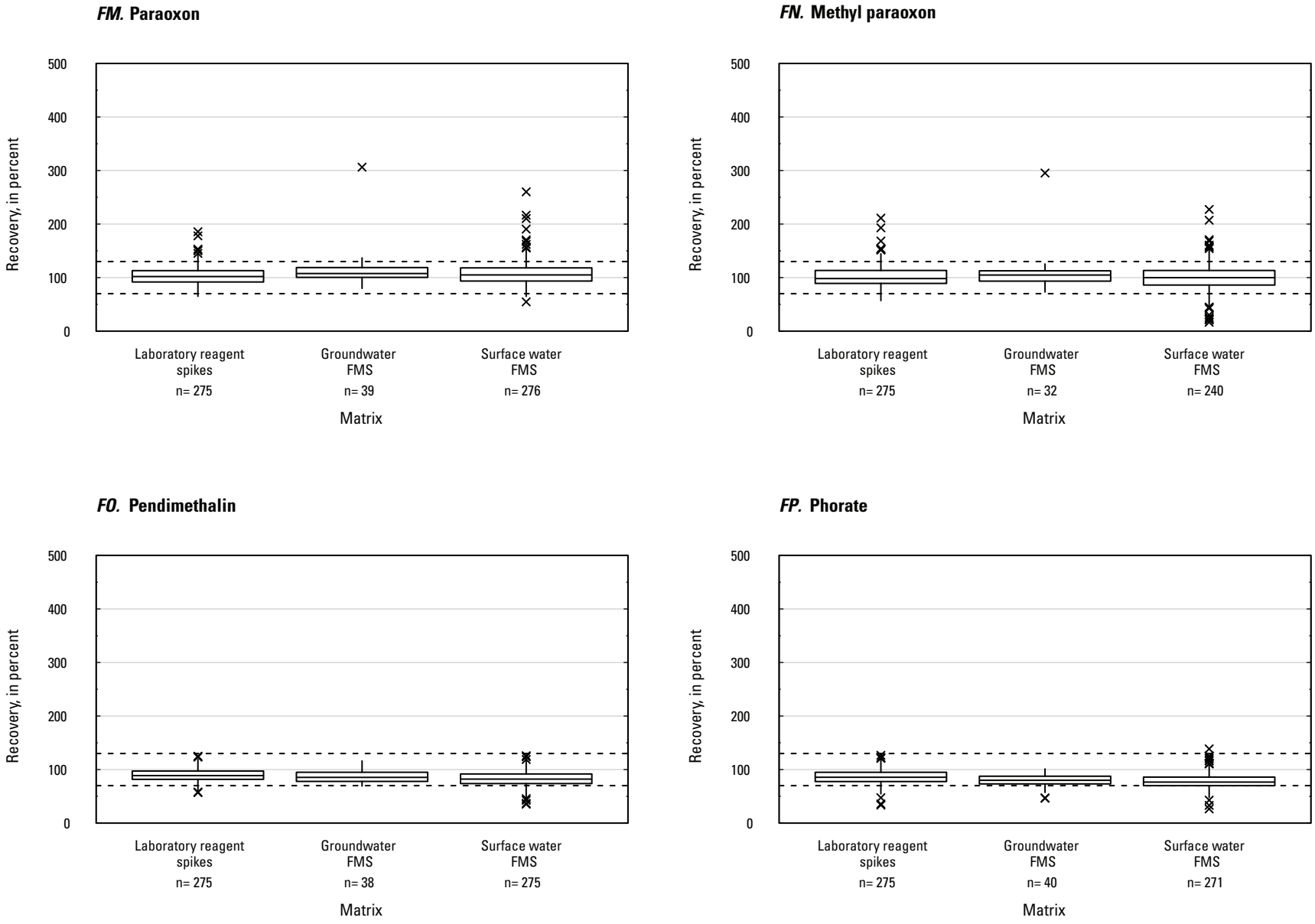

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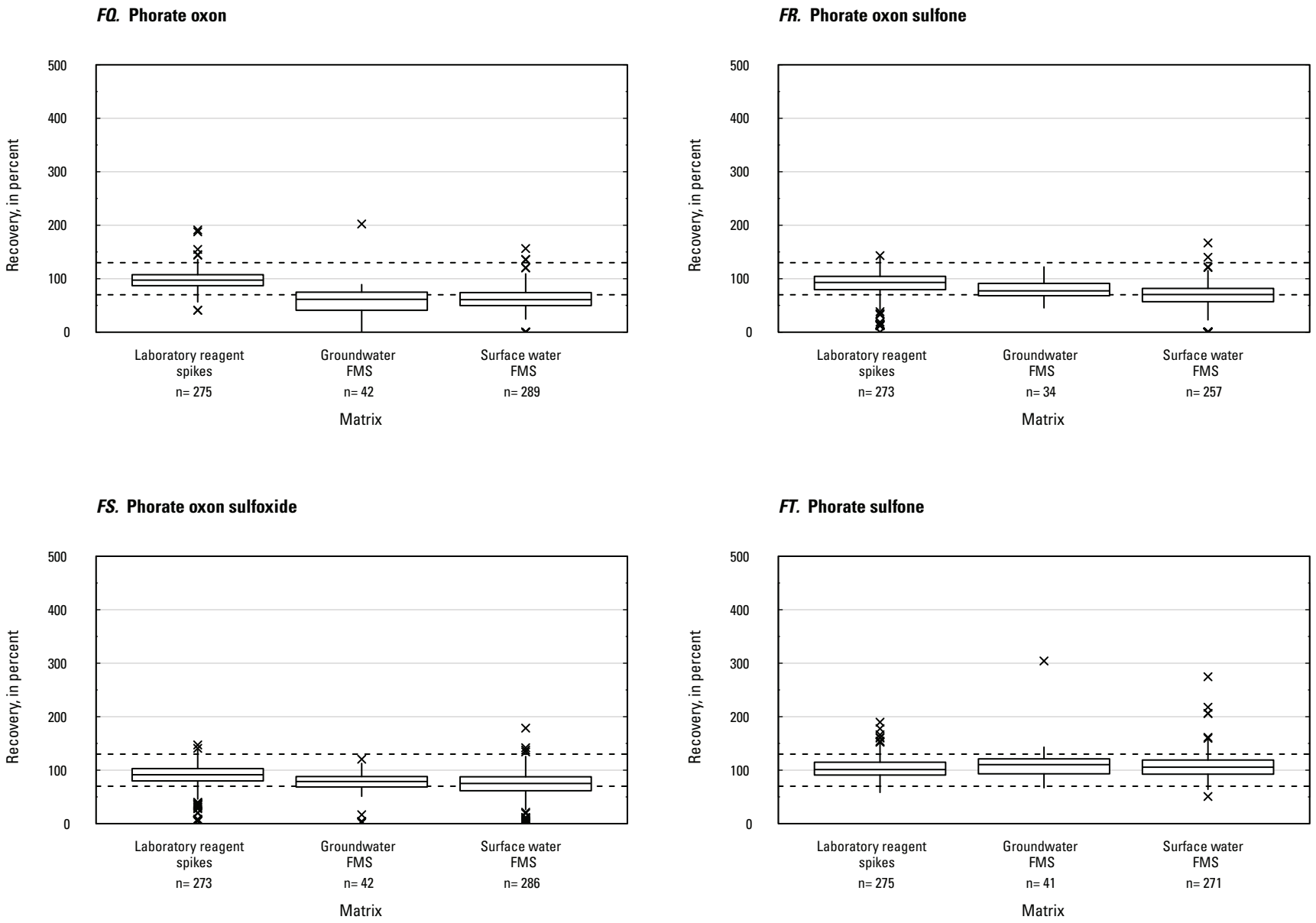

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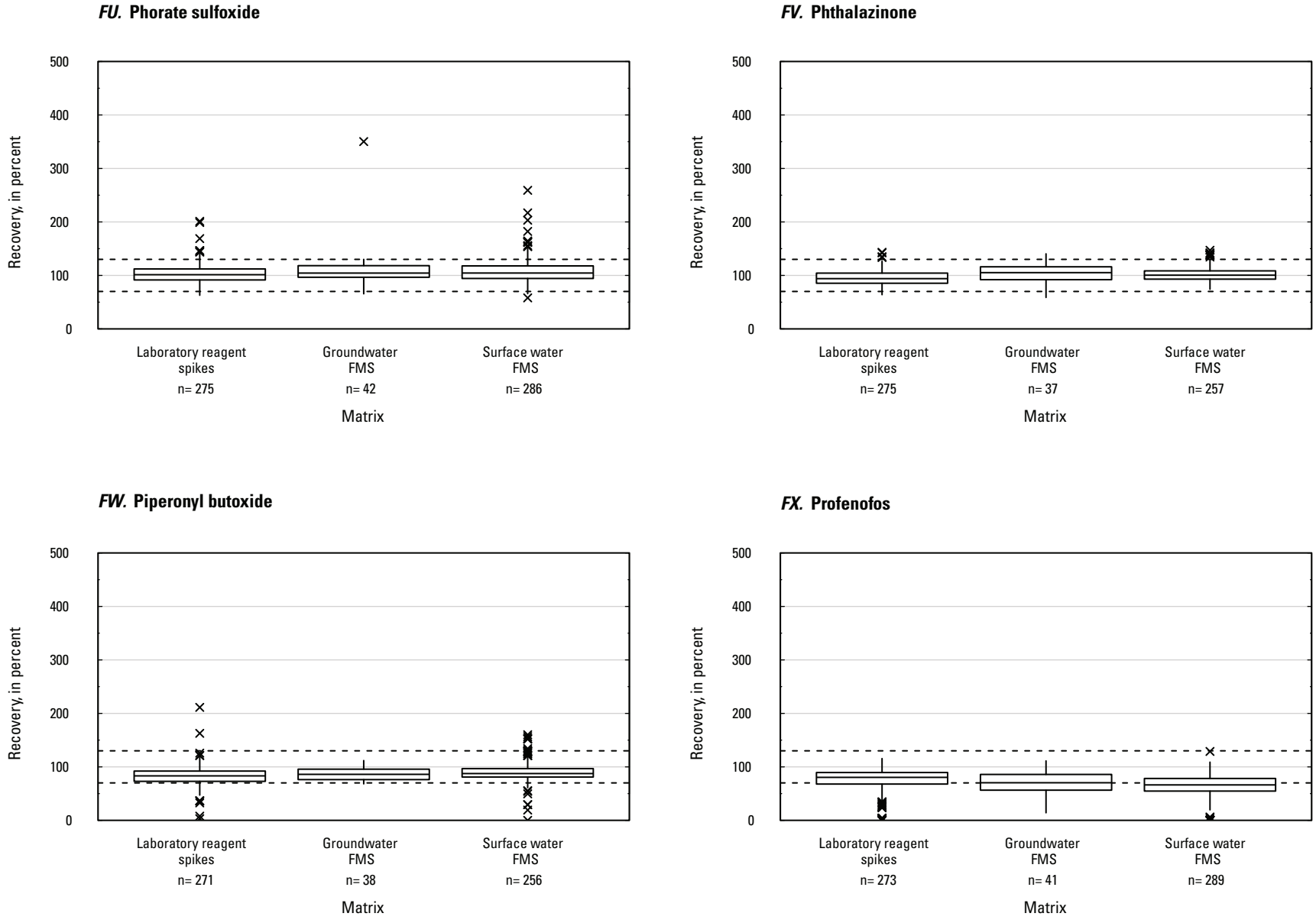

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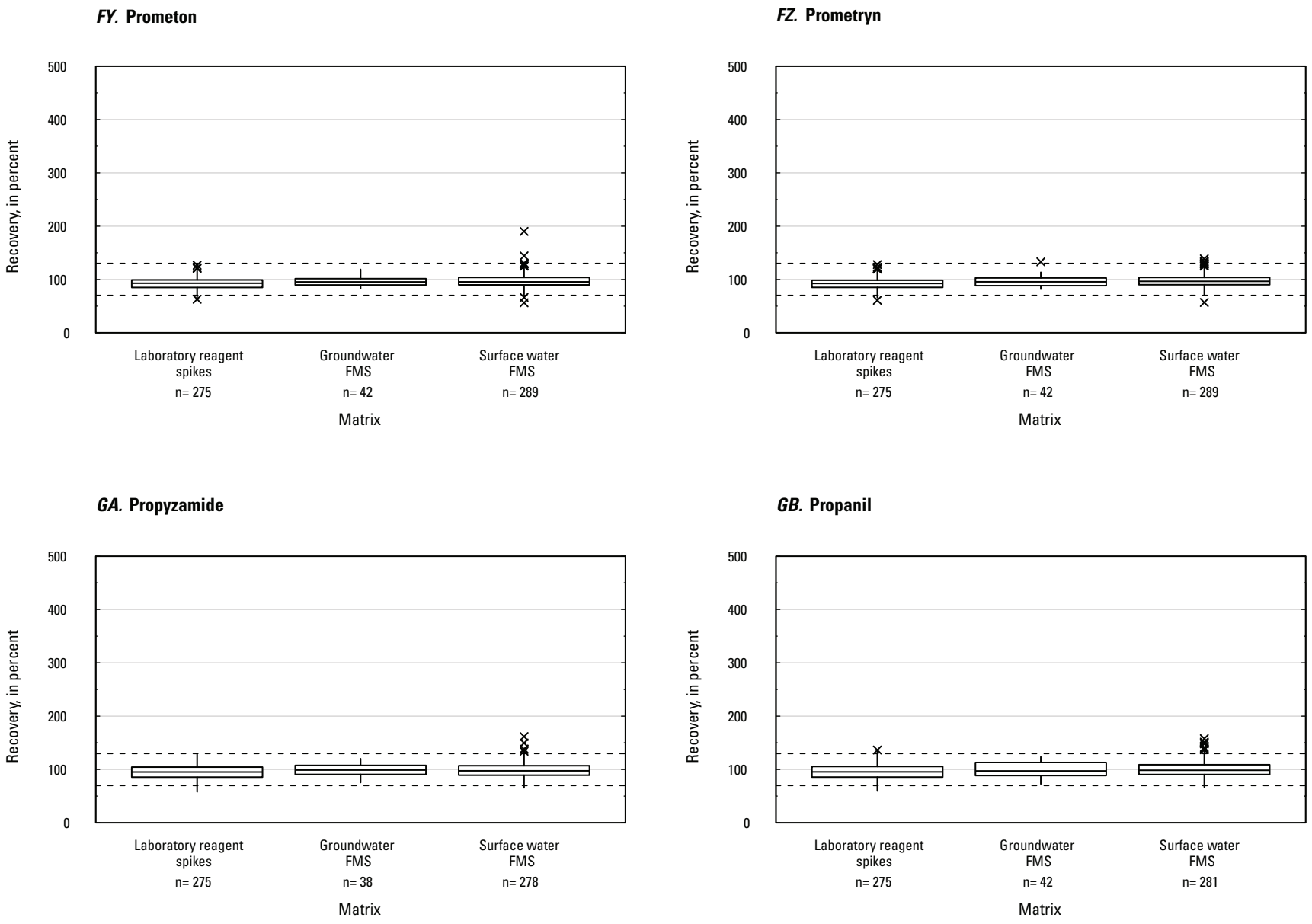

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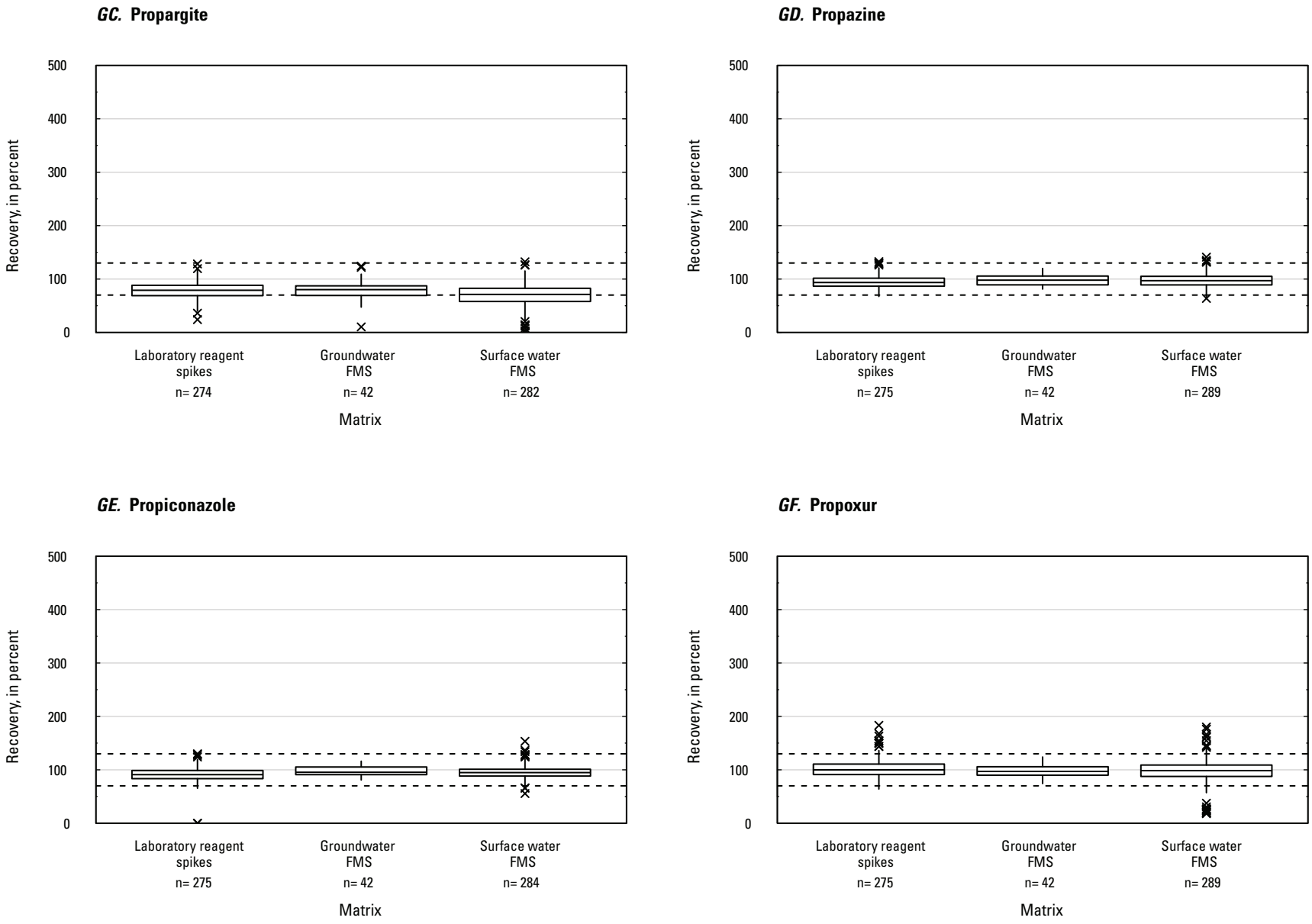

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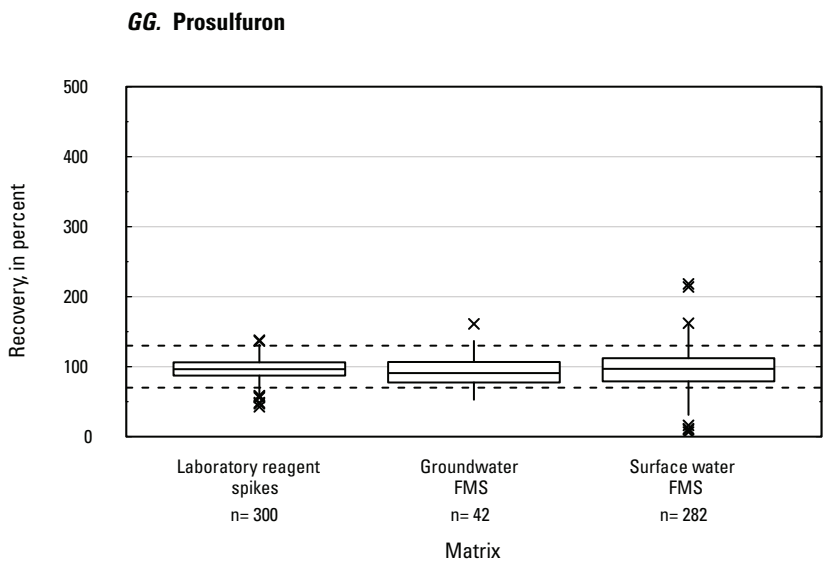
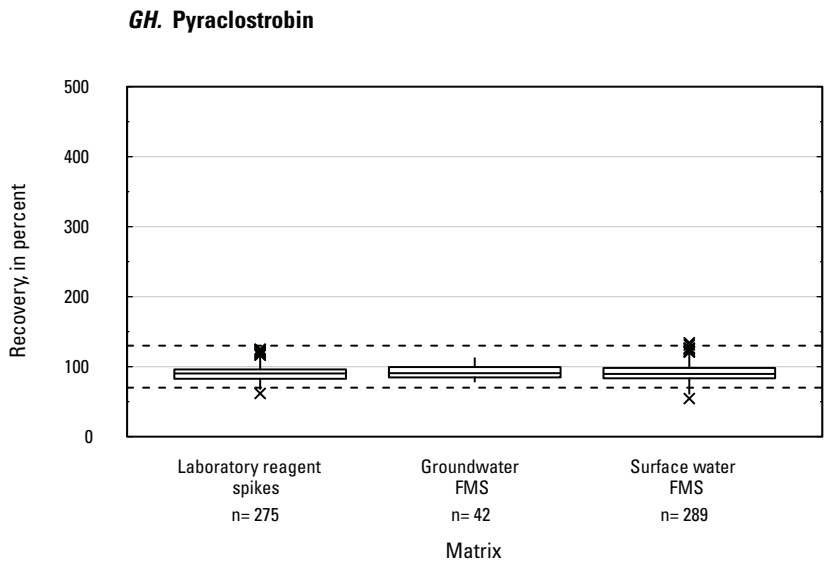
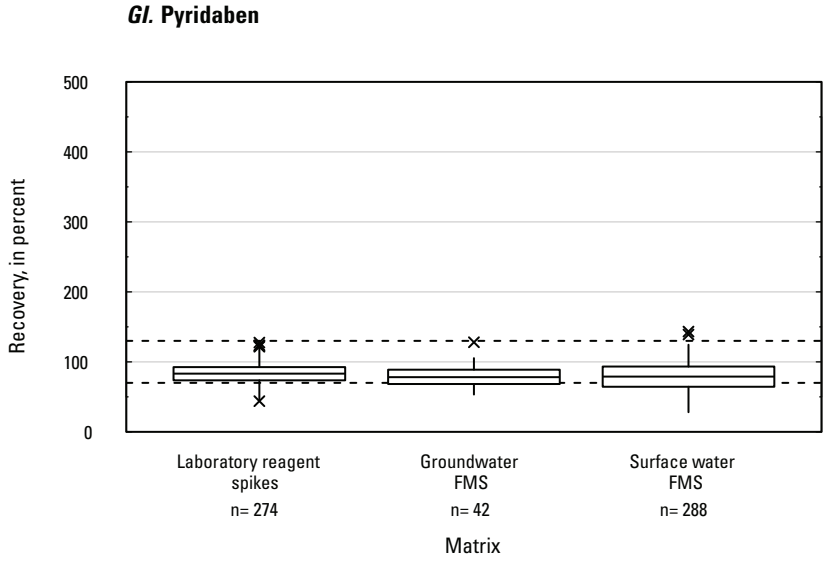






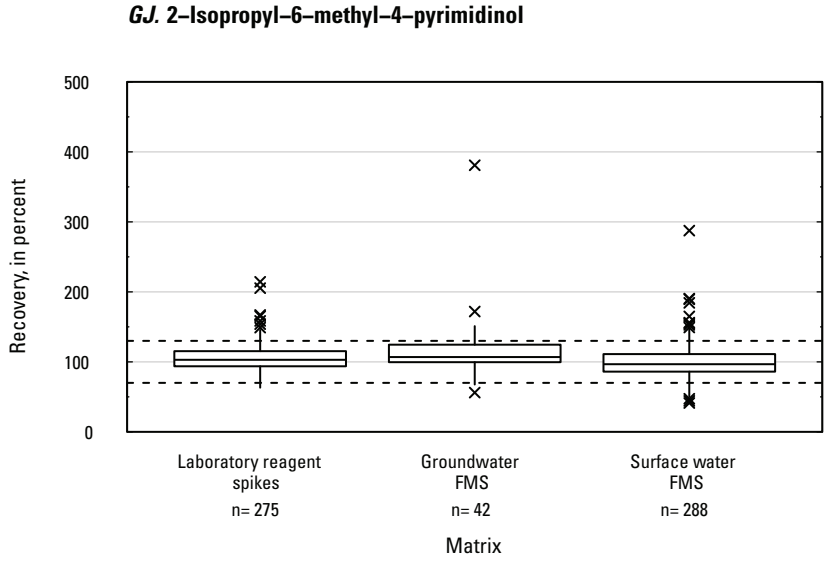


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.—Continued

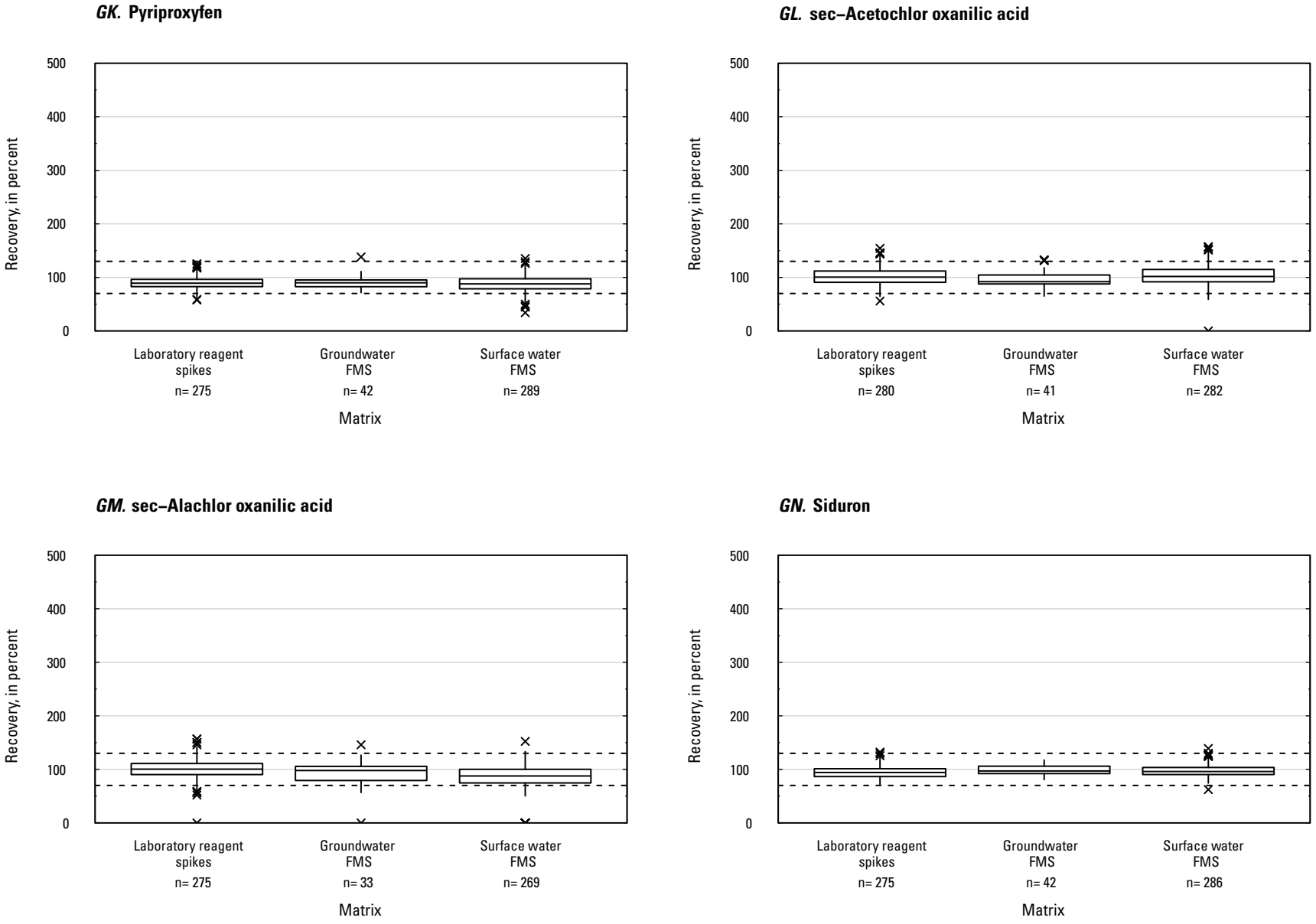


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.—Continued

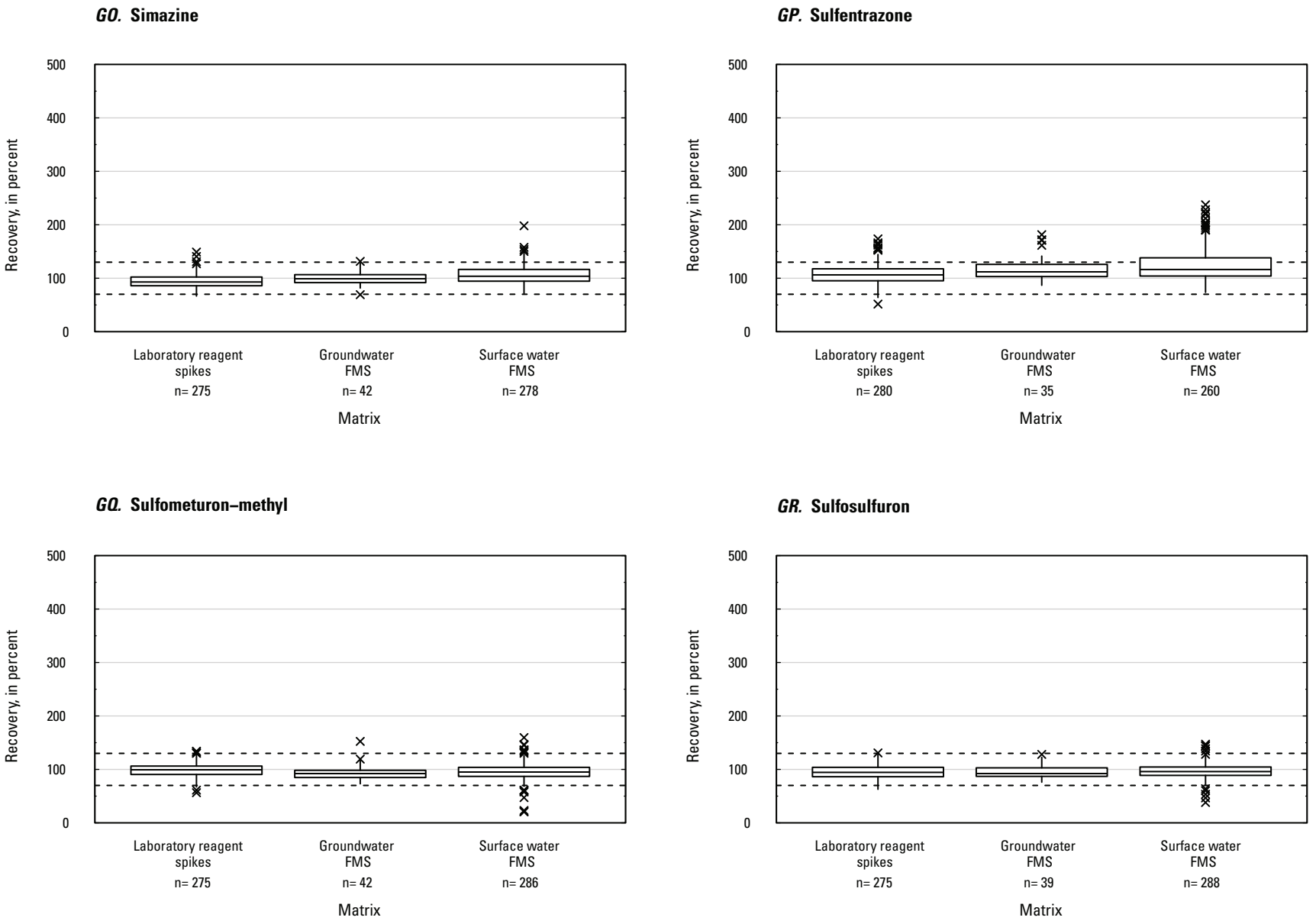


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.—Continued

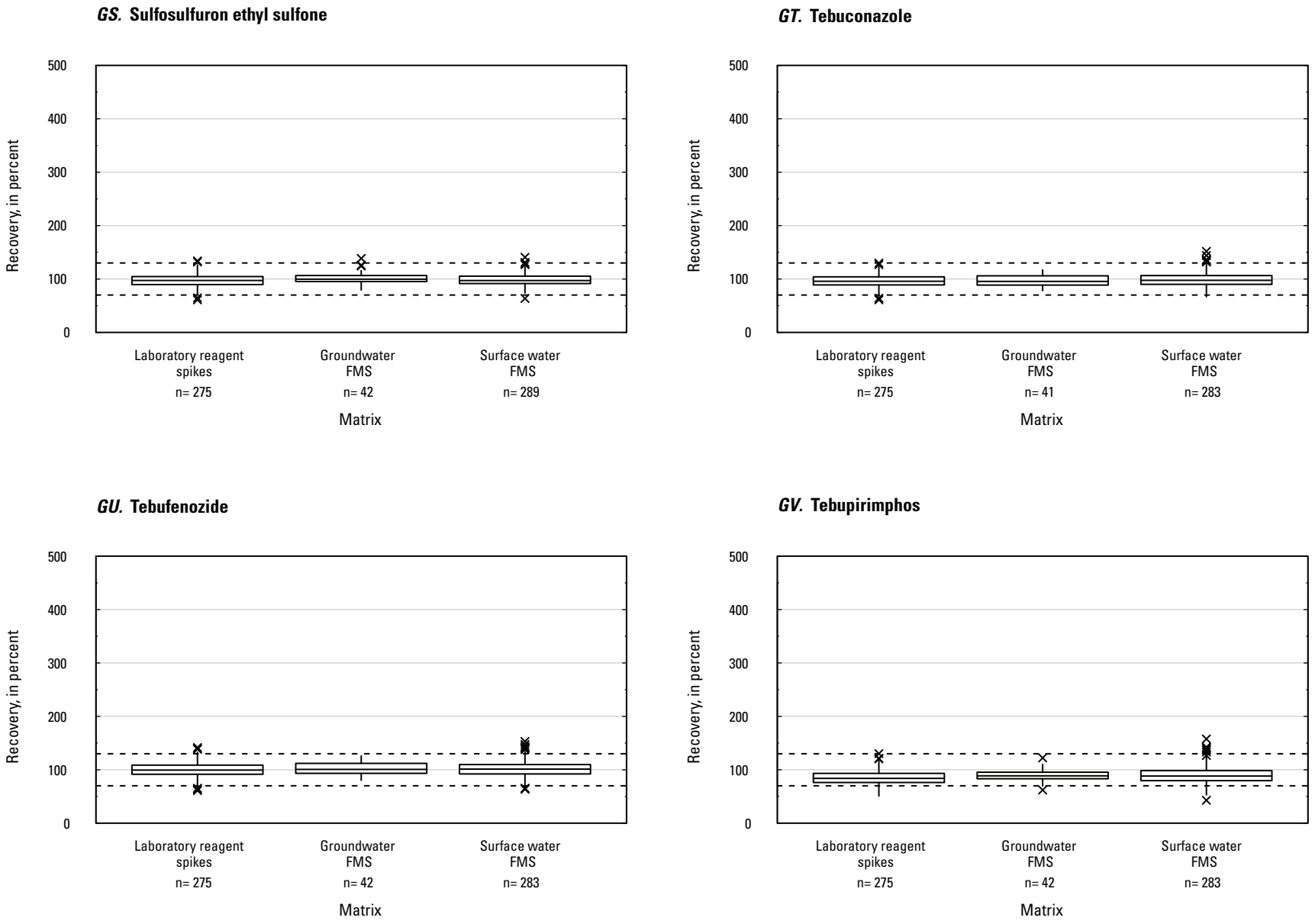


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.—Continued

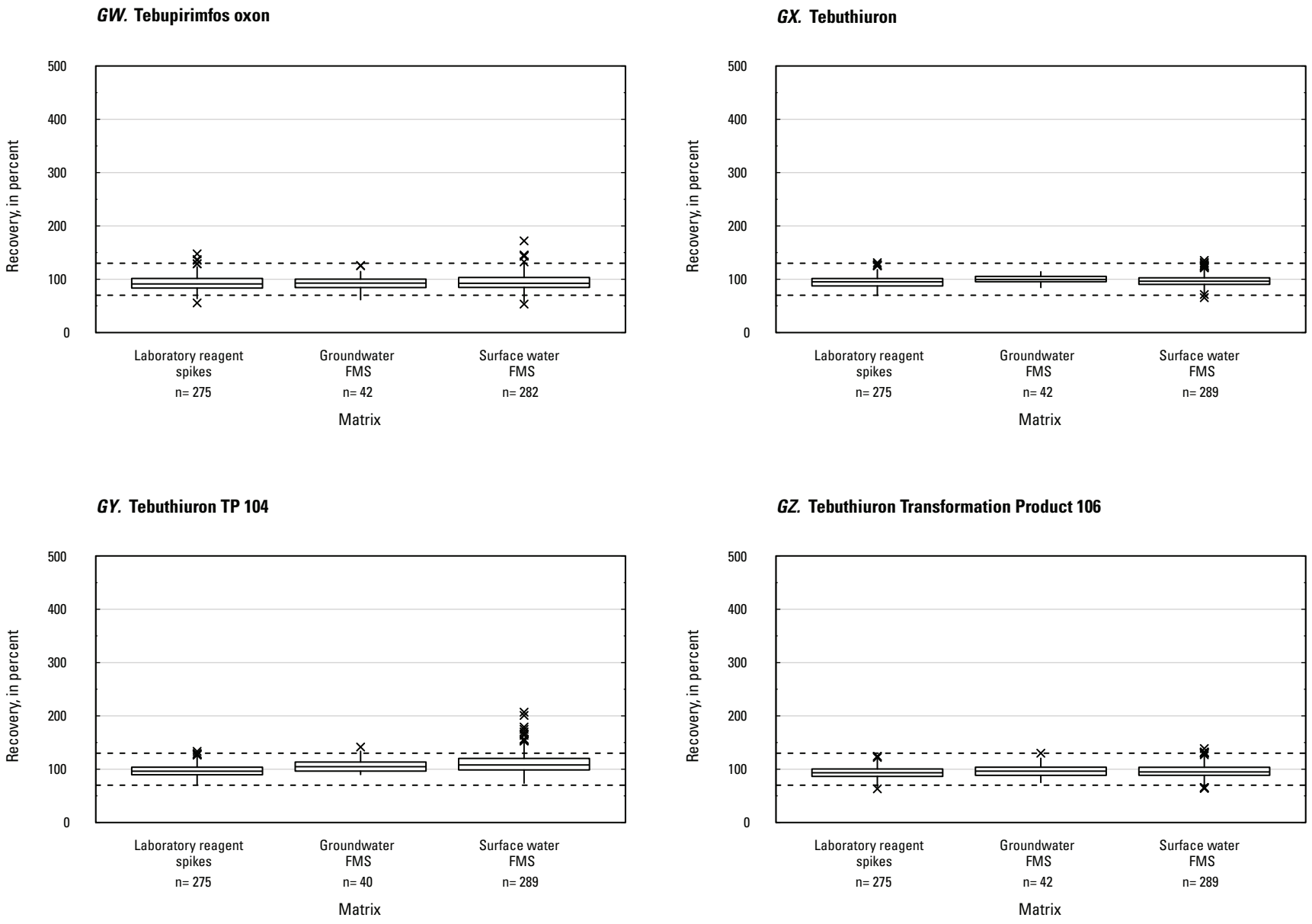


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.—Continued

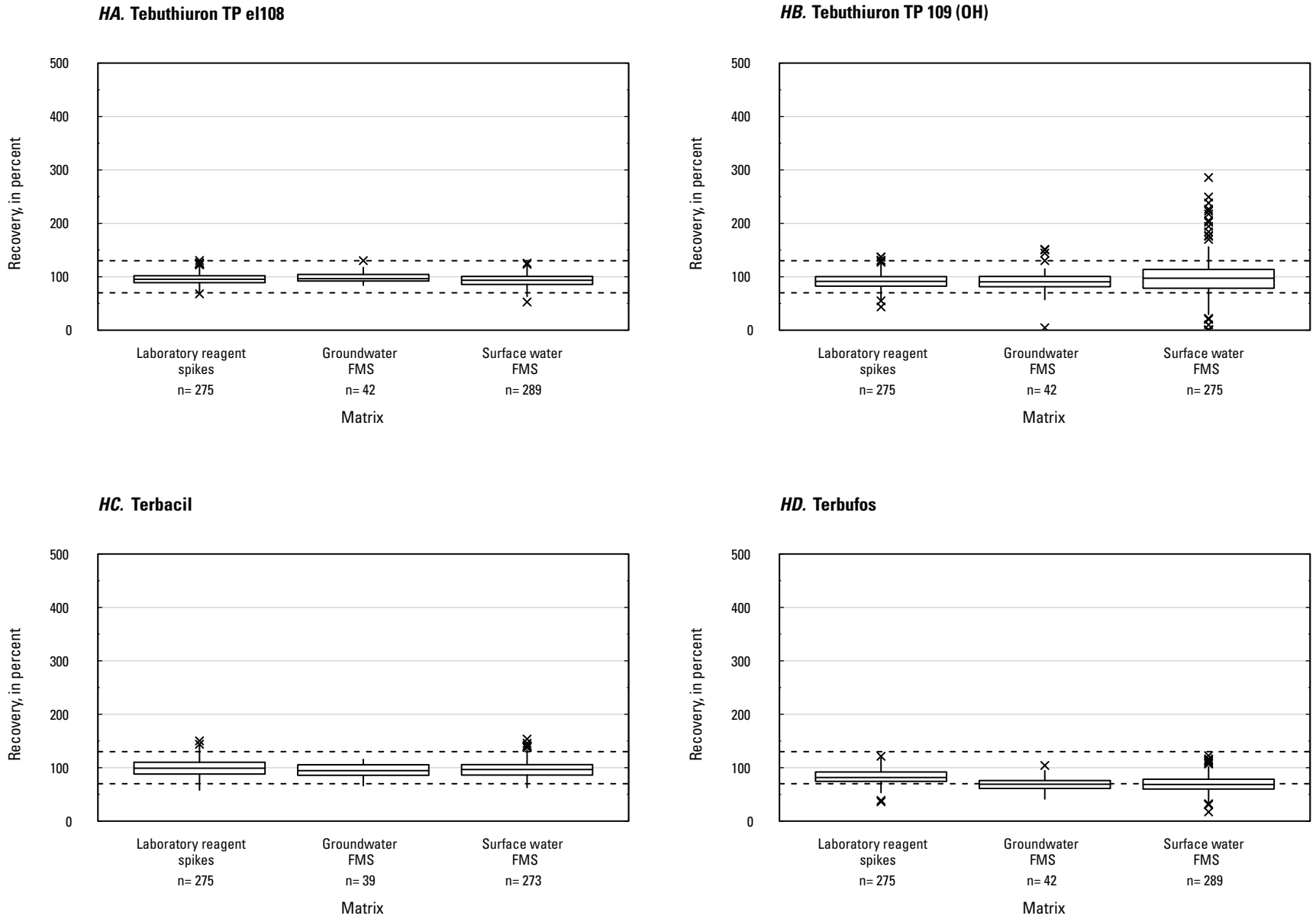


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.—Continued

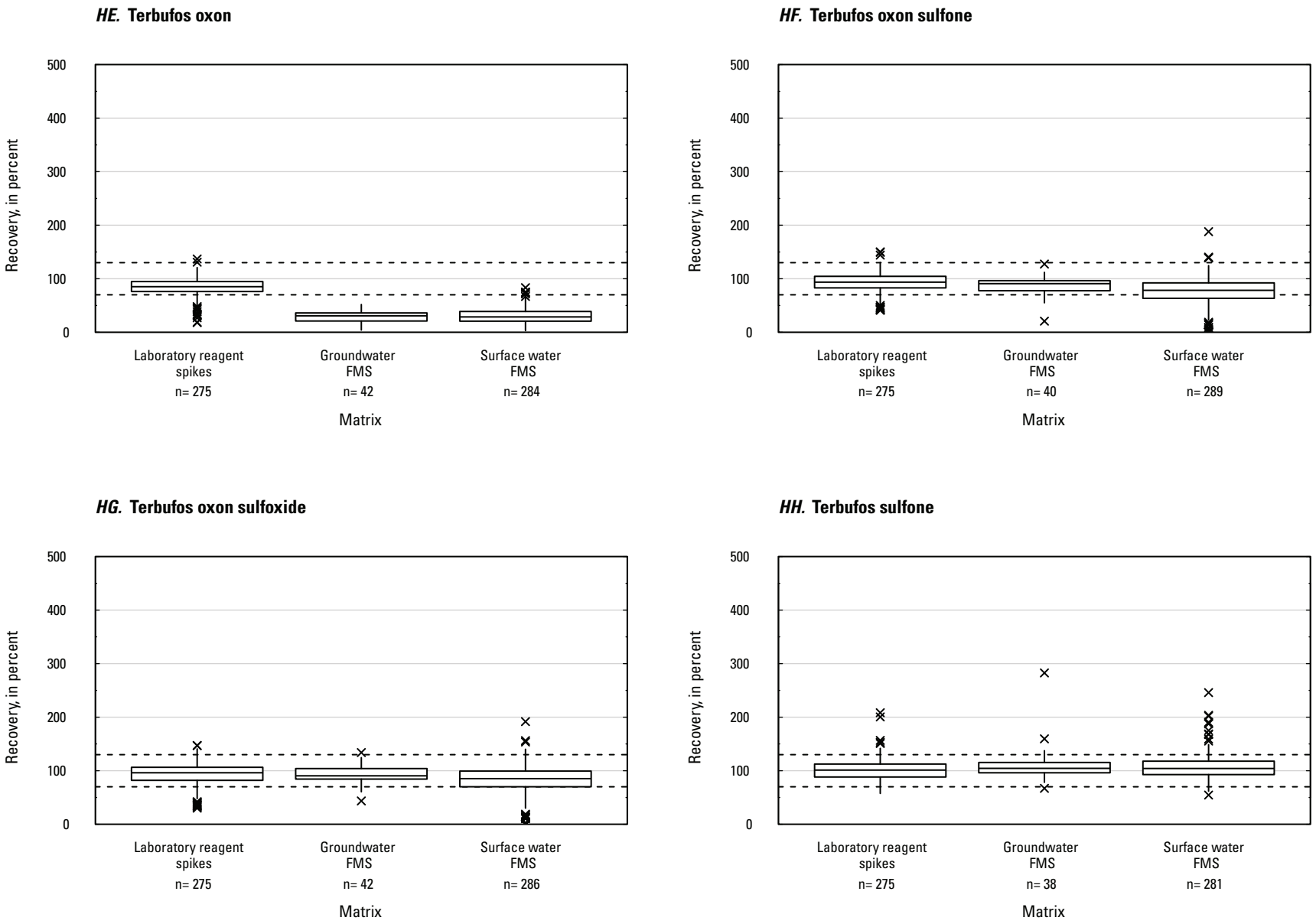


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.—Continued

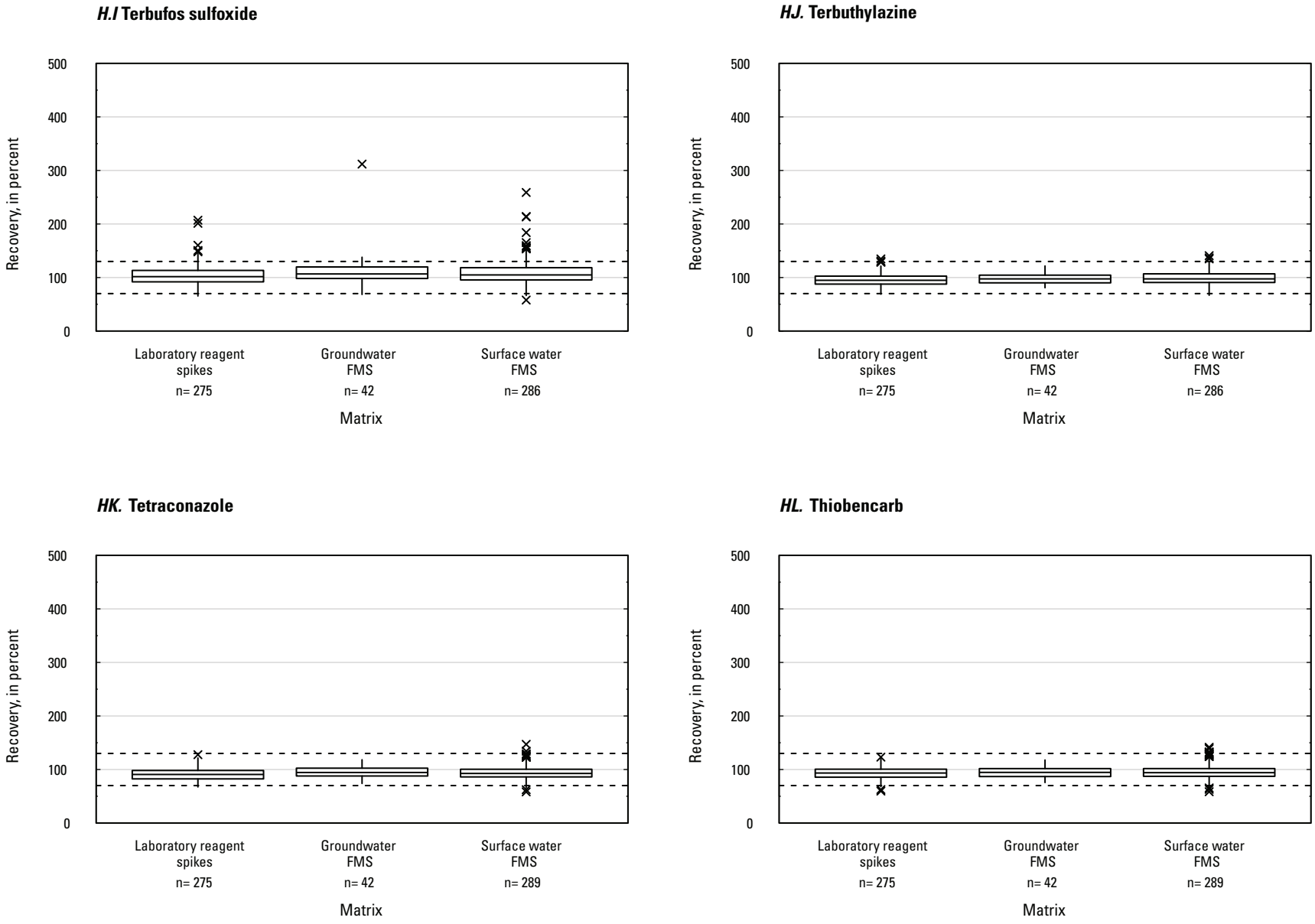


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.—Continued

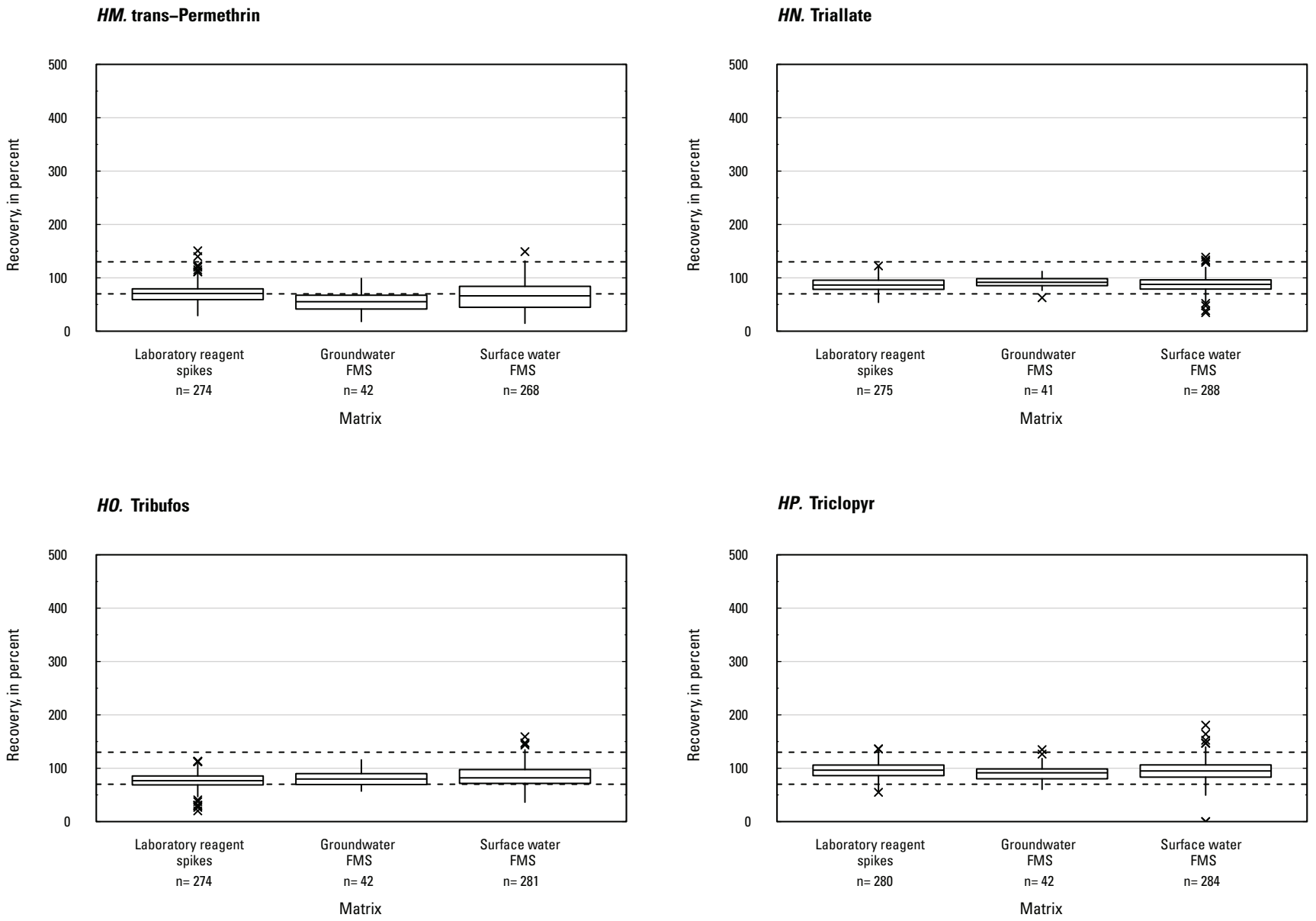


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.—Continued

HQ. **Trifloxystrobin**

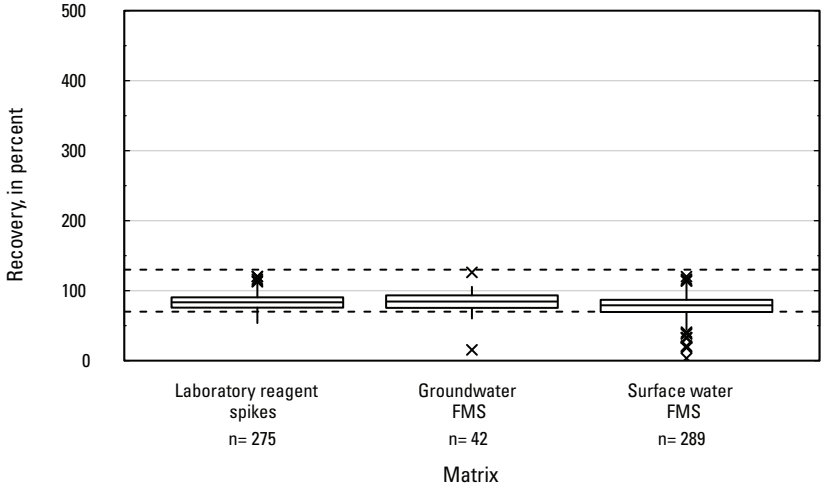


Figure 4. Graph showing distributions of recovery for pesticides in schedule 2437 by matrix. Dashed lines are at 130 percent and 70 percent. Recovery values larger than 400 percent are not shown.—Continued

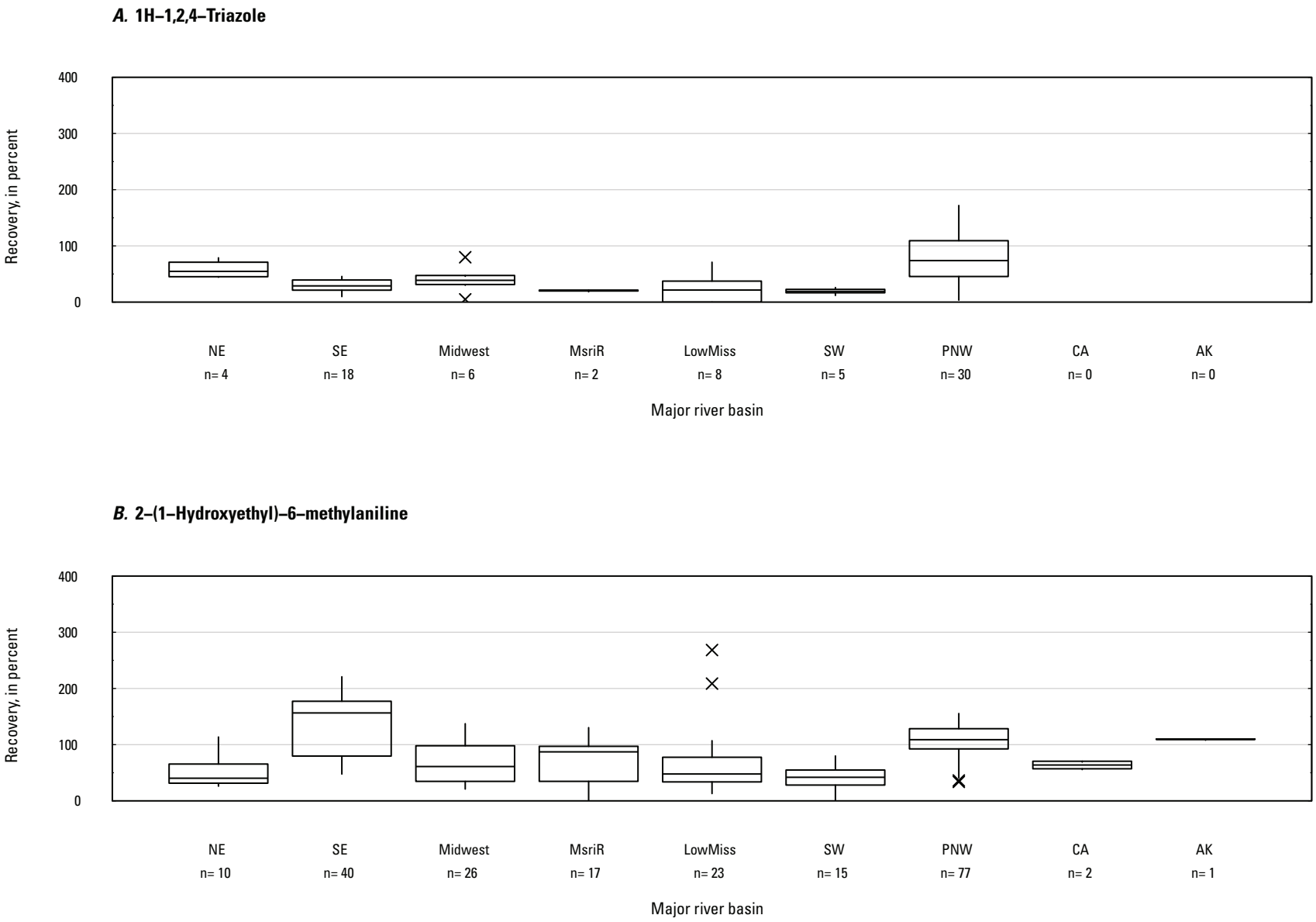
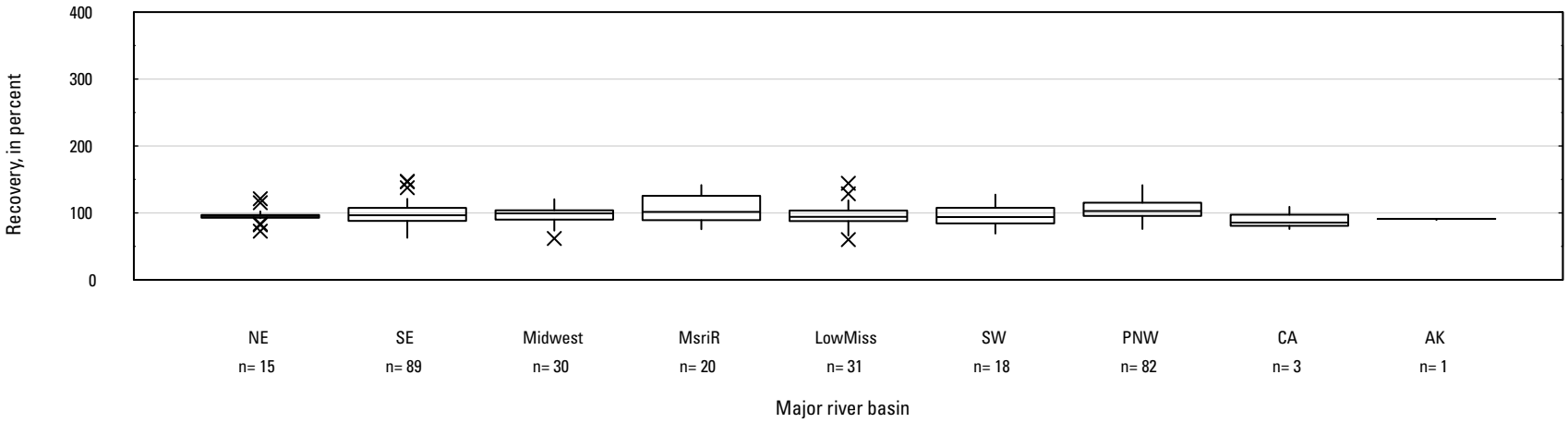


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.

C. **2–[(2–Ethyl–6–methylphenyl)amino]–1–propanol**



D. **2,3,3–Trichloro–2–propene–1–sulfonic acid (TCPSA)**

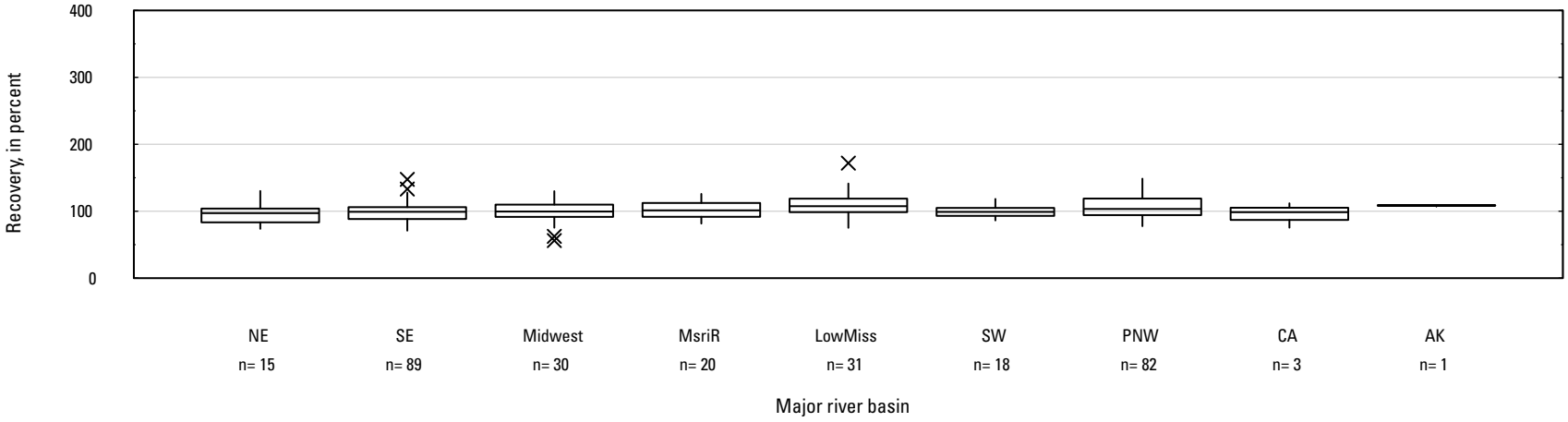


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

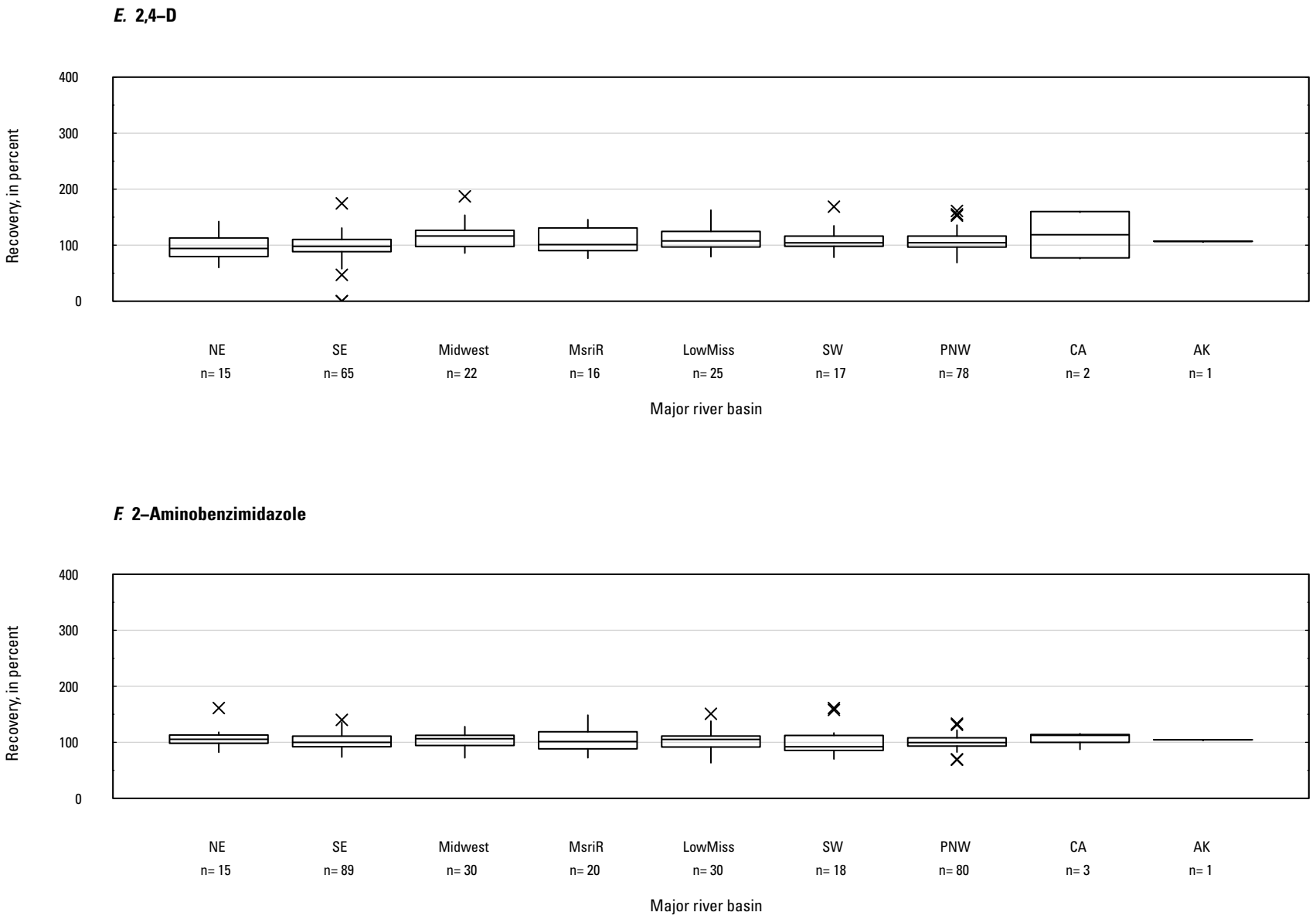
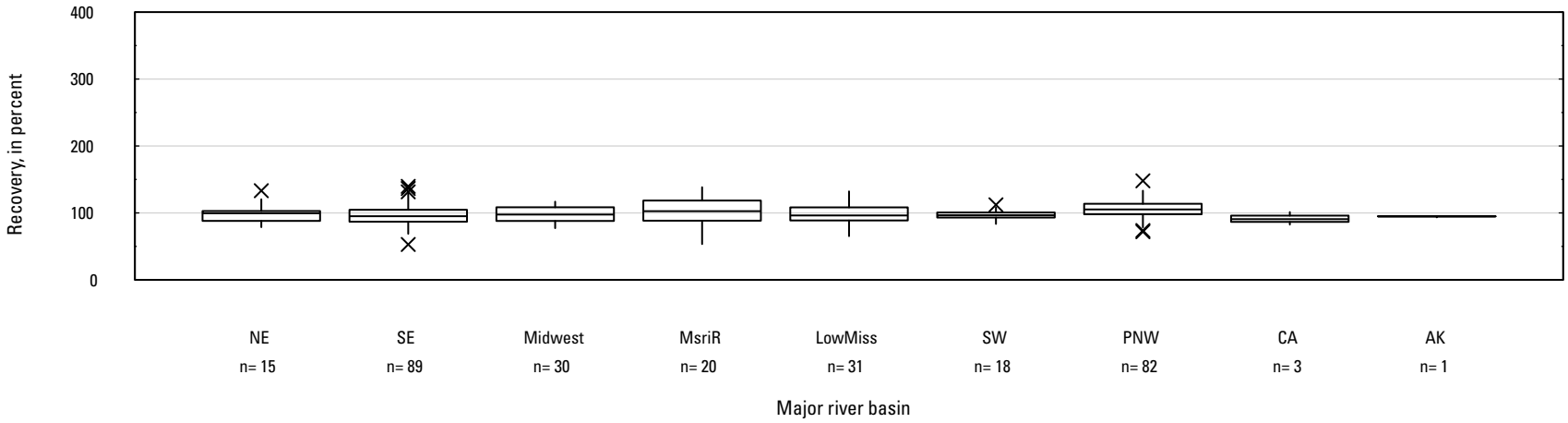


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

G. **2–Amino–N–isopropylbenzamide**



H. **2–Chloro–2',6'–diethylacetanilide**

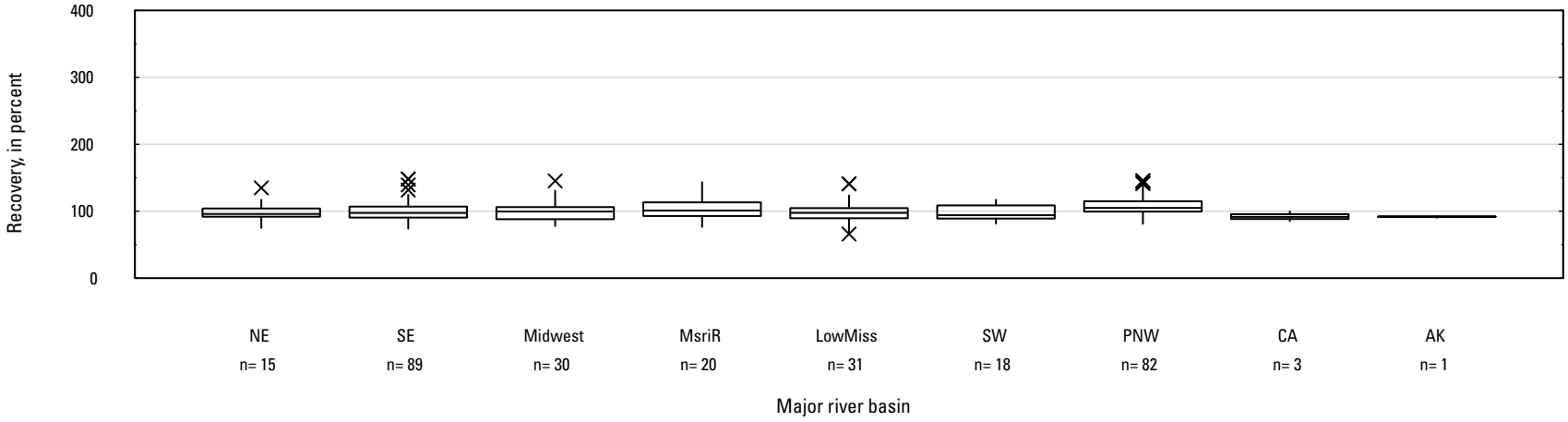
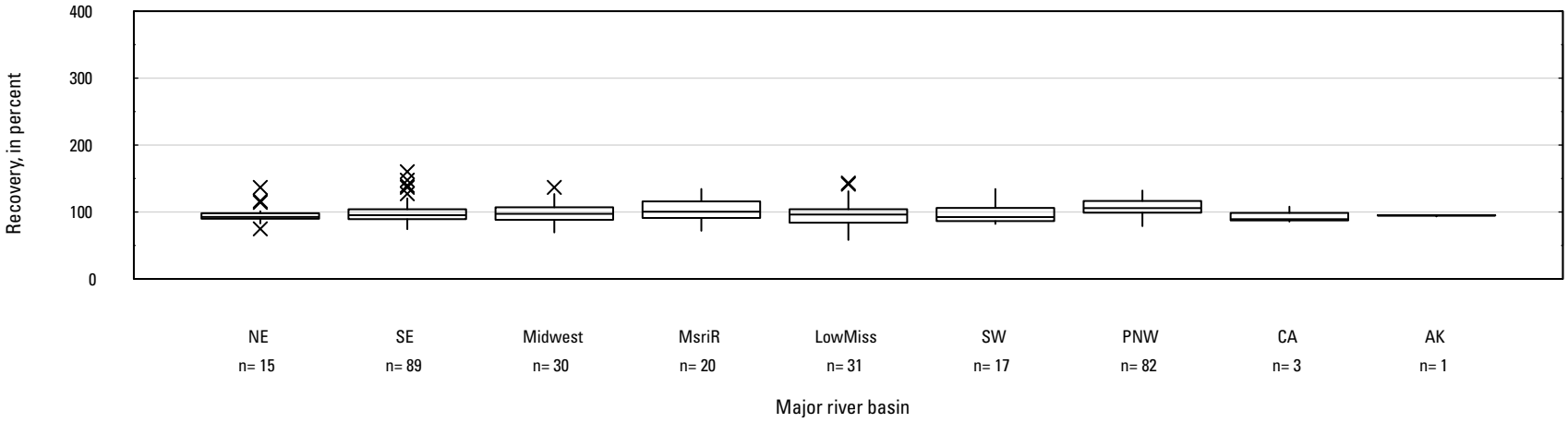


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

I. **2–Chloro–N–(2–ethyl–6–methylphenyl)acetamide**



J. **2–Hydroxy–4–isopropylamino–6–amino–s–triazine**

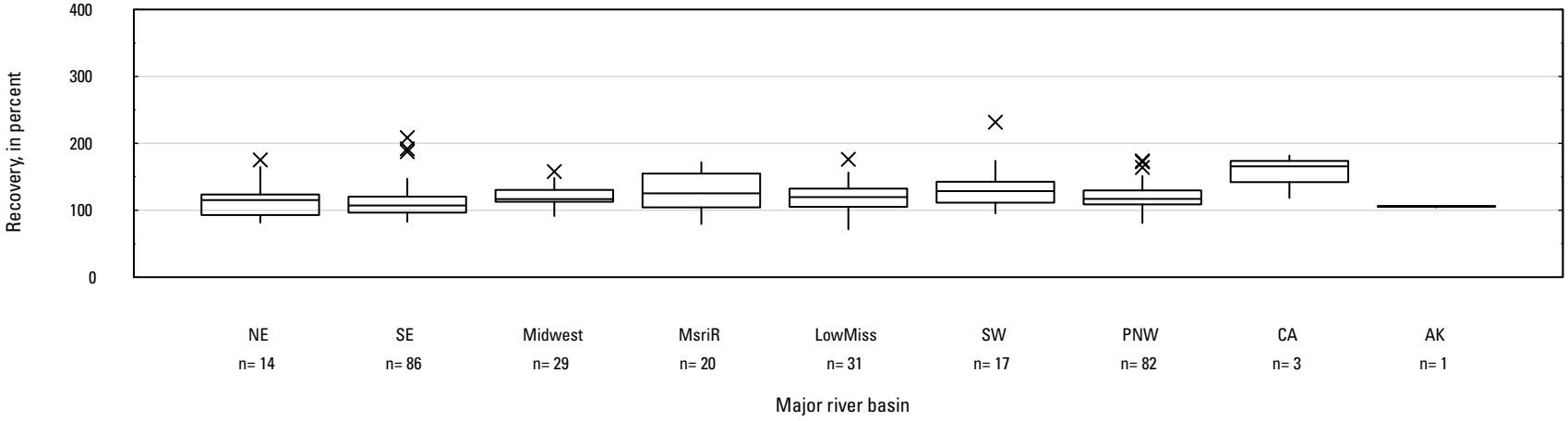
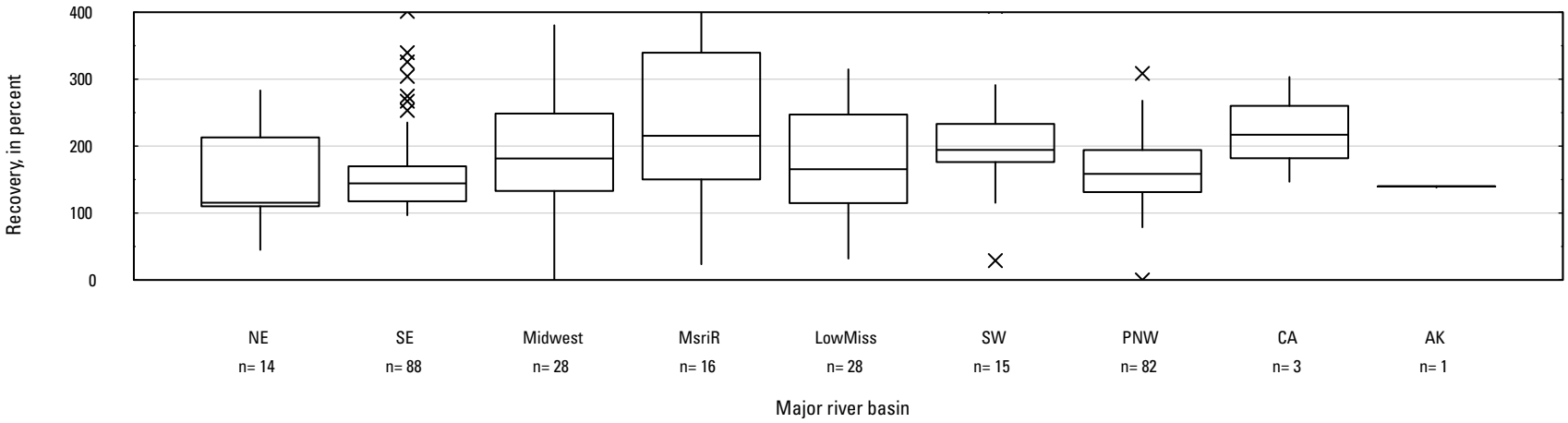


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

K. **2–Hydroxy–6–ethylamino–4–amino–s–triazine**



L. **2–Hydroxy–4–isopropylamino–6–ethylamino–s–triazine {OIET}**

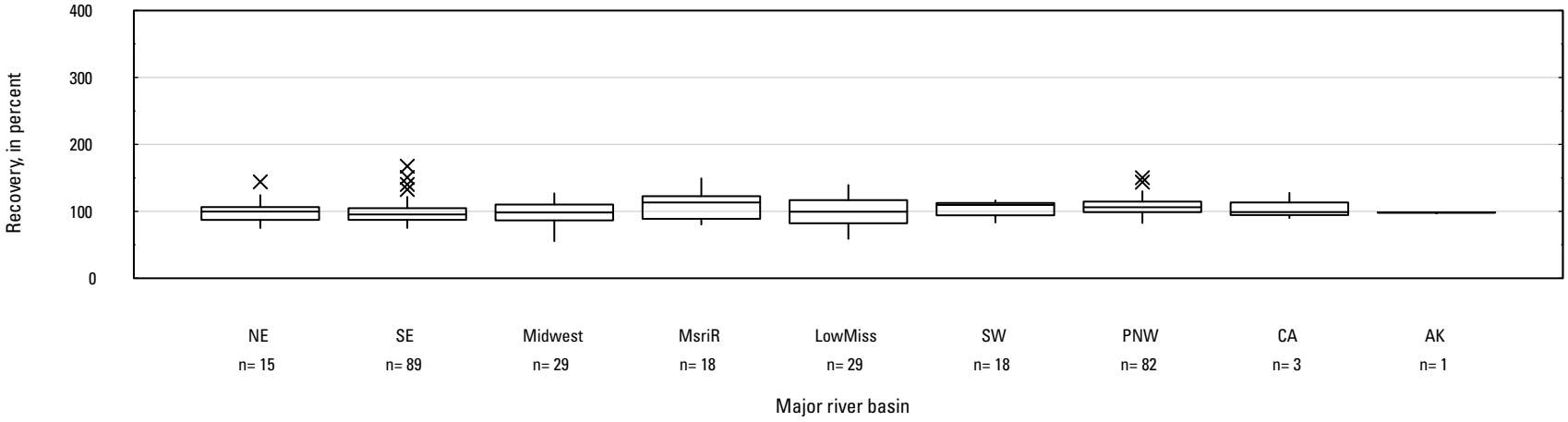


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

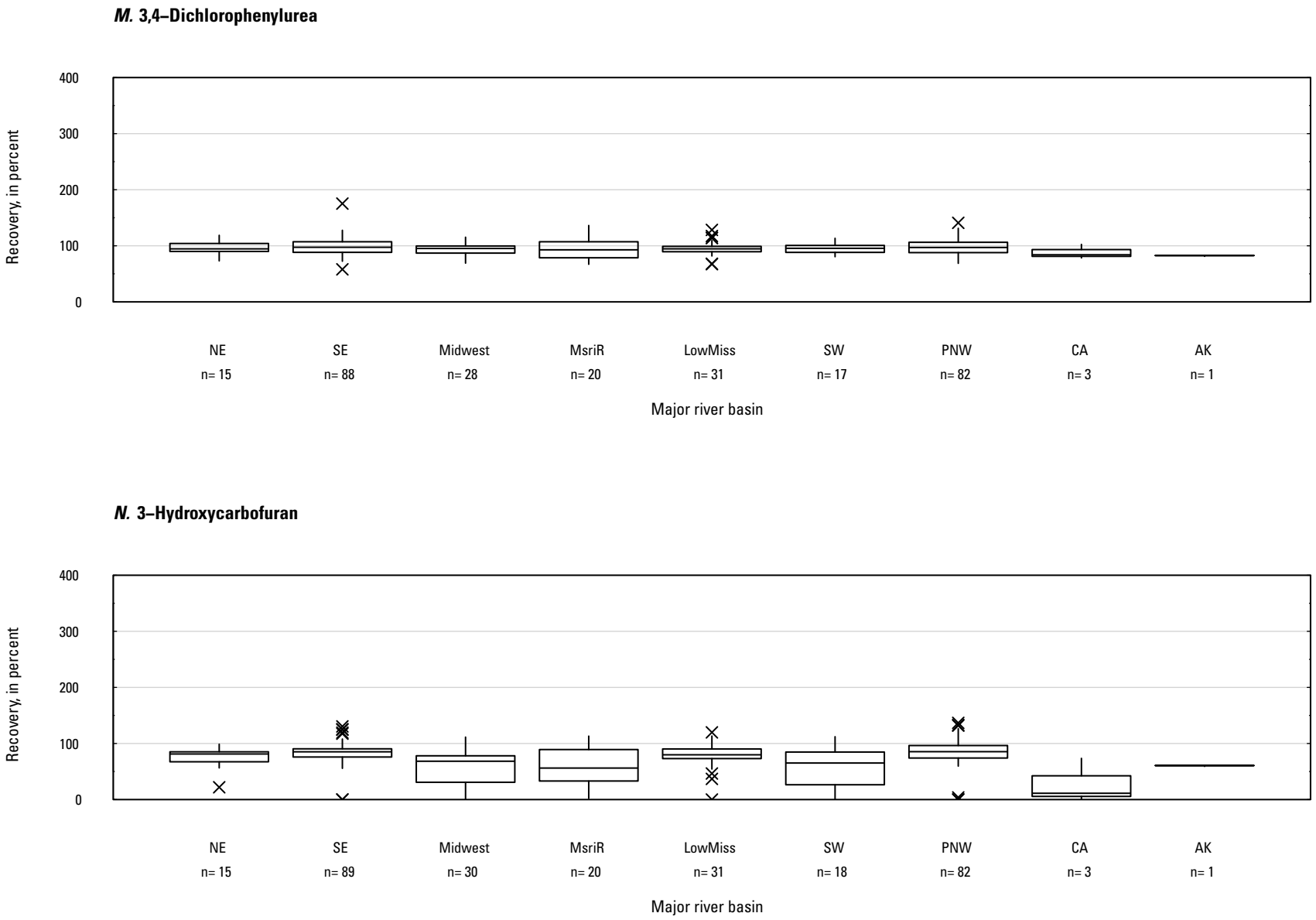
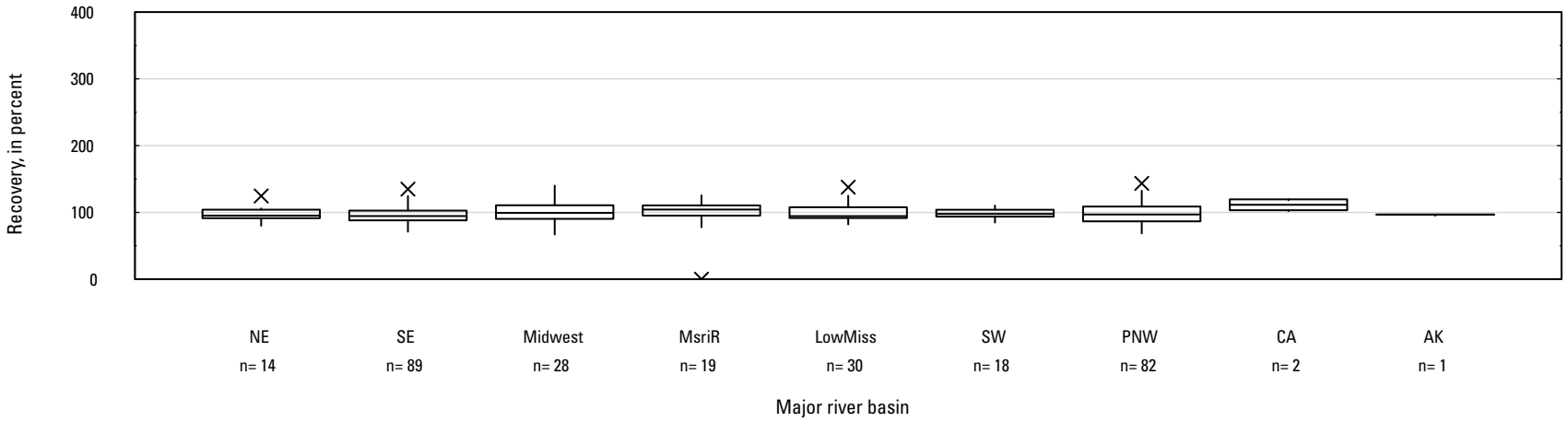


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

O. **3–Phenoxybenzoic acid**



P. **4–(Hydroxymethyl)pendimethalin**

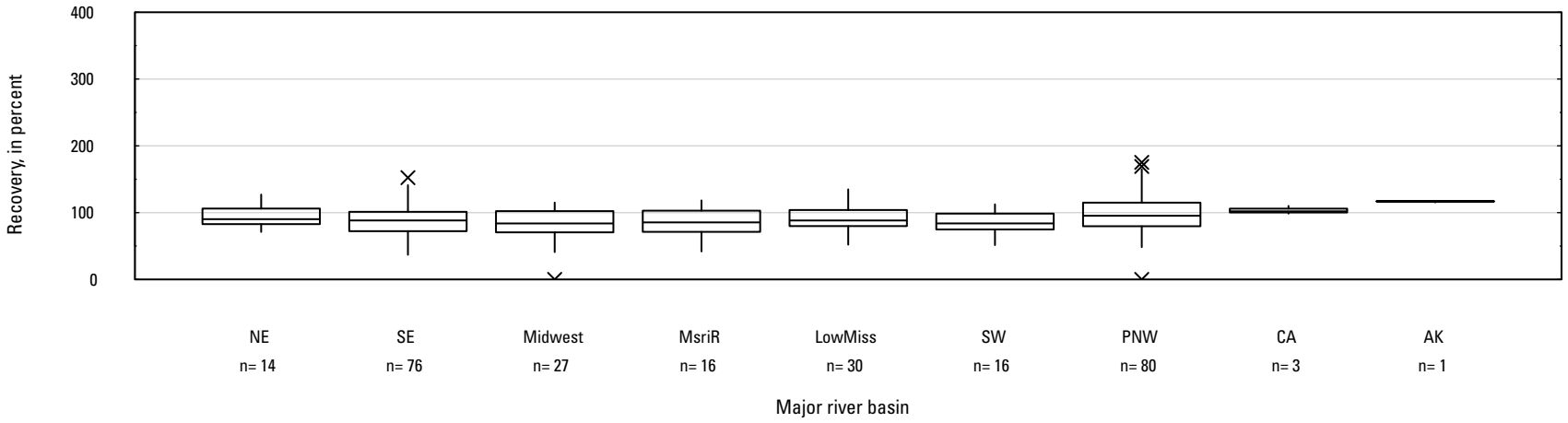
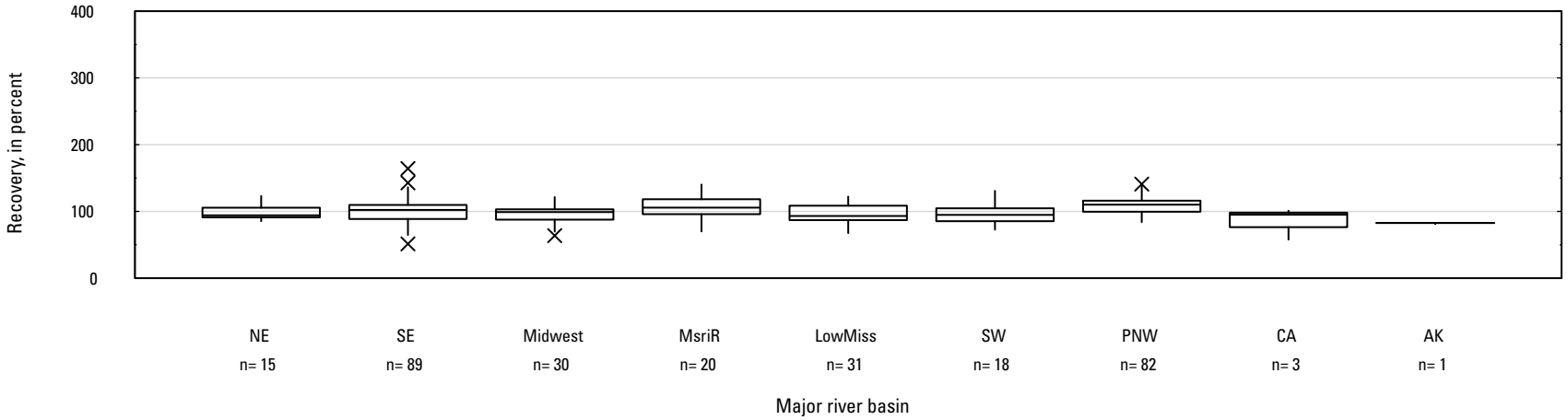


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

Q. **4–Chlorobenzylmethyl sulfoxide**



R. **4–Hydroxy molinate**

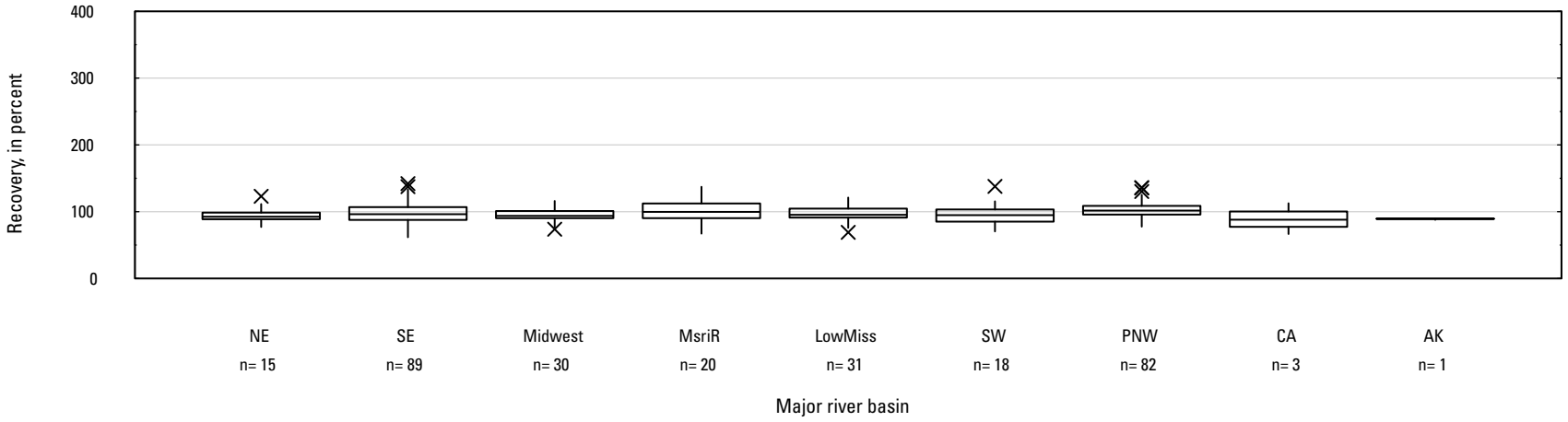


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

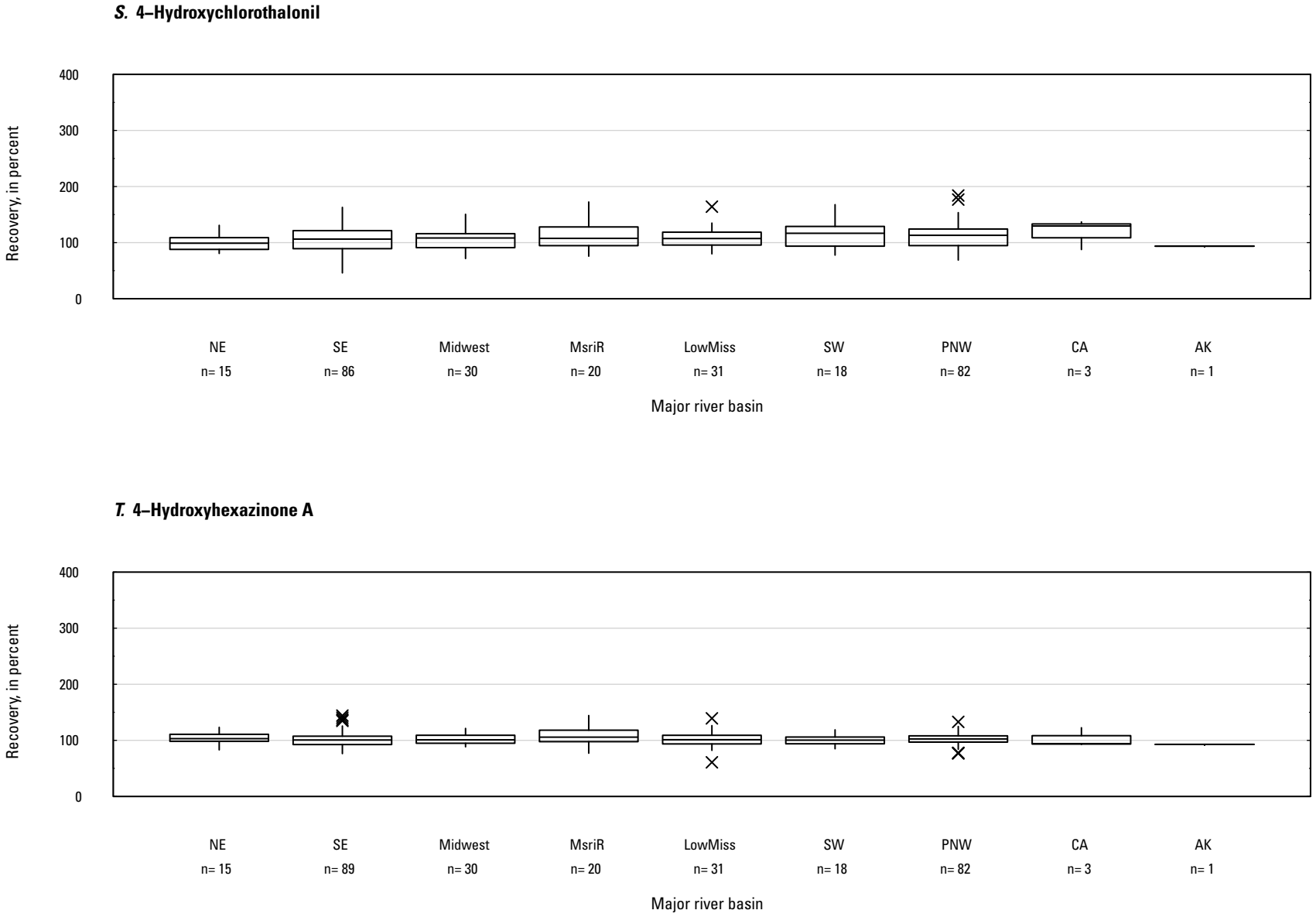


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

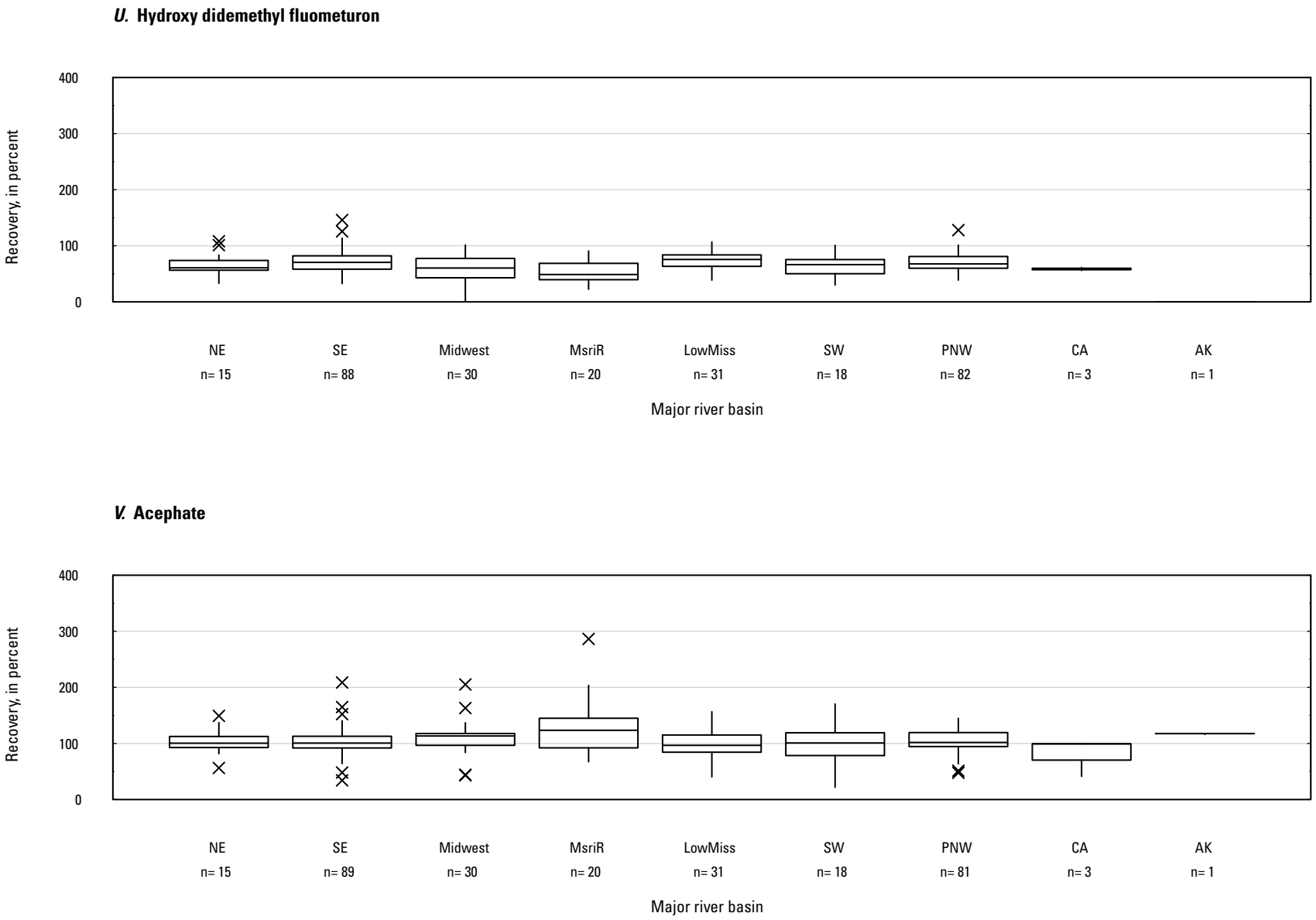


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

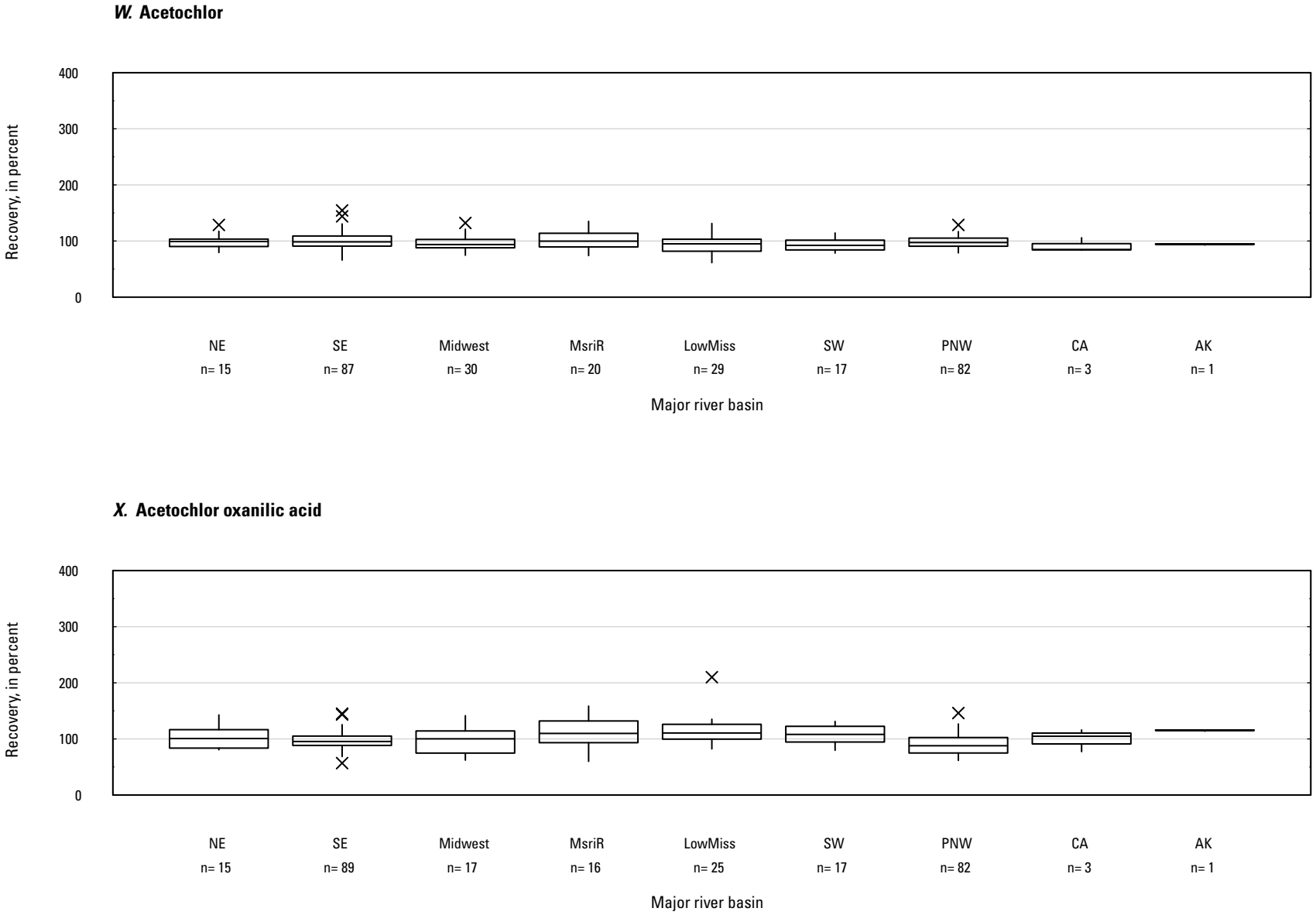


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

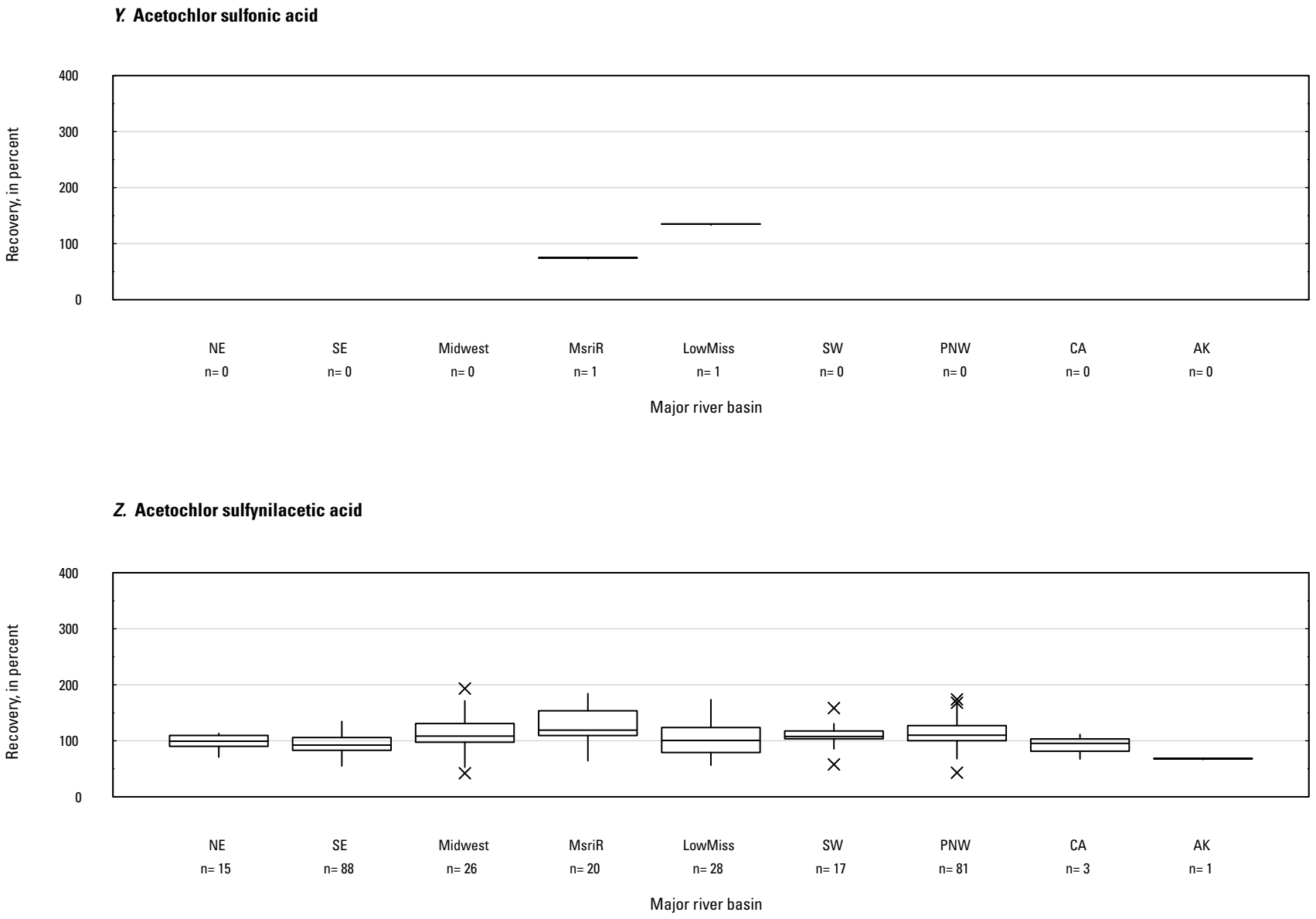
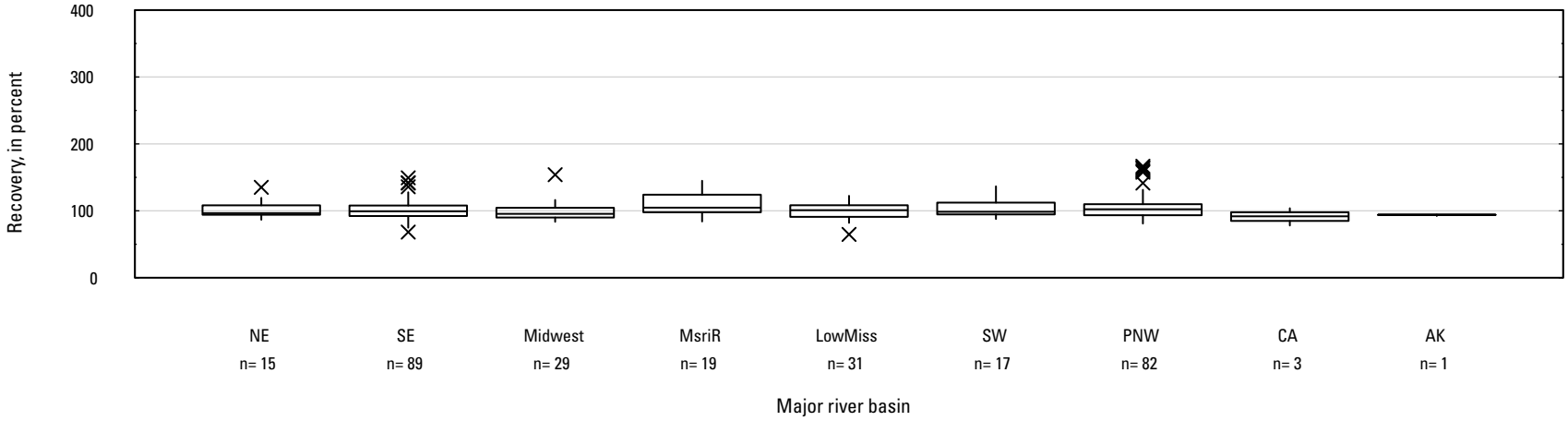


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

AA. **Alachlor**



AB. **Alachlor oxanilic acid**

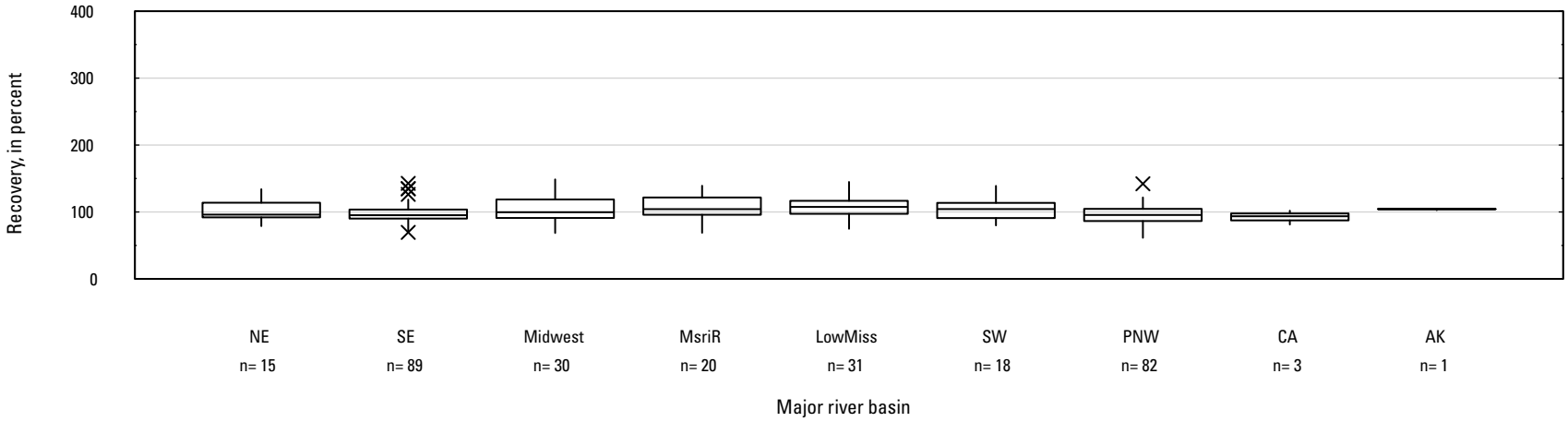
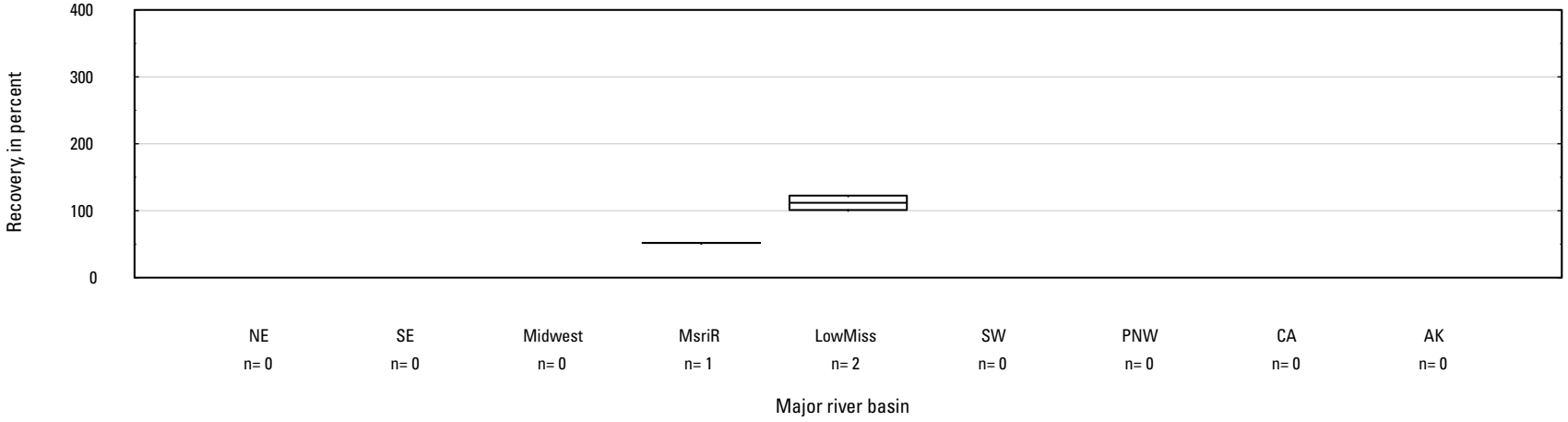


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

AC. **Alachlor sulfonic acid**



AD. **Alachlor sulfynilacetic acid**

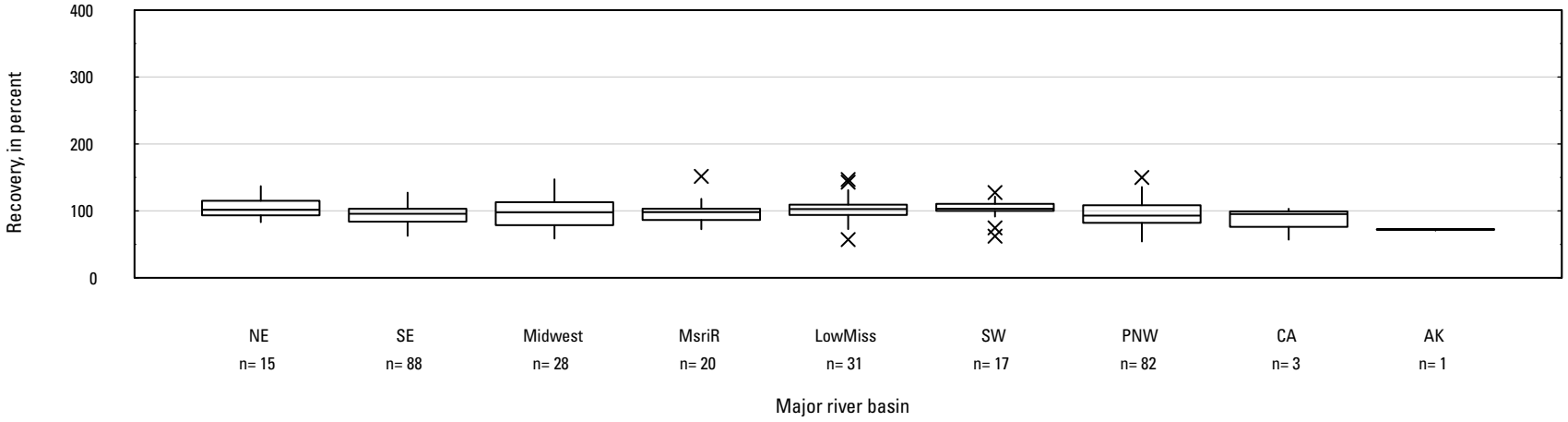
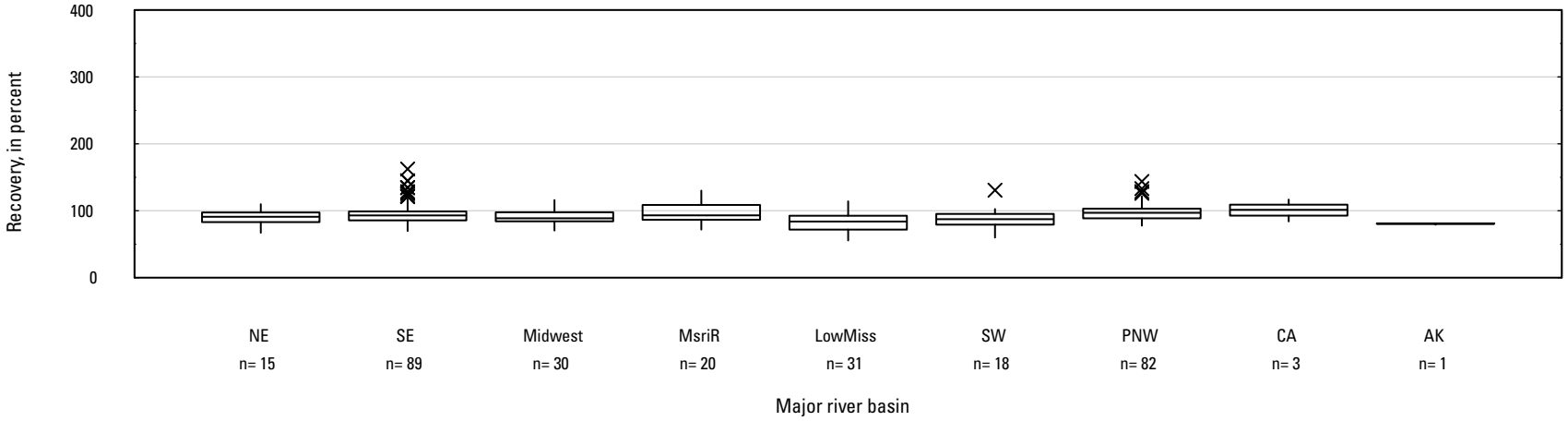


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

AE. **Aldicarb**



AF. **Aldicarb sulfone**

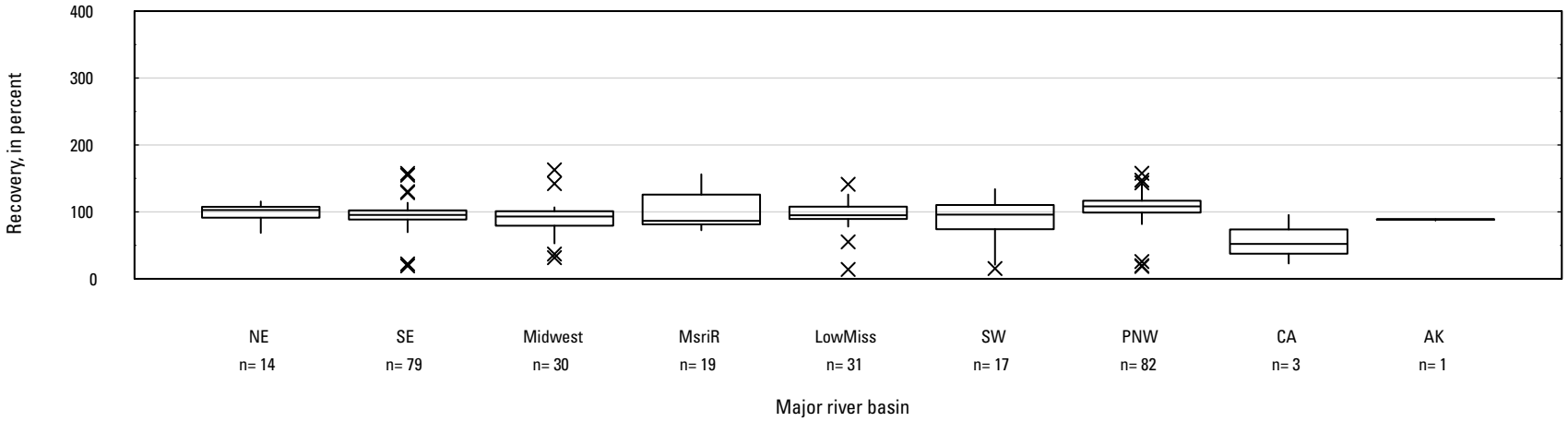
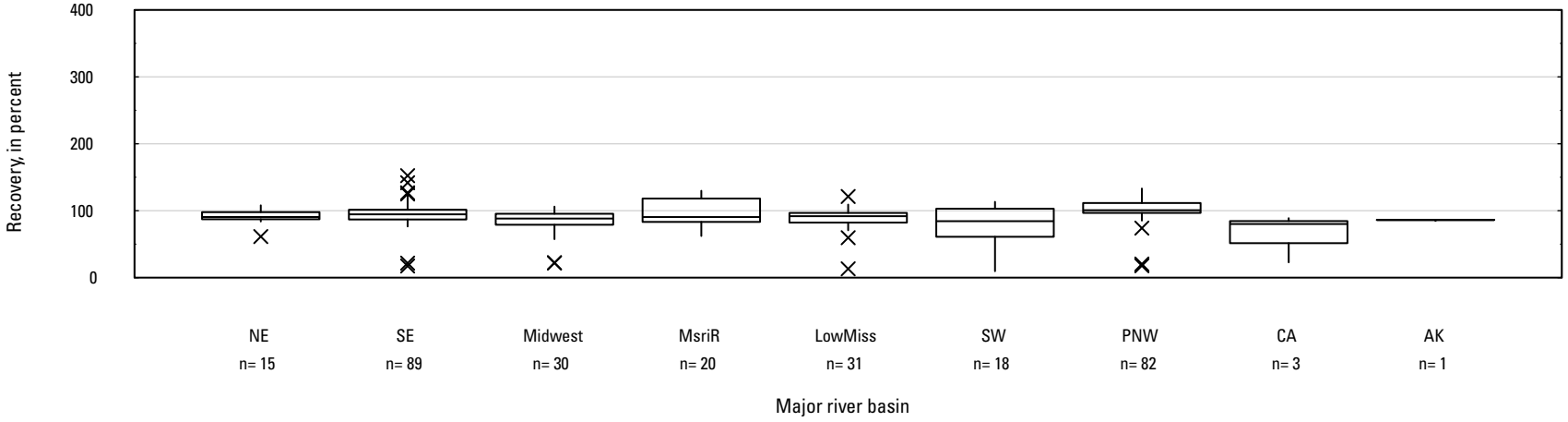


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

AG. **Aldicarb sulfoxide**



AH. **Ametryn**

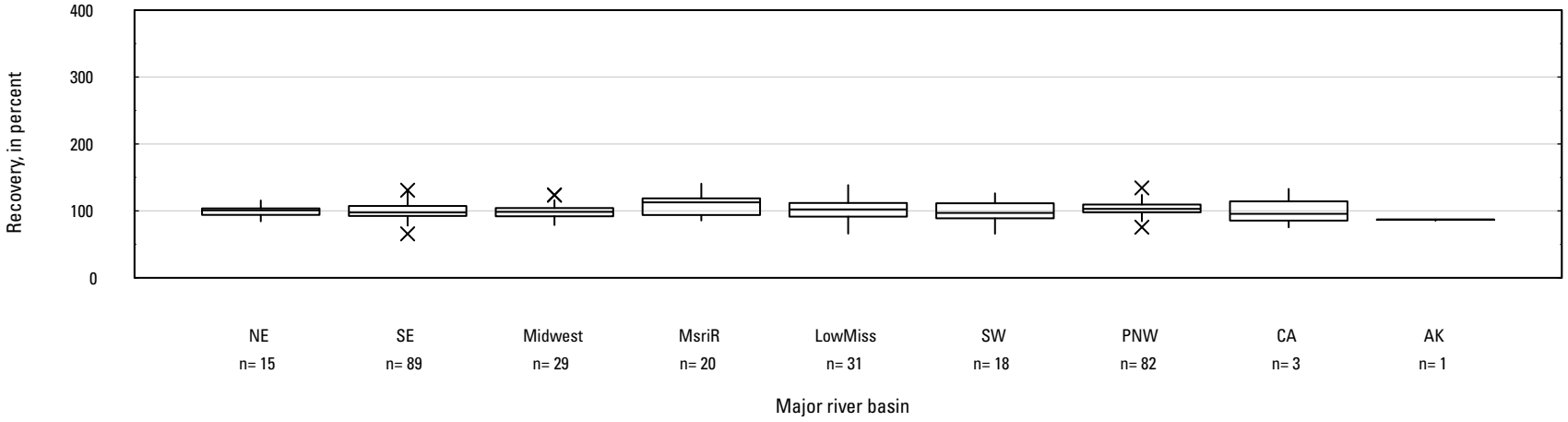


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

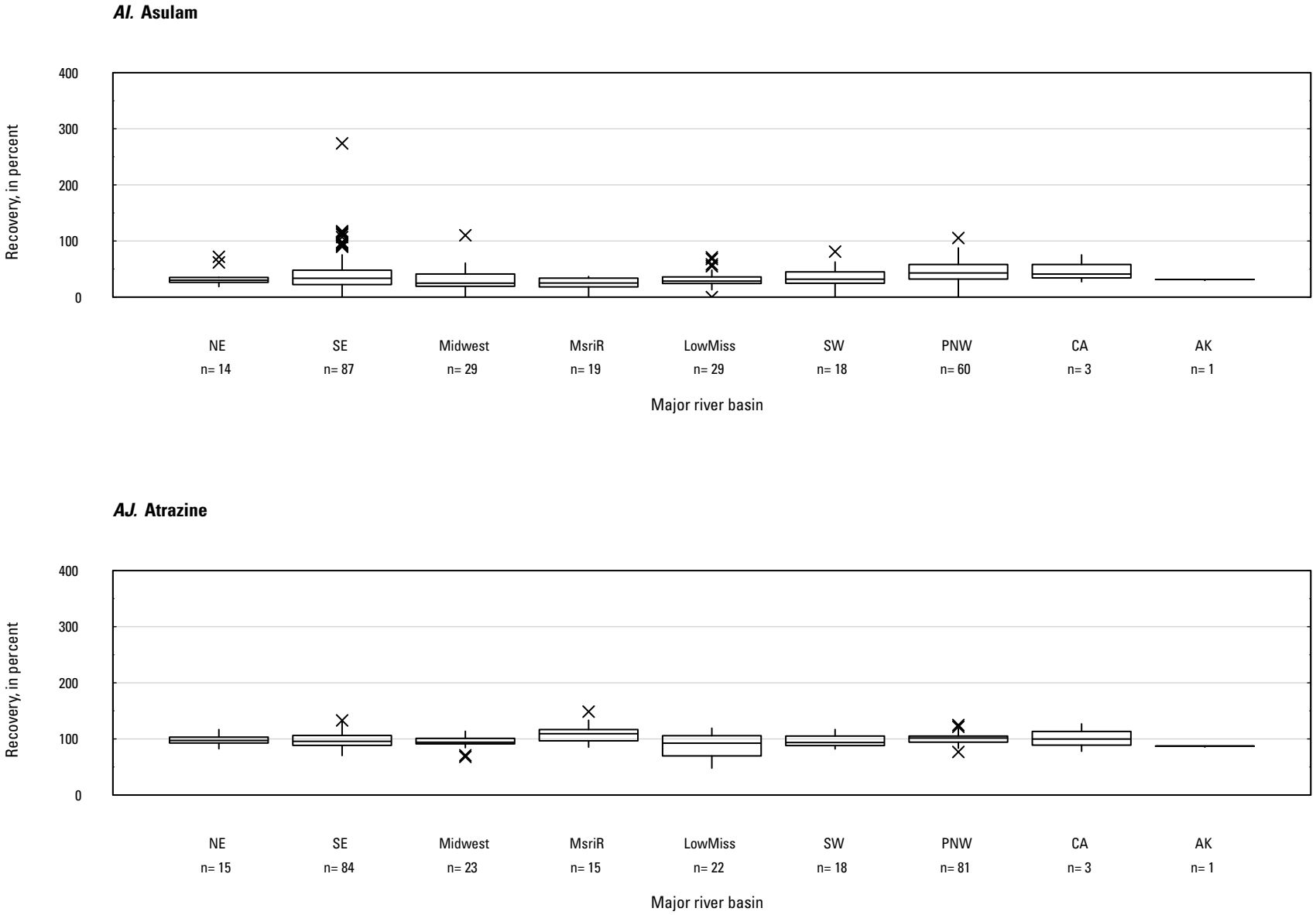


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

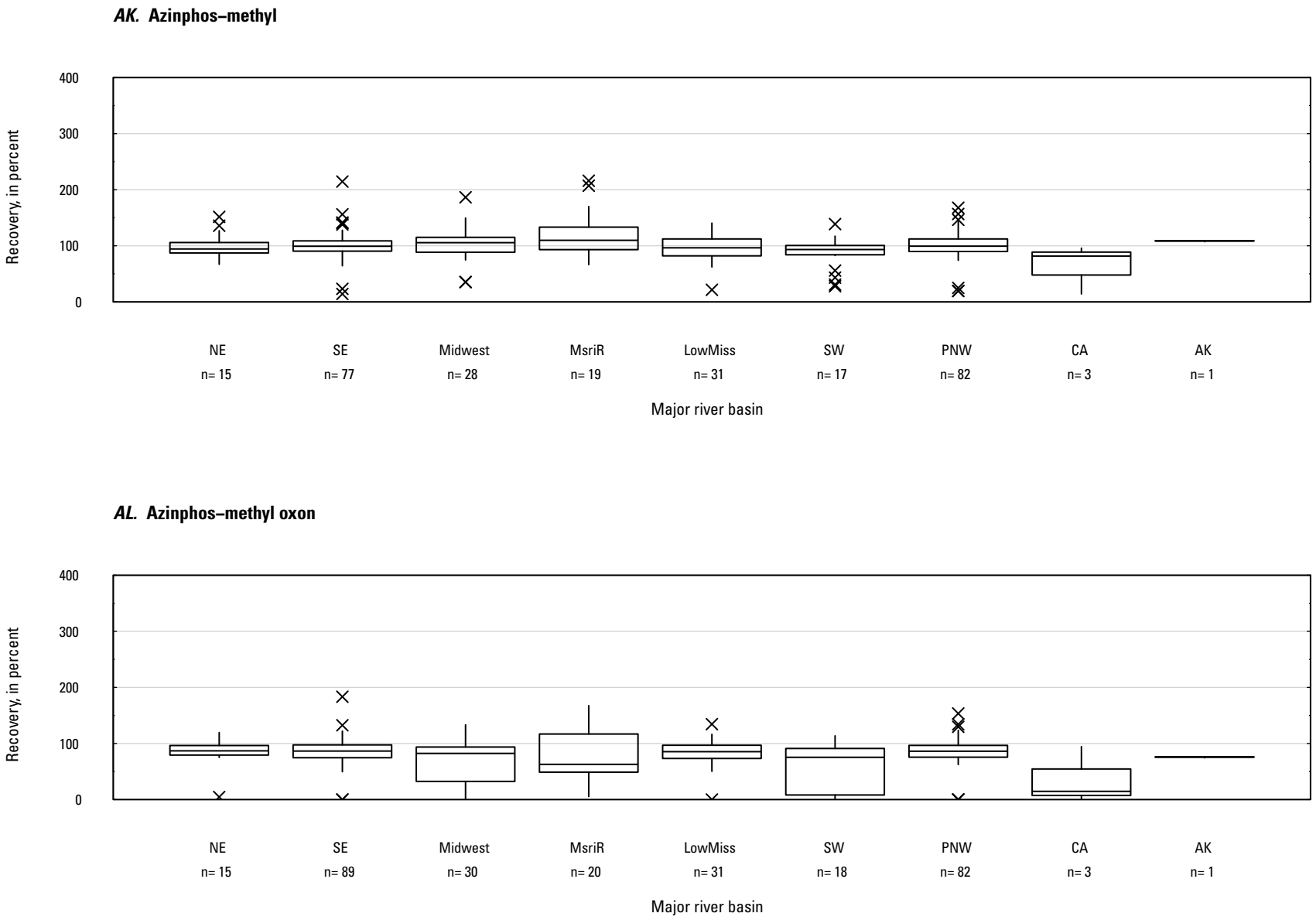
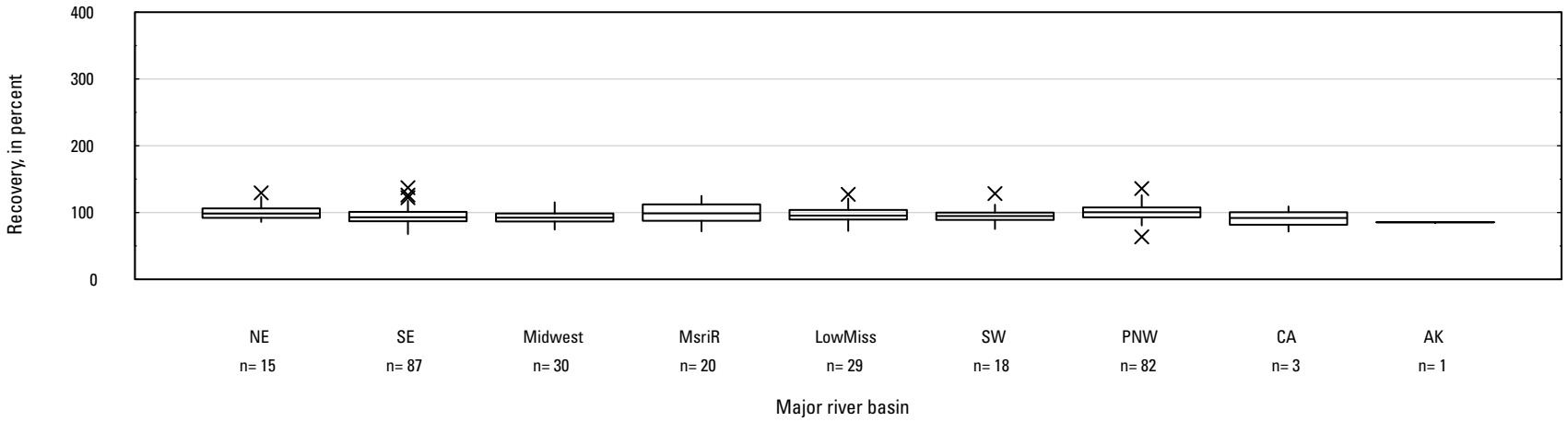


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

AM. **Azoxystrobin**



AN. **Bentazone**

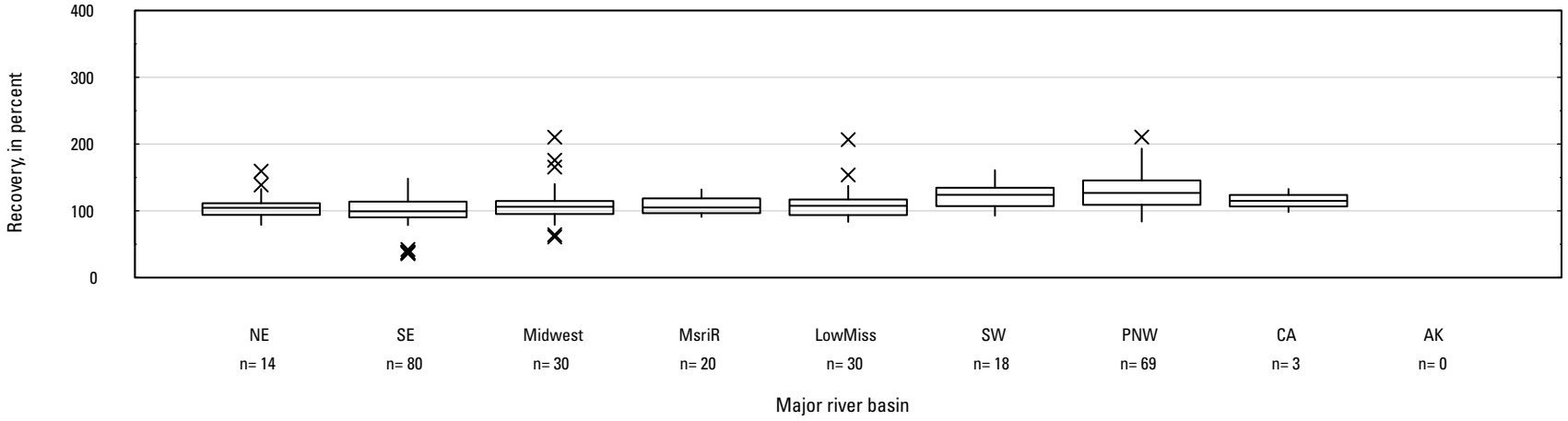
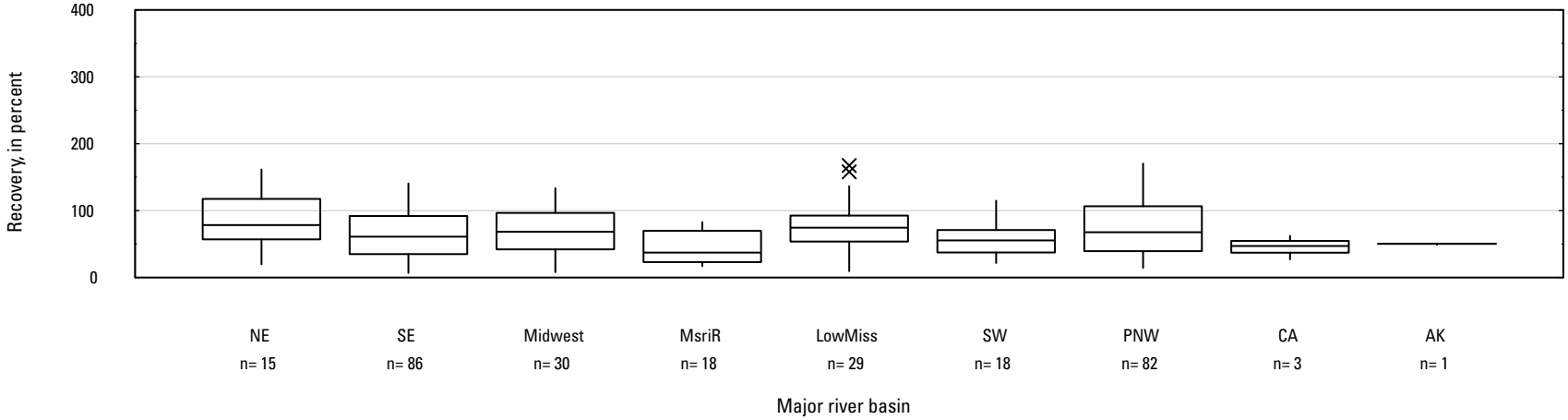


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

AO. **Bifenthrin**



AP. **Bromacil**

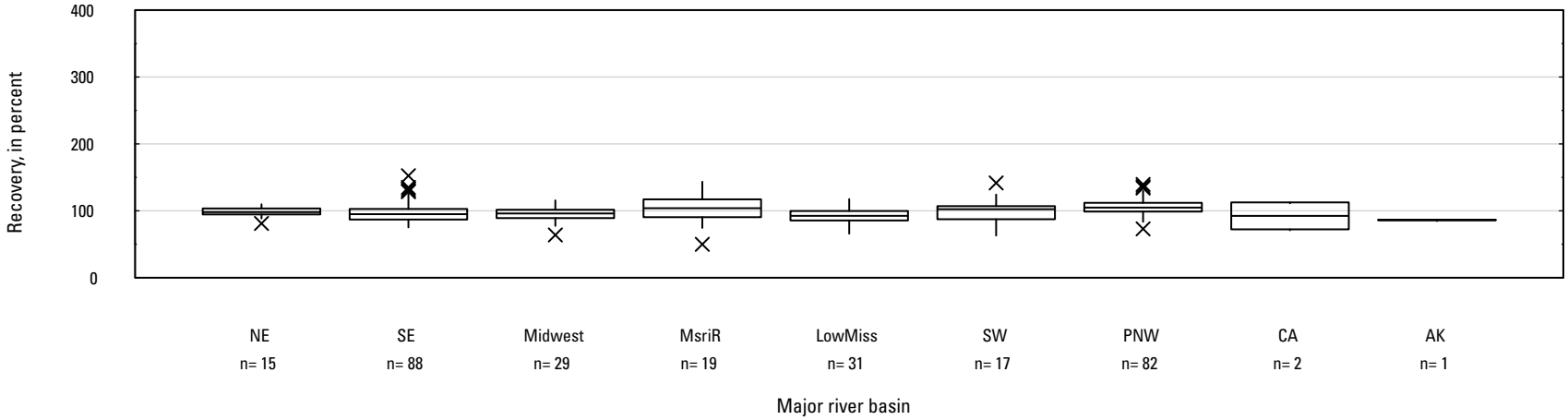
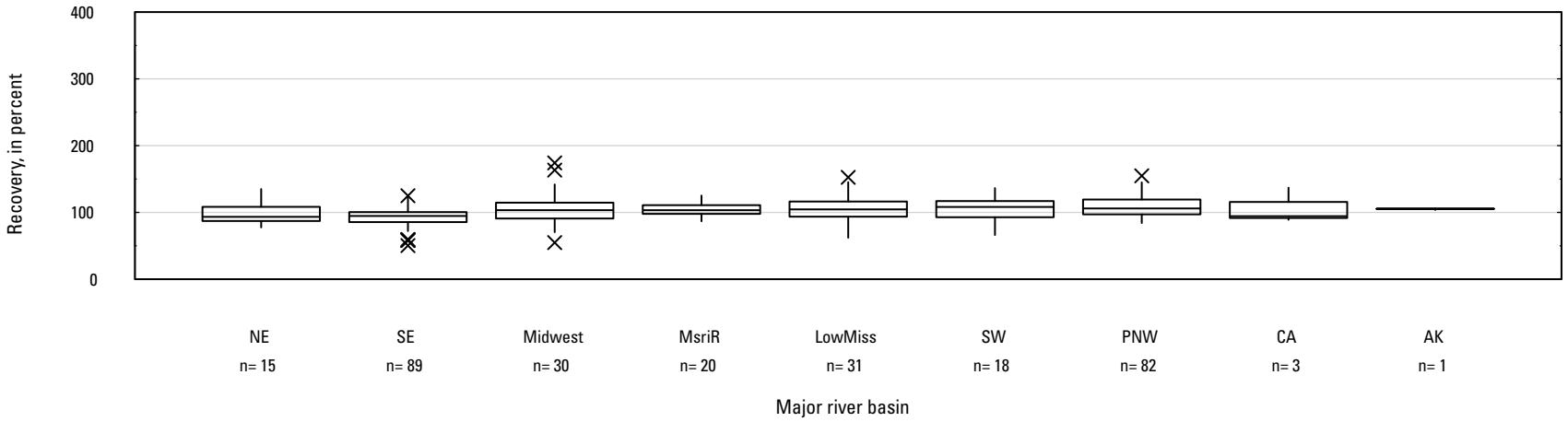


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

AQ. **Bromoxynil**



AR. **Butralin**

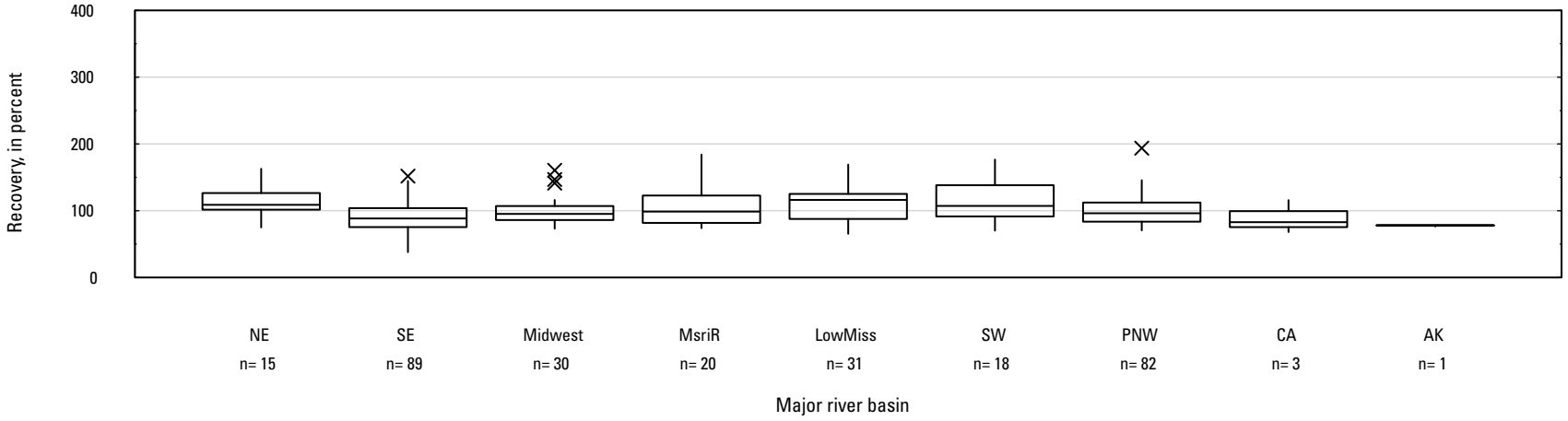


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

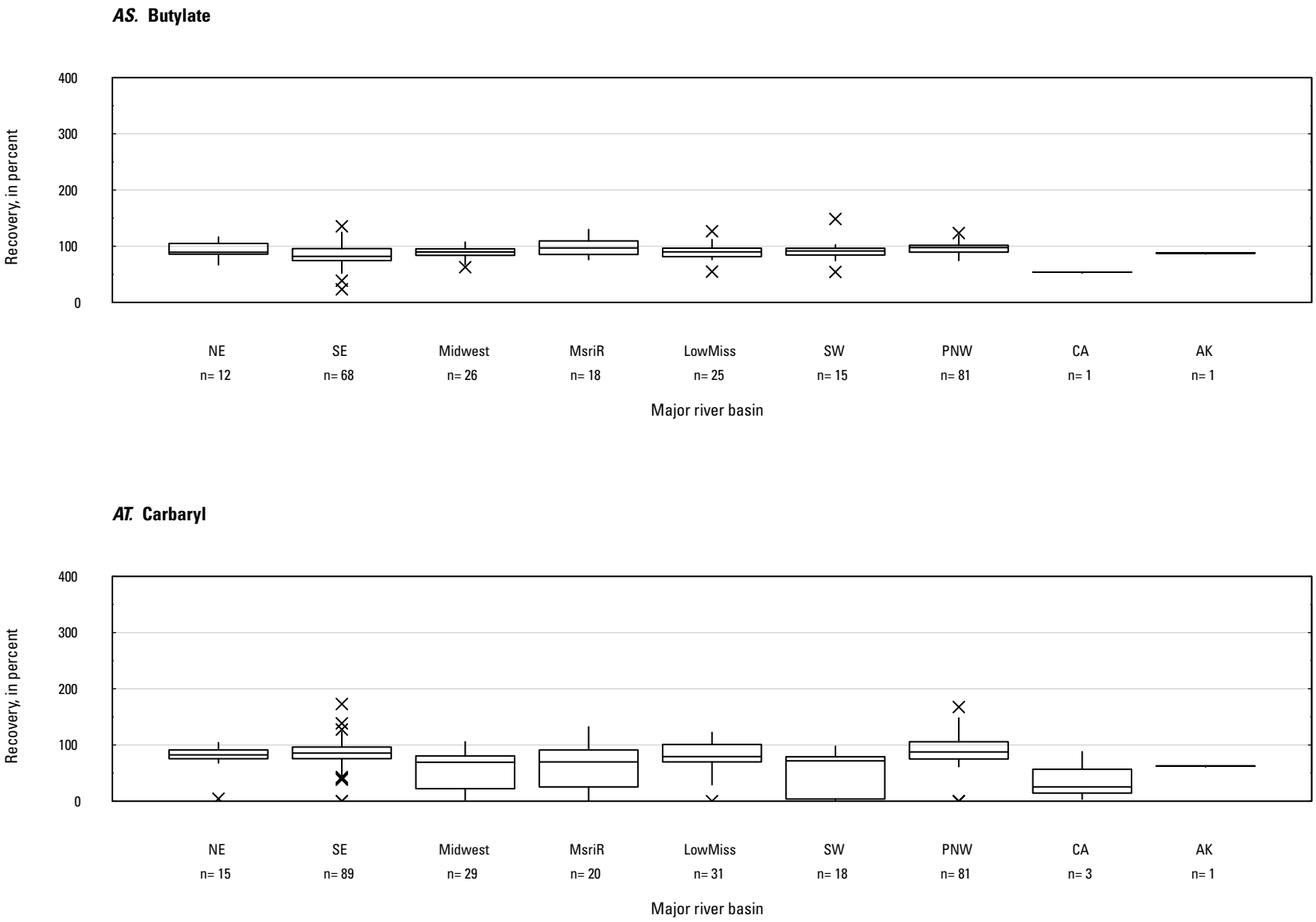
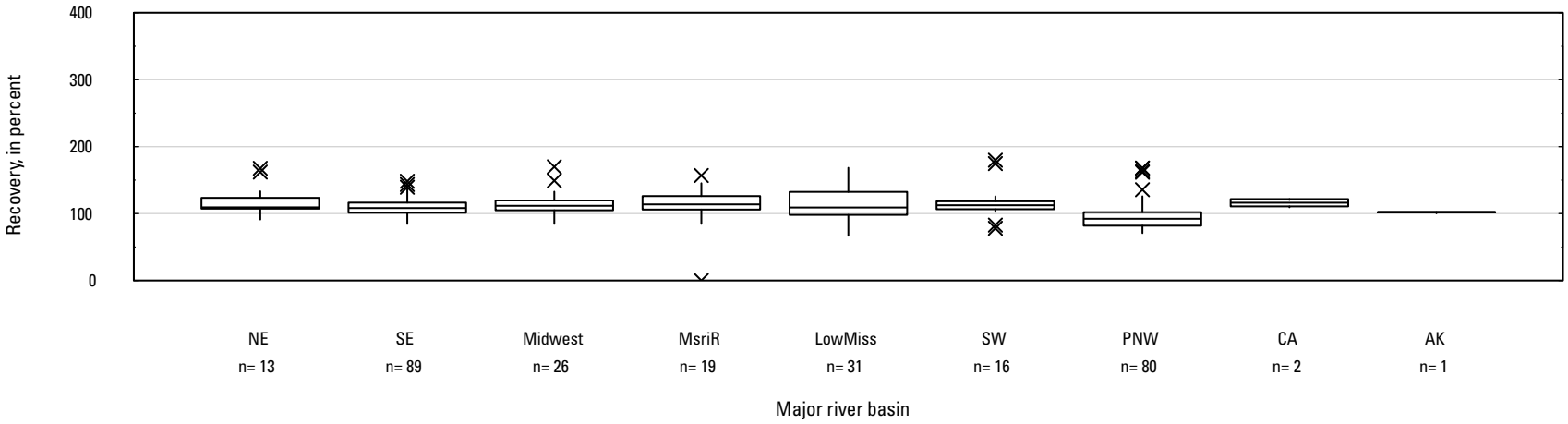


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

AU. **Carbendazim**



AV. **Carbofuran**

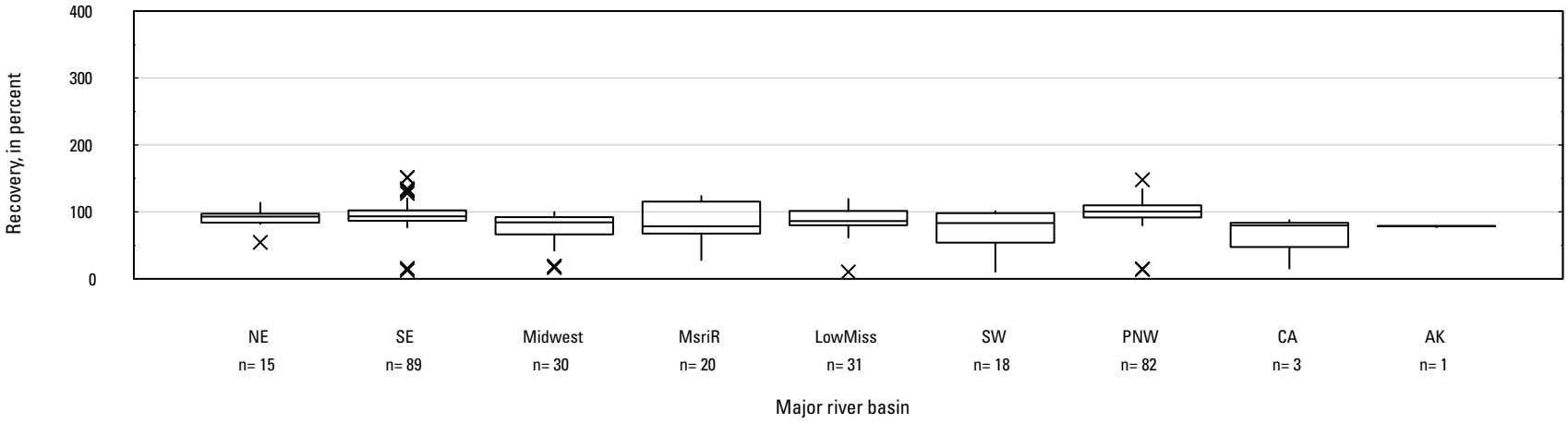
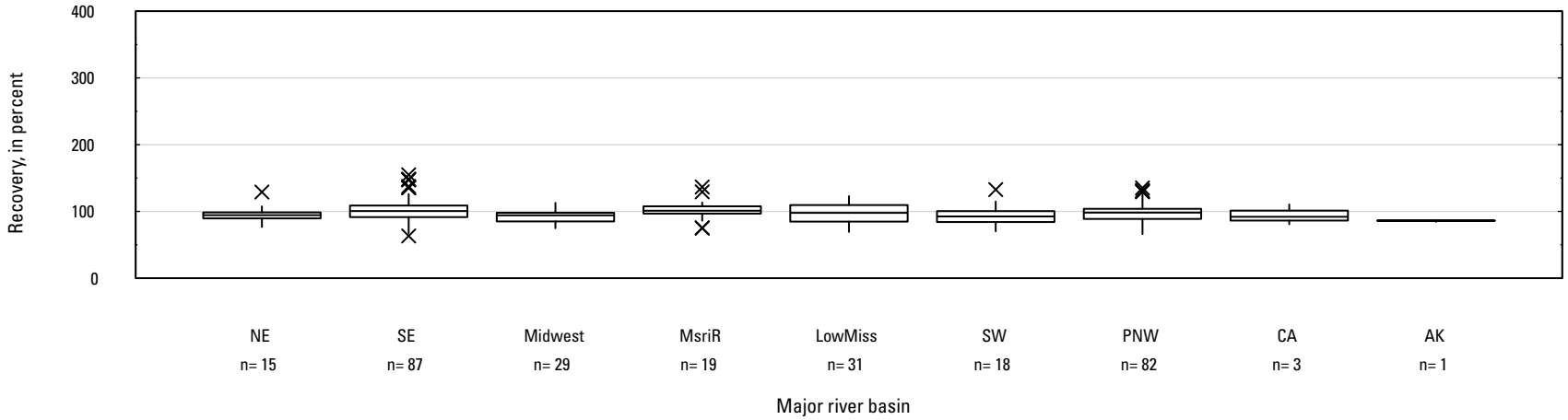


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

AW. **Carboxy molinate**



AX. **Chlorimuron–ethyl**

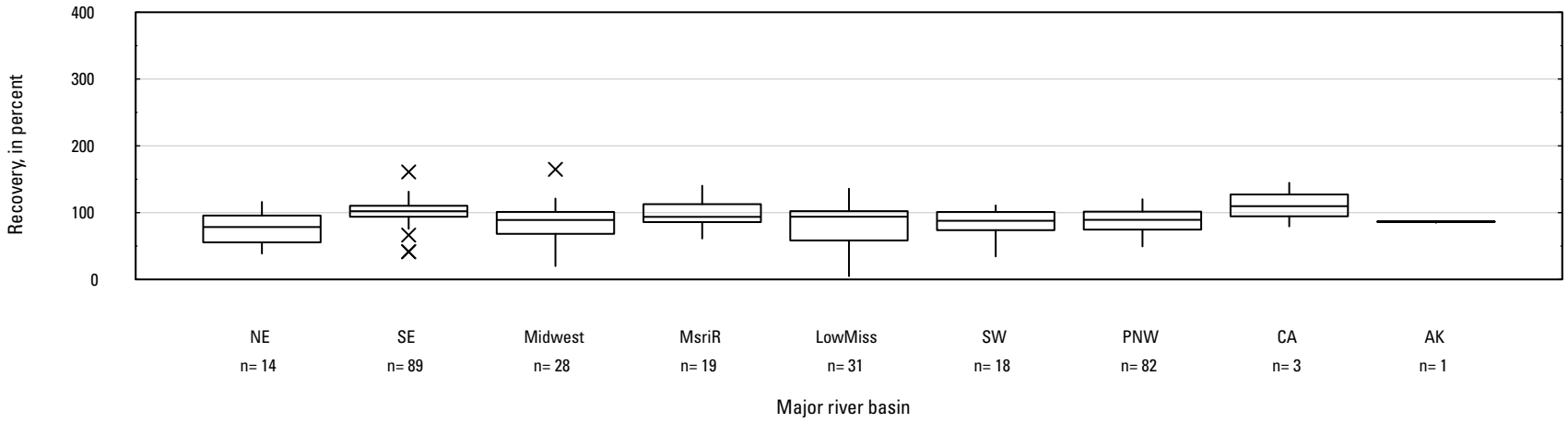
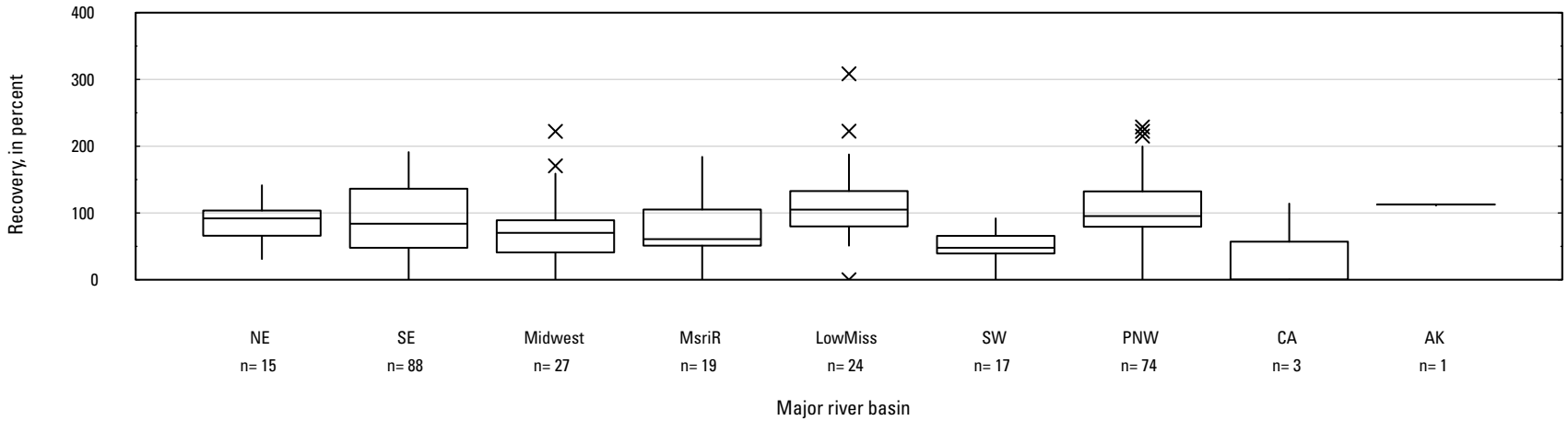


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

AY. **Chlorosulfonamide acid**



AZ. **Chlorpyrifos**

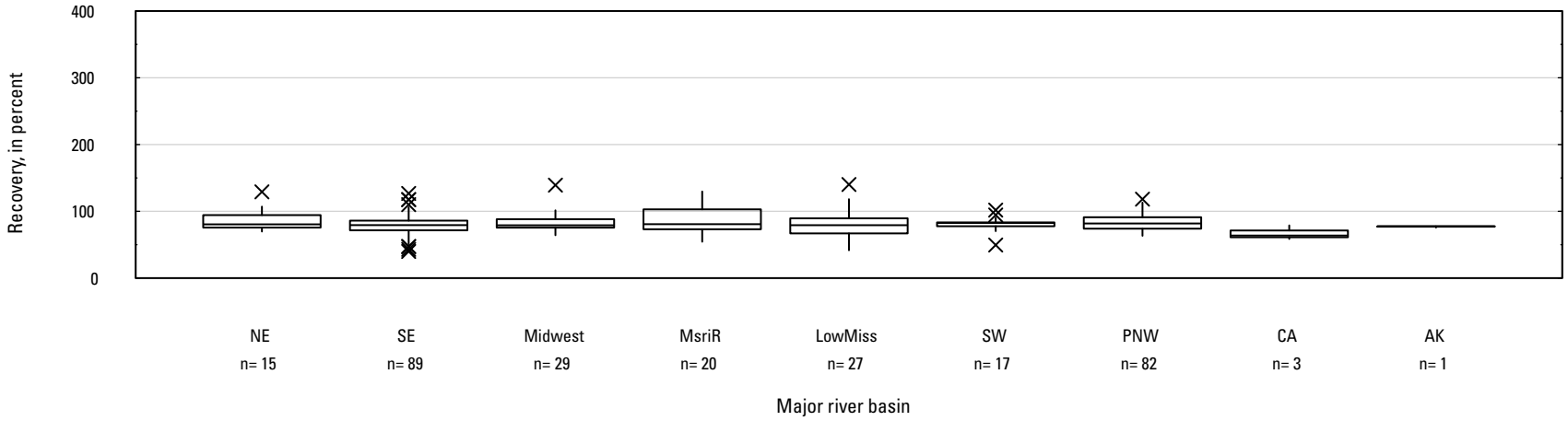


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

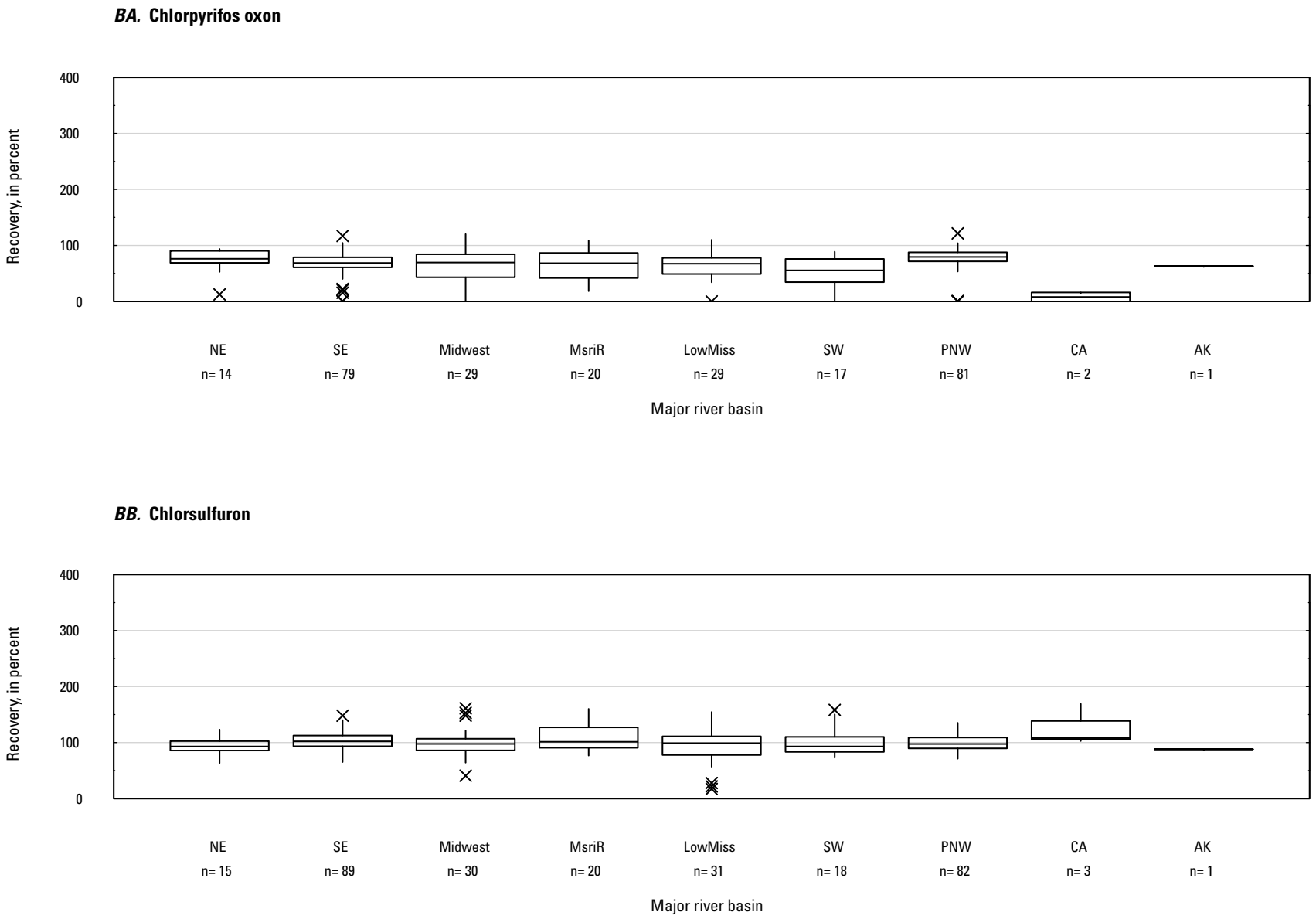
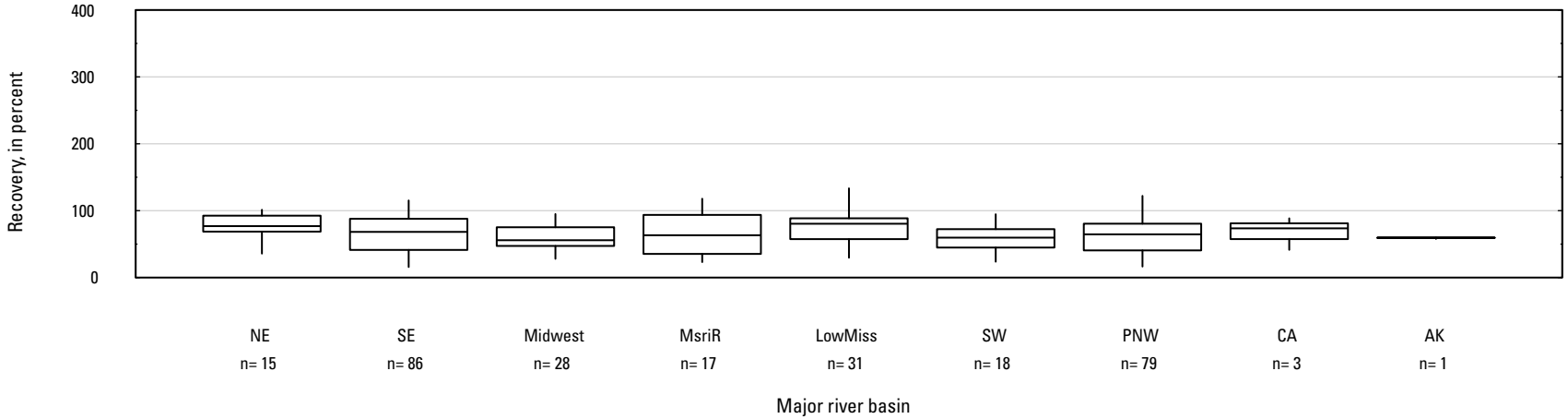


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

BE. **cis–Permethrin**



BF. **Cyanazine**

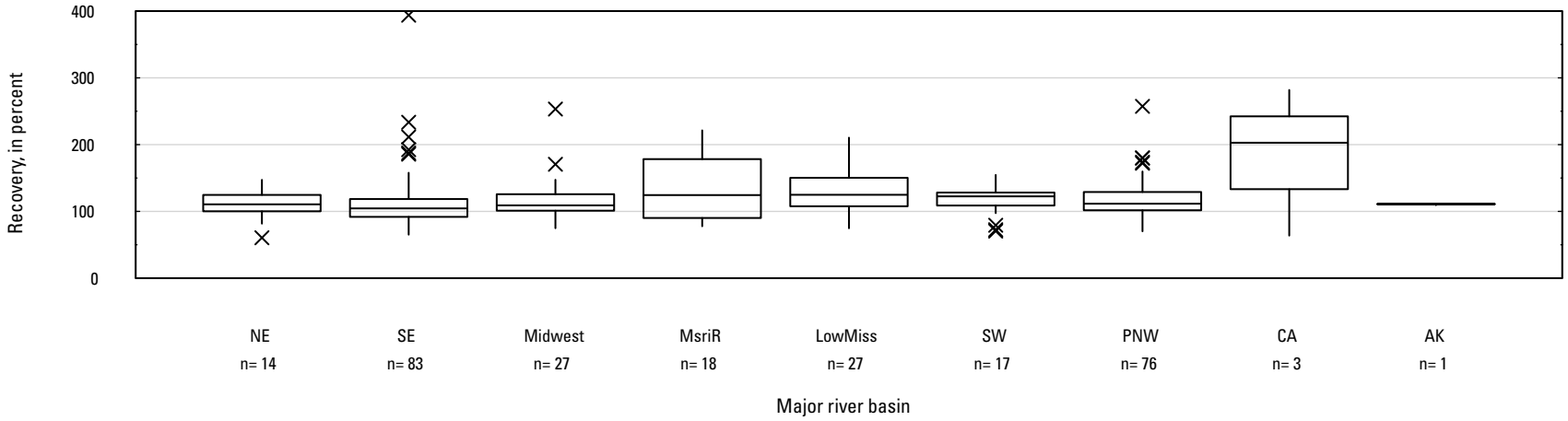
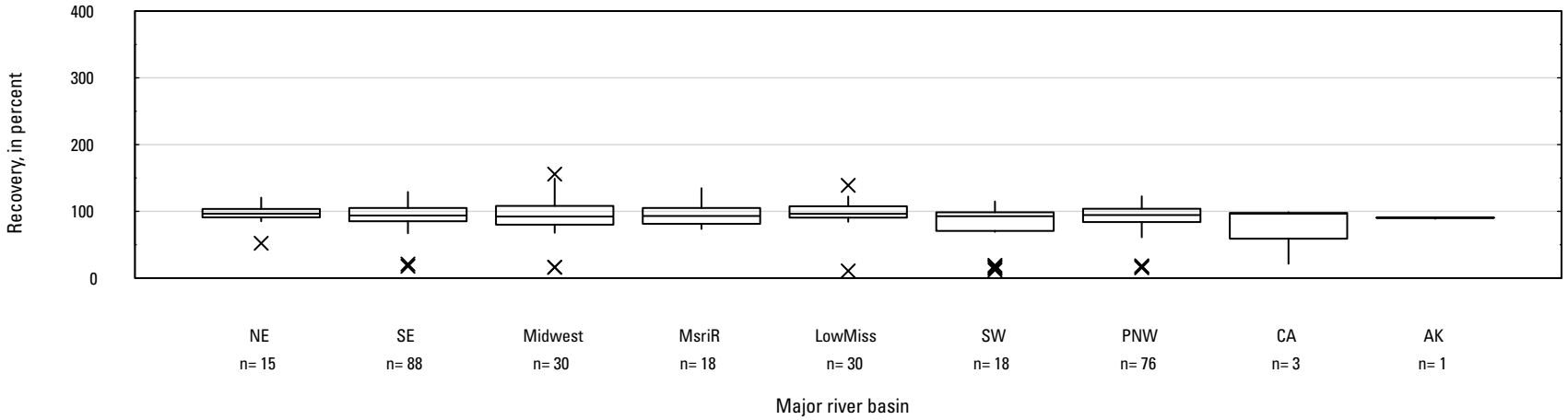


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

BG. **Dechlorofipronil**



BH. **Dechlorometolachlor**

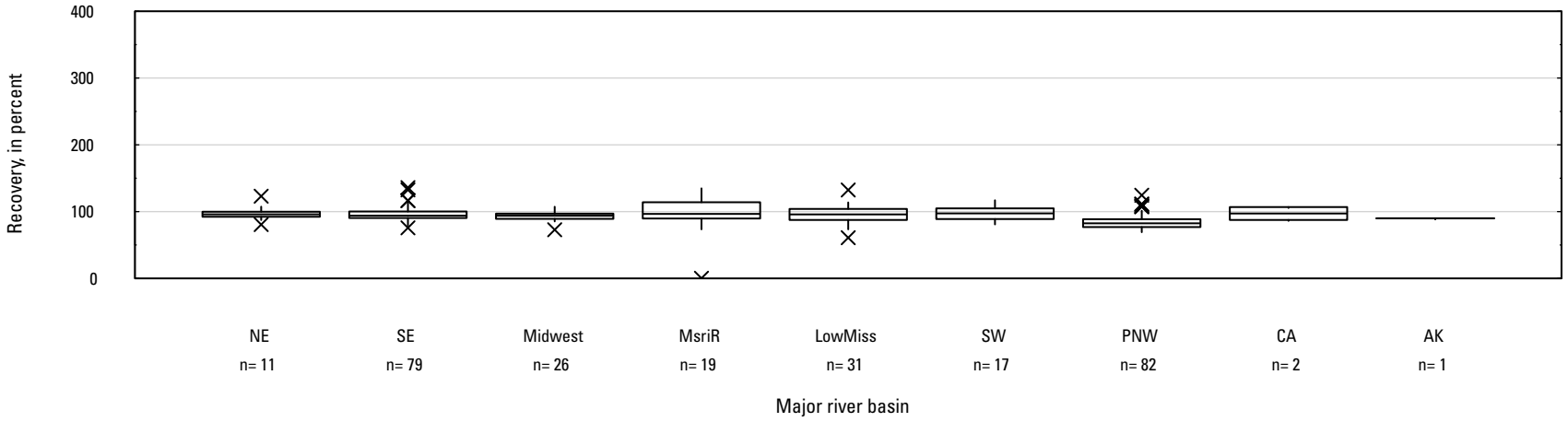
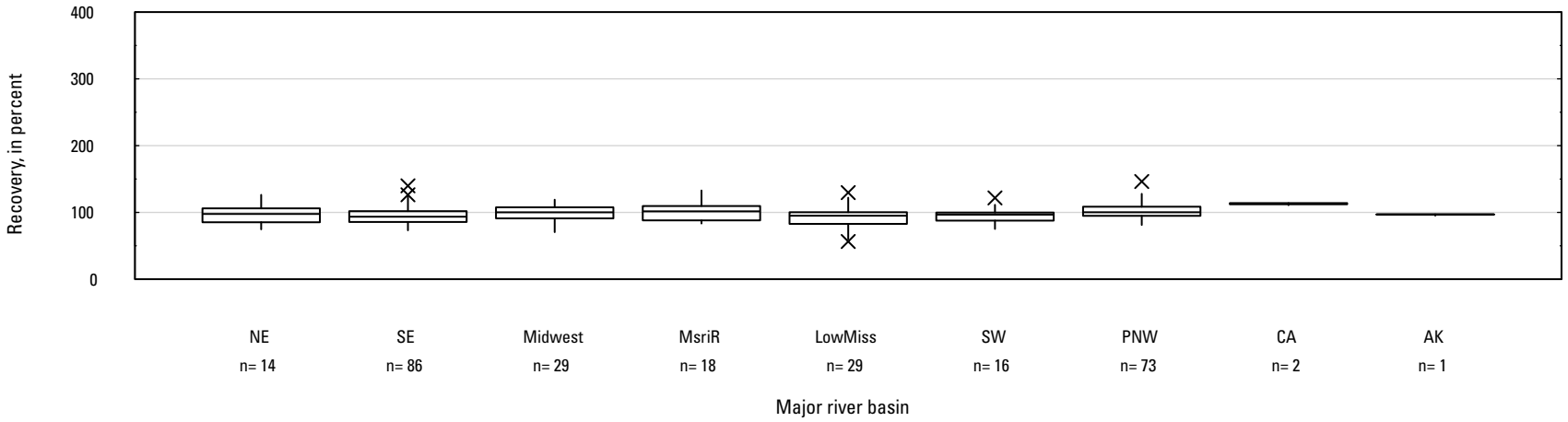


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

BI. **2–Chloro–4–isopropylamino–6–amino–s–triazine**



BJ. **Deisopropyl prometryn**

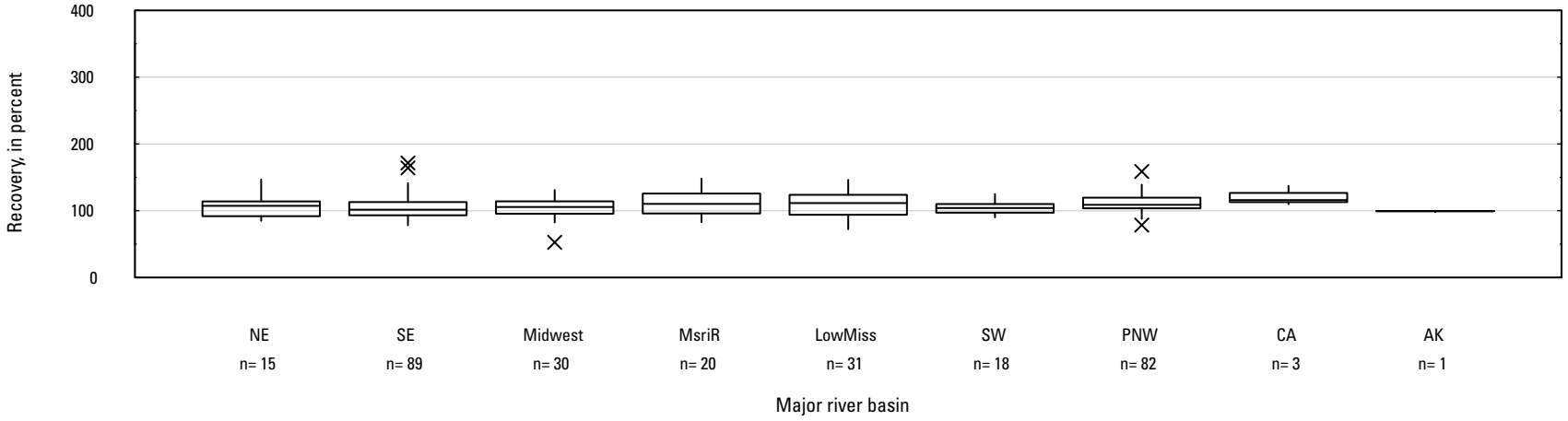
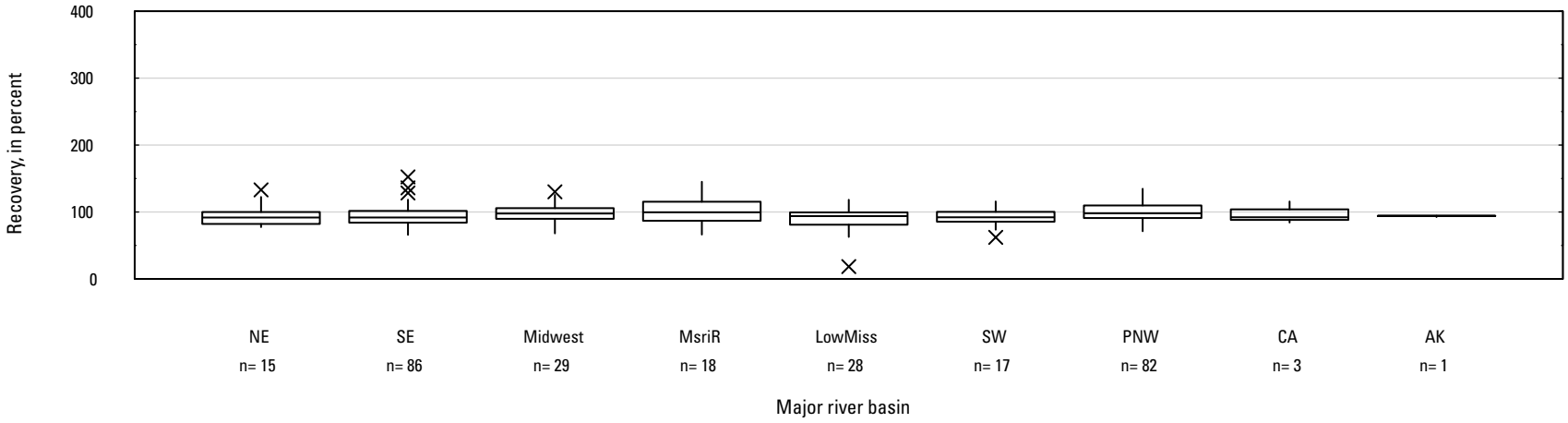


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

BK. **2–Chloro–6–ethylamino–4–amino–s–triazine {CEAT}**



BL. **Demethyl fluometuron**

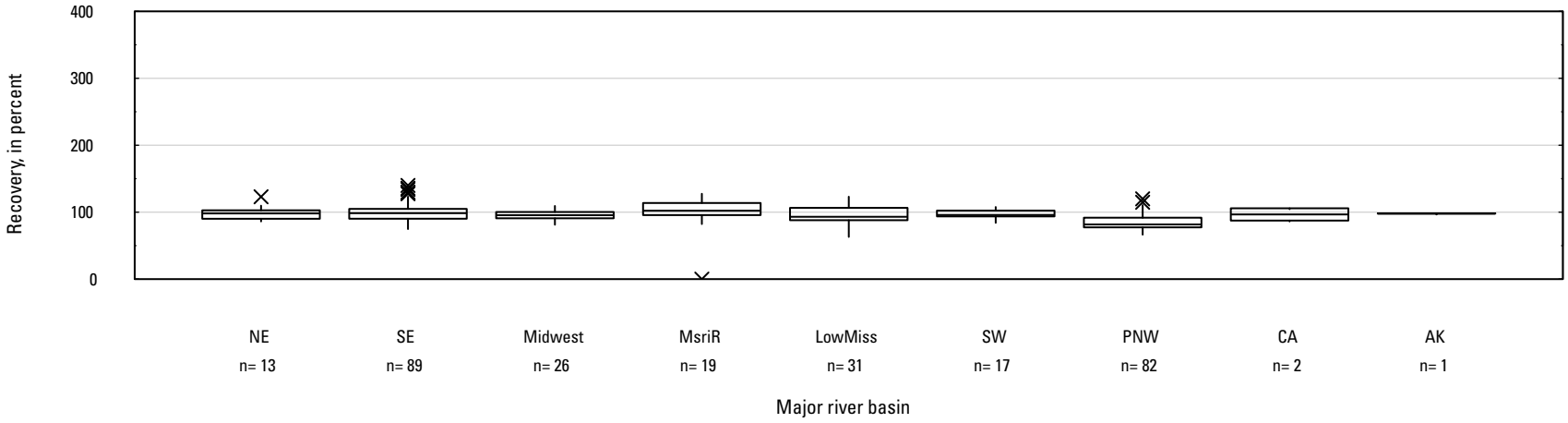
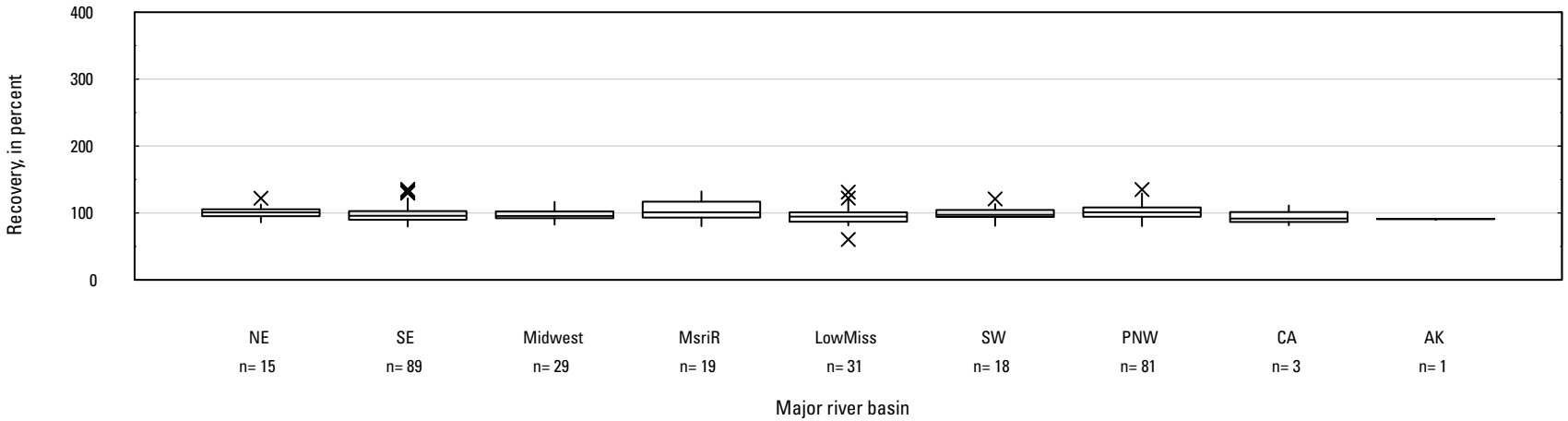


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

BM. **Demethyl hexazinone B**



BN. **Demethyl norflurazon**

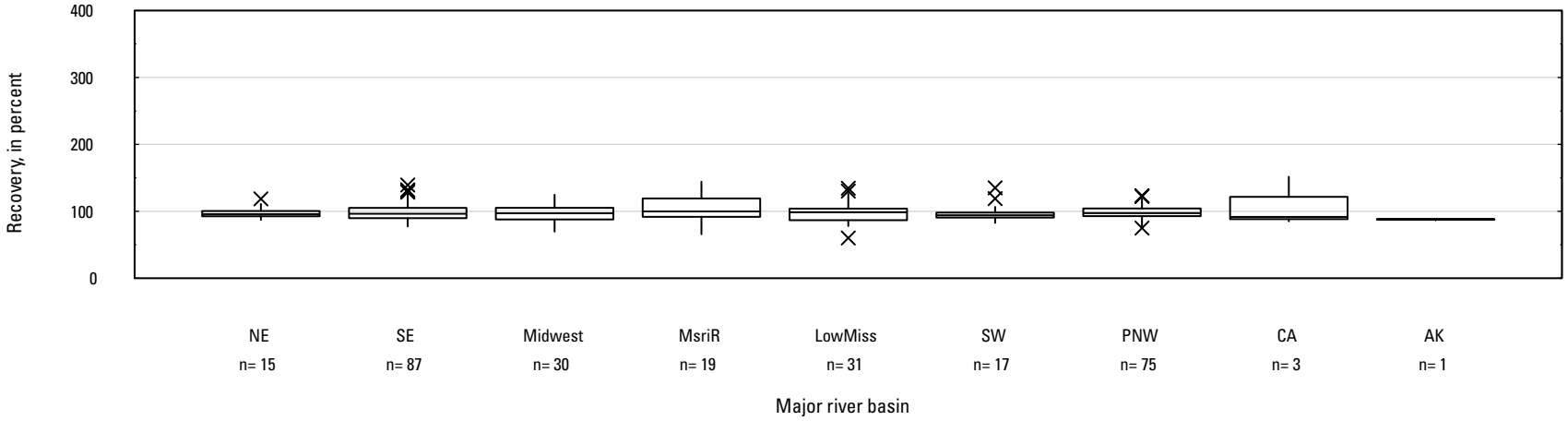
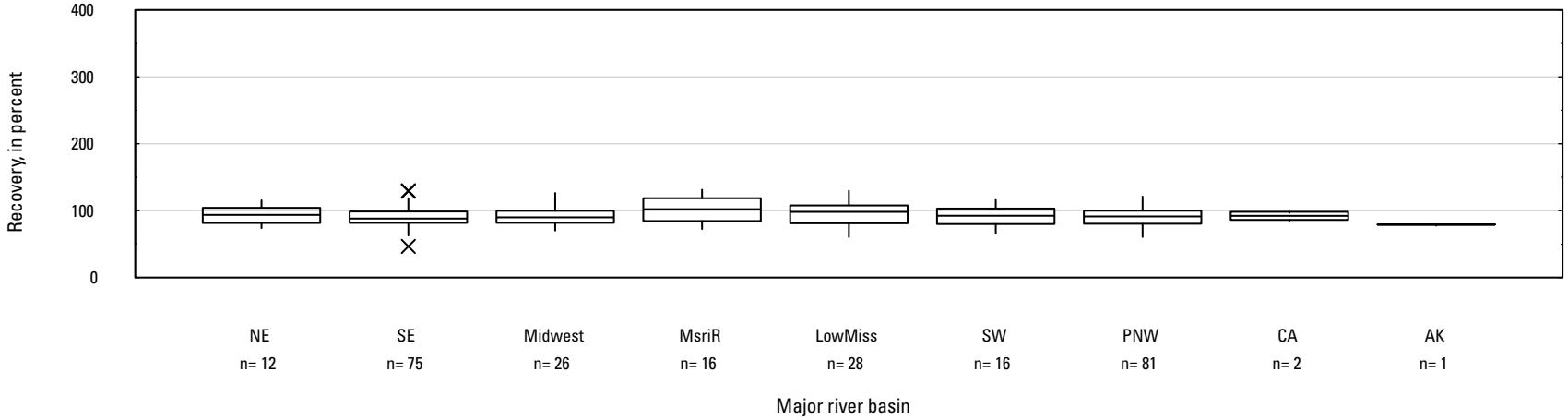


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

BO. **Deiodo flubendiamide**



BP. **Desulfinylfipronil**

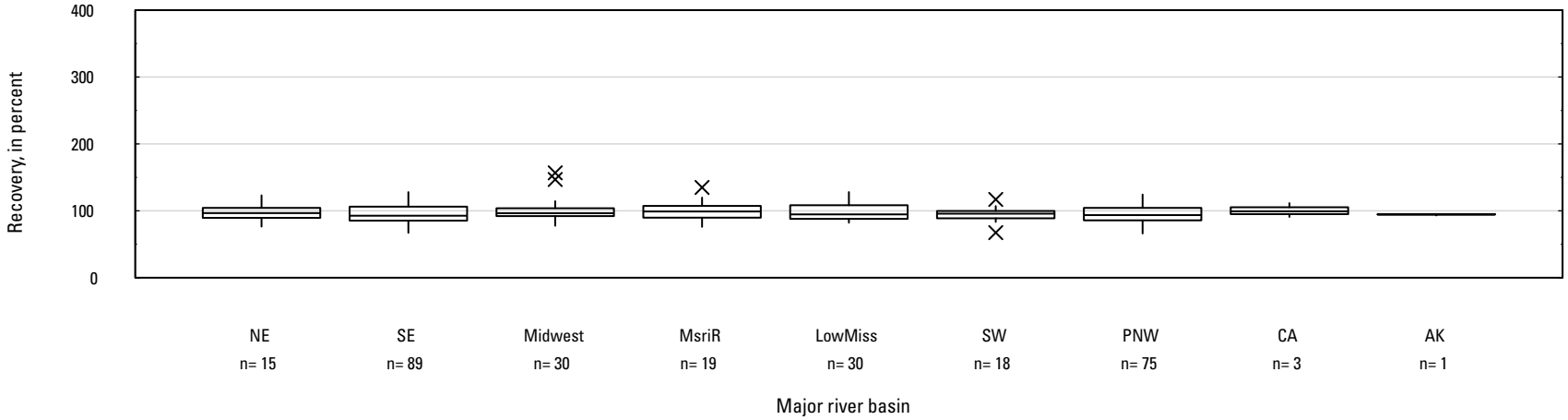
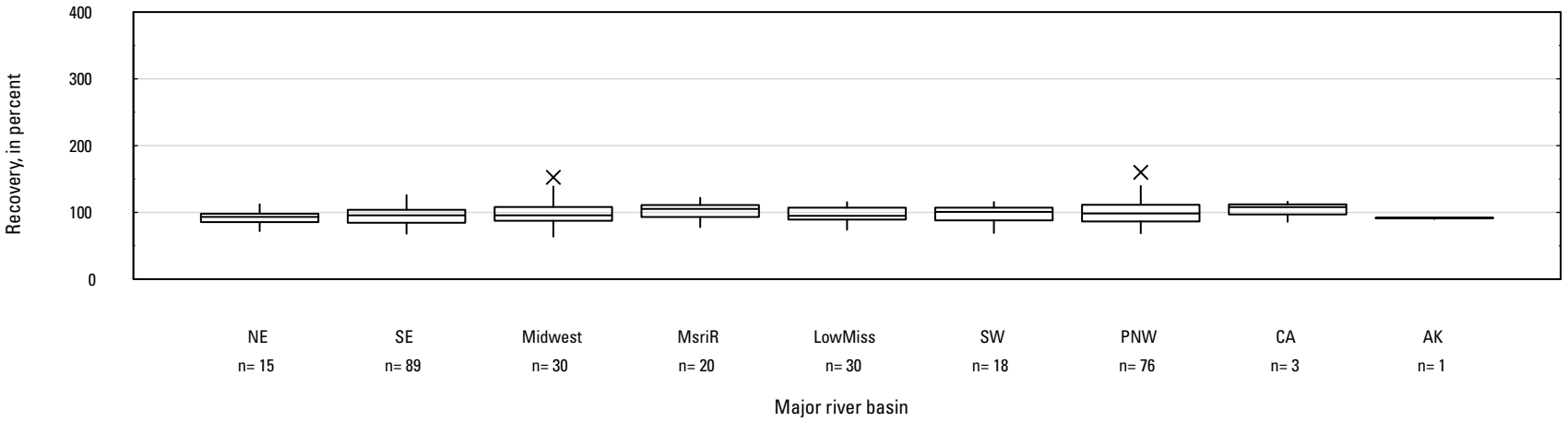


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

BQ. **Desulfinylfipronil amide**



BR. **Diazinon**

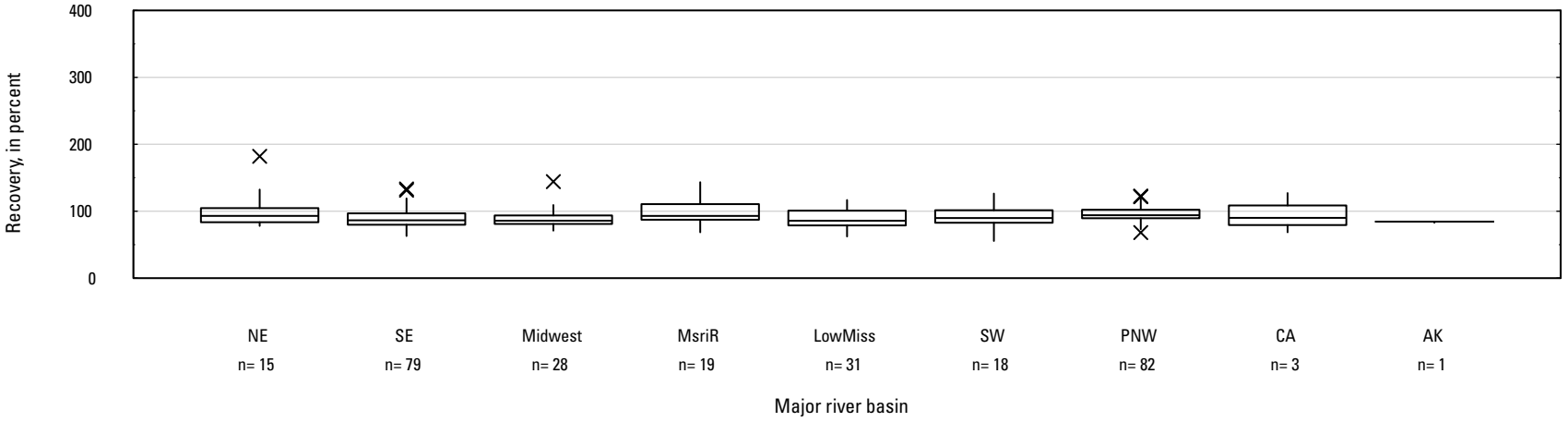


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

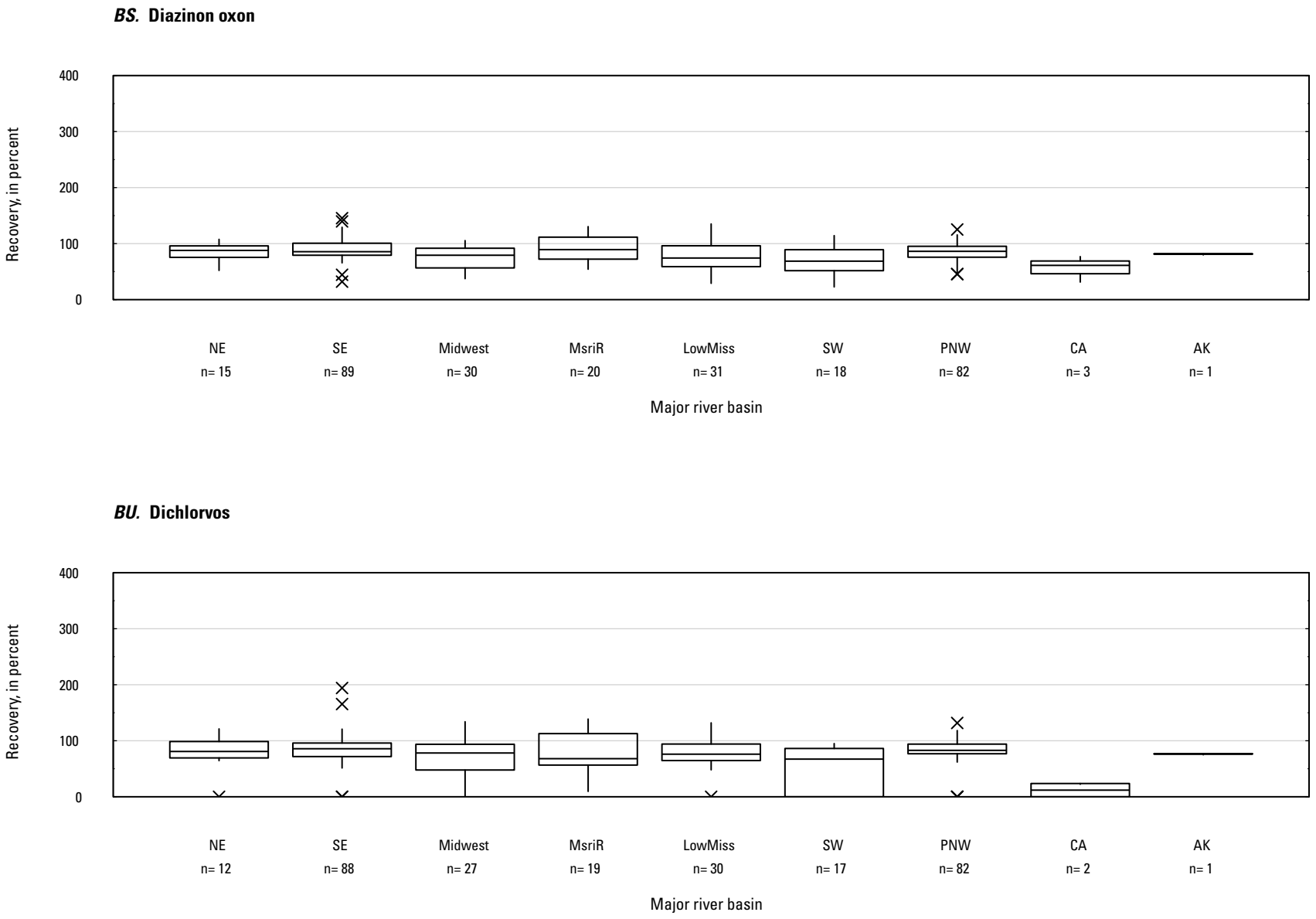
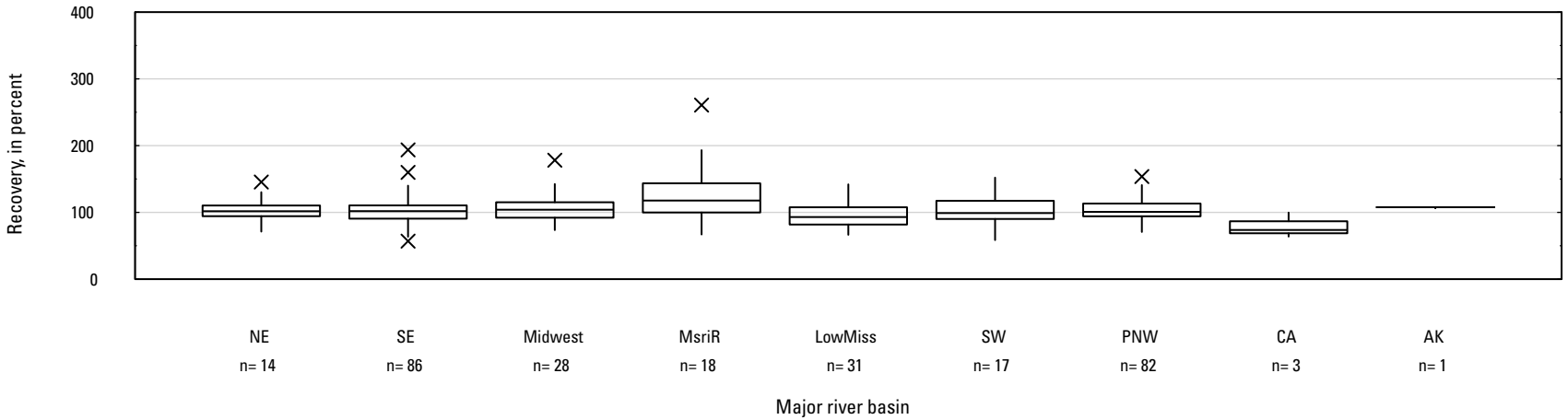


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

BV. **Dicrotophos**



BW. **2–Chloro–4,6–diamino–s–triazine {CAAT} (Didealkylatrazine)**

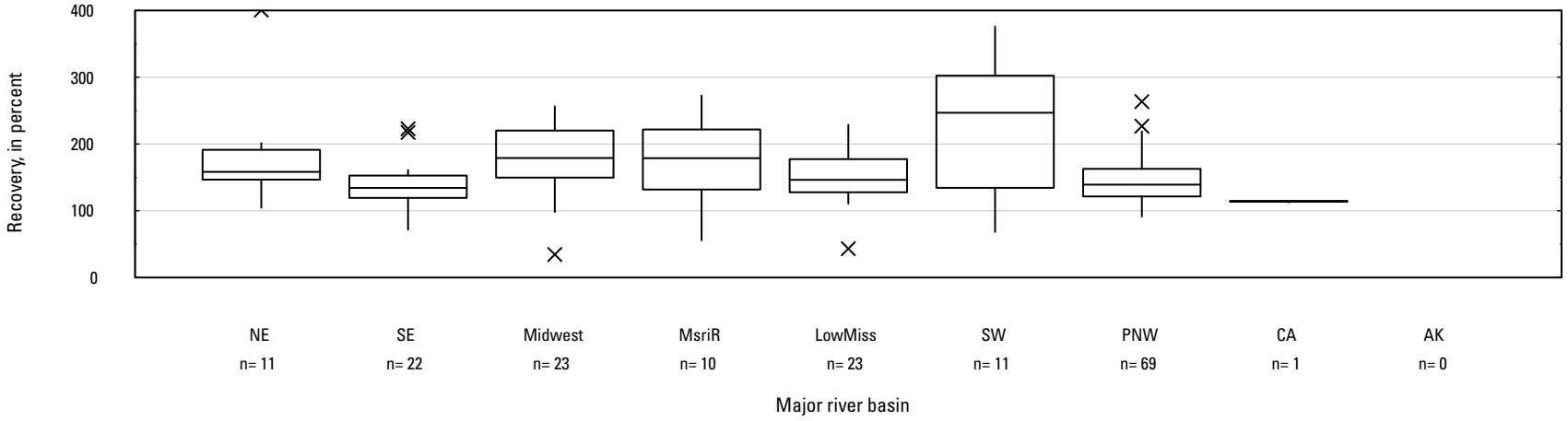
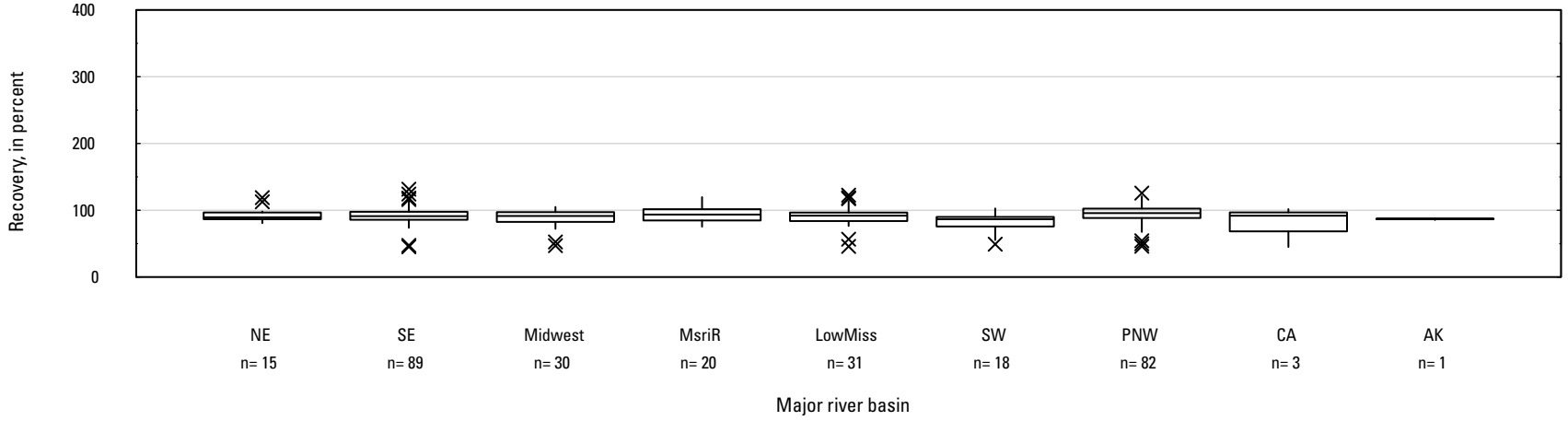


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

BX. **Diflubenzuron**



BY. **Diflufenzopyr**

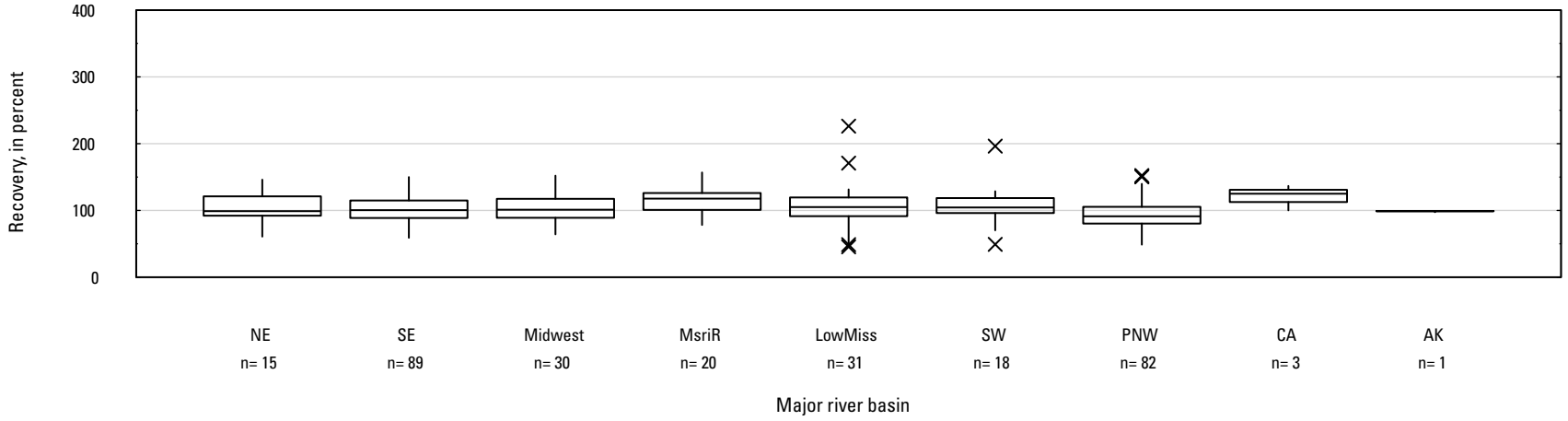
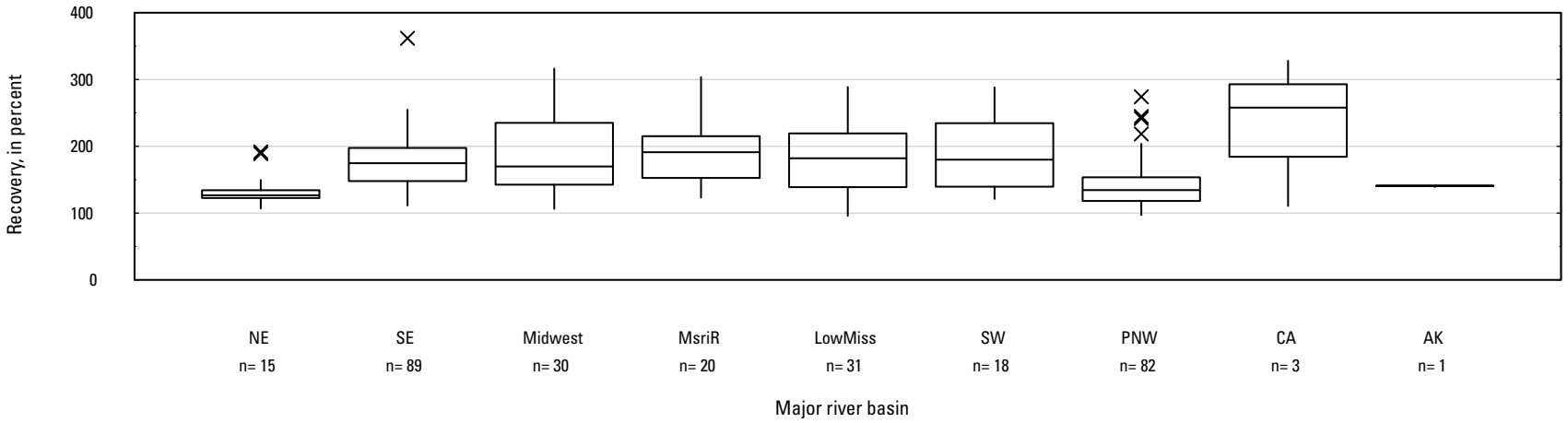


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

BZ. **Diketonitrile–isoxaflutole**



CA. **Dimethenamid**

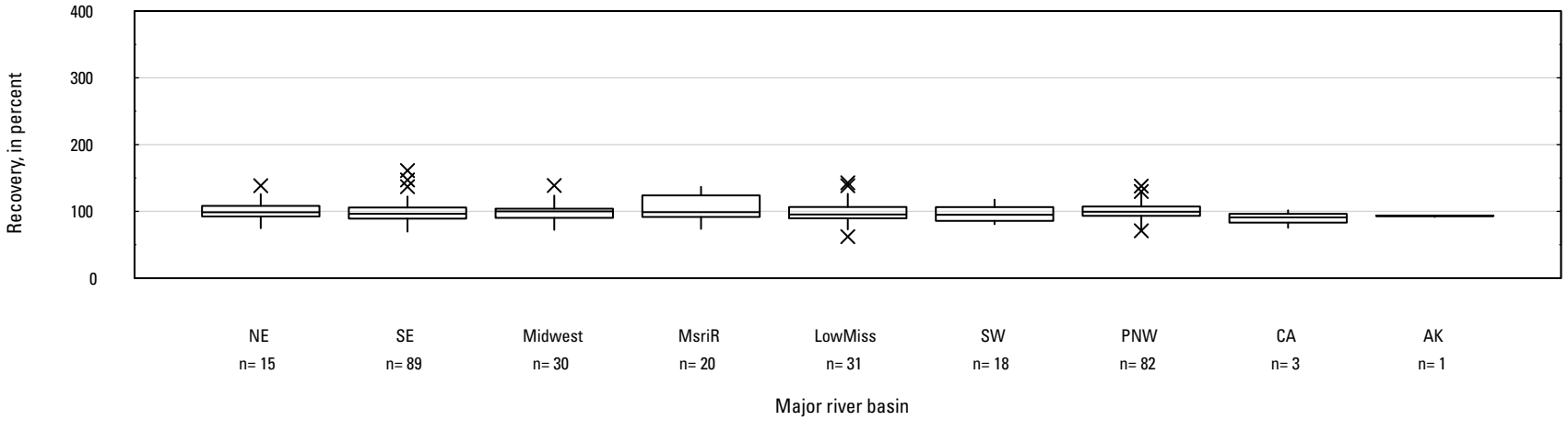
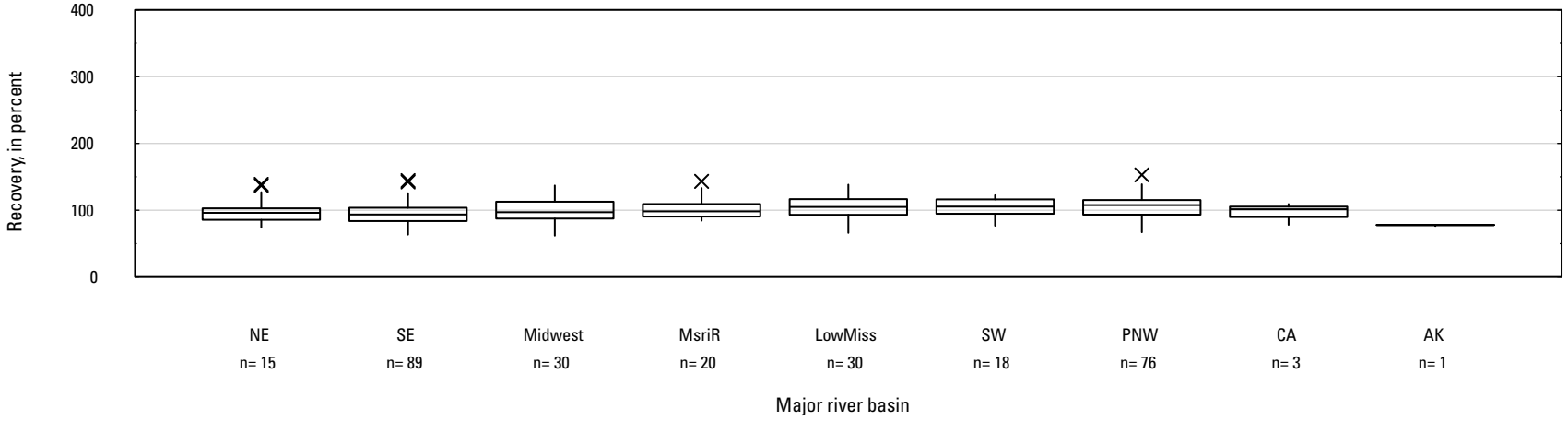


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

CB. **Dimethenamid oxanilic acid**



CC. **Dimethenamid sulfonic acid**

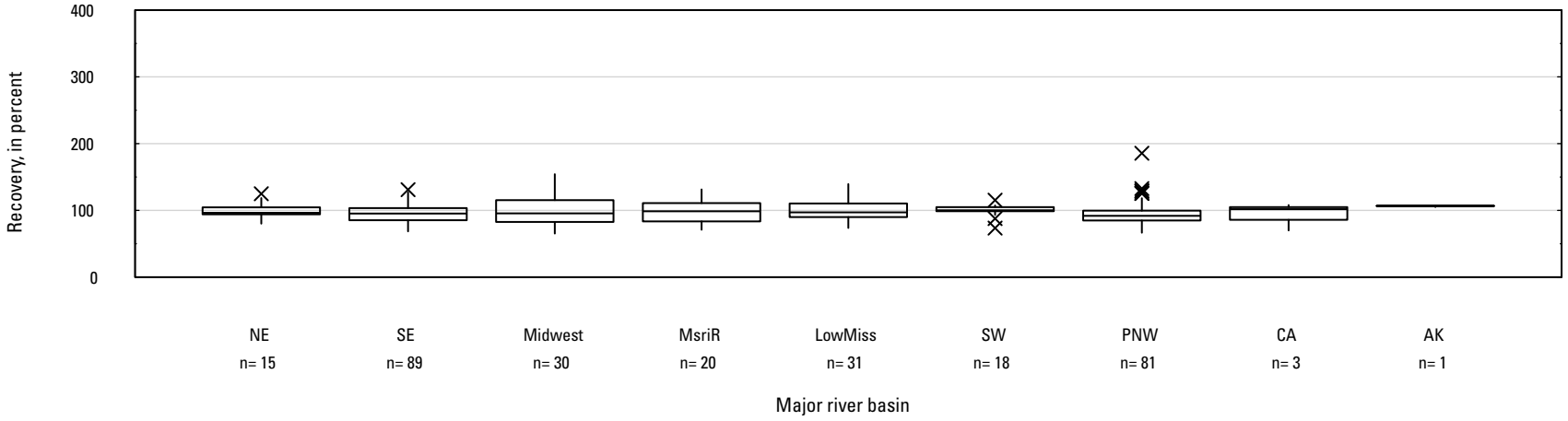
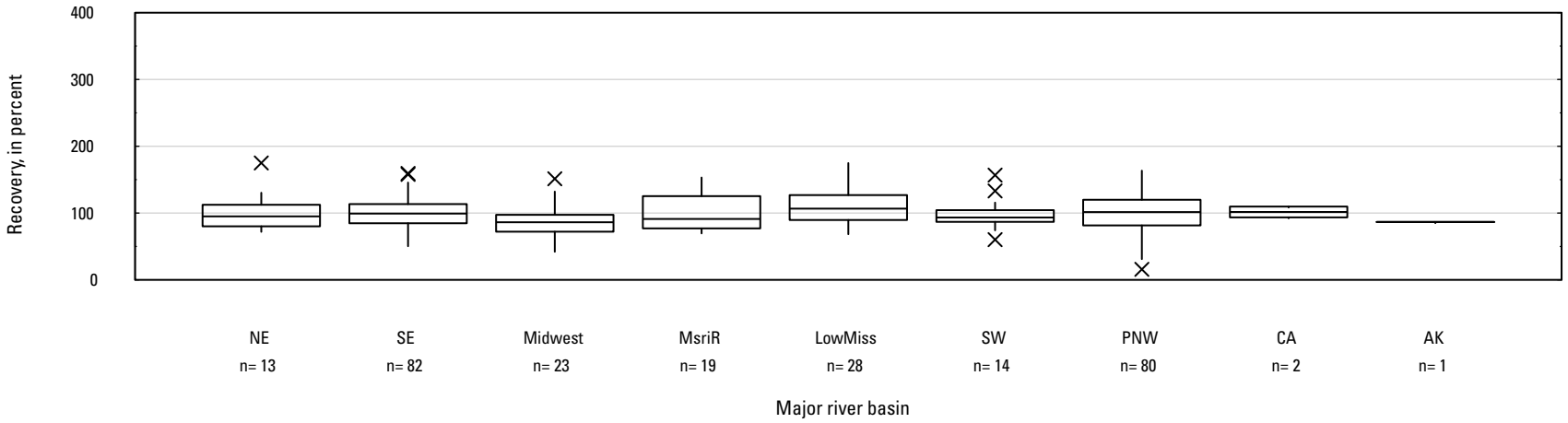


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

CD. **Dimethenamid SAA**



CE. **Dimethoate**

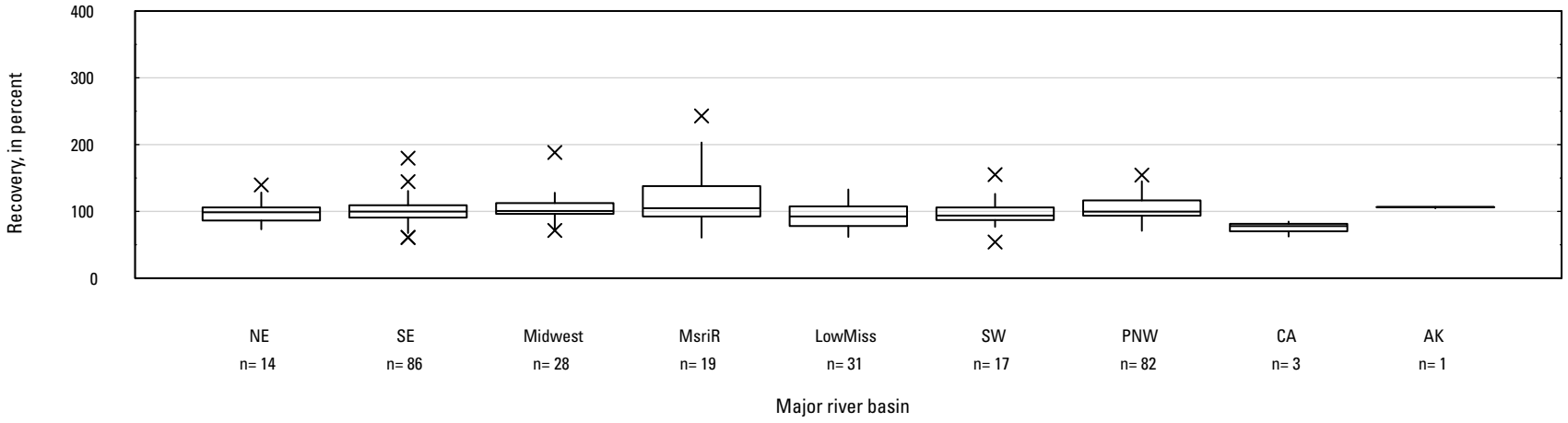
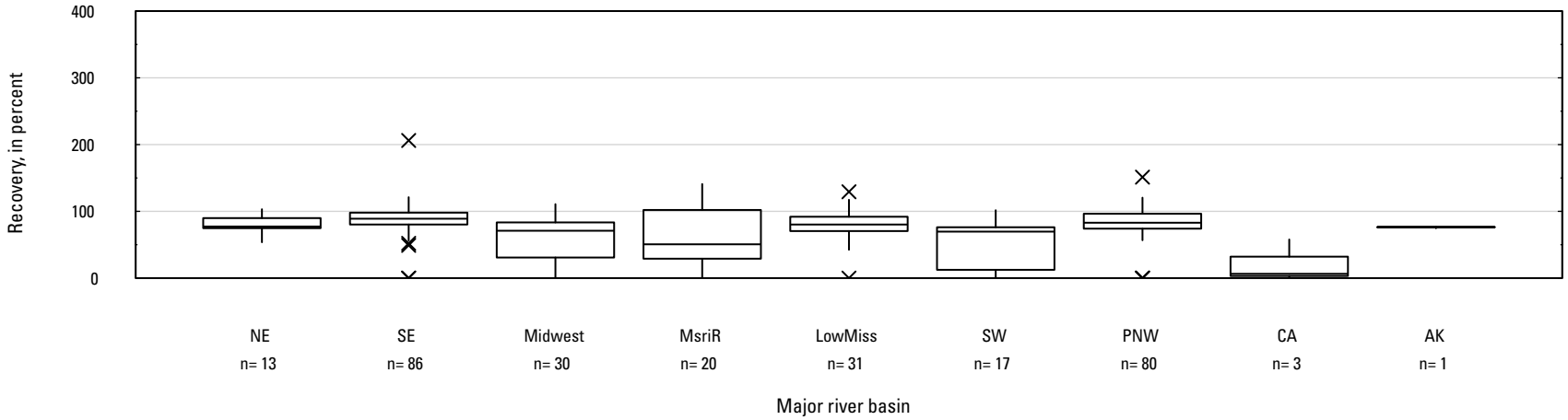


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

CF. **Omethoate (Dimethoate oxon)**



CG. **Disulfoton**

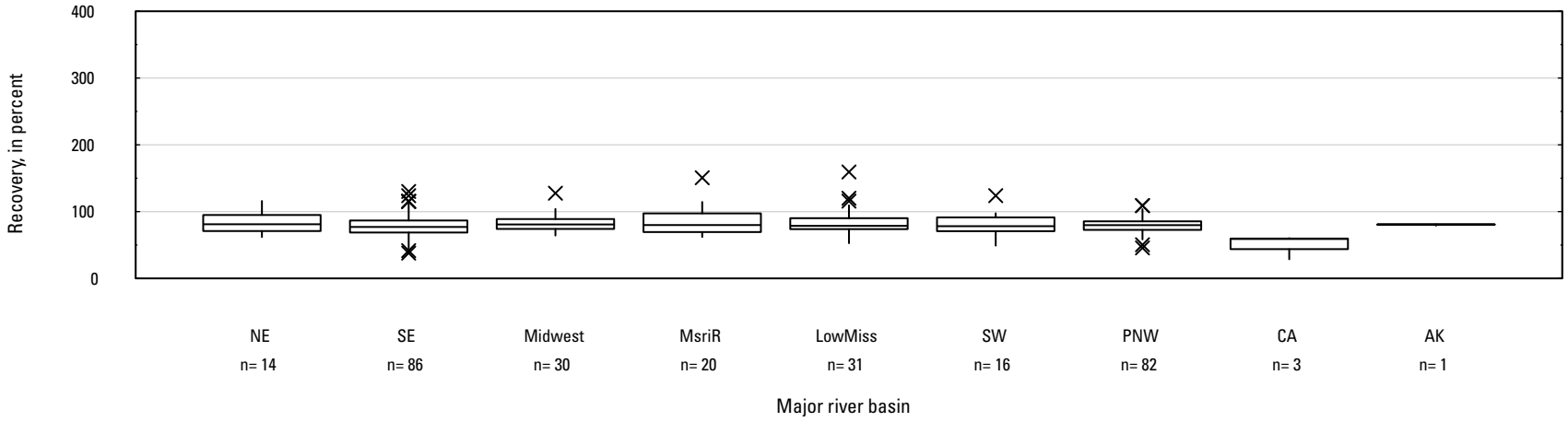
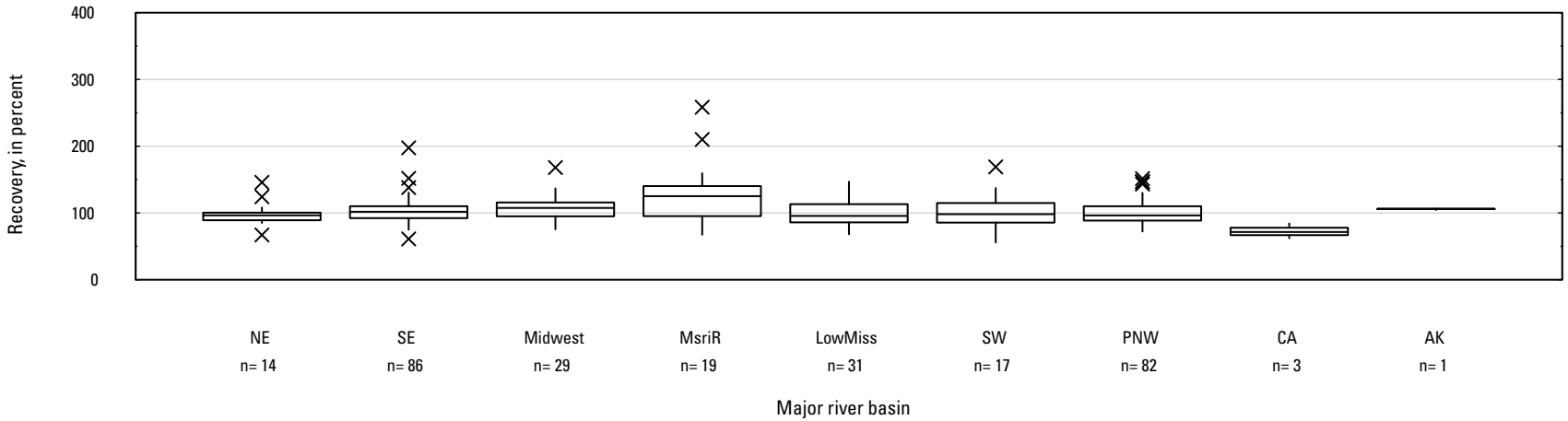


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

CH. **Disulfoton oxon**



CI. **Disulfoton oxon sulfone**

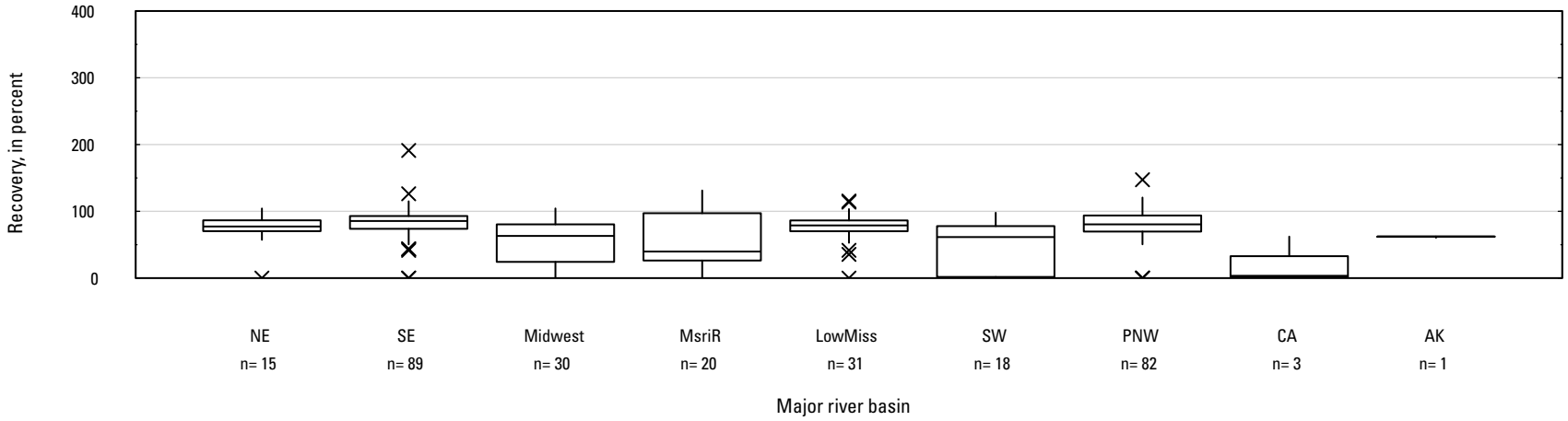
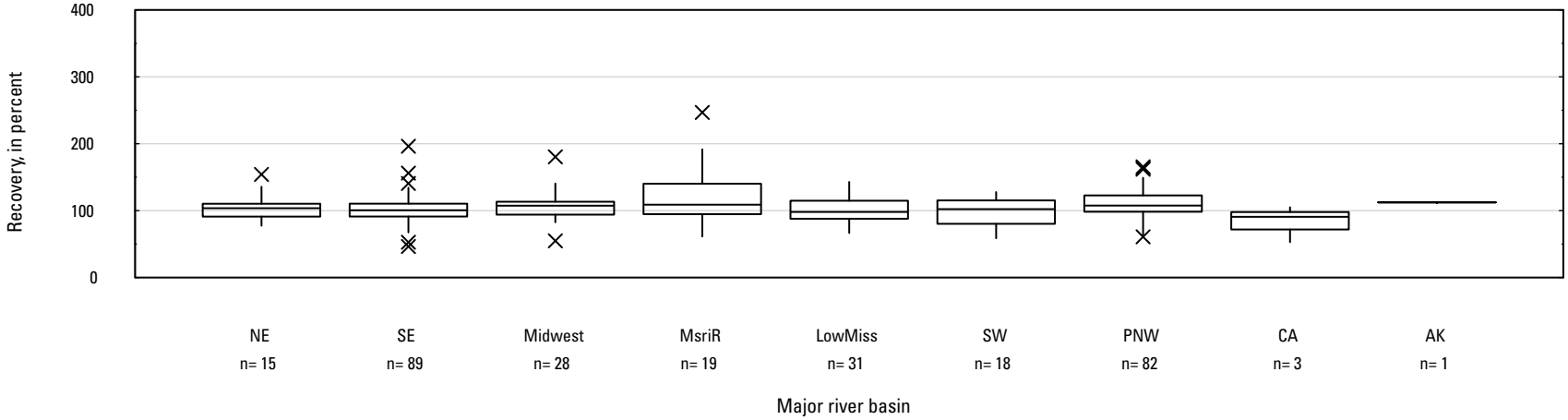


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

CJ. **Disulfoton oxon sulfoxide**



CK. **Disulfoton sulfone**

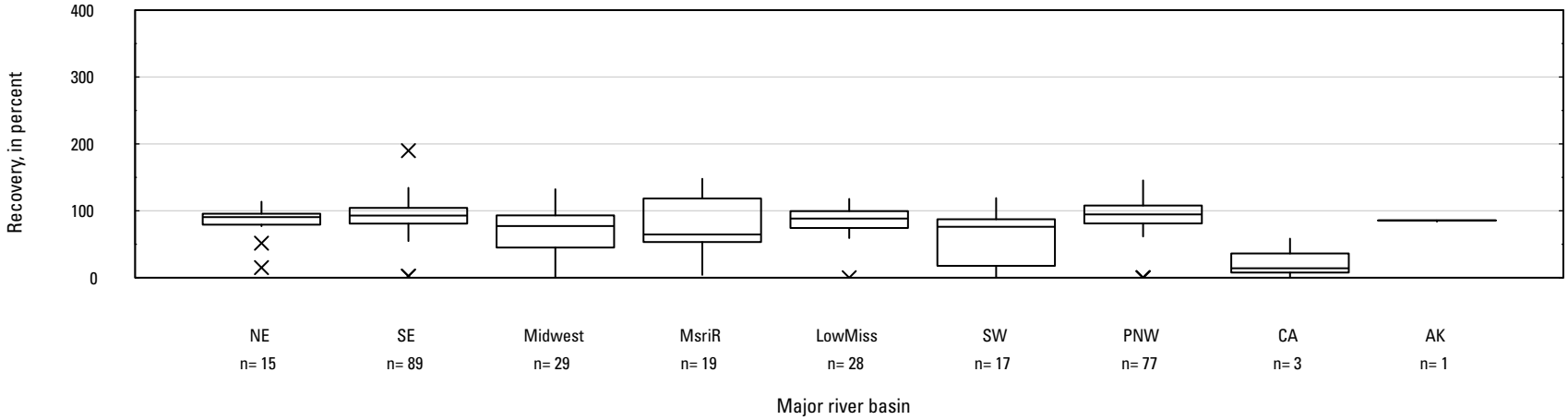
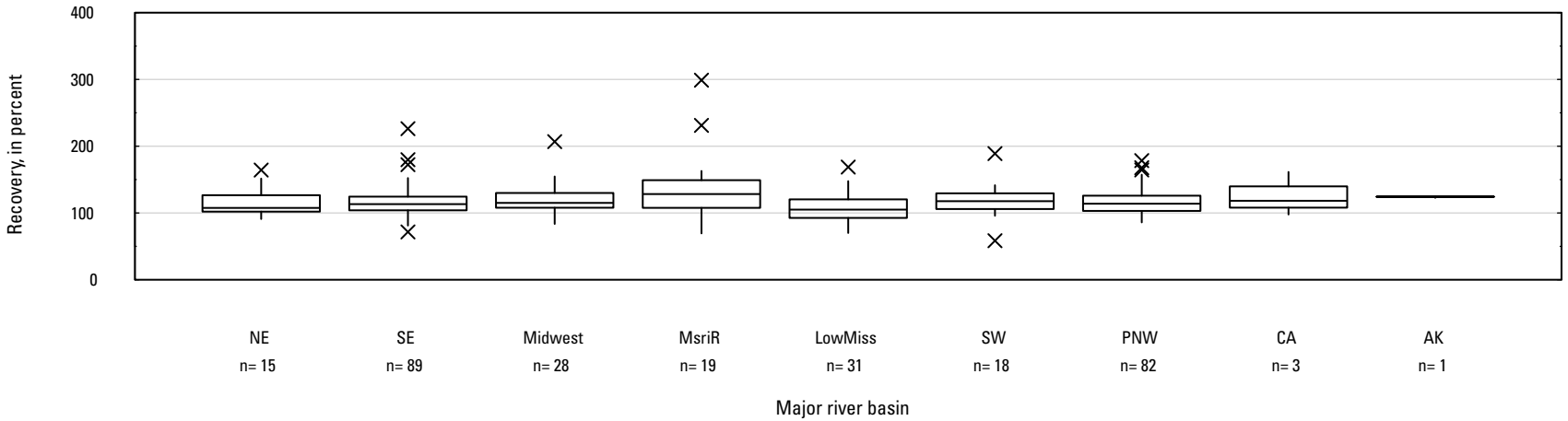


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

CL. **Disulfoton sulfoxide**



CM. **Diuron**

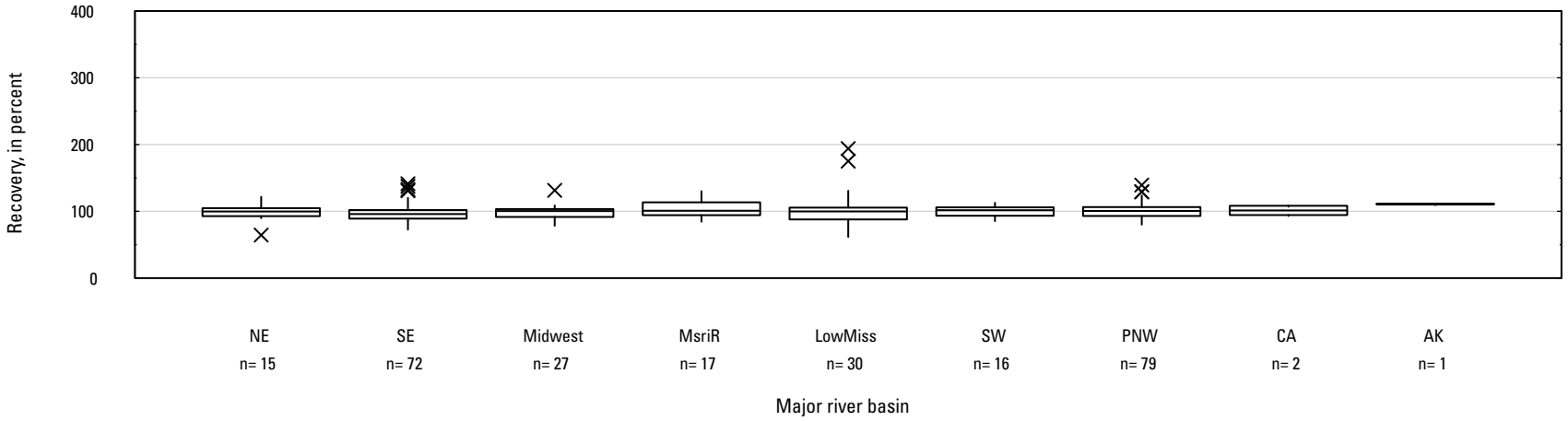
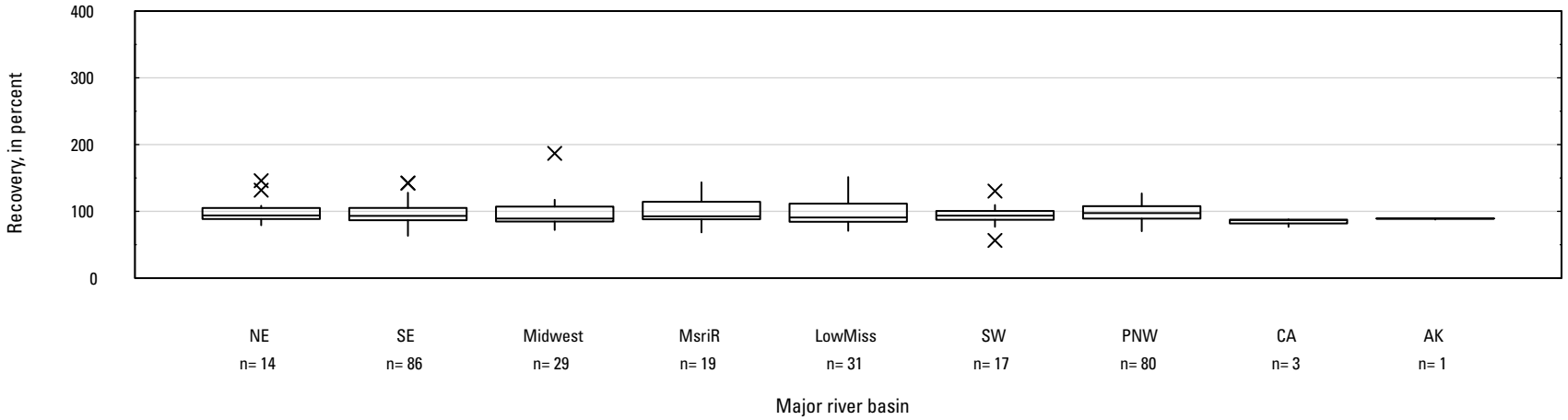


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

CR. **Fenamiphos**



CS. **Fenamiphos sulfone**

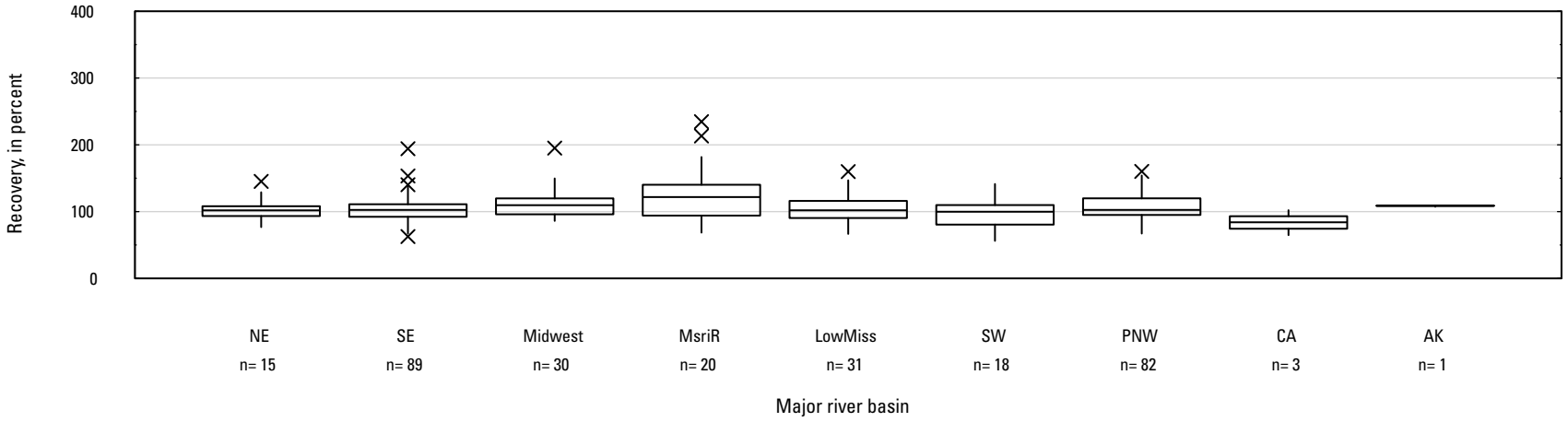
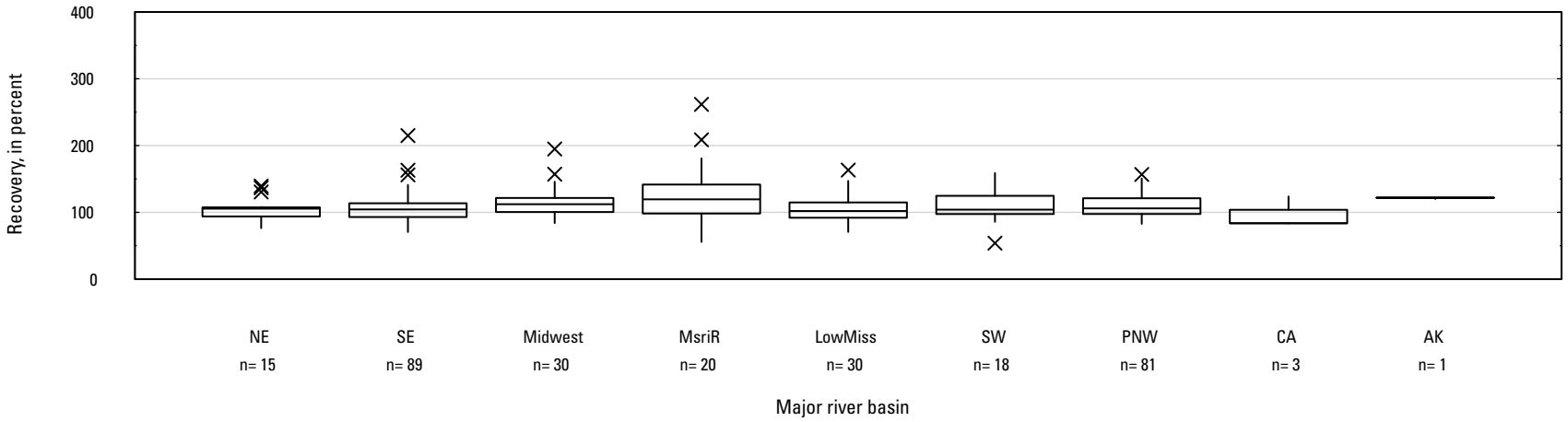


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

CT. **Fenamiphos sulfoxide**



CU. **Fenbutatin oxide**

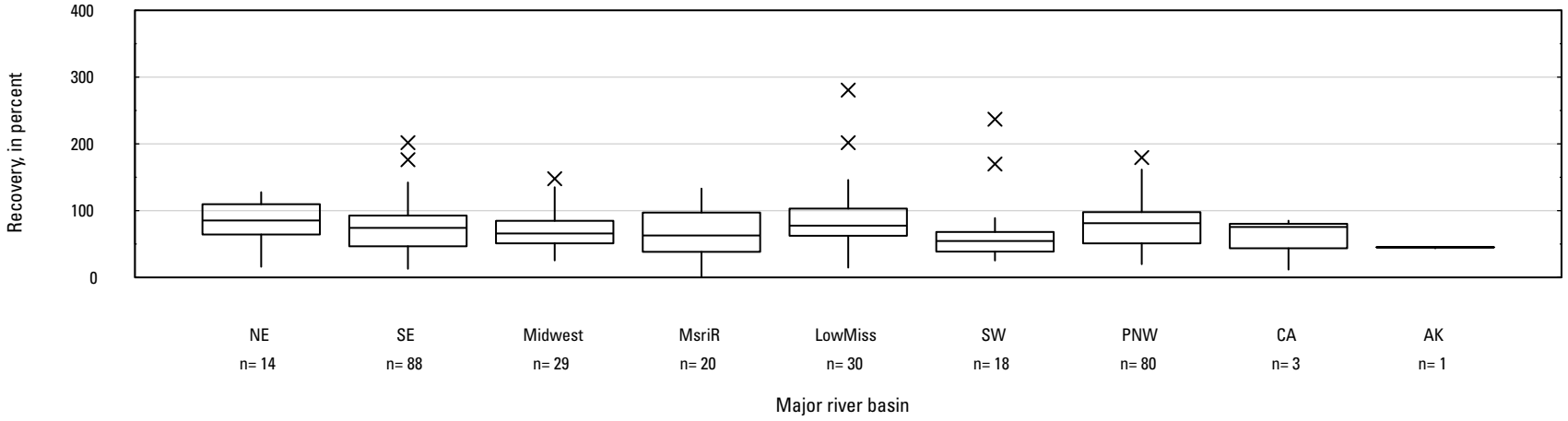
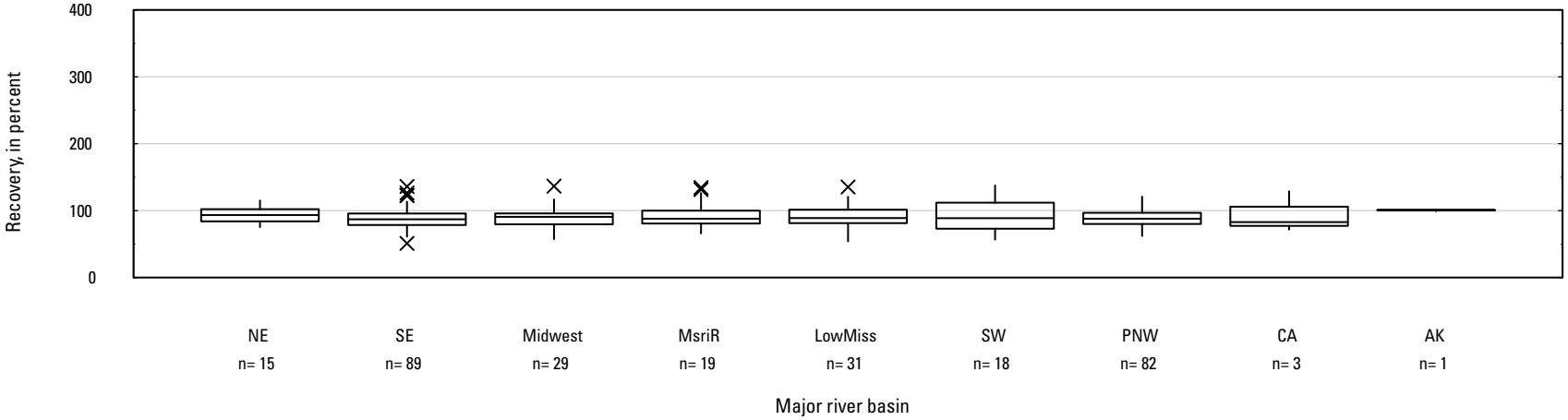


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

CV. **Fentin**



CW. **Fipronil**

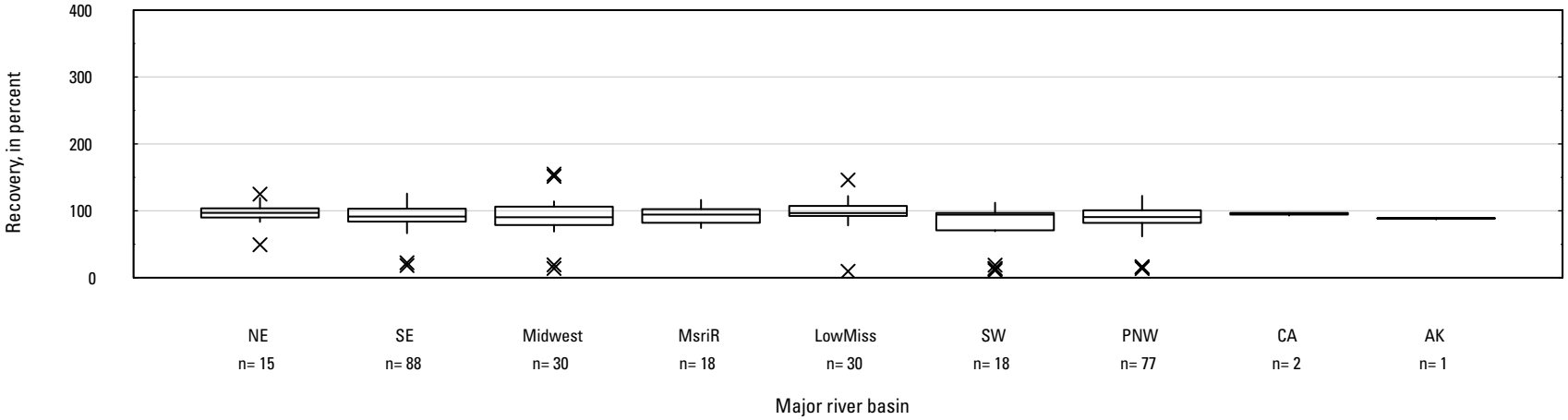
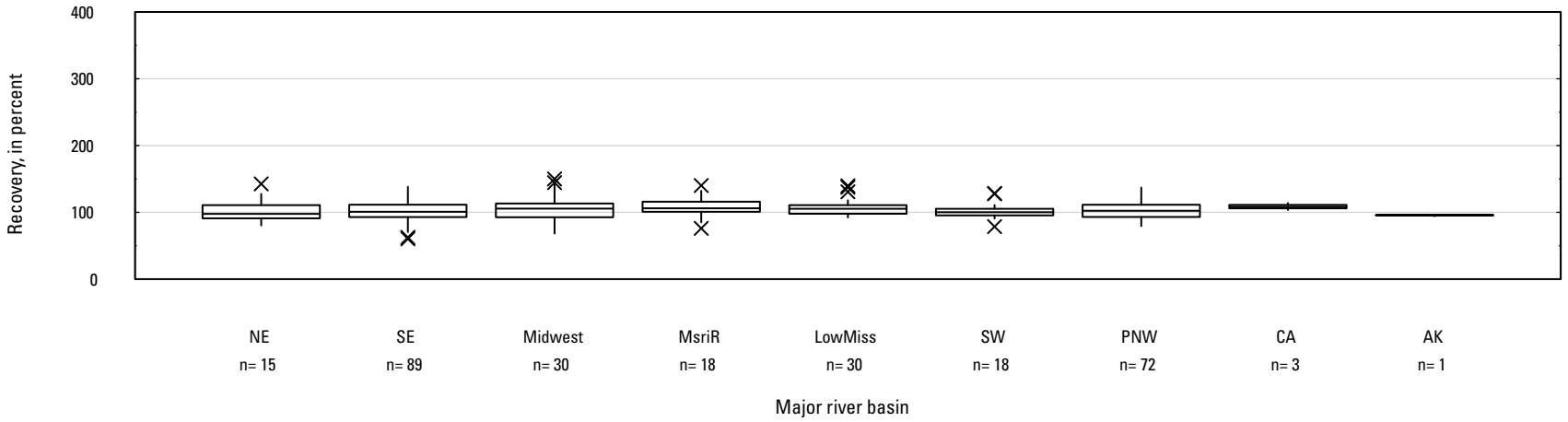


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

CX. **Fipronil amide**



CY. **Fipronil sulfide**

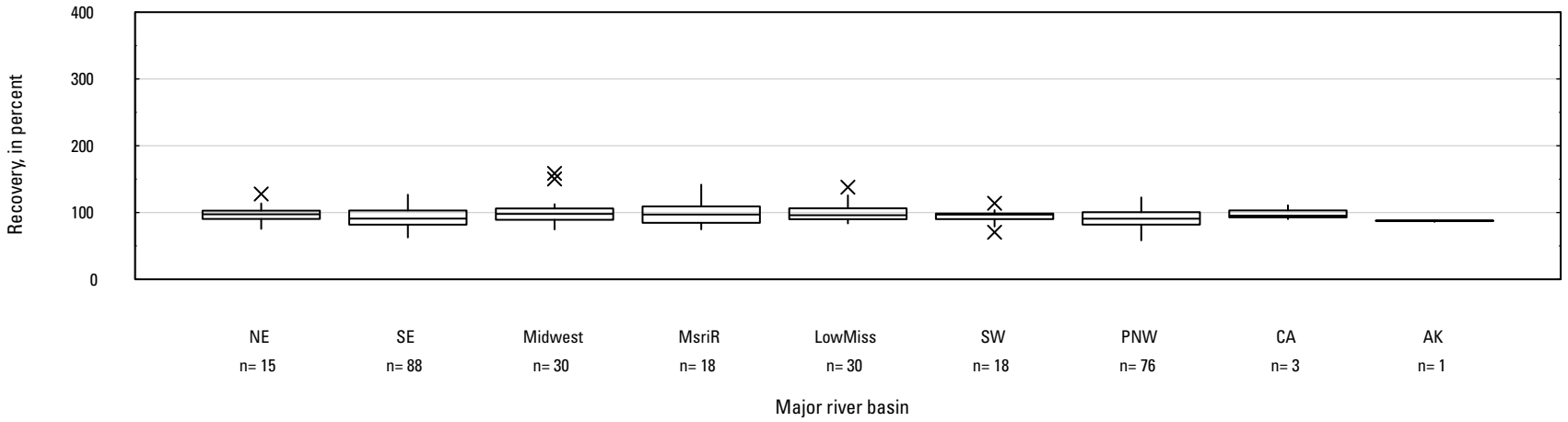
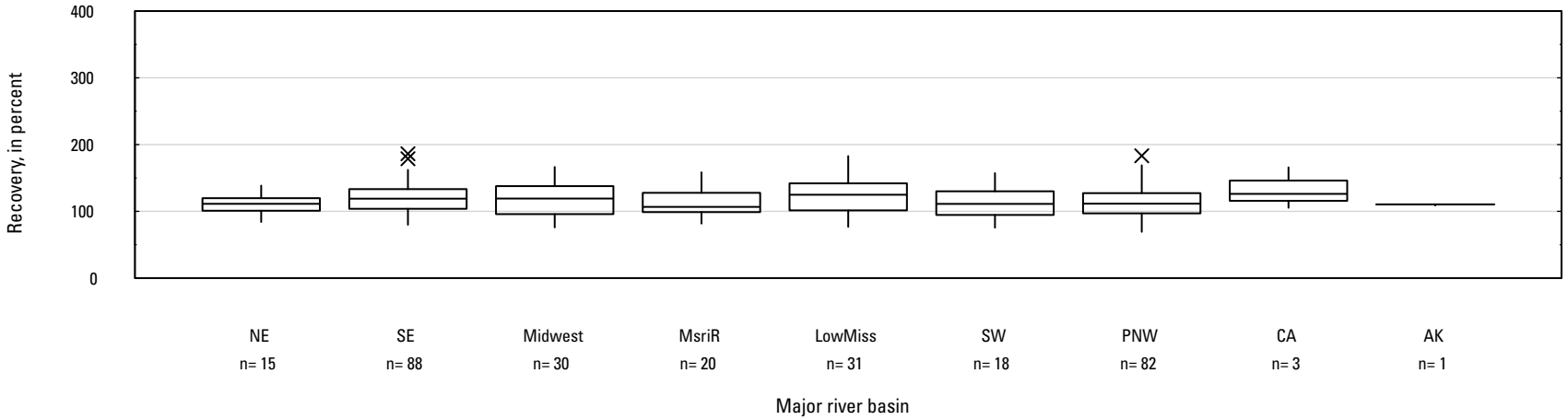


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

CZ. **Fipronil sulfonate**



DA. **Fipronil sulfone**

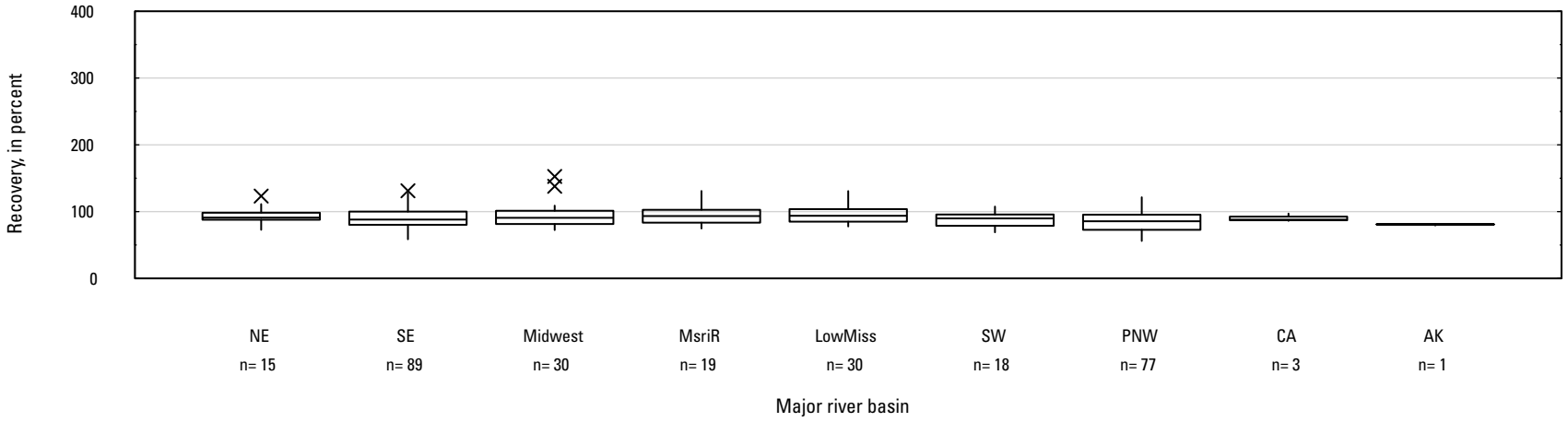
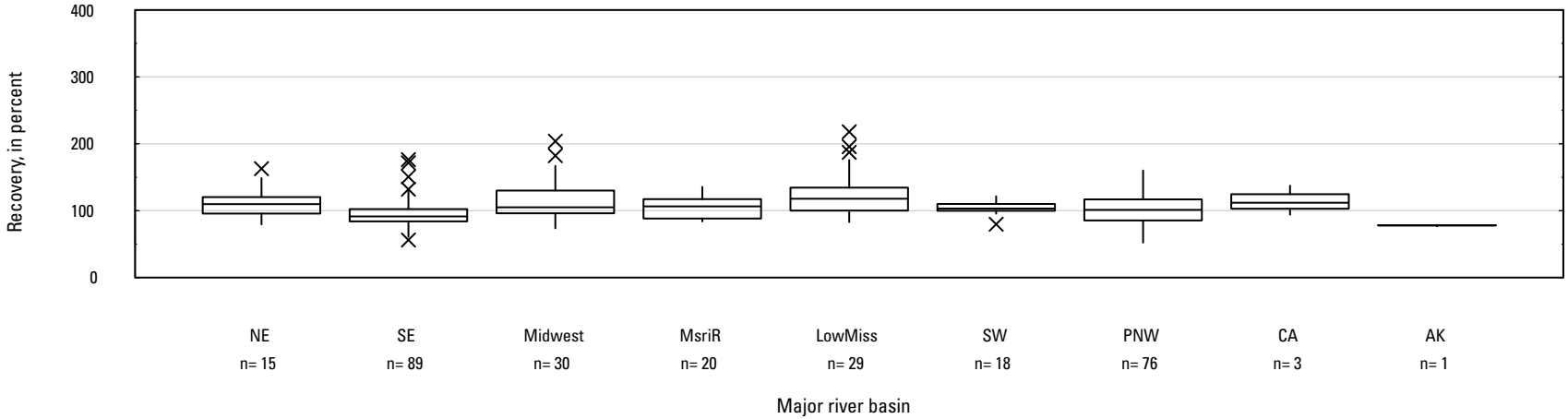


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

DB. **Flubendiamide**



DC. **Flumetsulam**

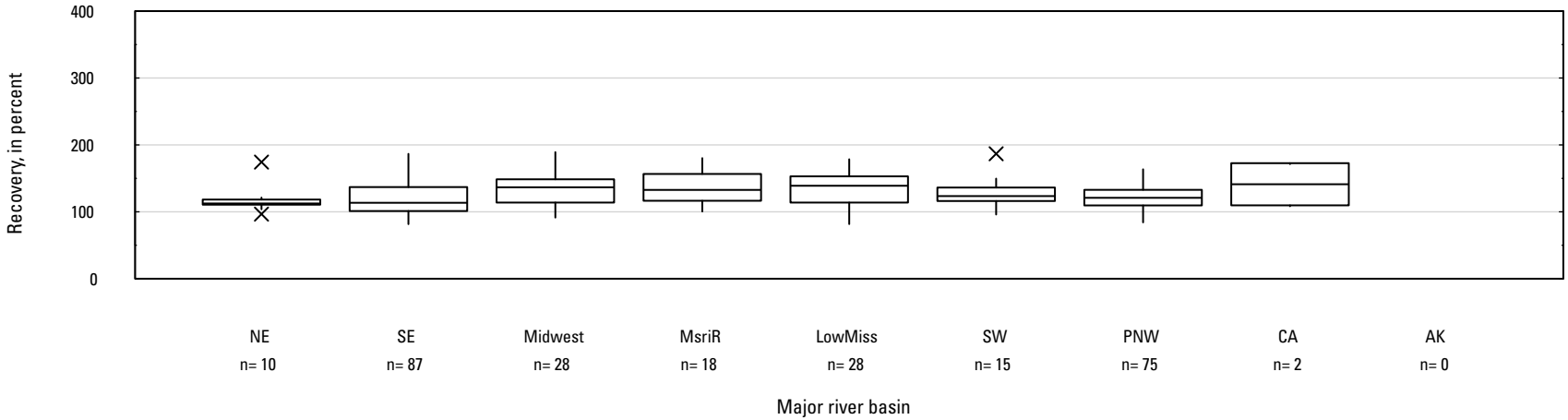
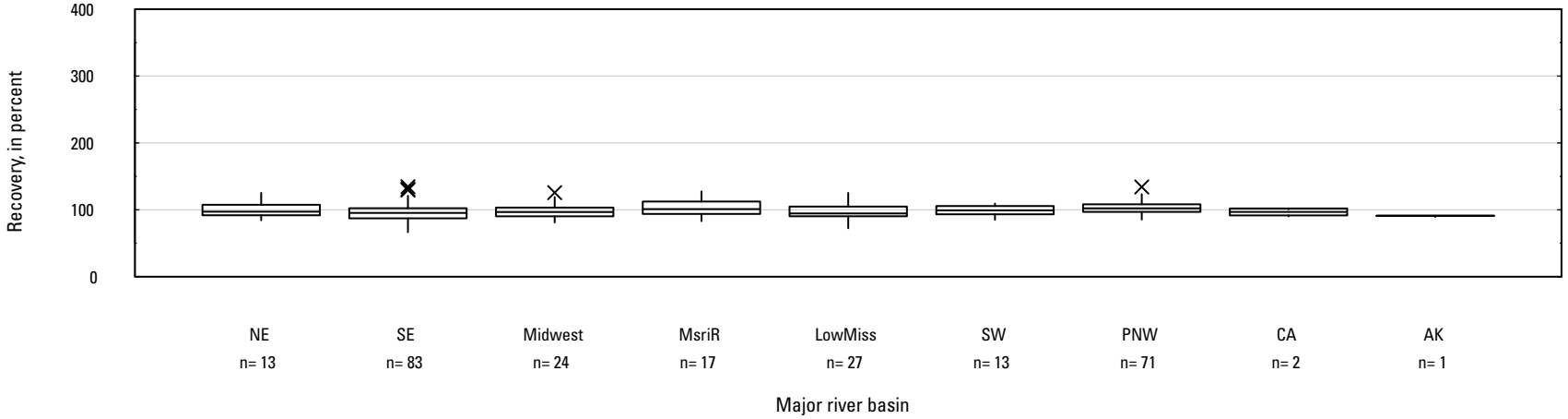


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

DD. **Fluometuron**



DE. **Fonofos**

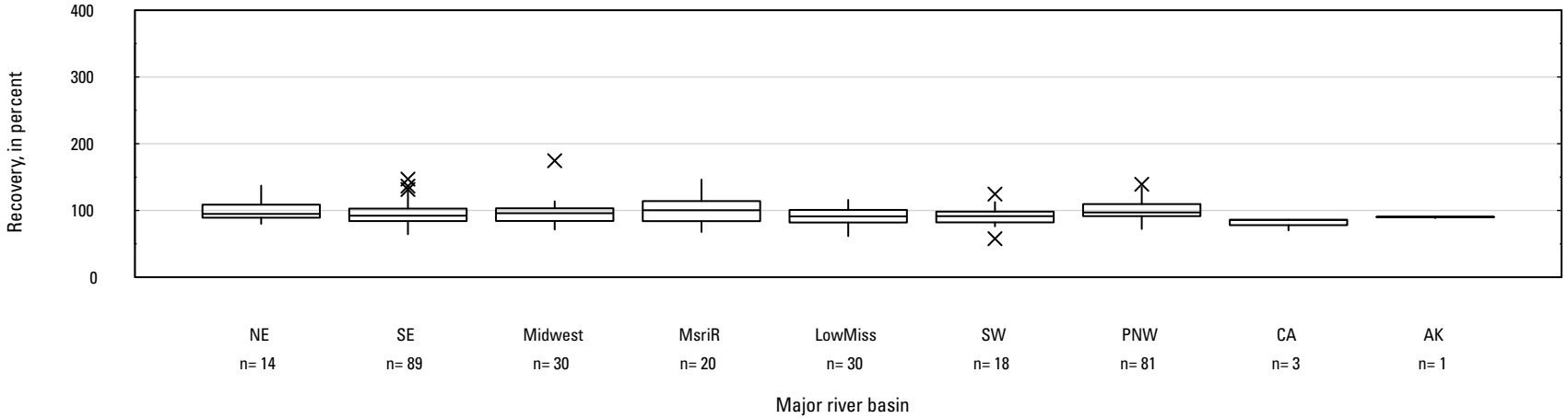
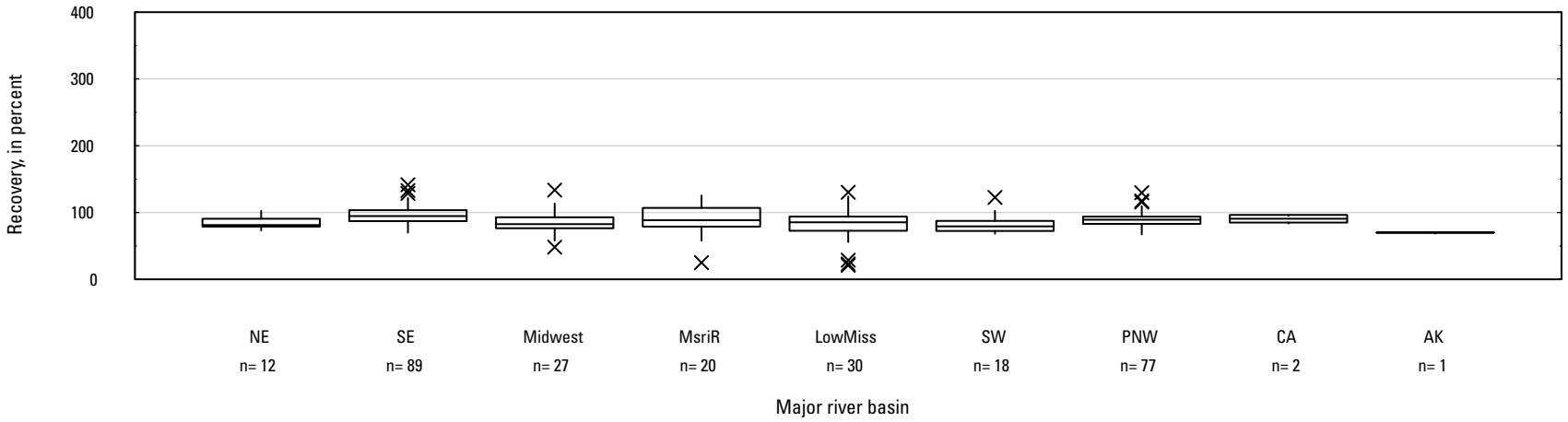


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

DF. **Halosulfuron–methyl**



DG. **Hexazinone**

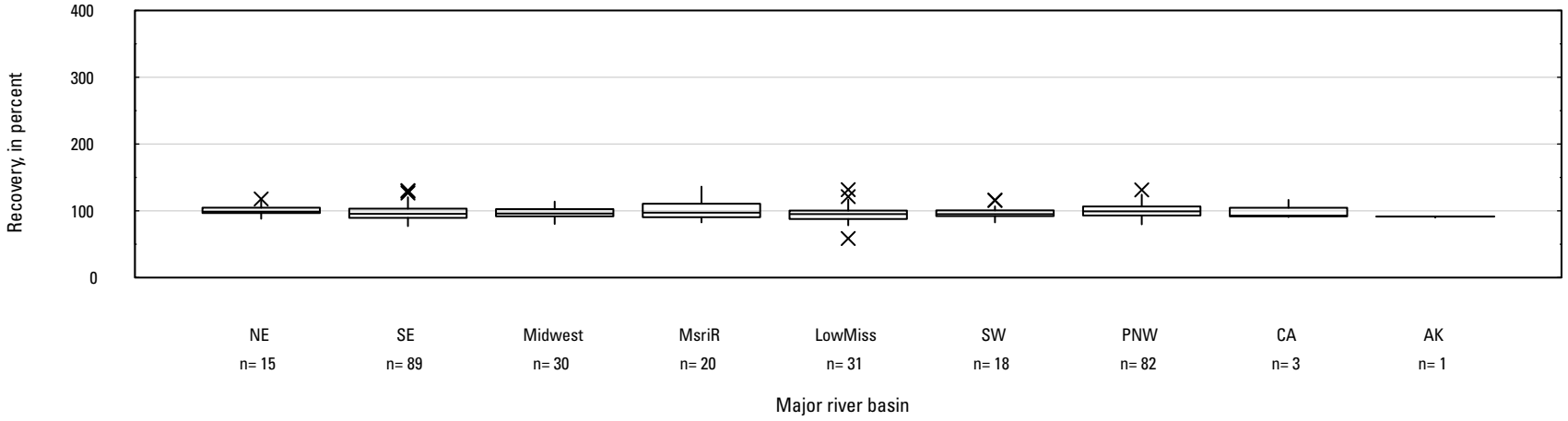
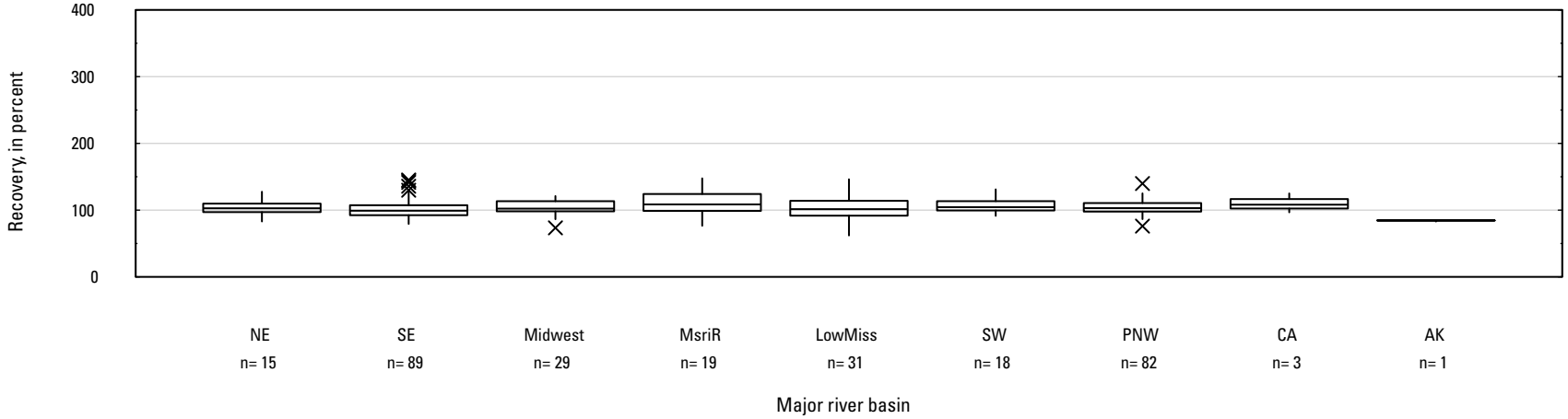


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

DH. **Hexazinone Transformation Product C**



DI. **Hexazinone Transformation Product D**

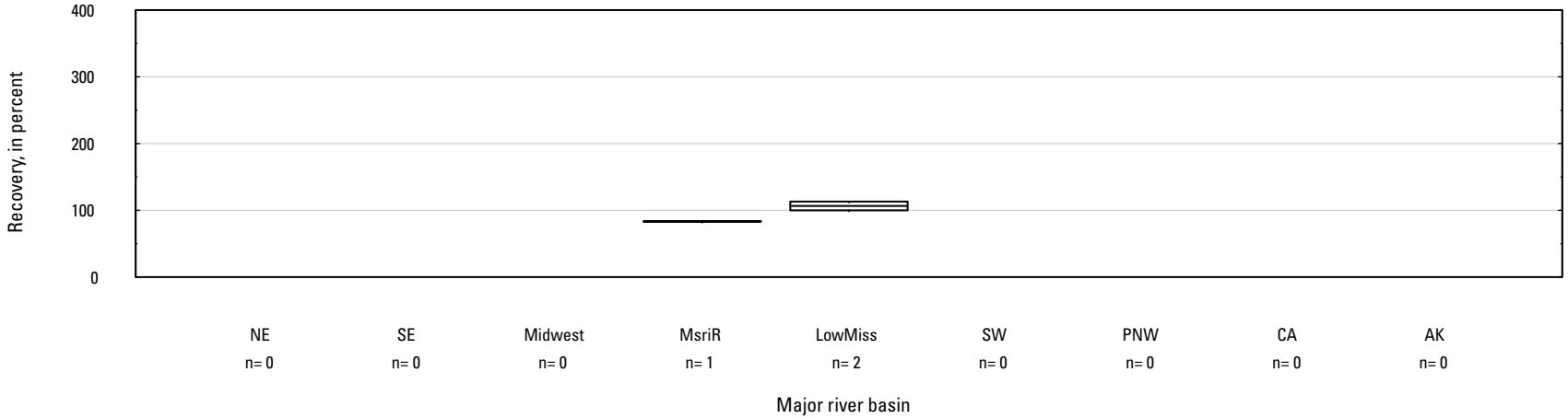
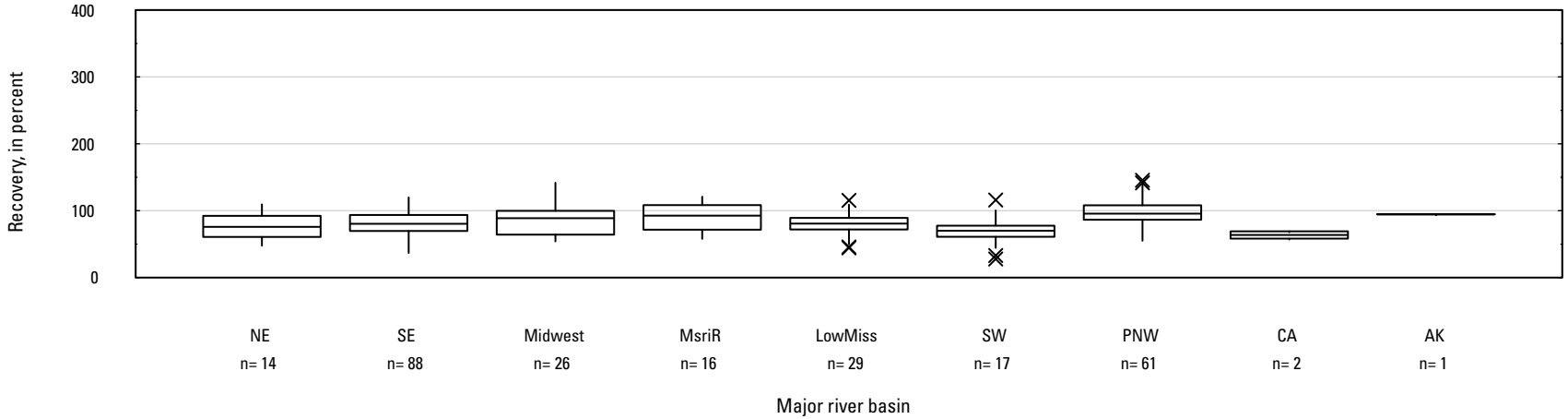


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

DJ. **Hexazinone Transformation Product E**



DK. **Didemethyl hexazinone F**

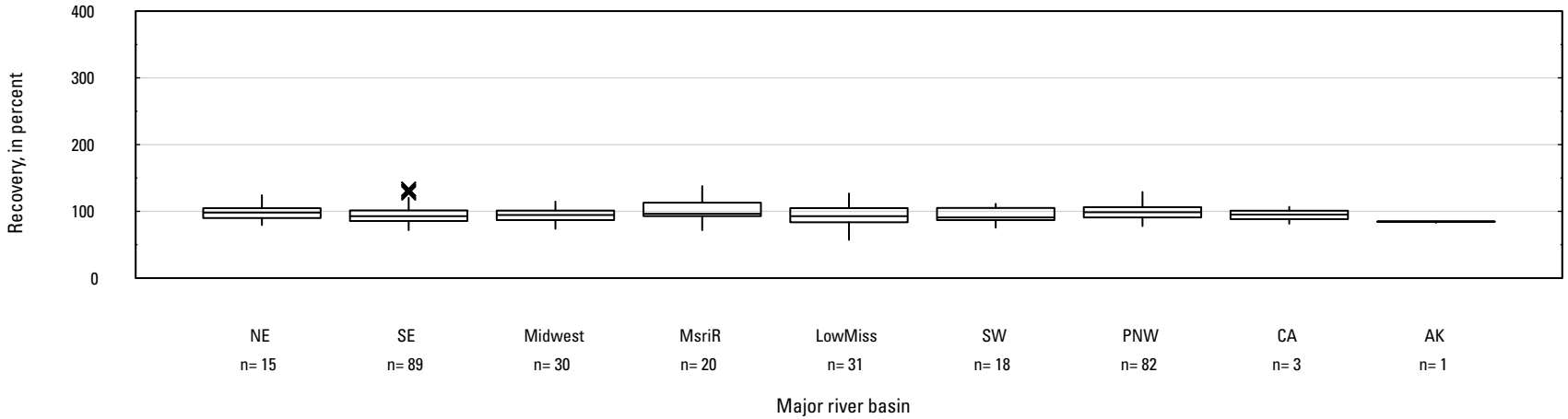
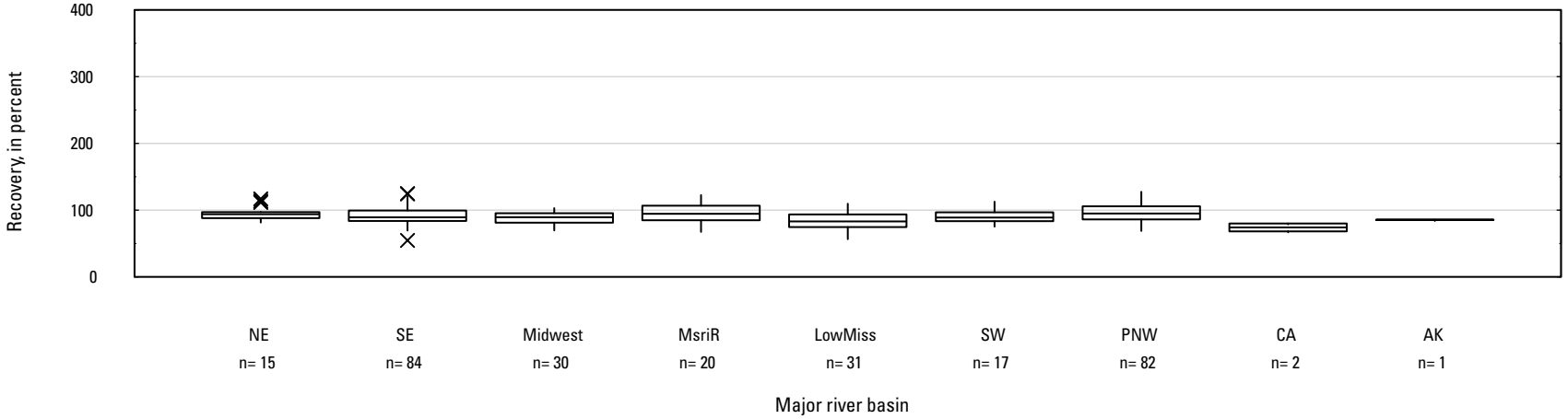


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

DL. **Hexazinone Transformation Product G**



DM. **Hydroxy monodemethyl fluometuron**

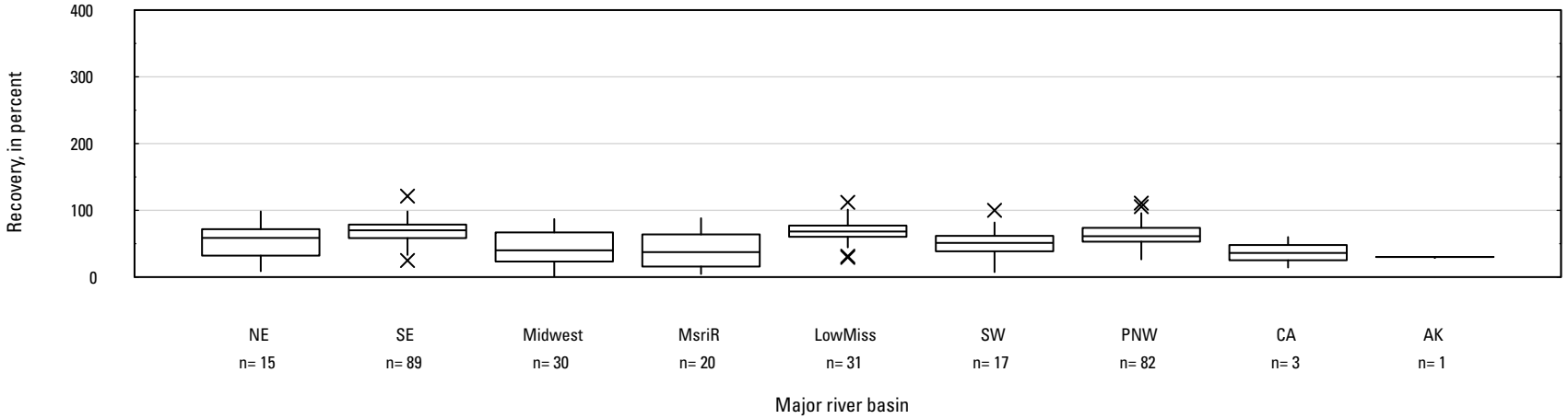
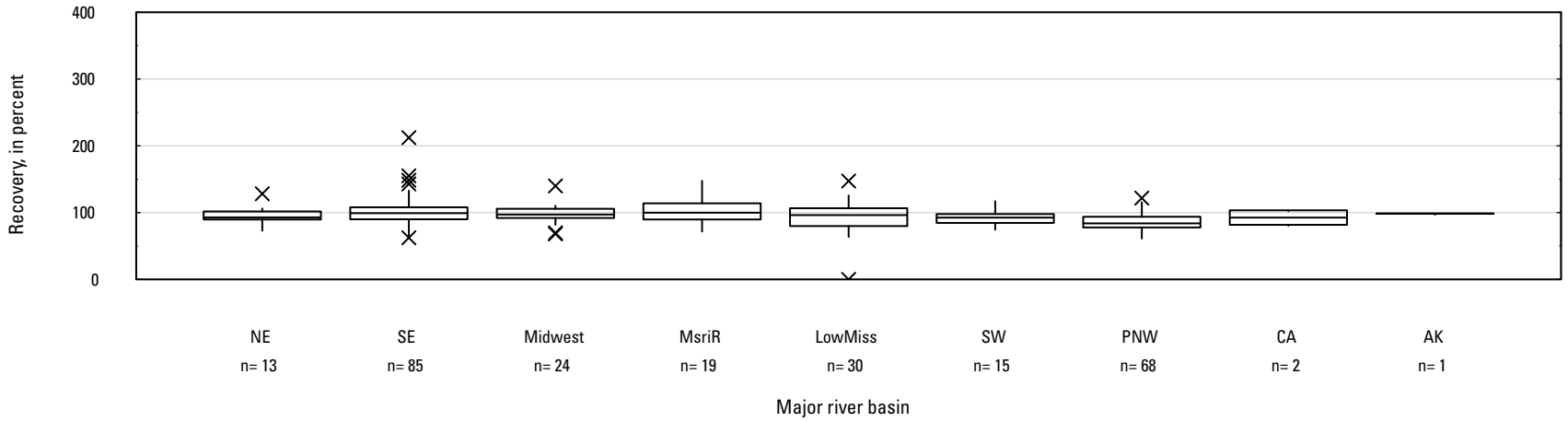


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

DN. **Hydroxyacetochlor**



DO. **Hydroxyalachlor**

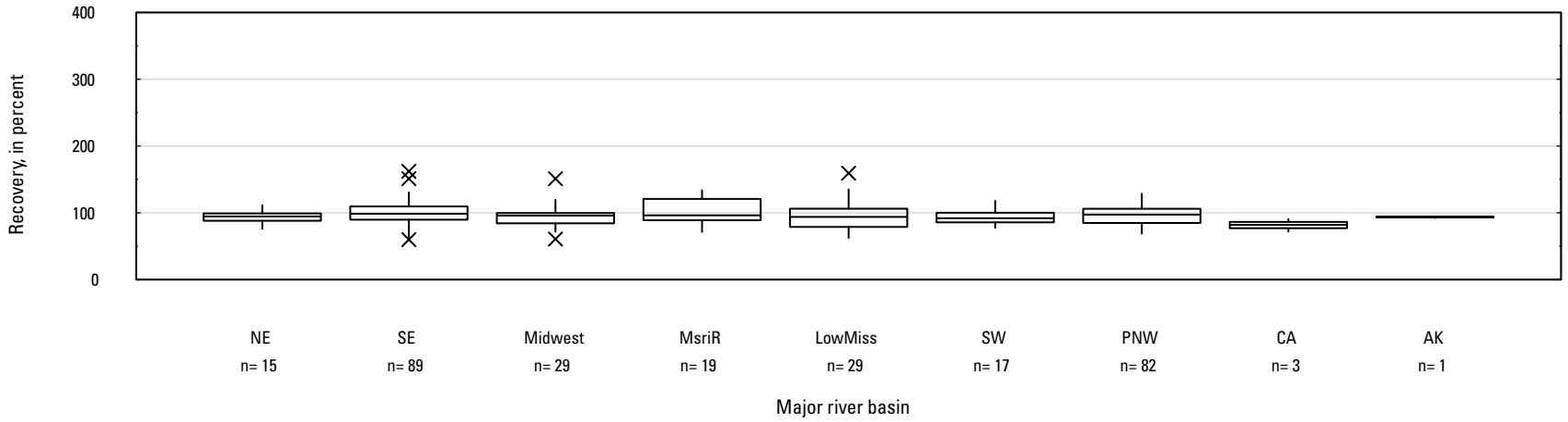
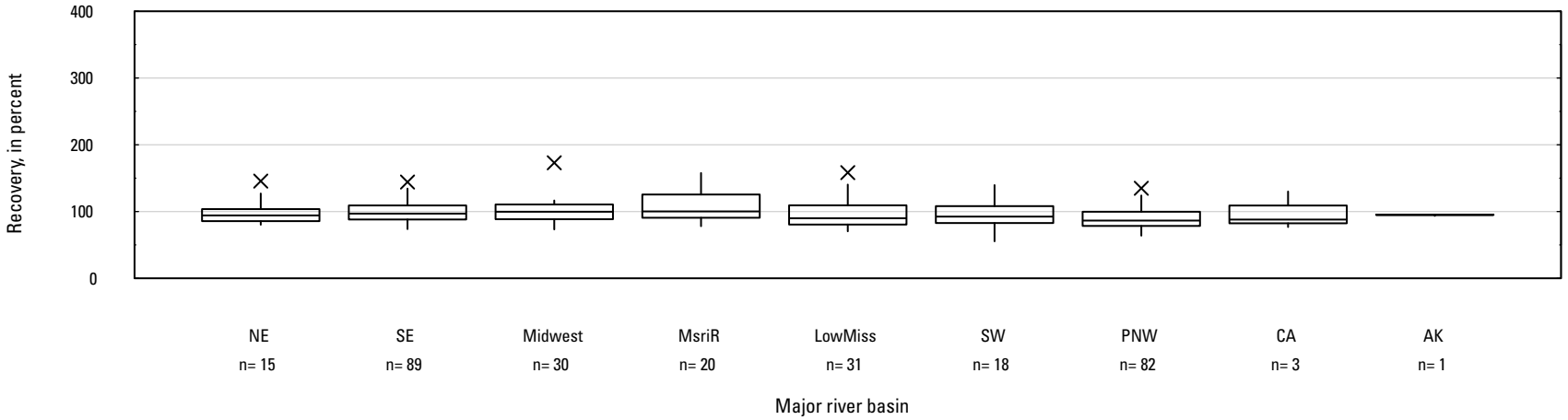


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

DP. **Hydroxydiazinon**



DQ. **Hydroxyfluometuron**

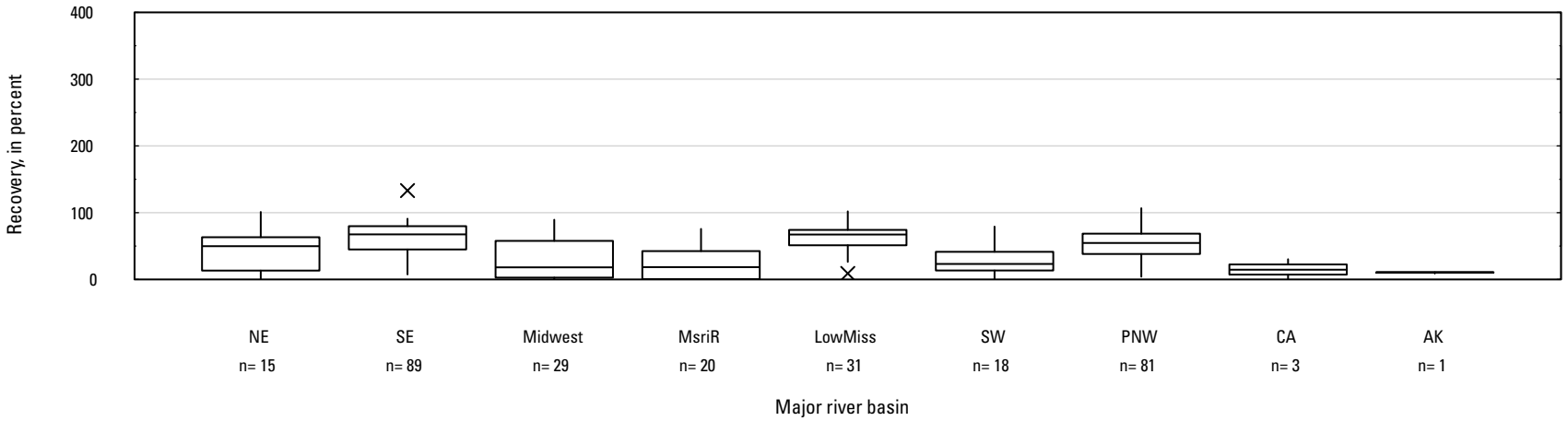
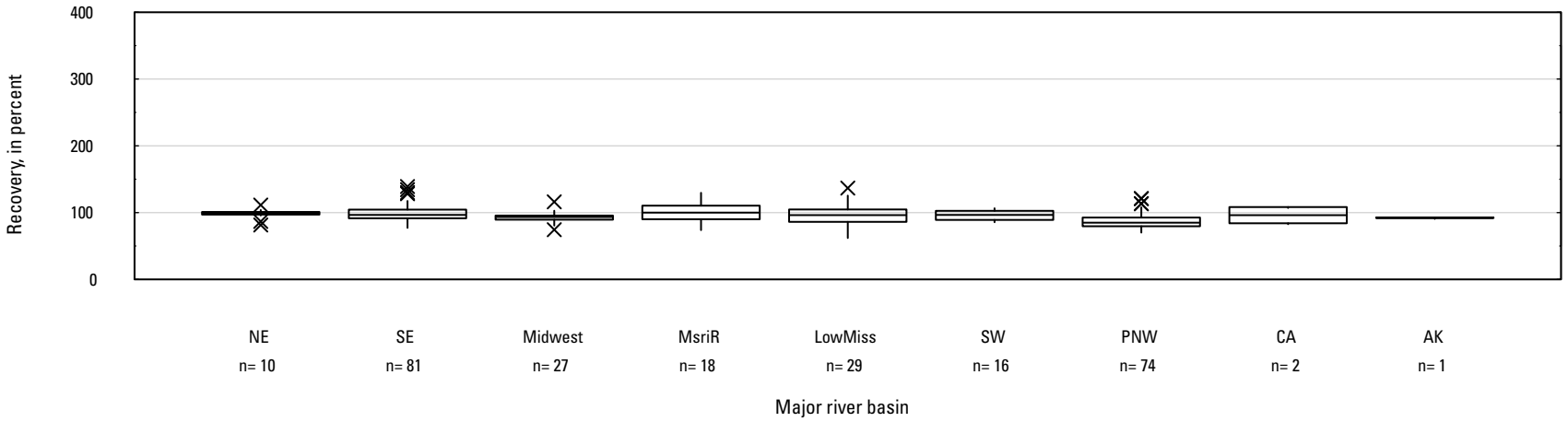


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

DR. **Hydroxymetolachlor**



DS. **Hydroxyphthalazinone**

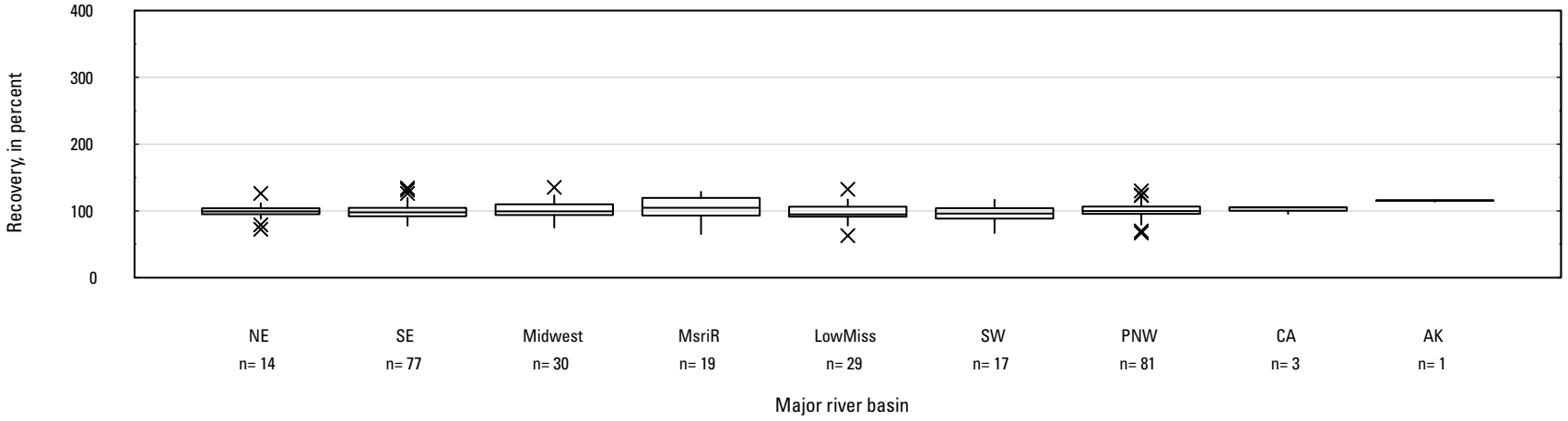
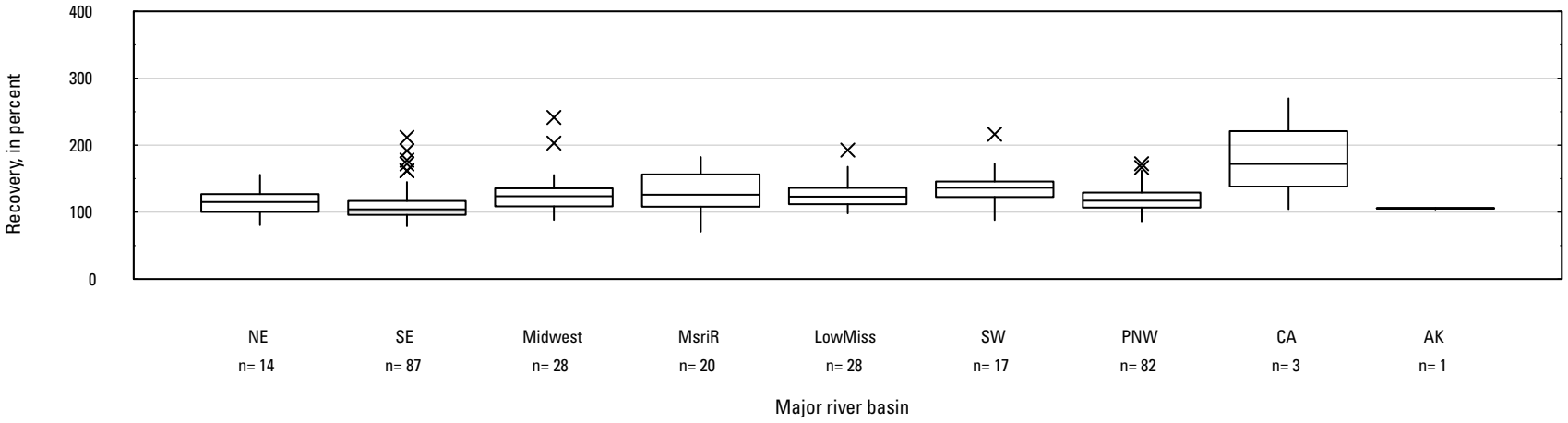


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

DT. **Hydroxysimazine**



DU. **Tebuthiuron TP 109**

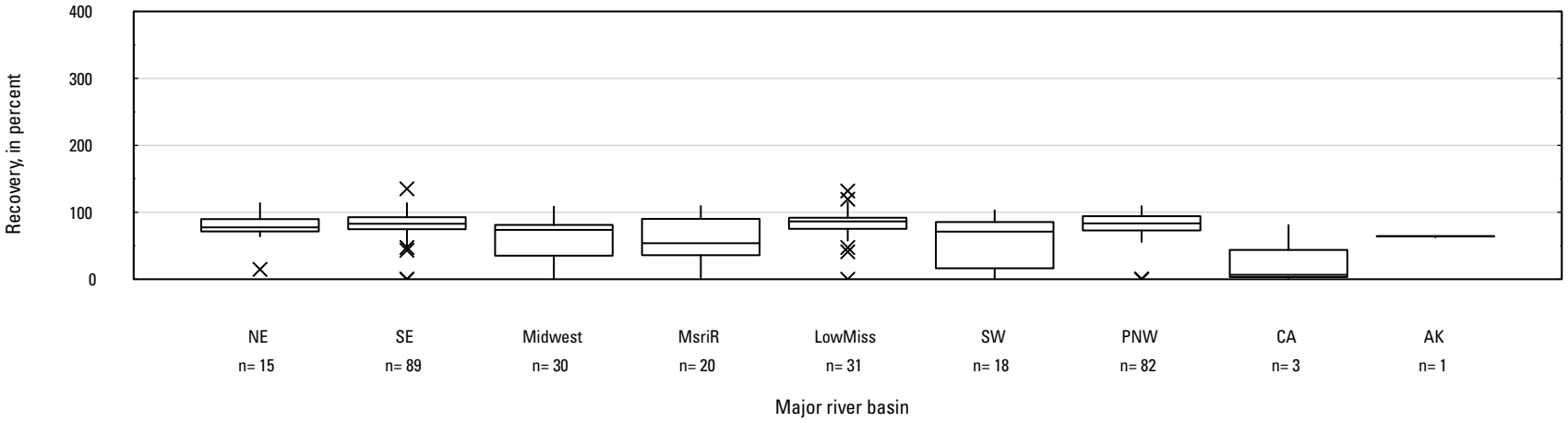
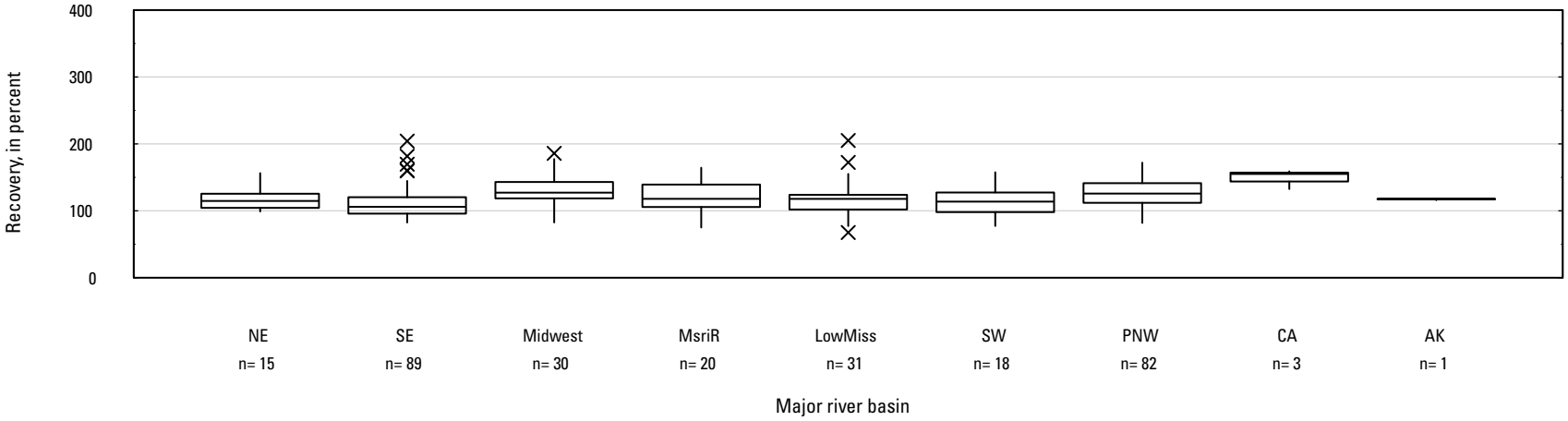


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

***DV.* Imazamox**



***DW.* Imazaquin**

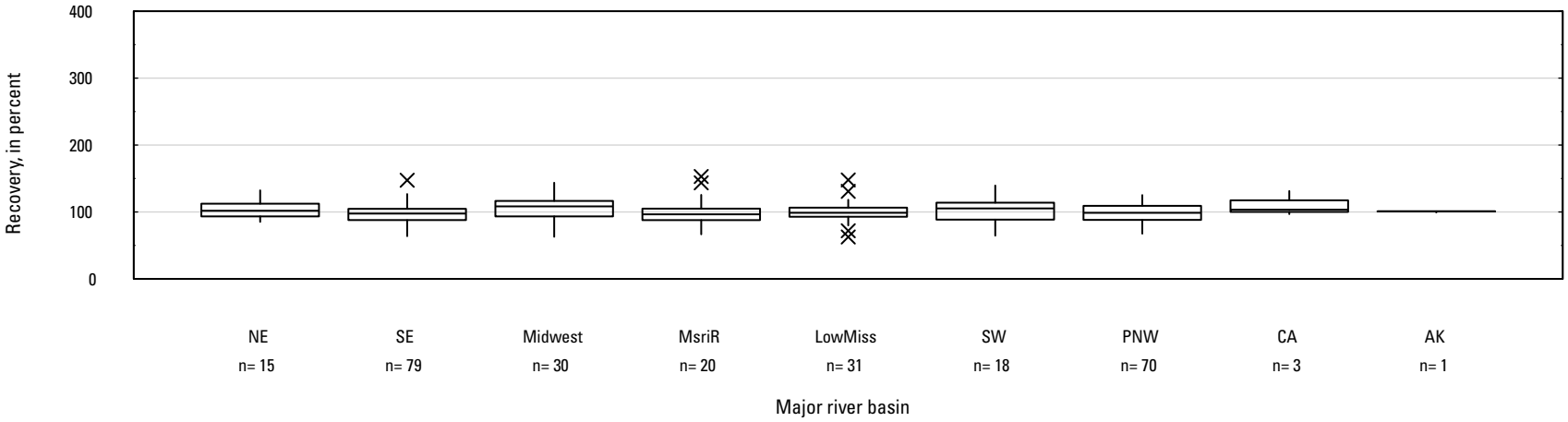
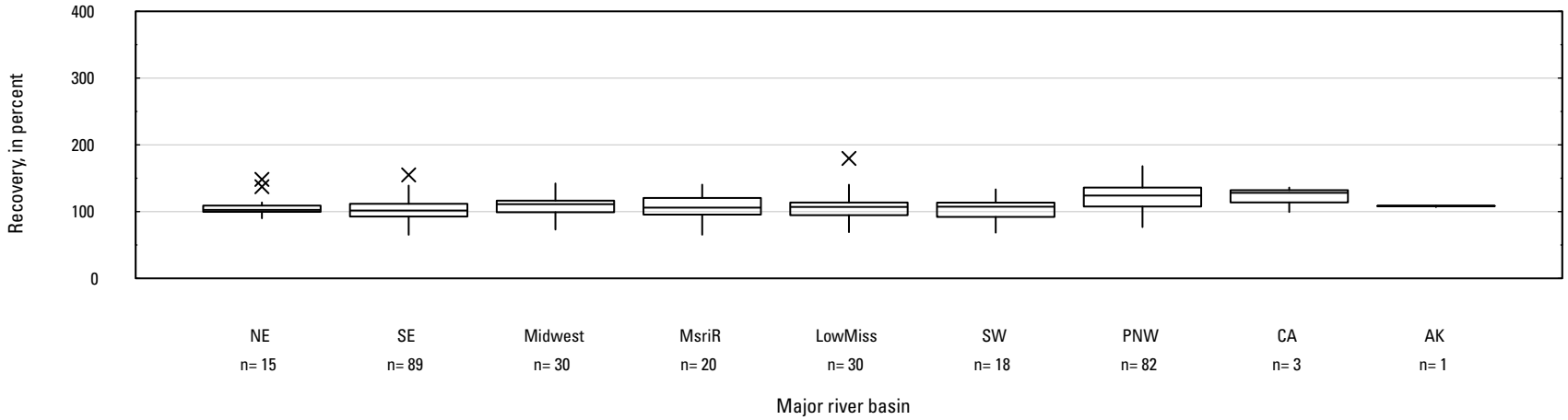


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

DX. **Imazethapyr**



DY. **Imidacloprid**

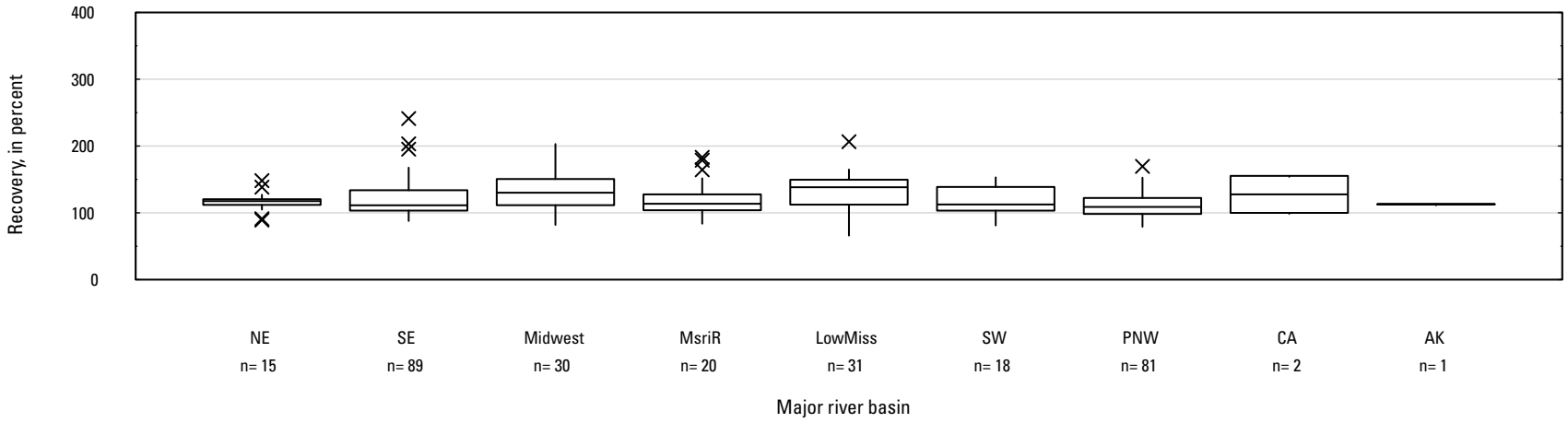
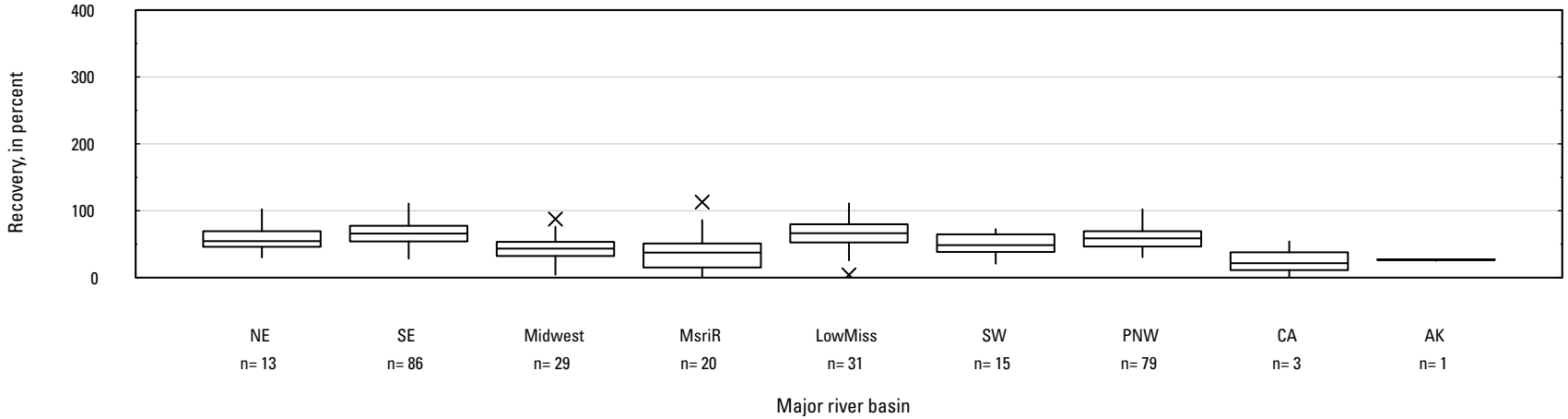


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

DZ. **Indoxacarb**



EA. **Isoxaflutole**

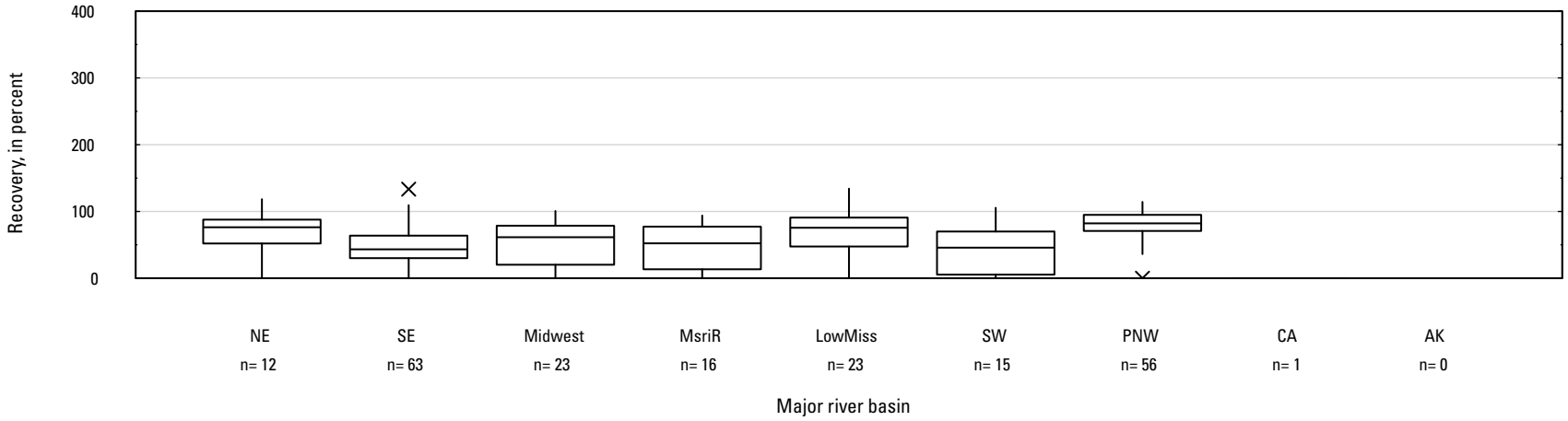
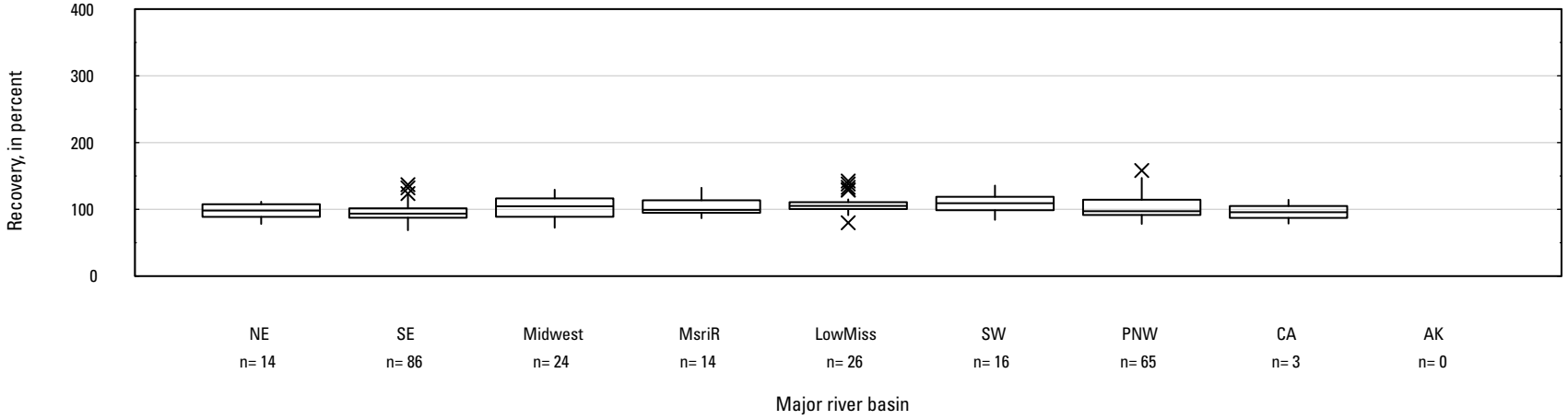


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

EB. **Isoxaflutole acid metabolite RPA 203328**



EC. **Kresoxim–methyl**

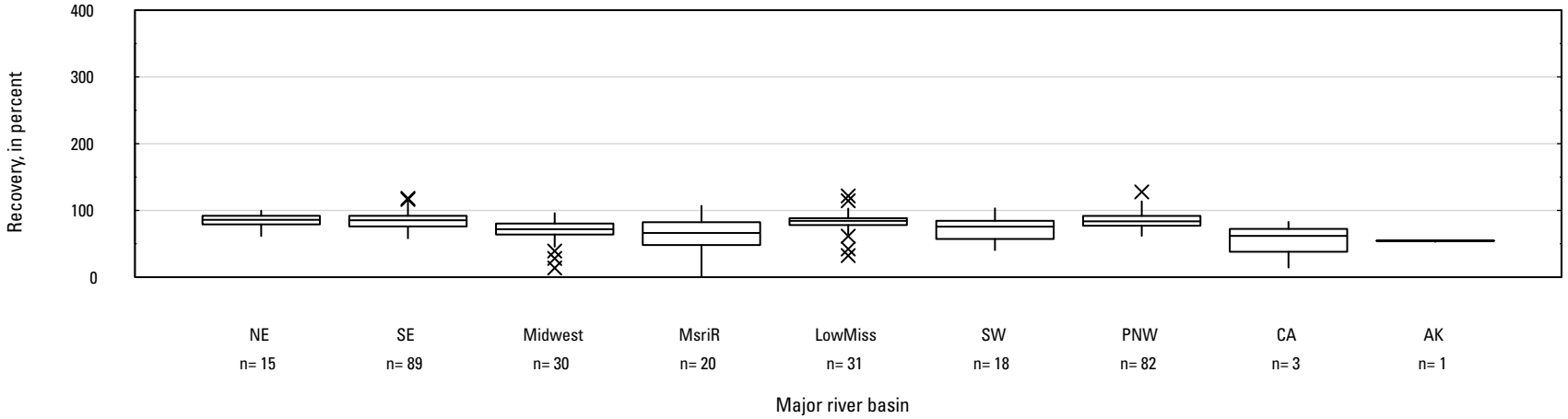
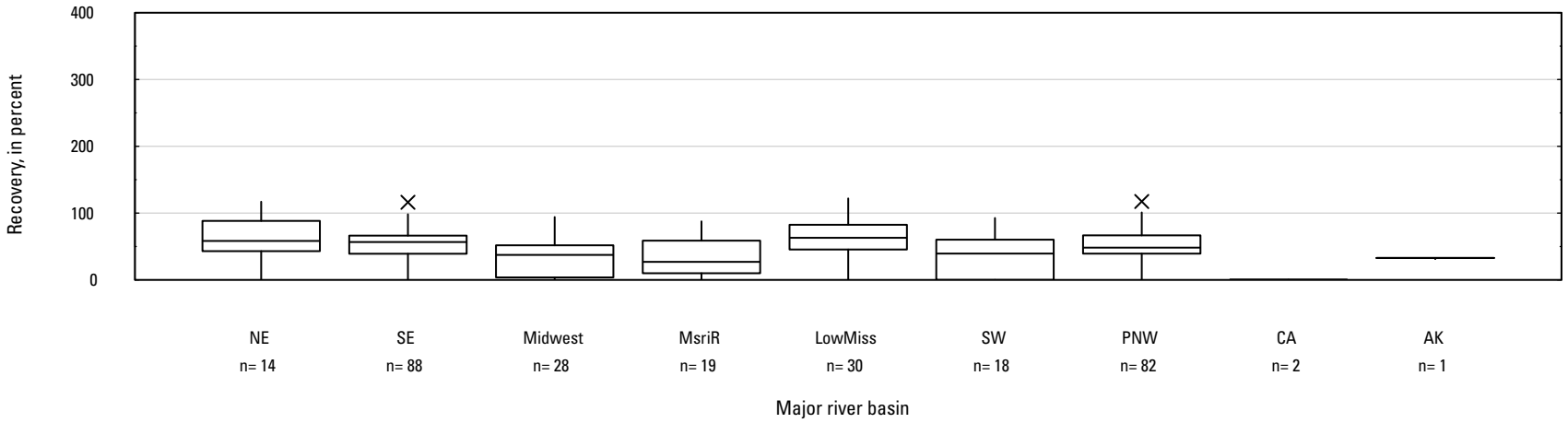


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

ED. **Lactofen**



EE. **Linuron**

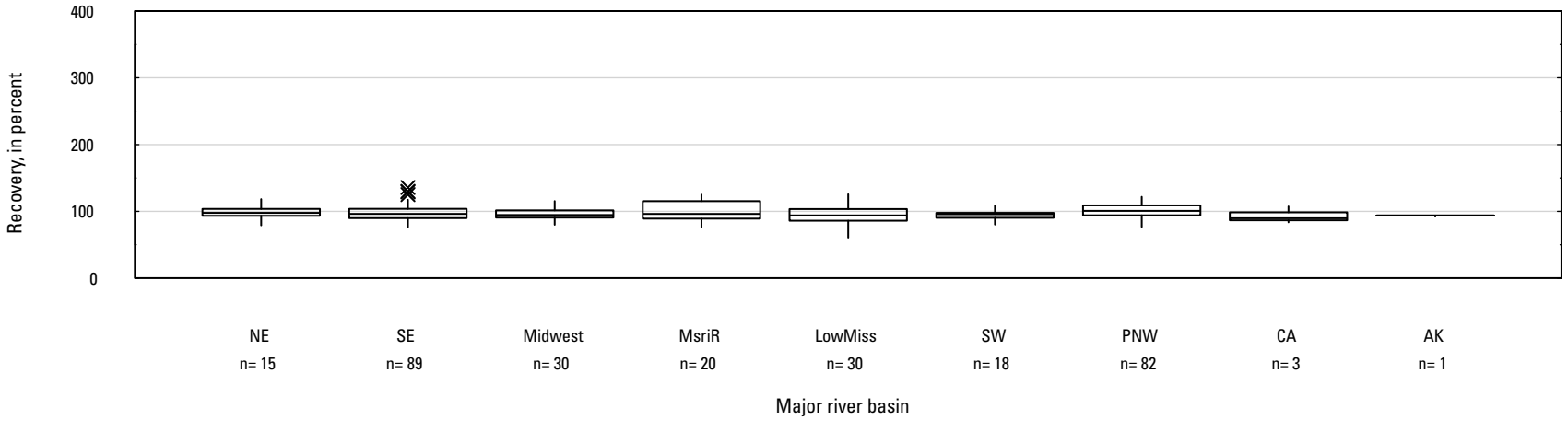
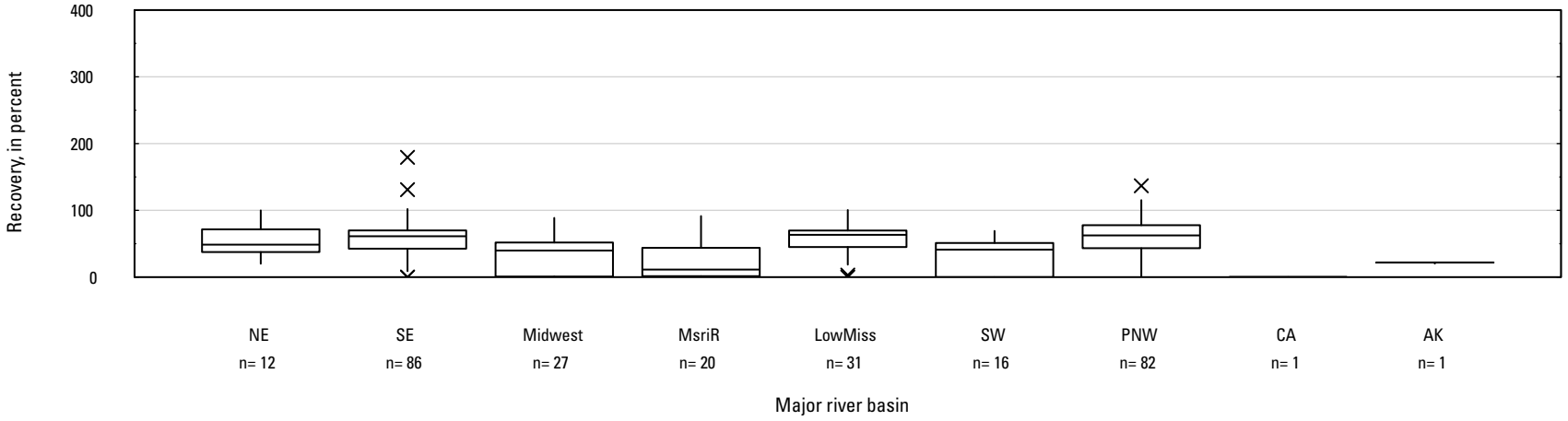


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

EF. **Malaoxon**



EG. **Malathion**

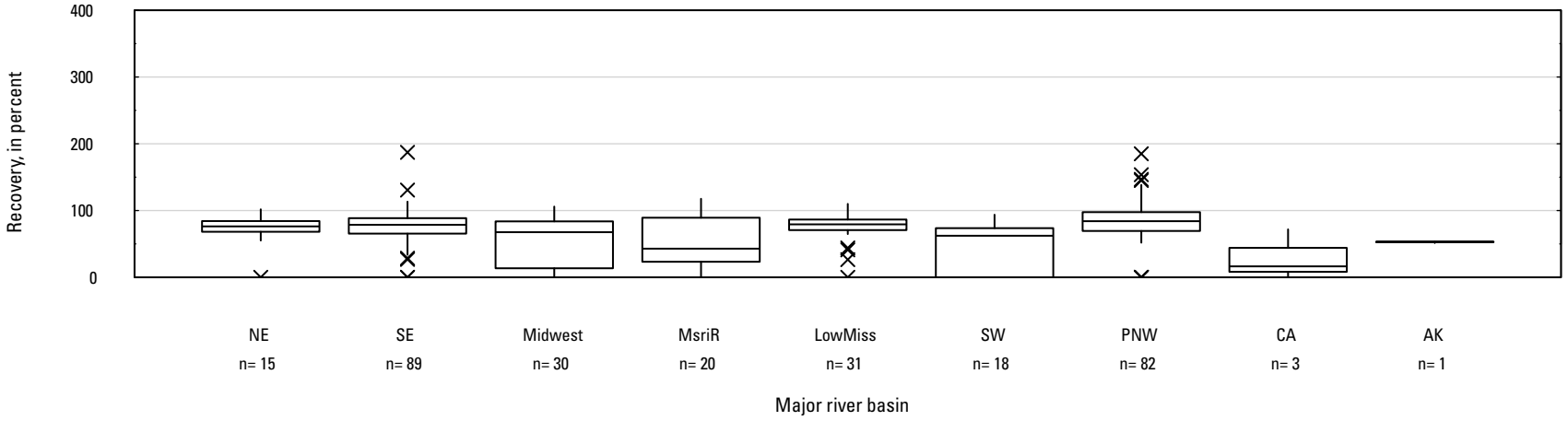
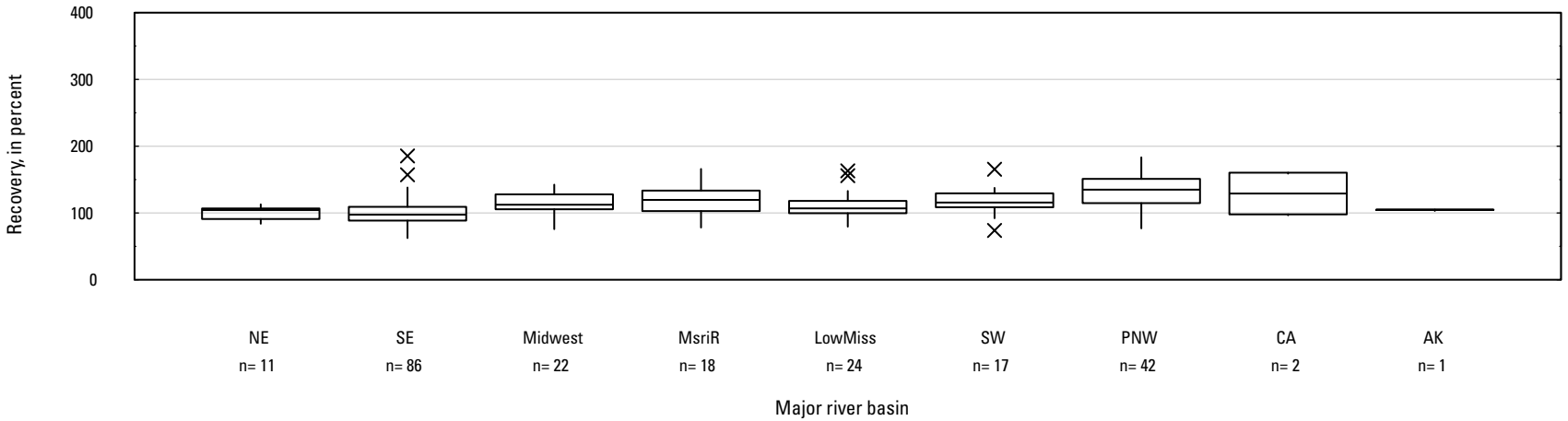


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

EH. **MCPA**



EI. **Metalaxyl**

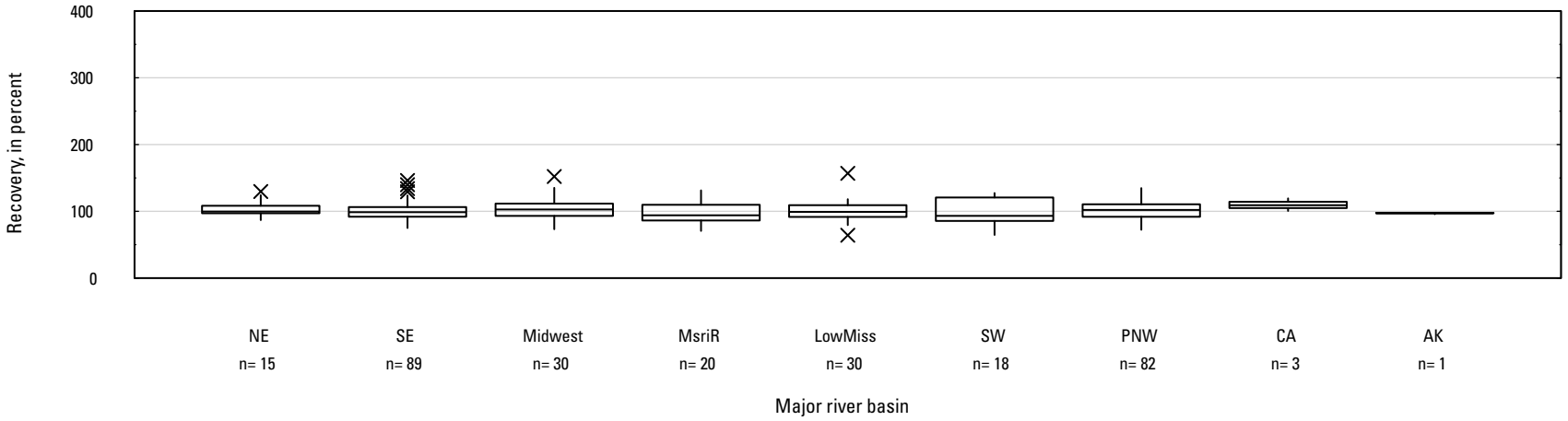
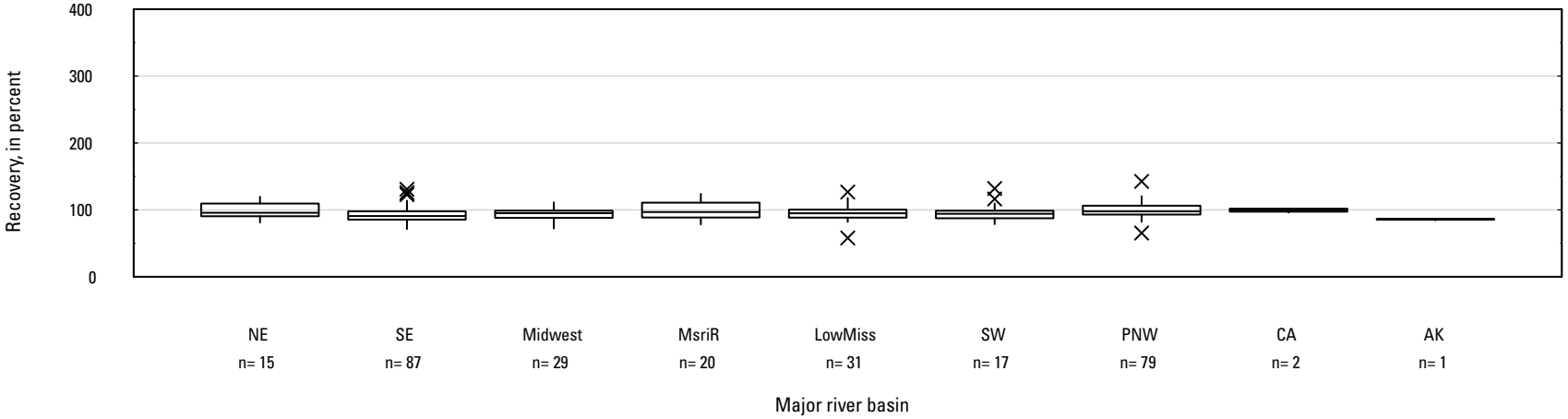


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

EJ. **Metconazole**



EK. **Methamidophos**

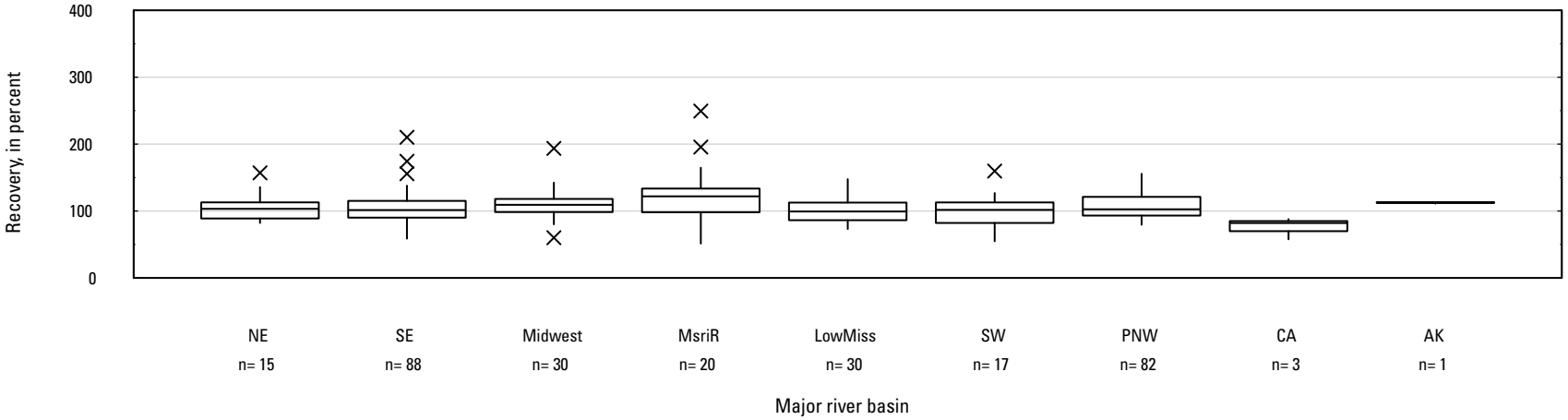
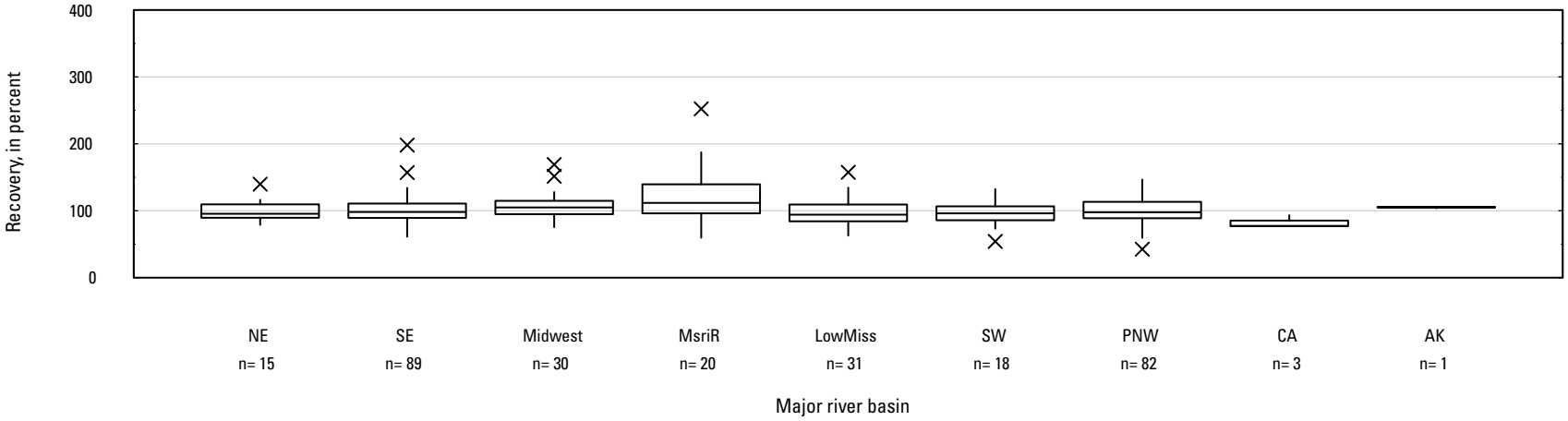


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

EL. **Methidathion**



EM. **Methomyl**

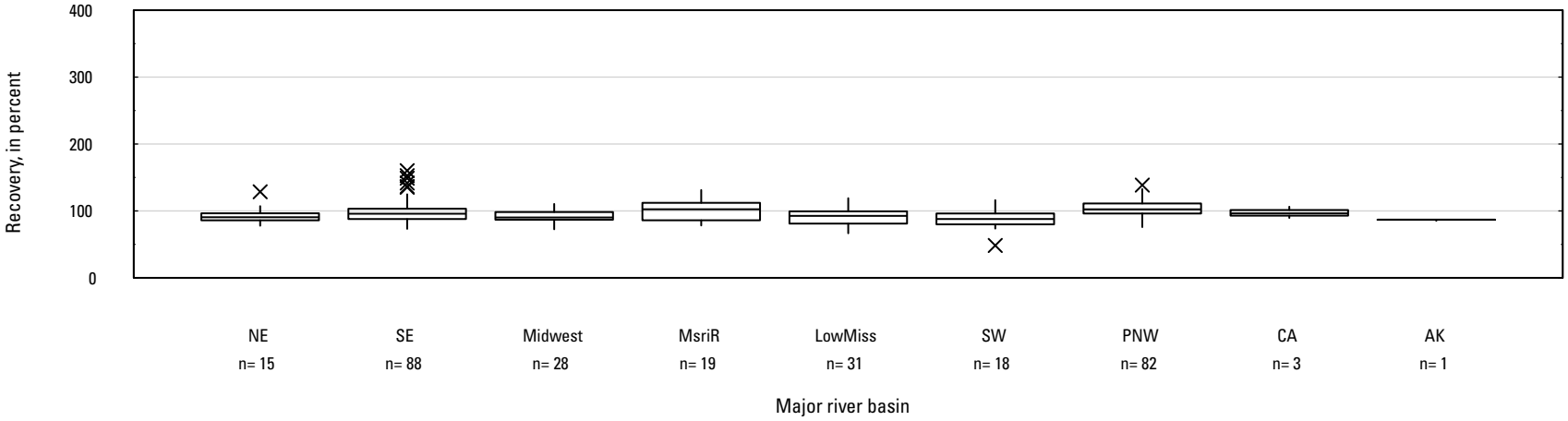
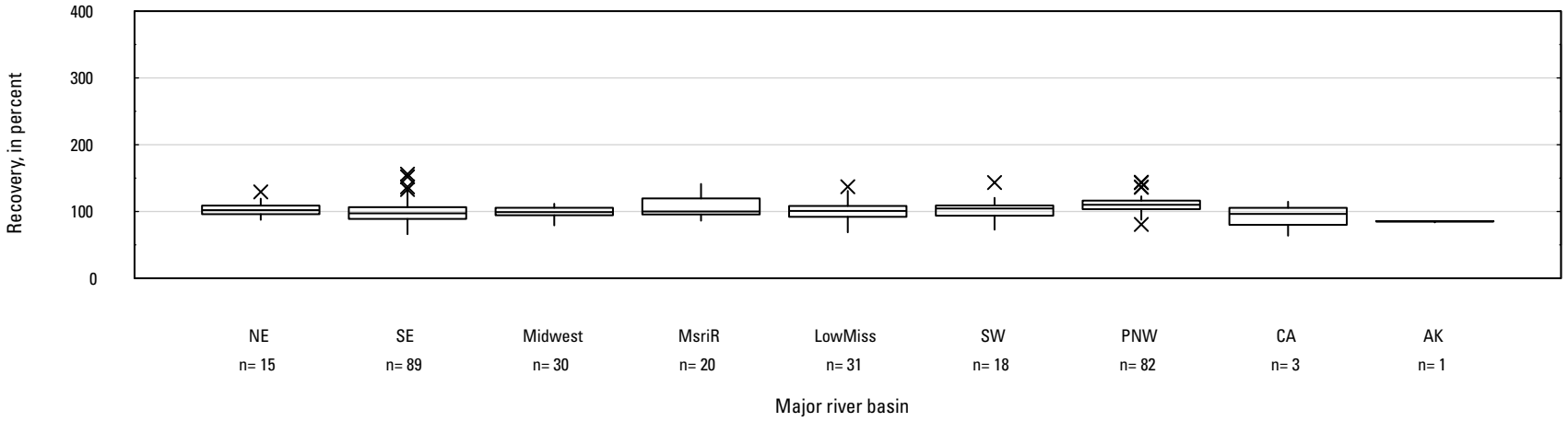


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

EO. **Methoxyfenozide**



EP. **Metolachlor**

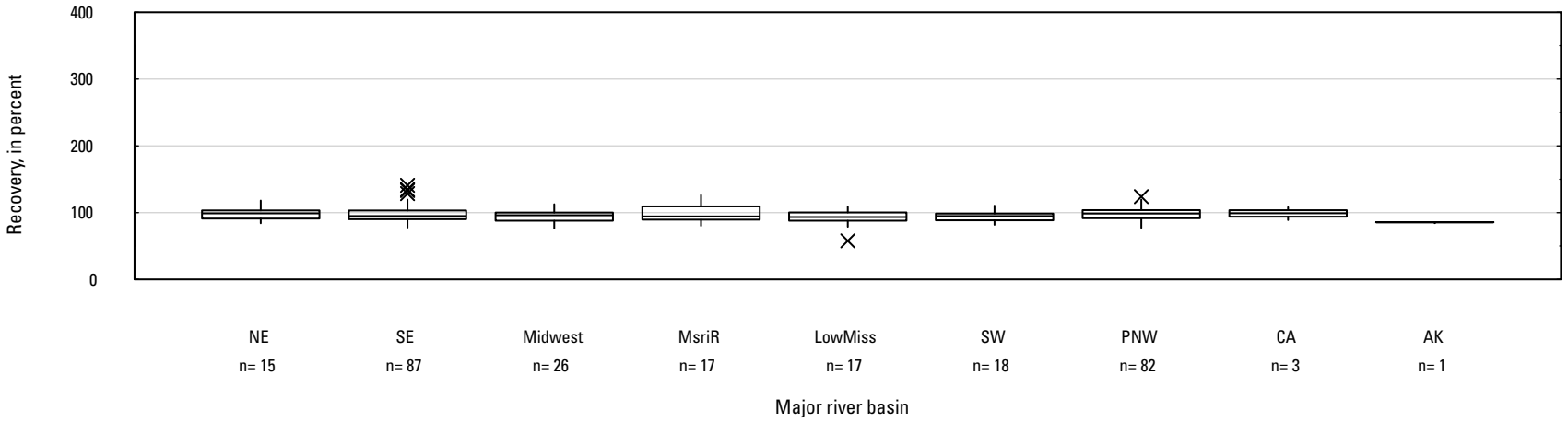
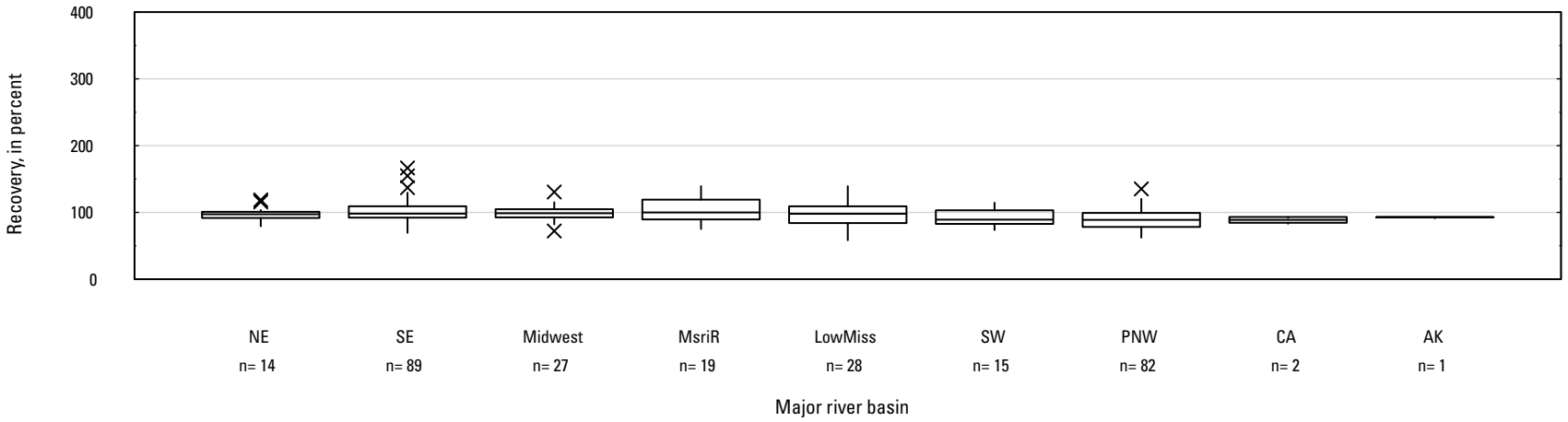


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

EQ. **Metolachlor hydroxy morpholinone**



ER. **Metolachlor oxanilic acid**

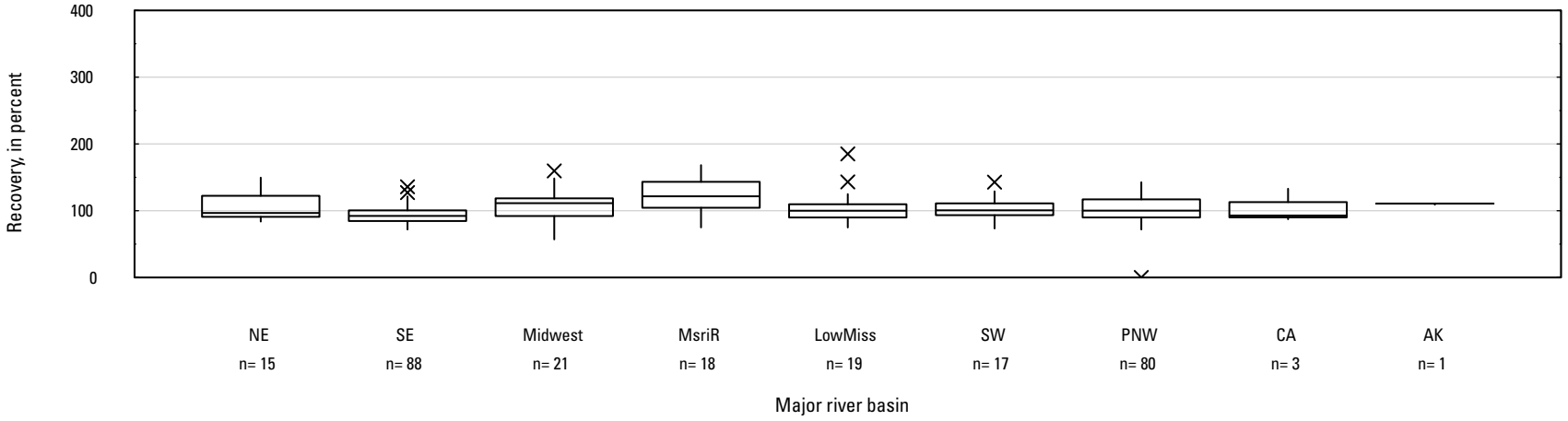
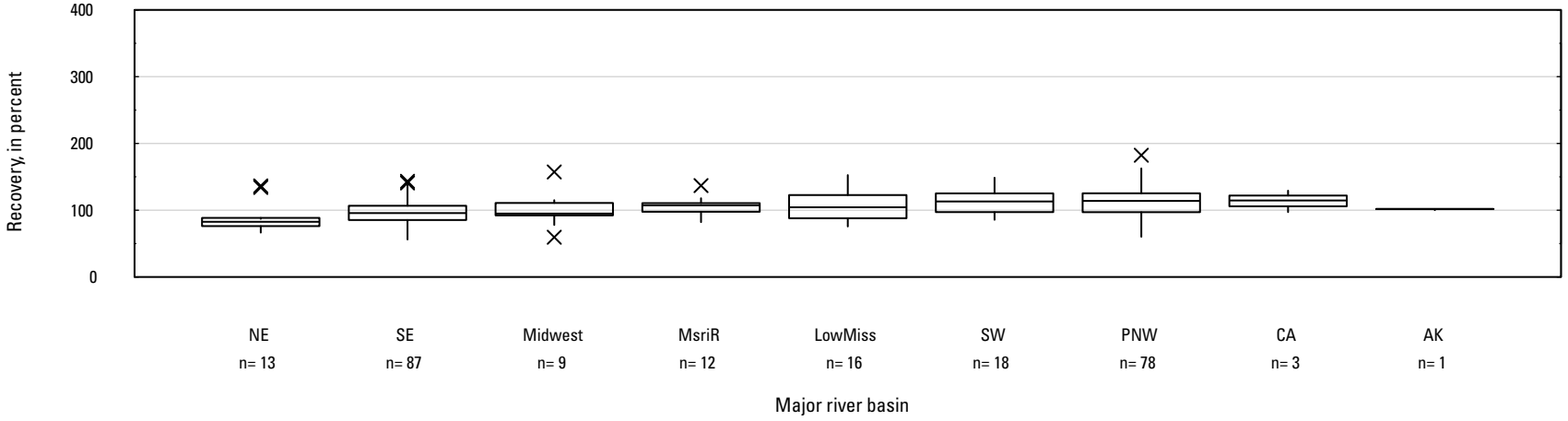


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

ES. **Metolachlor sulfonic acid**



ET. **Metribuzin**

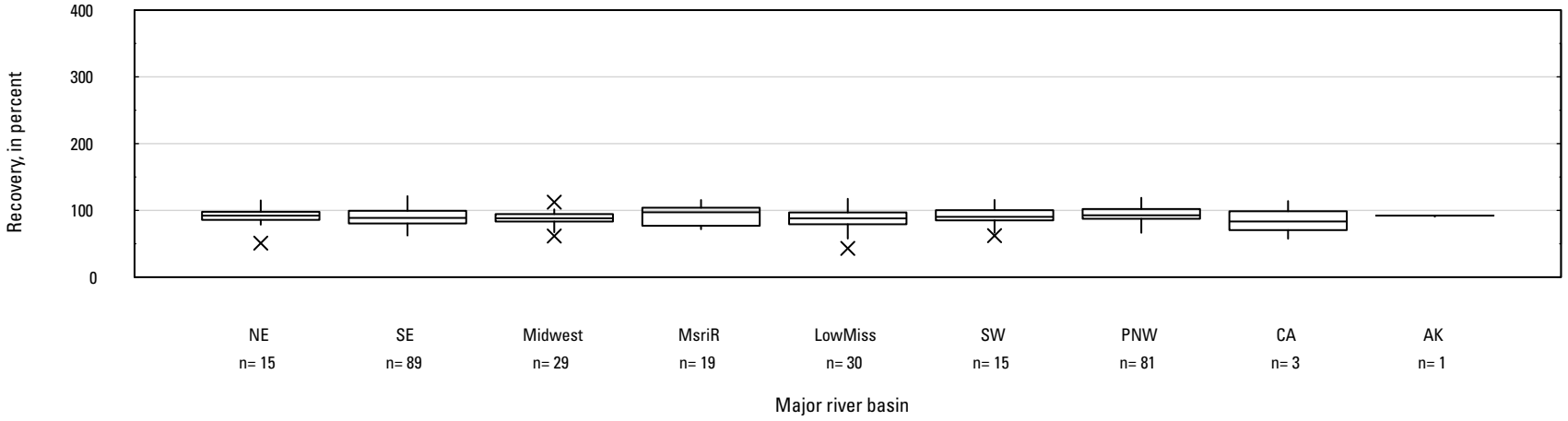
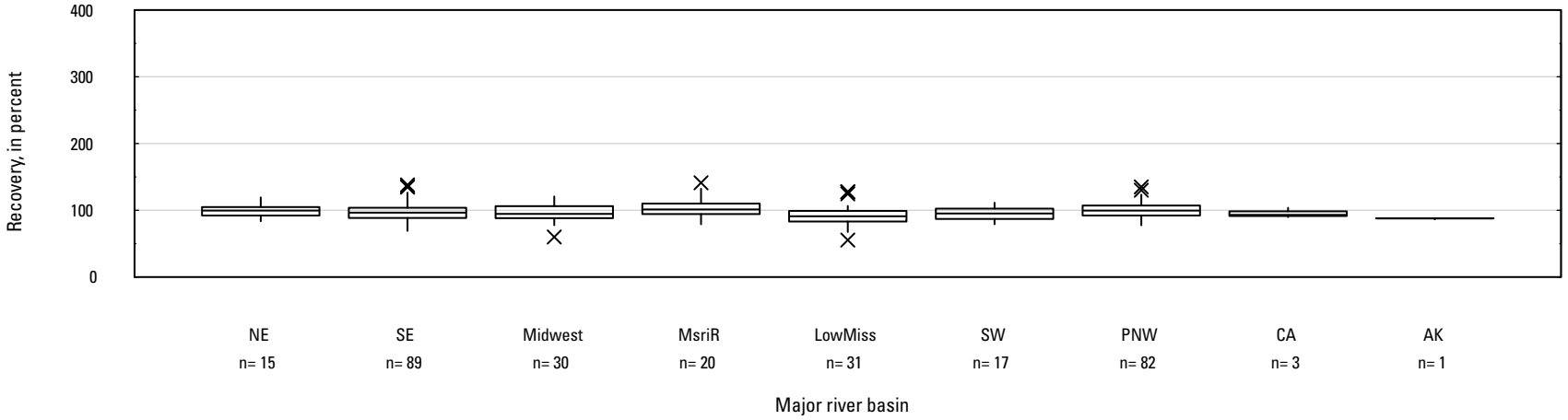


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

EU. **Desamino metribuzin**



EV. **Desamino–diketo metribuzin**

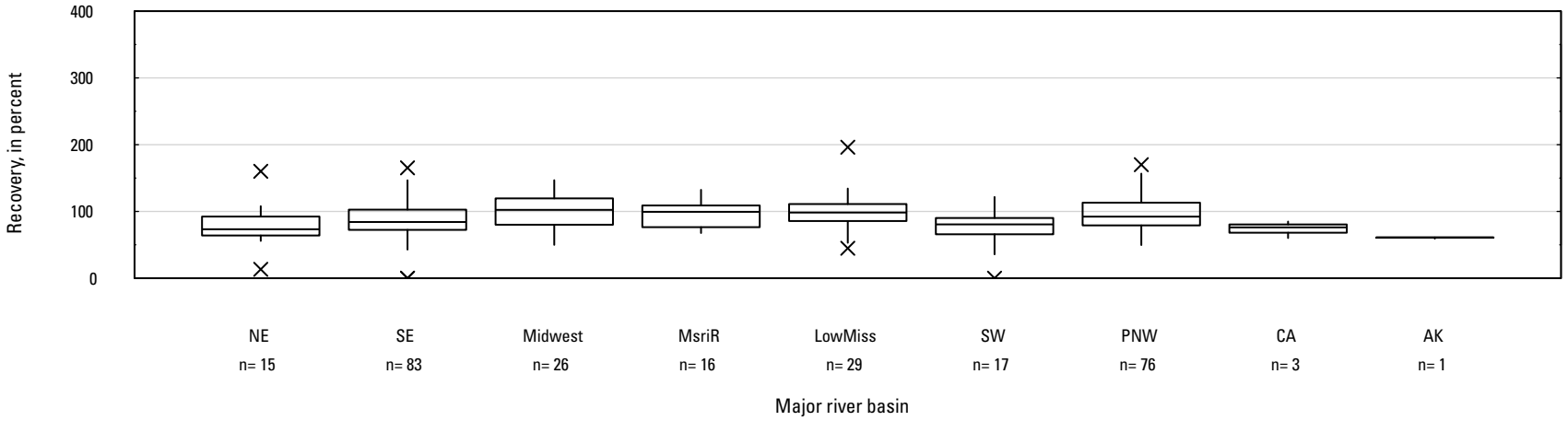
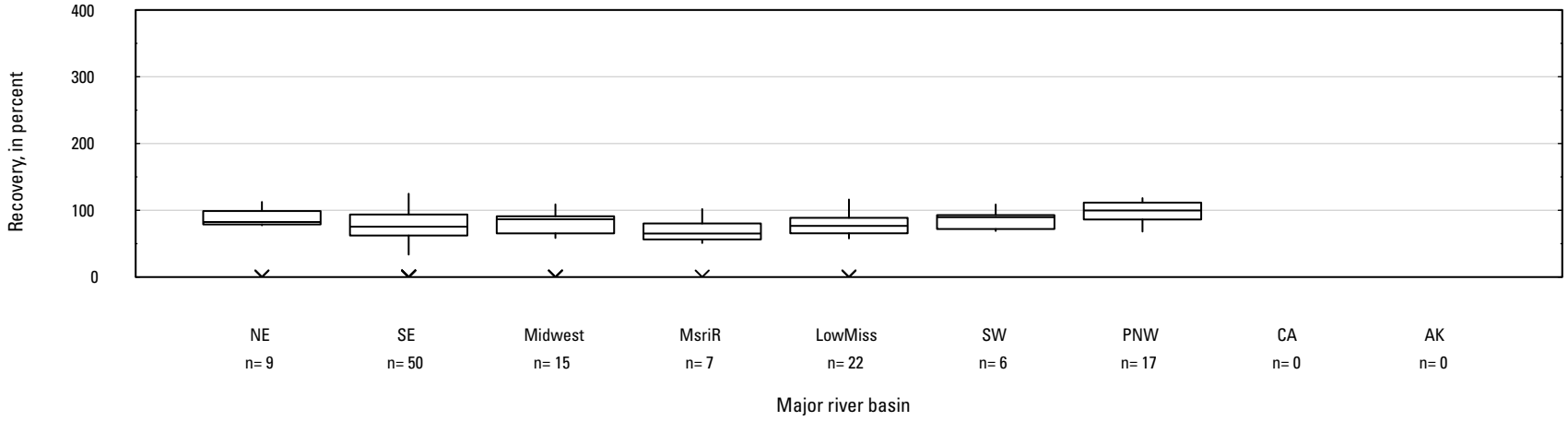


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

EW. **Metribuzin DK**



EX. **Molinate**

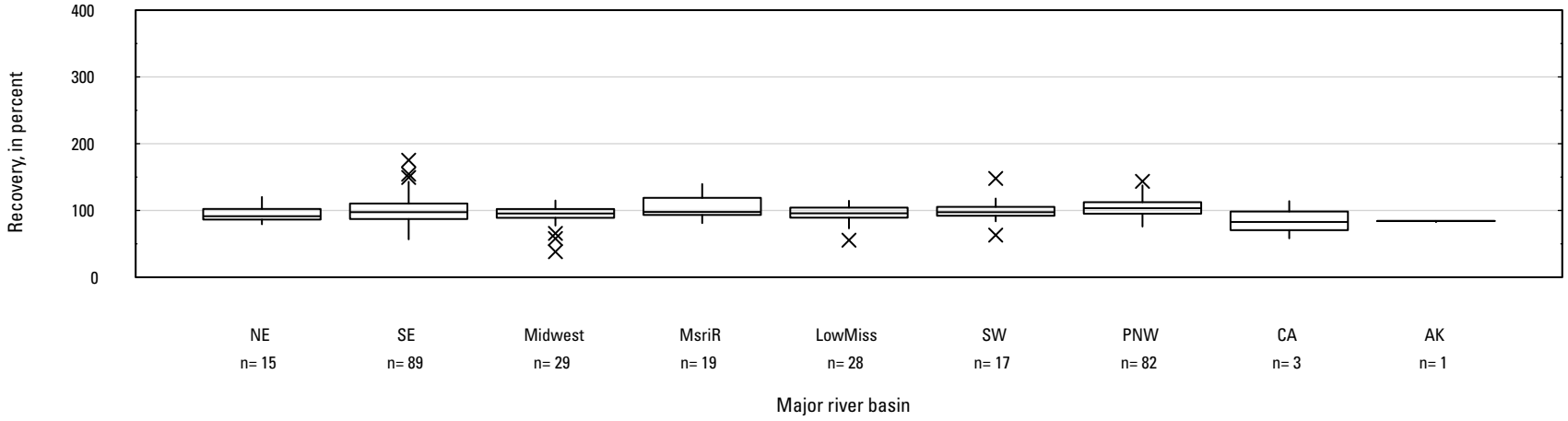
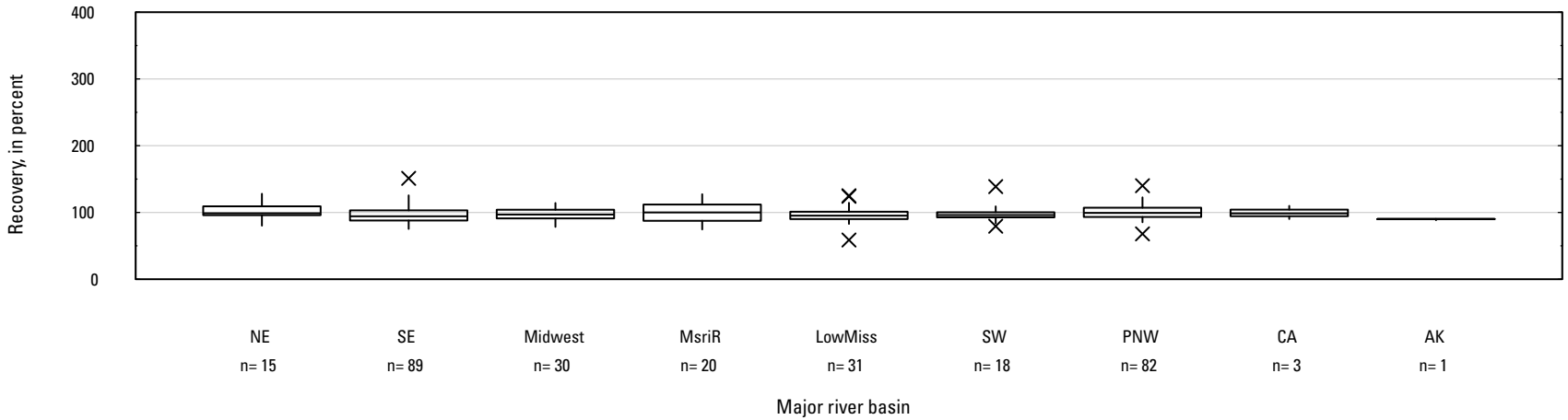


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

EY. **Myclobutanil**



EZ. **N–(3,4–Dichlorophenyl)–N'–methylurea**

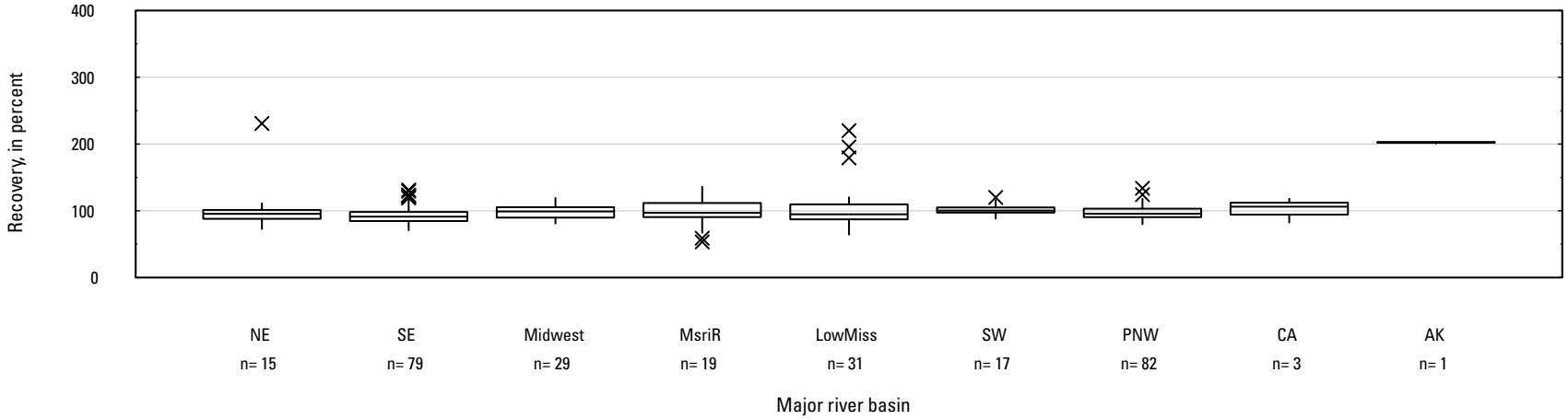
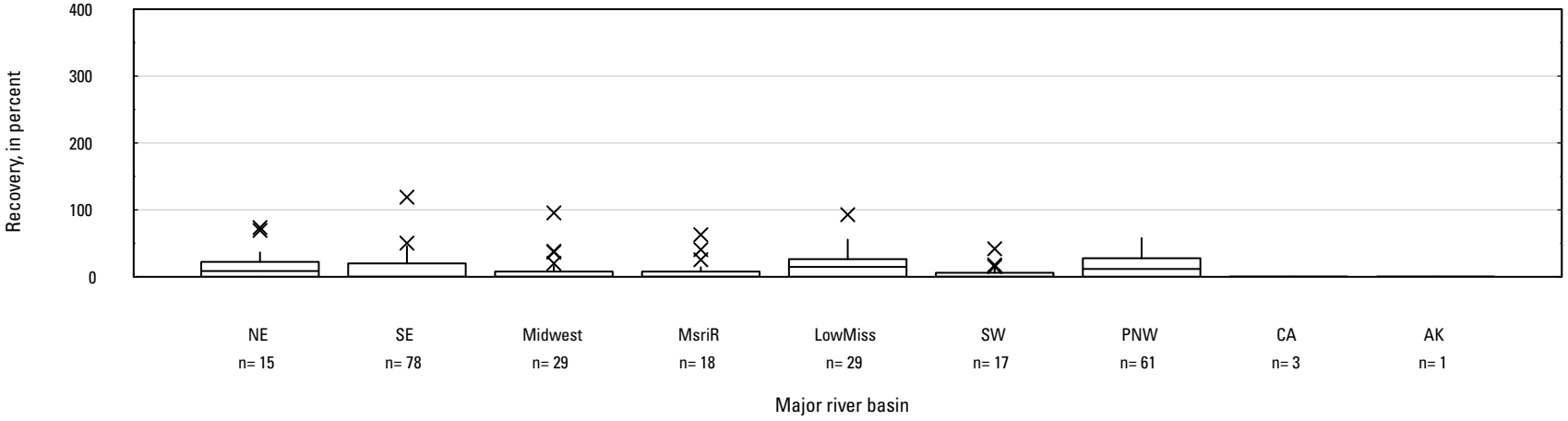


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

FA. **Naled**



FB. **Nicosulfuron**

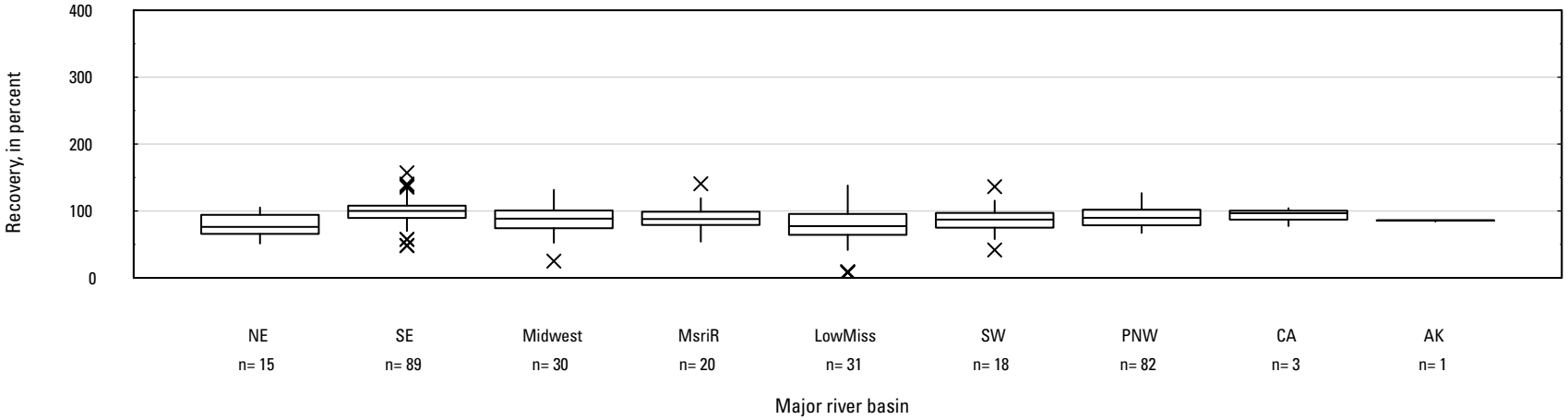
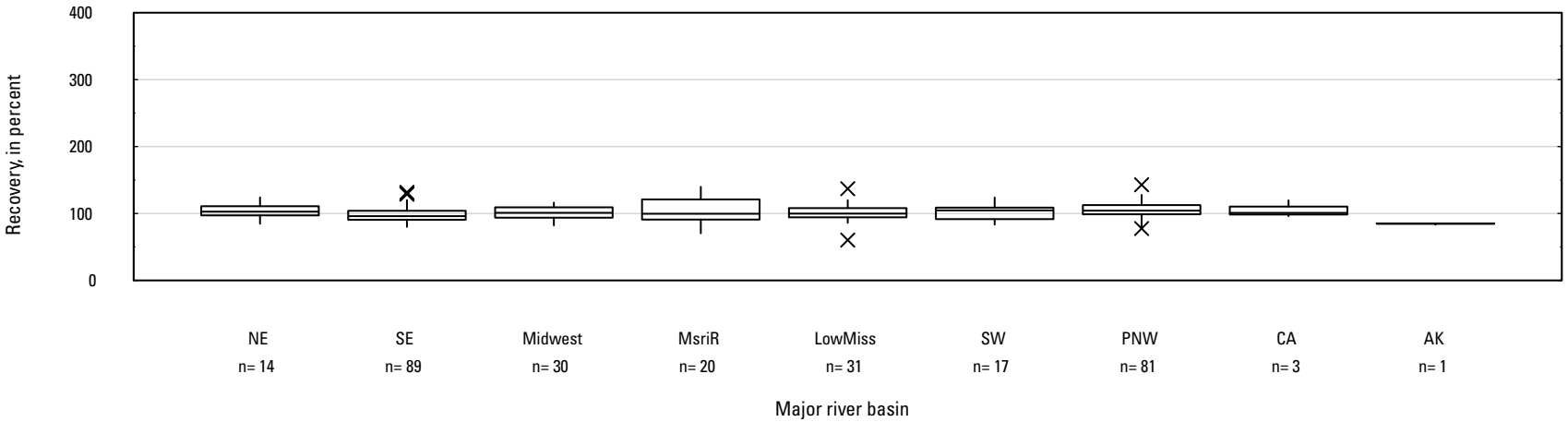


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

FC. **Norflurazon**



FD. **Novaluron**

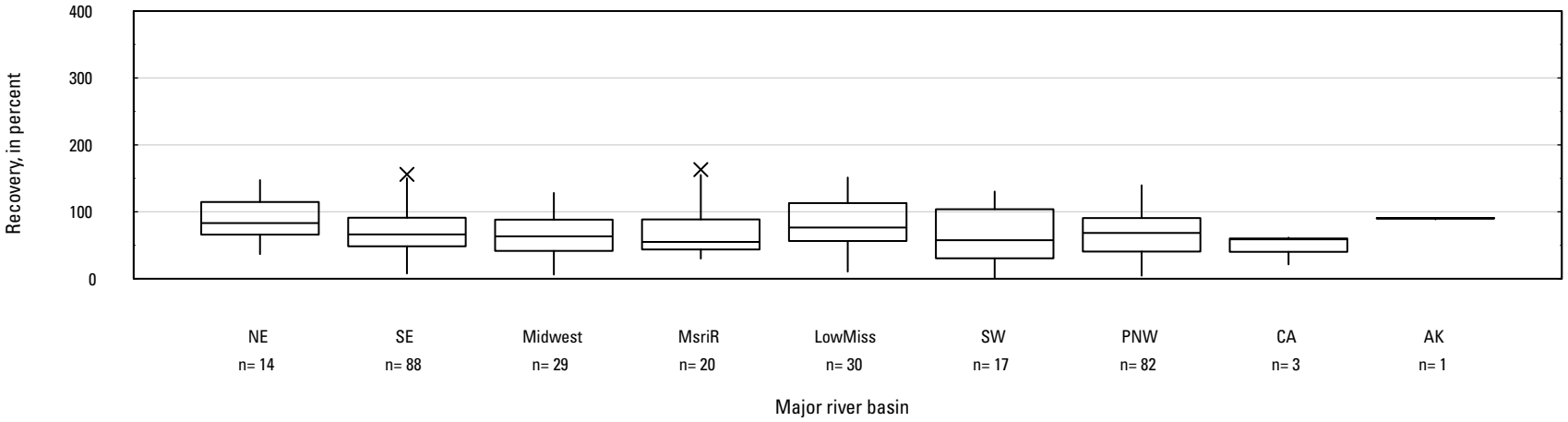
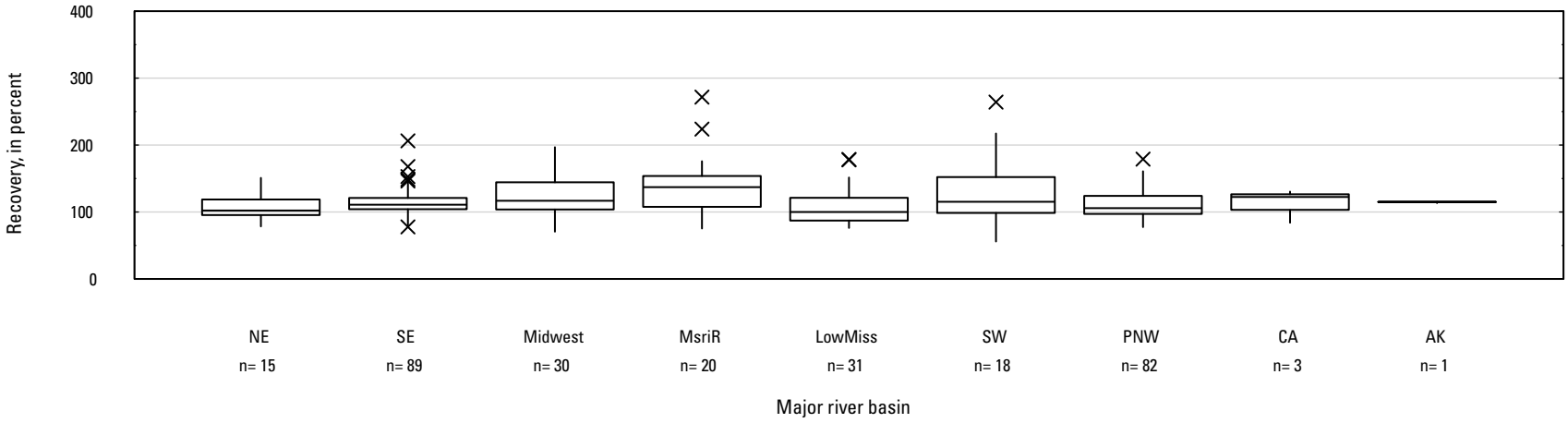


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

FE. **O–Ethyl–O–methyl–S–propylphosphorothioate**



FF. **O–Ethyl–S–methyl–S–propyl phosphorodithioate**

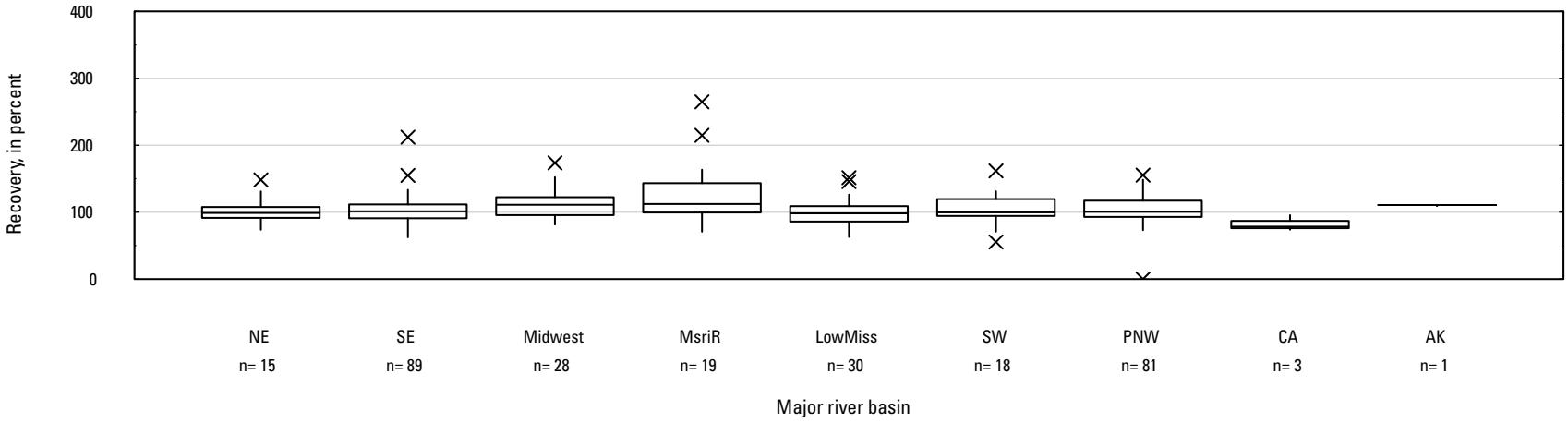
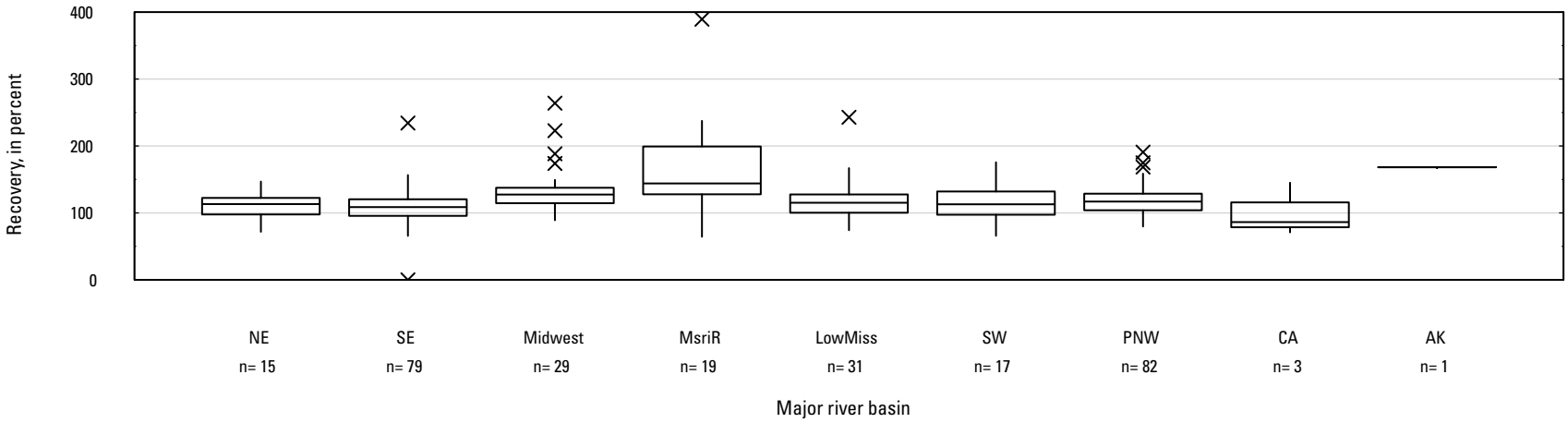


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

FG. **O–Ethyl–S–propyl phosphorothioate**



FH. **Orthosulfamuron**

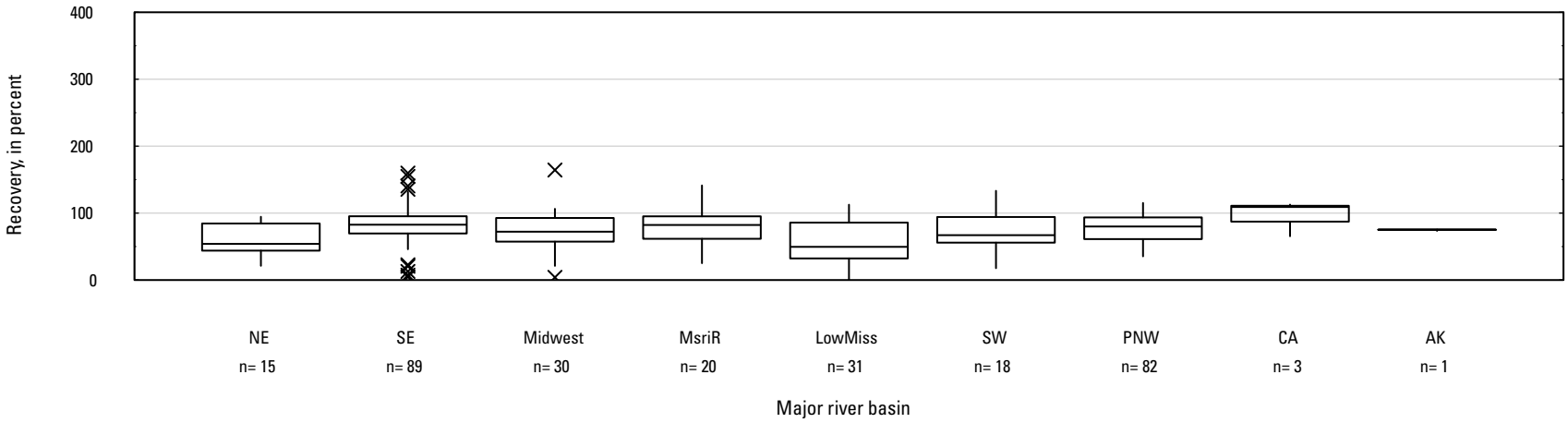
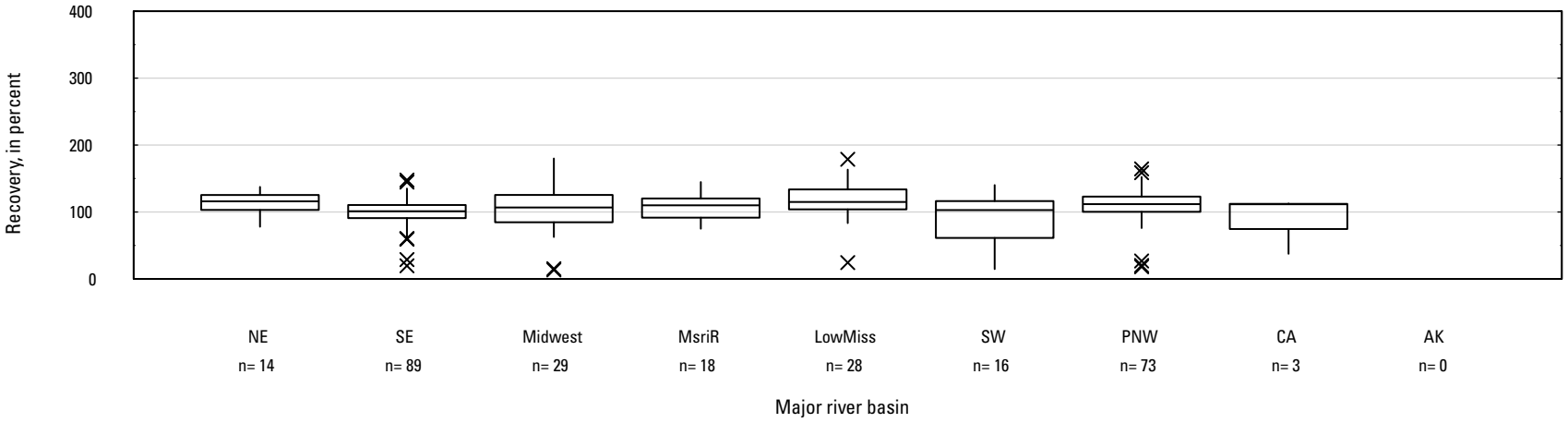


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

FI. **Oryzalin**



FJ. **Oxamyl**

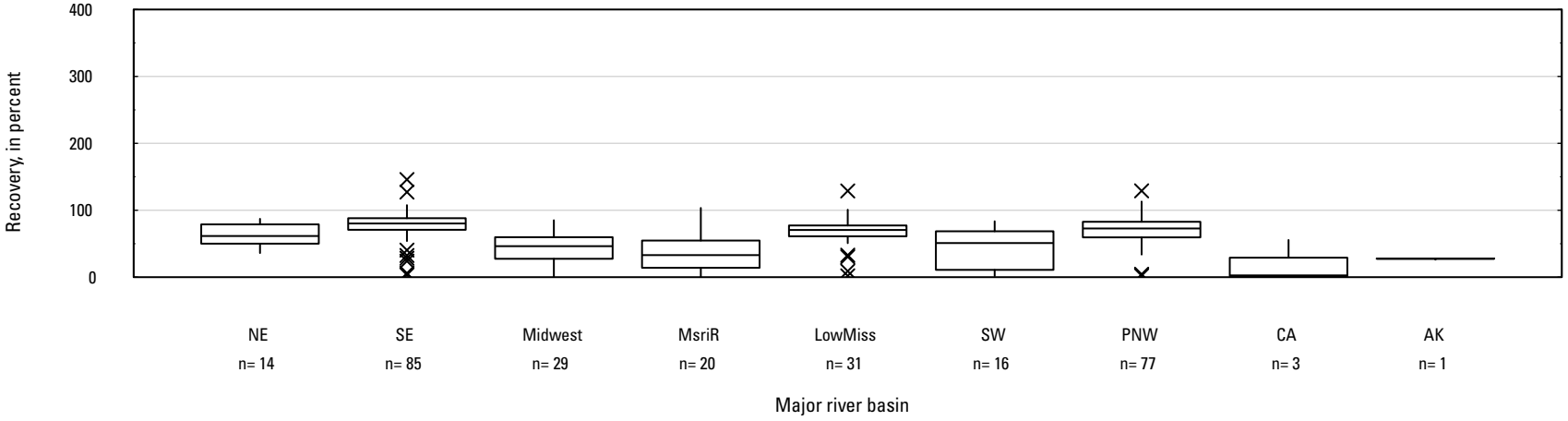
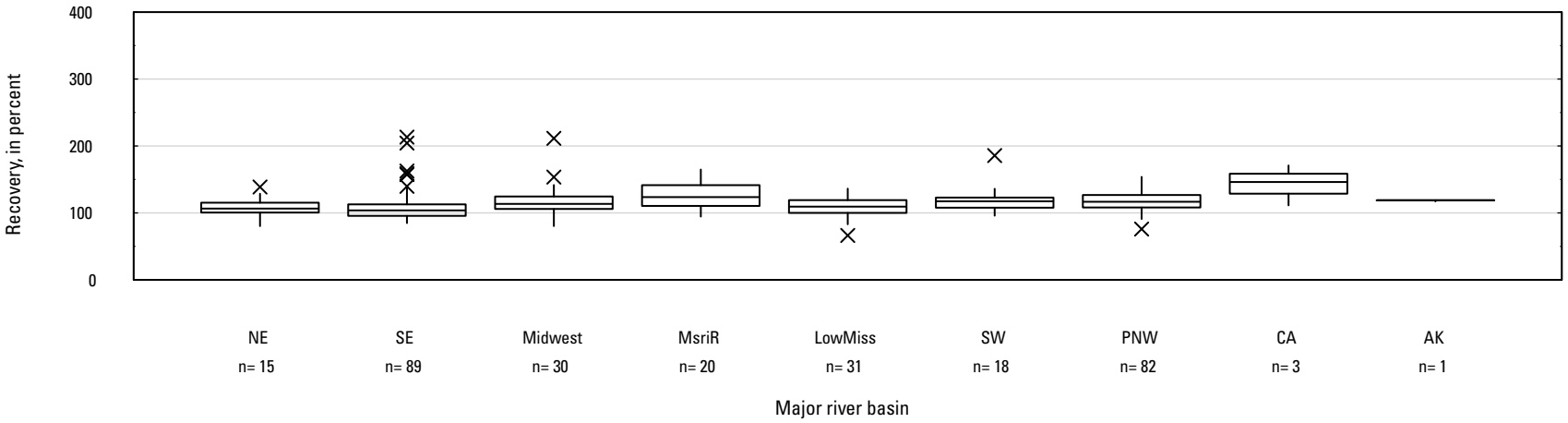


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

FK. **Oxamyl oxime**



FL. **Oxyfluorfen**

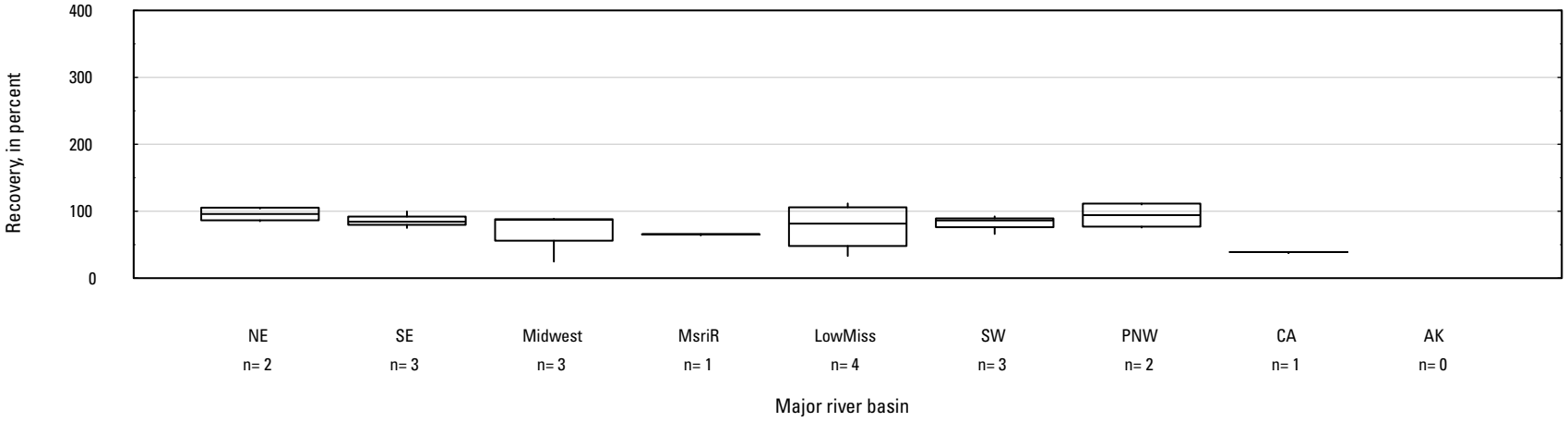


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

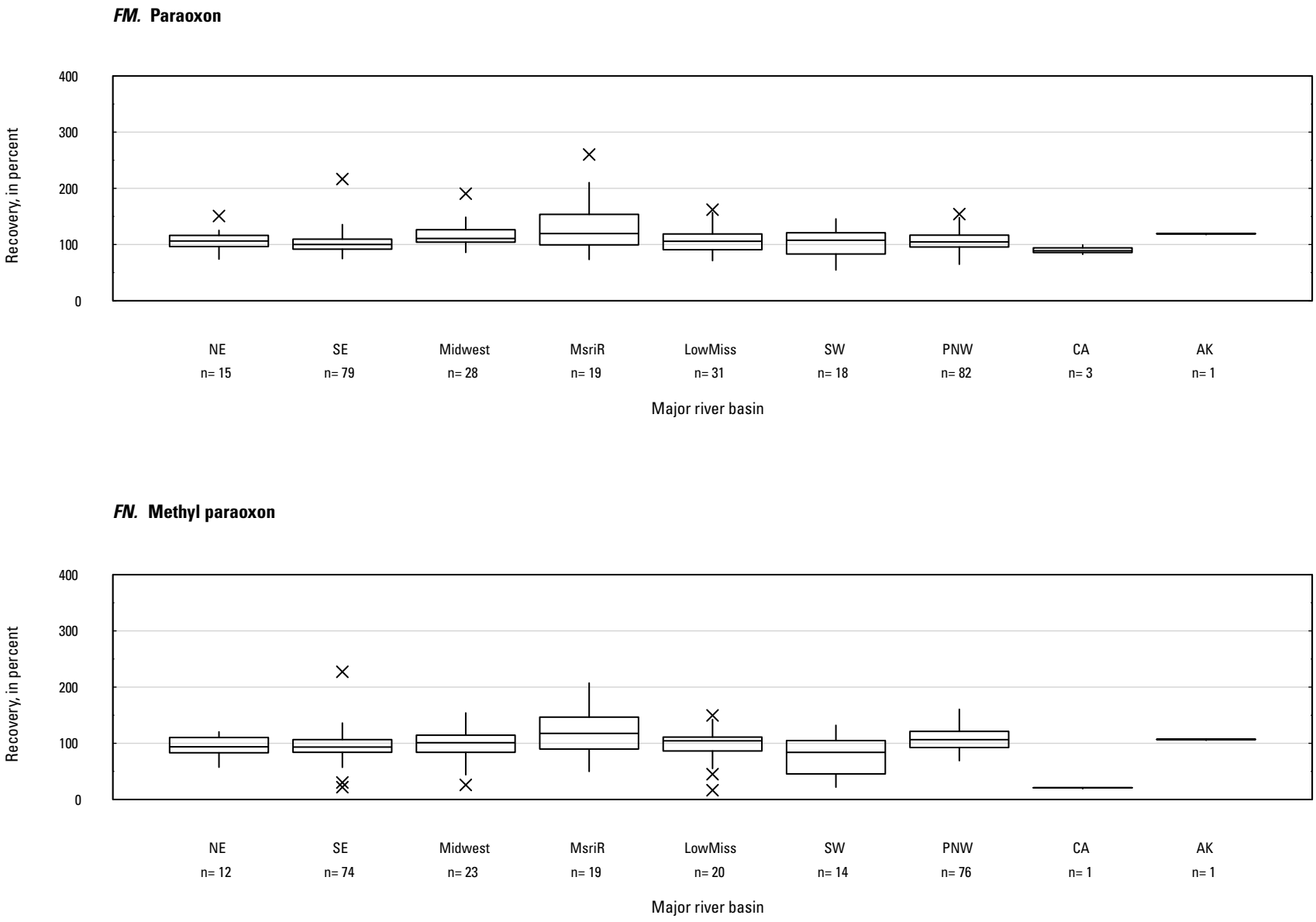
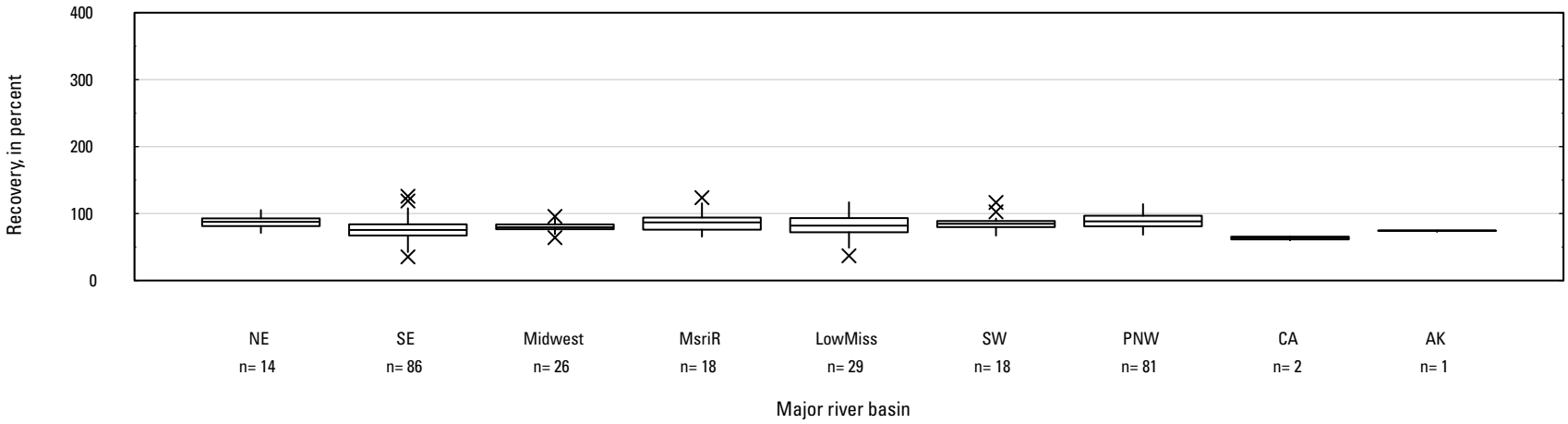


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

FO. **Pendimethalin**



FP. **Phorate**

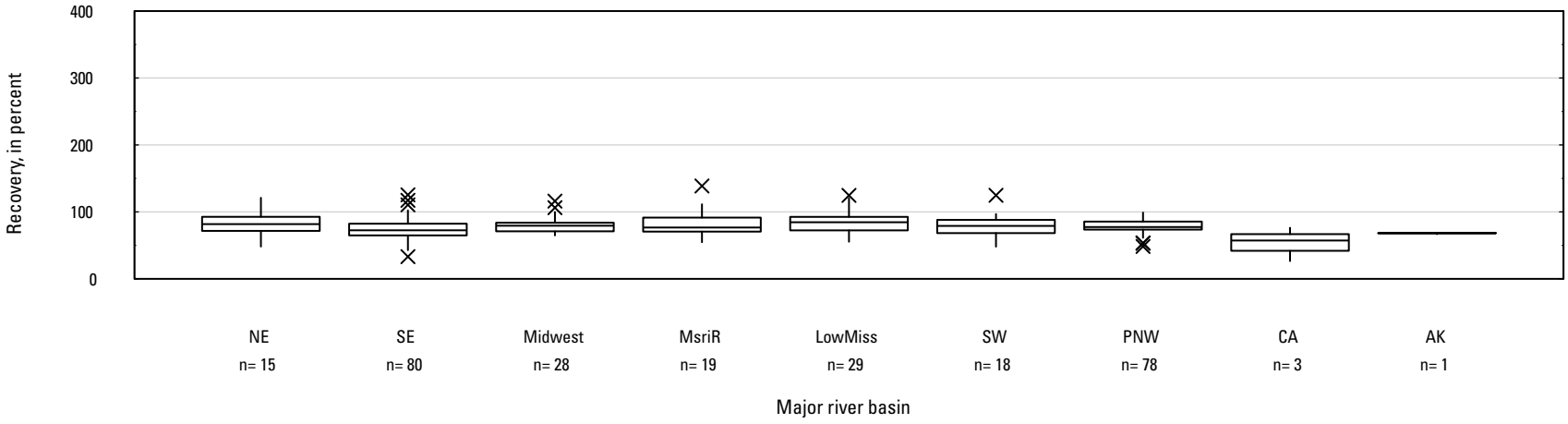
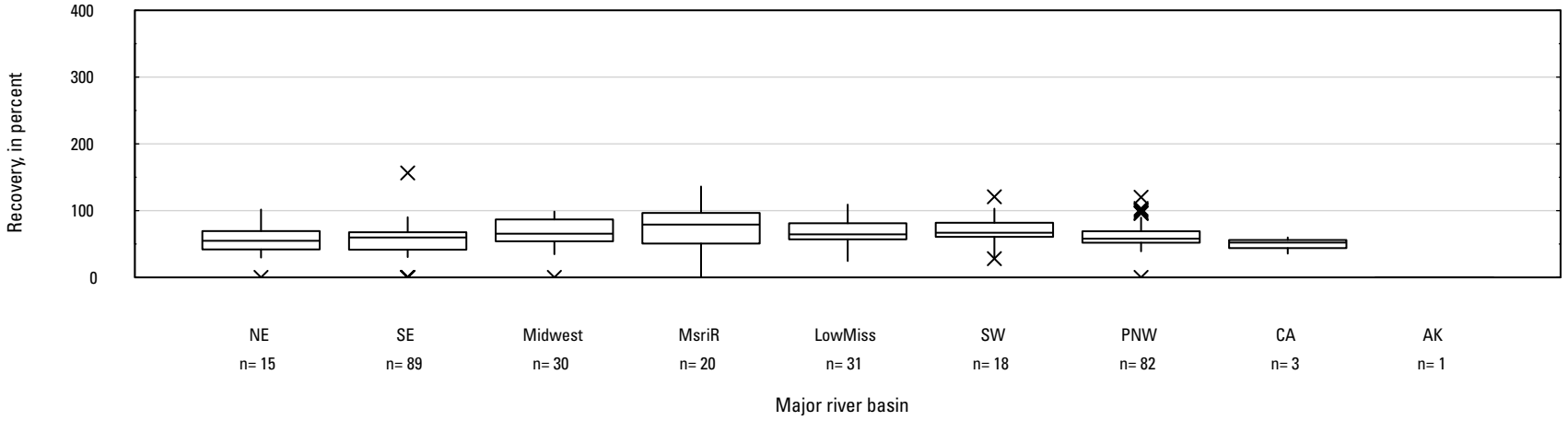


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

FQ. **Phorate oxon**



FR. **Phorate oxon sulfone**

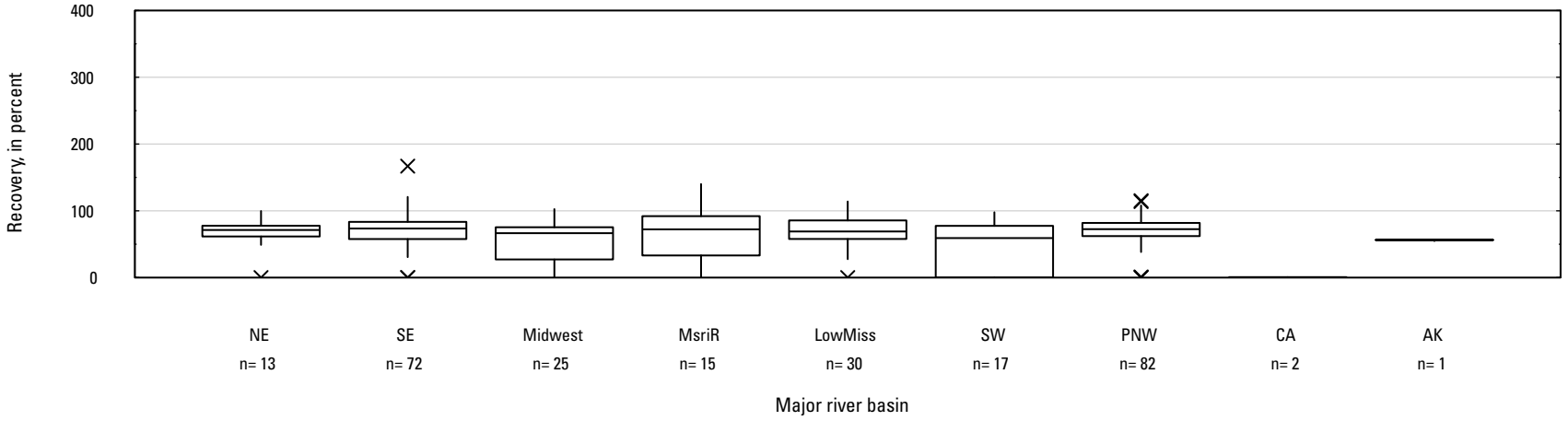
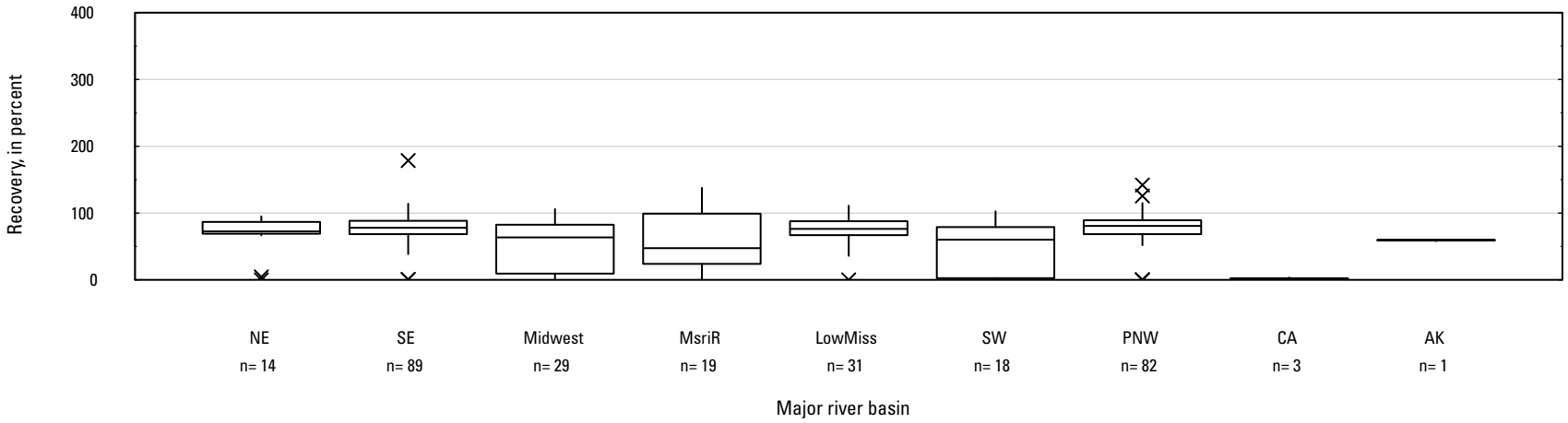


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

FS. **Phorate oxon sulfoxide**



FT. **Phorate sulfone**

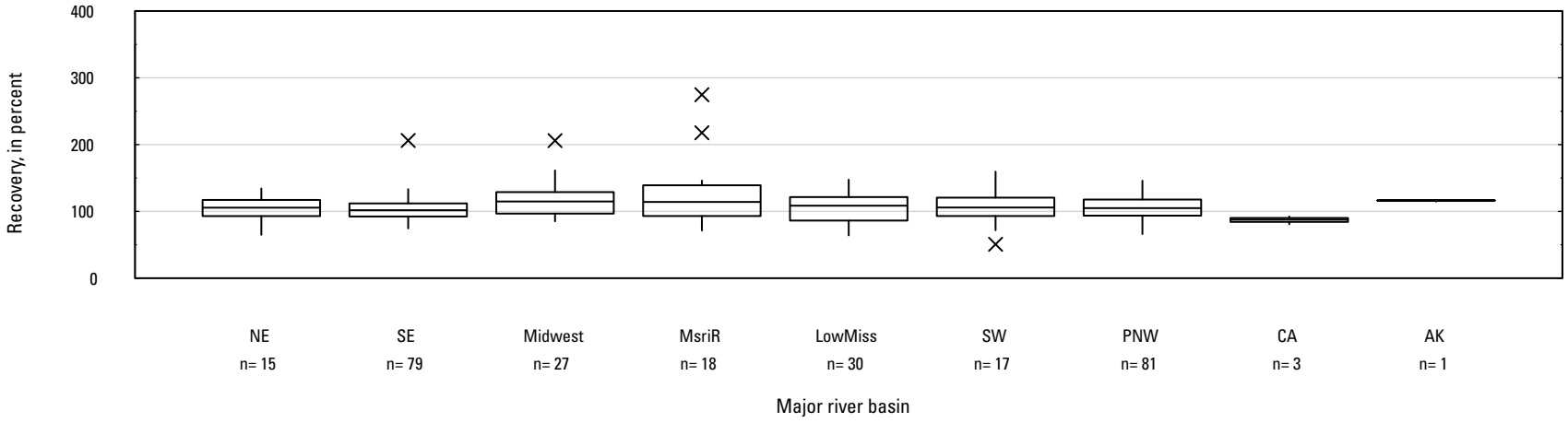
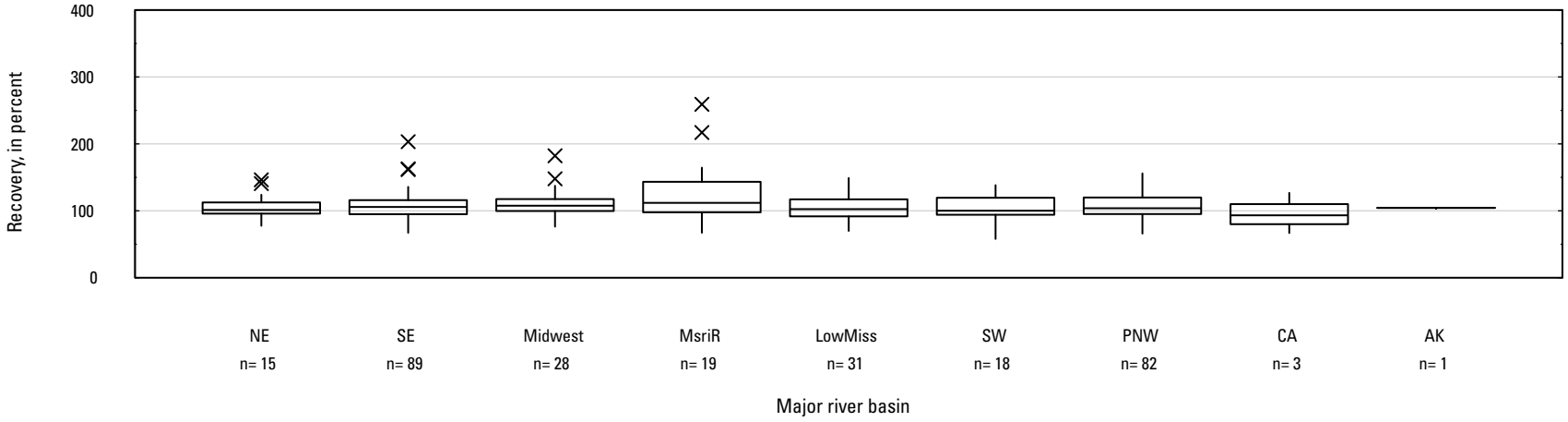


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

FU. **Phorate sulfoxide**



FV. **Phthalazinone**

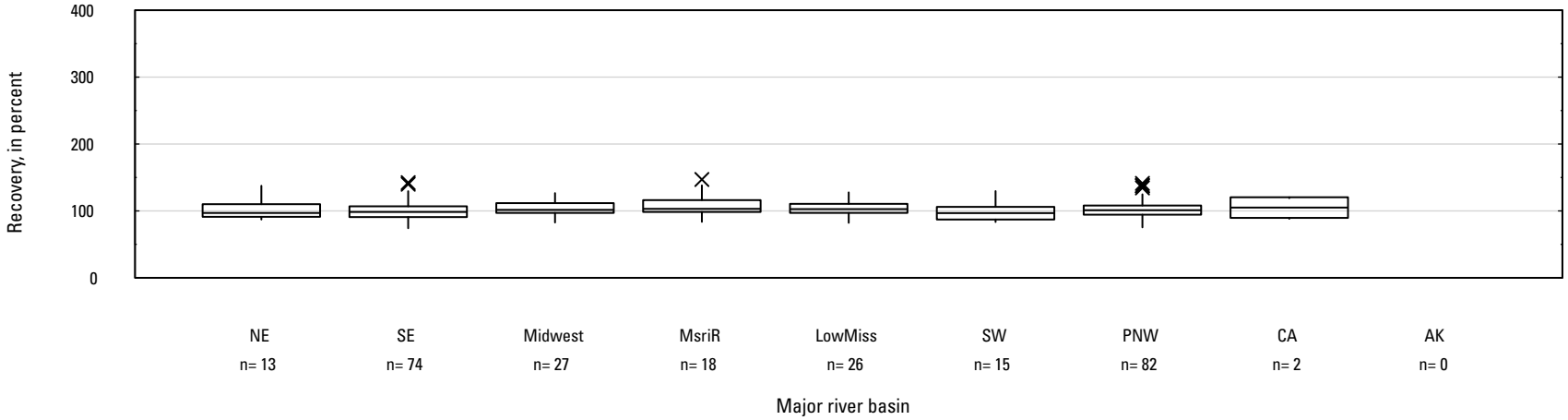
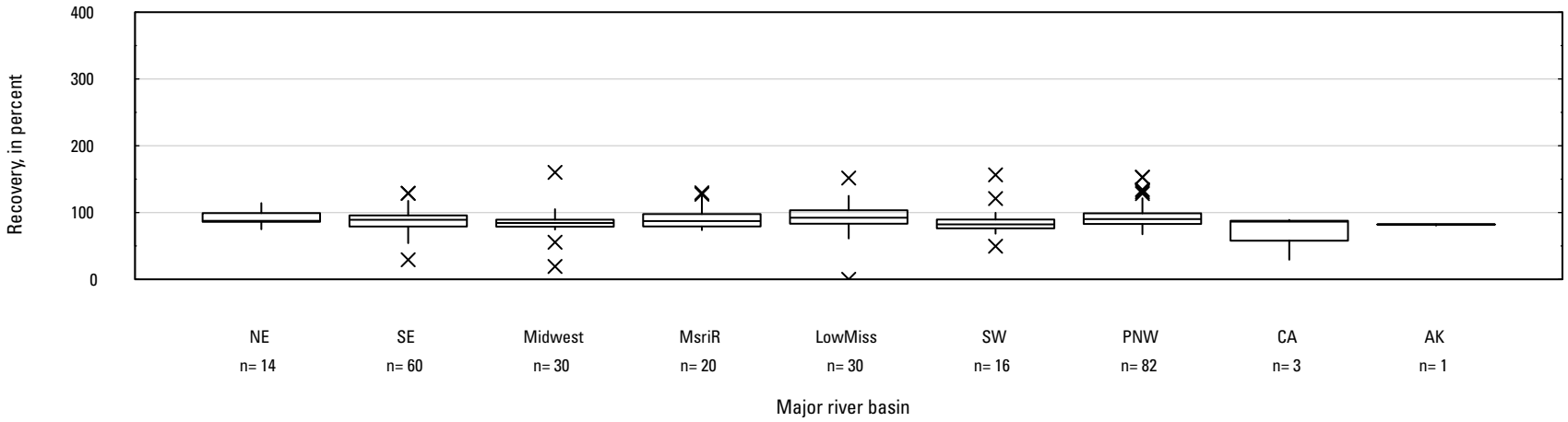


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

FW. **Piperonyl butoxide**



FX. **Profenofos**

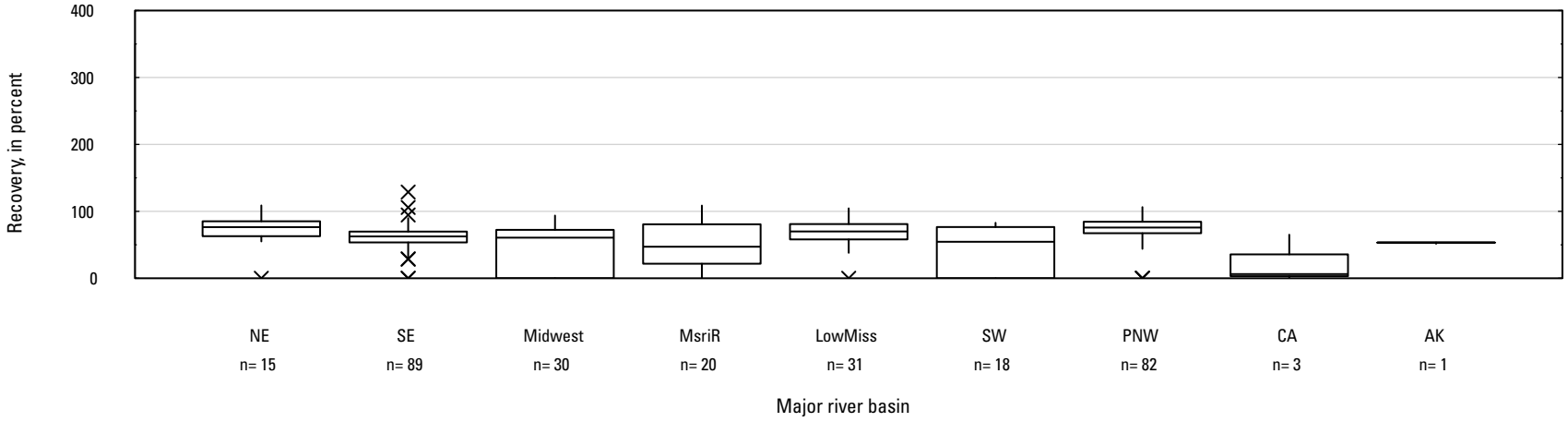


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

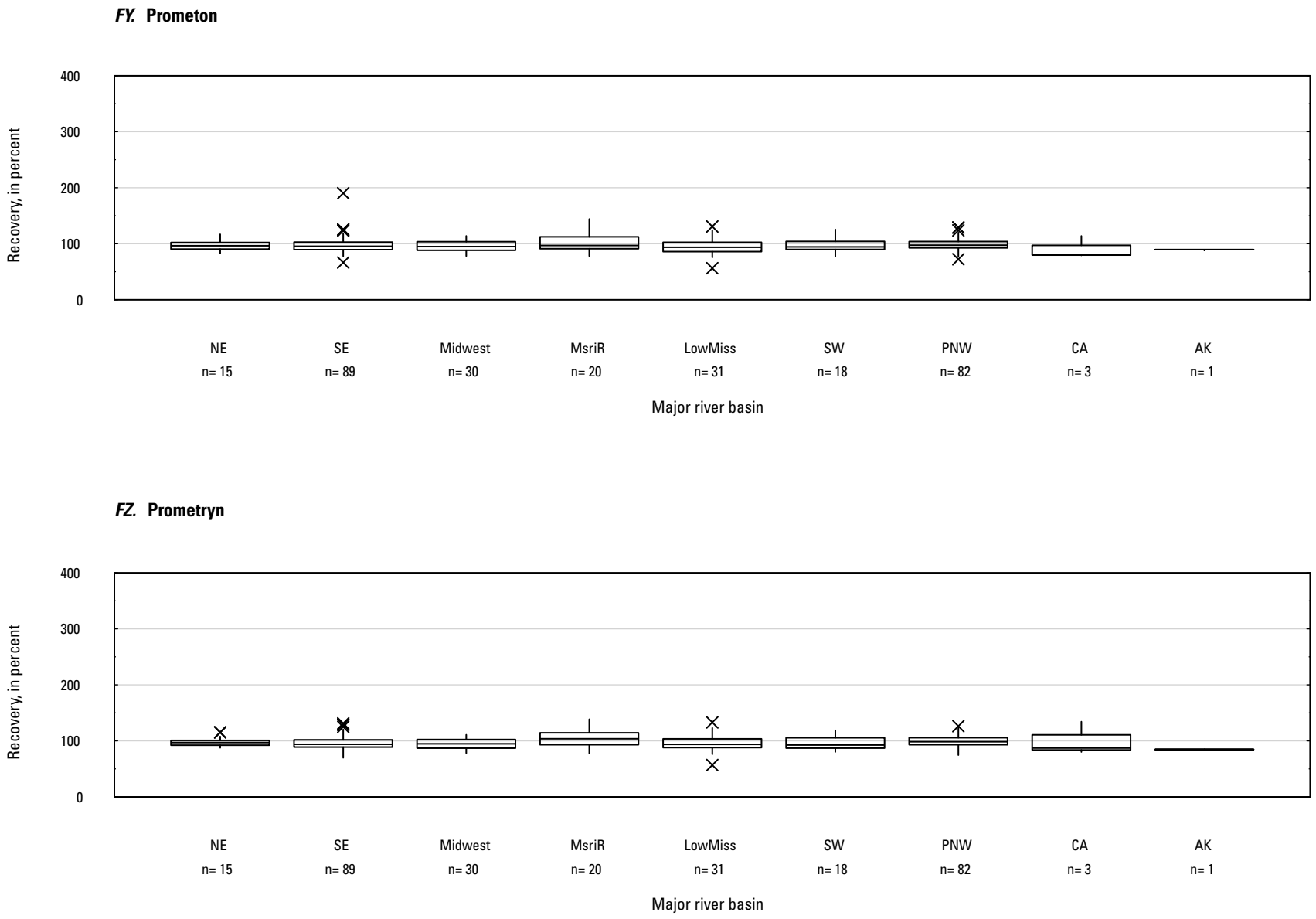
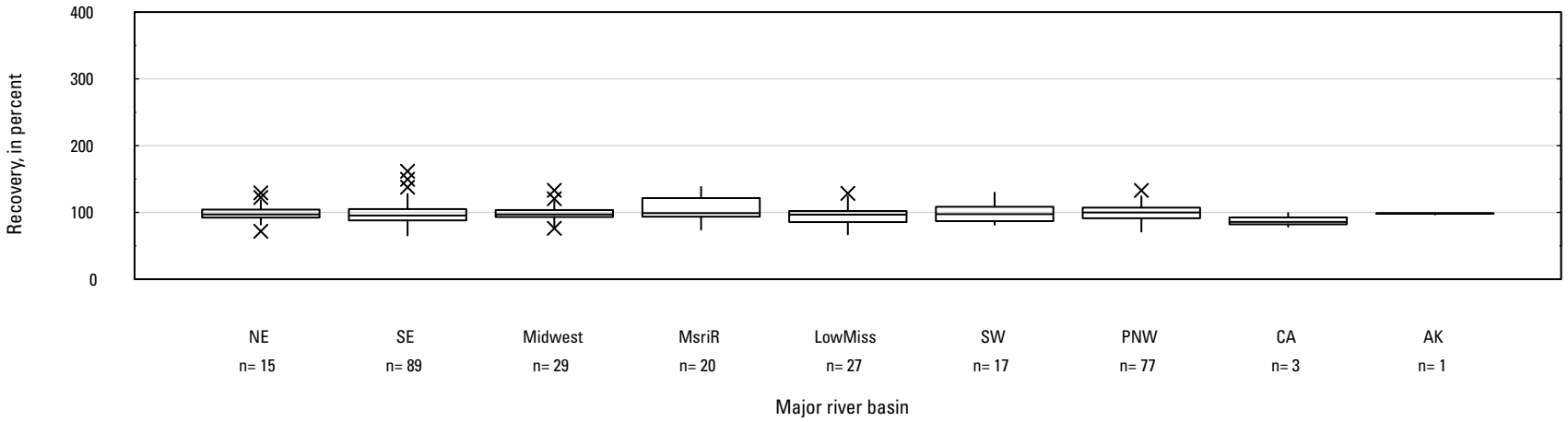


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

GA. **Propyzamide**



GB. **Propanil**

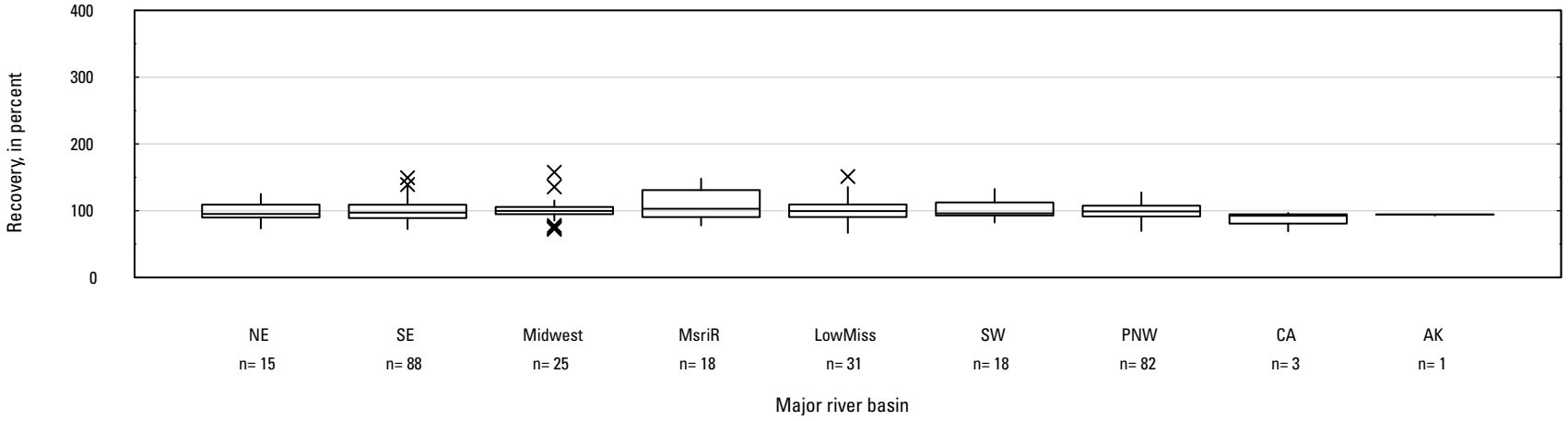
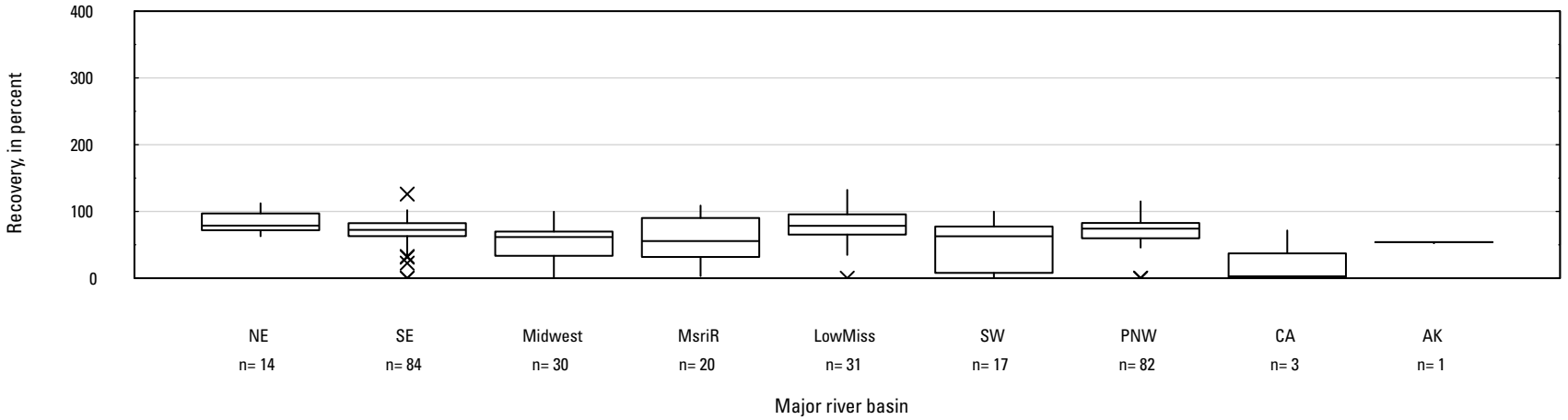


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

GC. **Propargite**



GD. **Propazine**

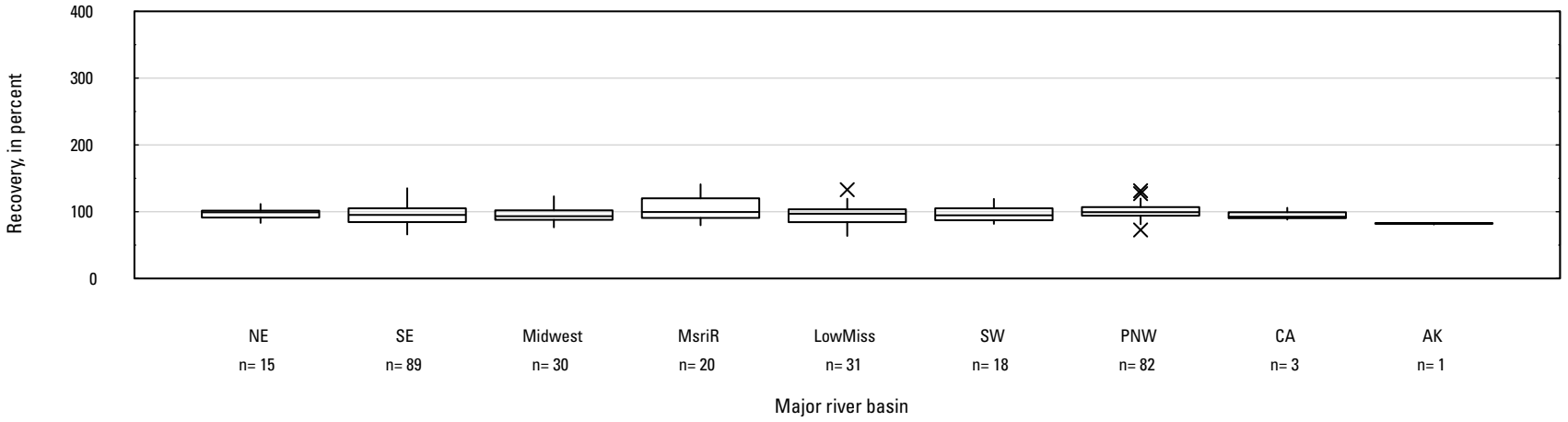
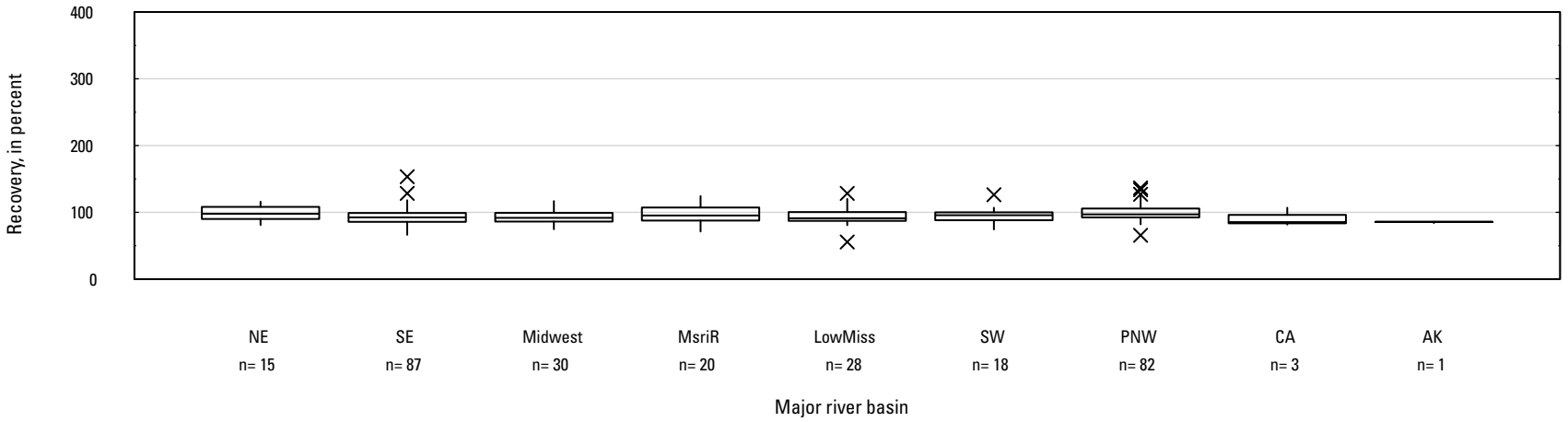


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

GE. **Propiconazole**



GF. **Propoxur**

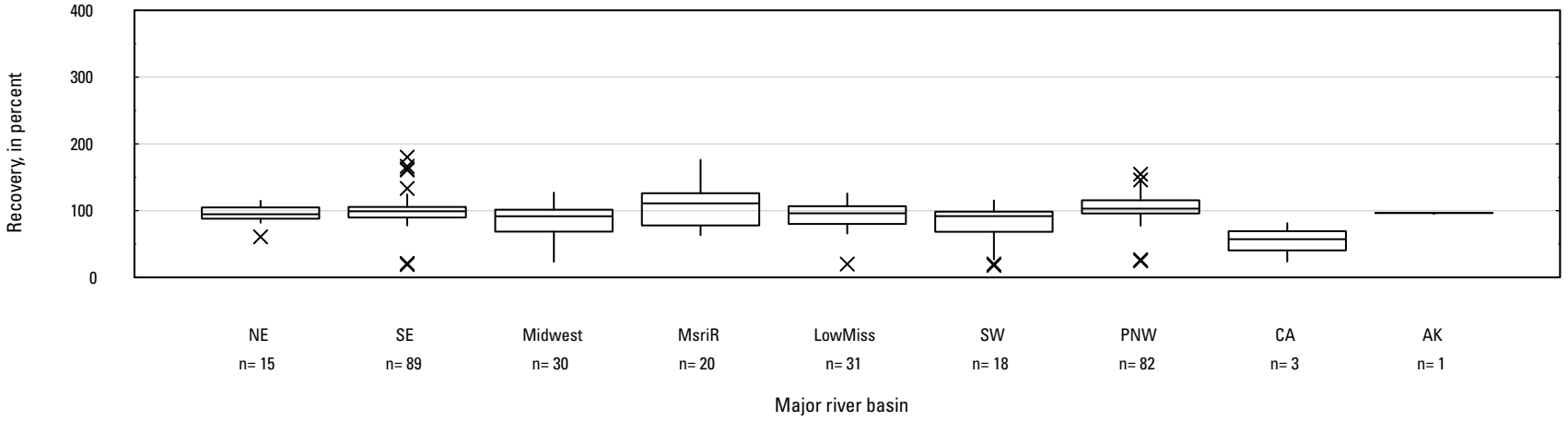
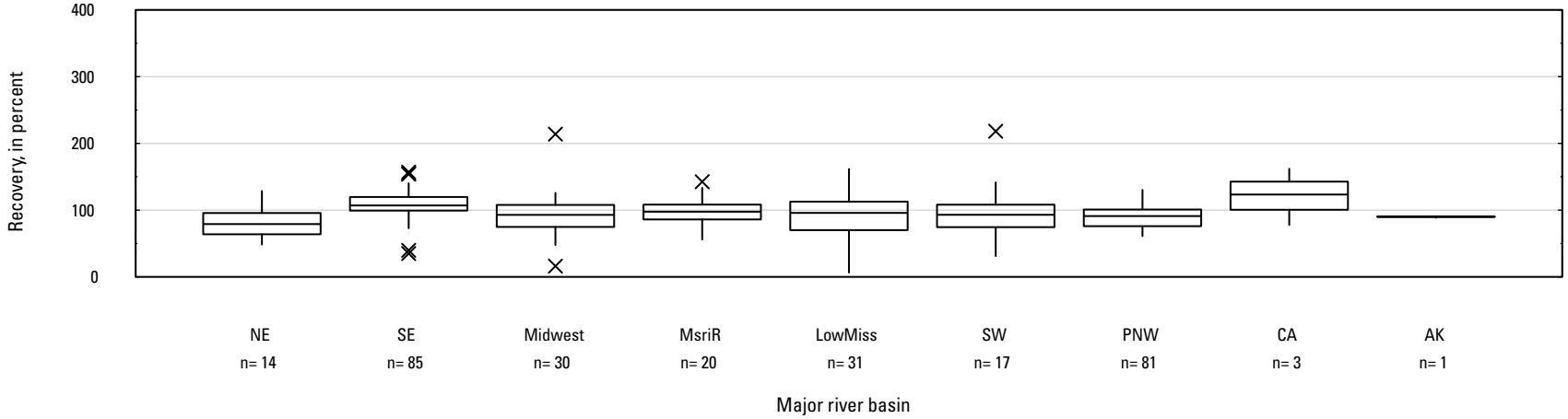


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

GG. **Prosulfuron**



GH. **Pyraclostrobin**

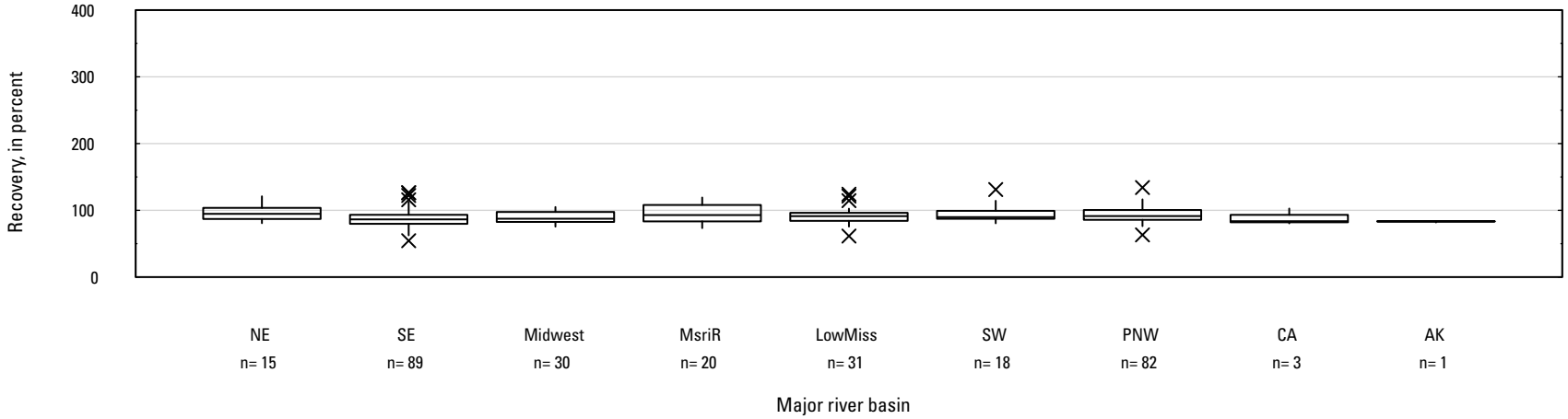
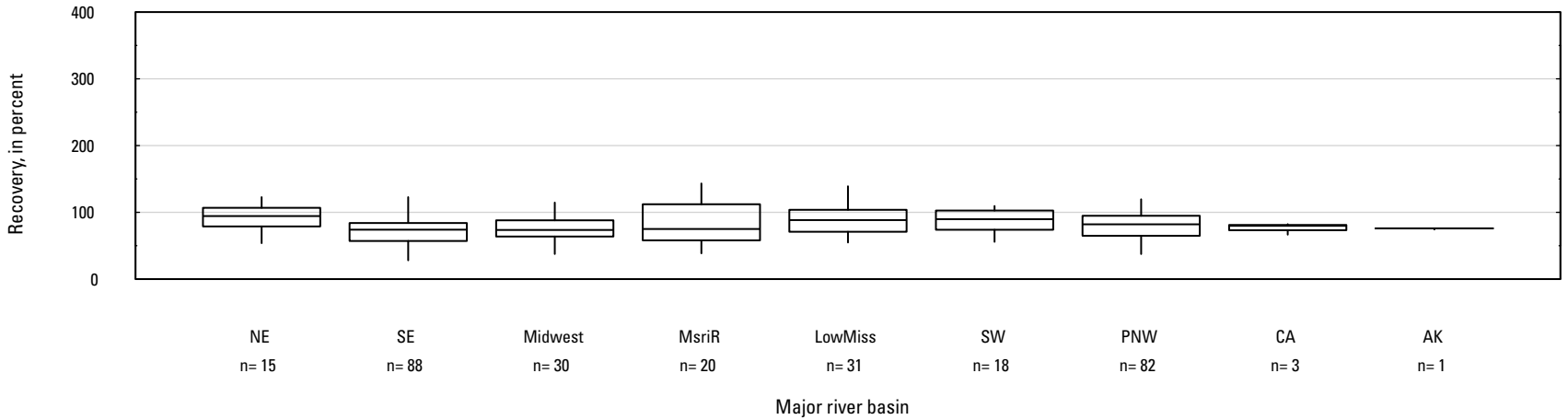


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

GI. **Pyridaben**



GJ. **2–Isopropyl–6–methyl–4–pyrimidinol**

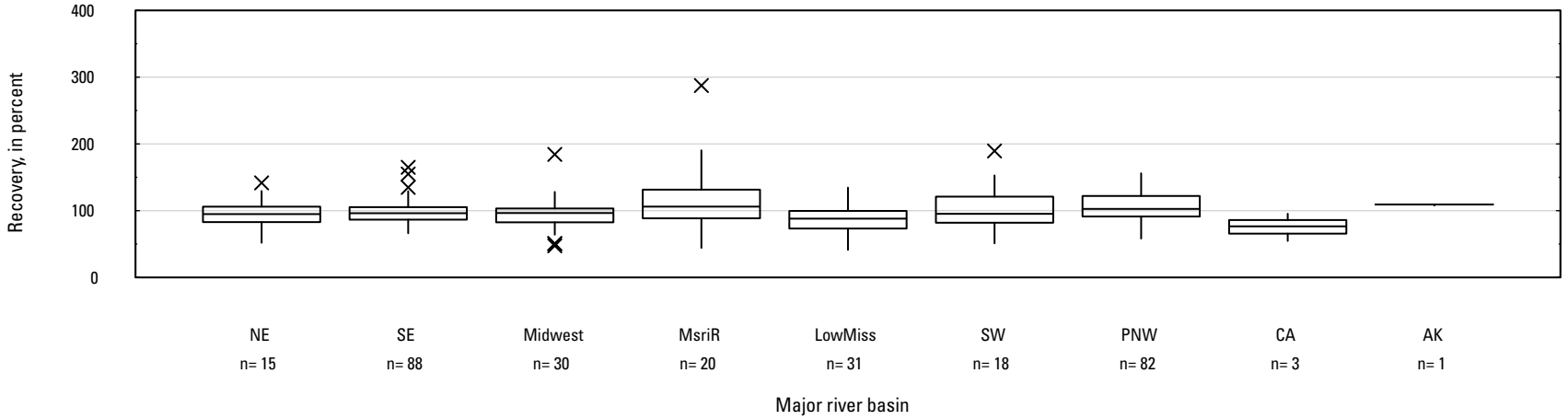
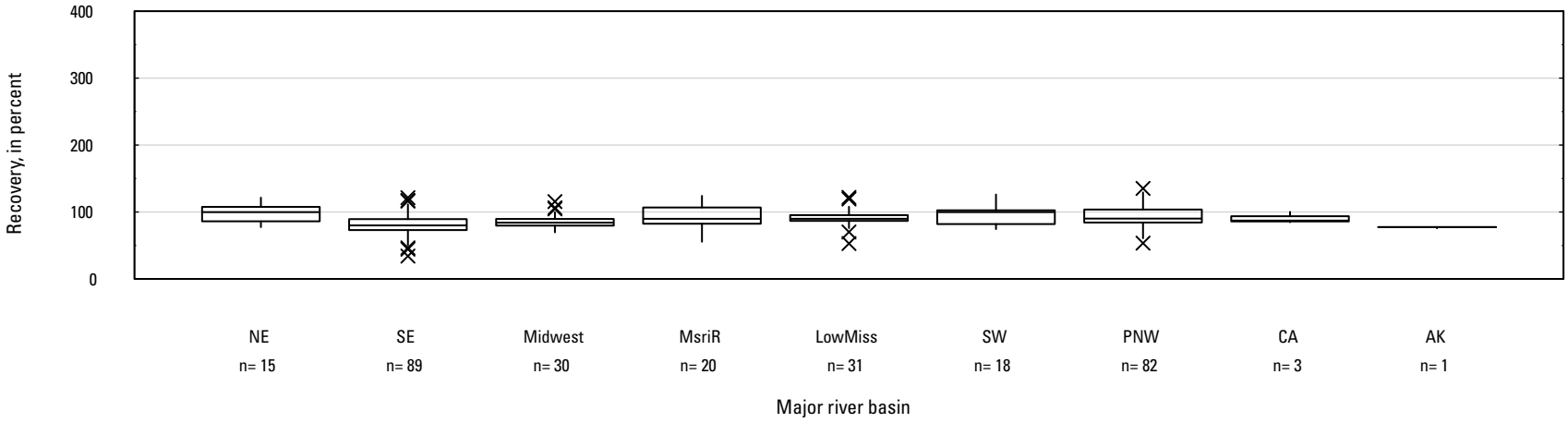


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

GK. **Pyriproxyfen**



GL. **sec–Acetochlor oxanilic acid**

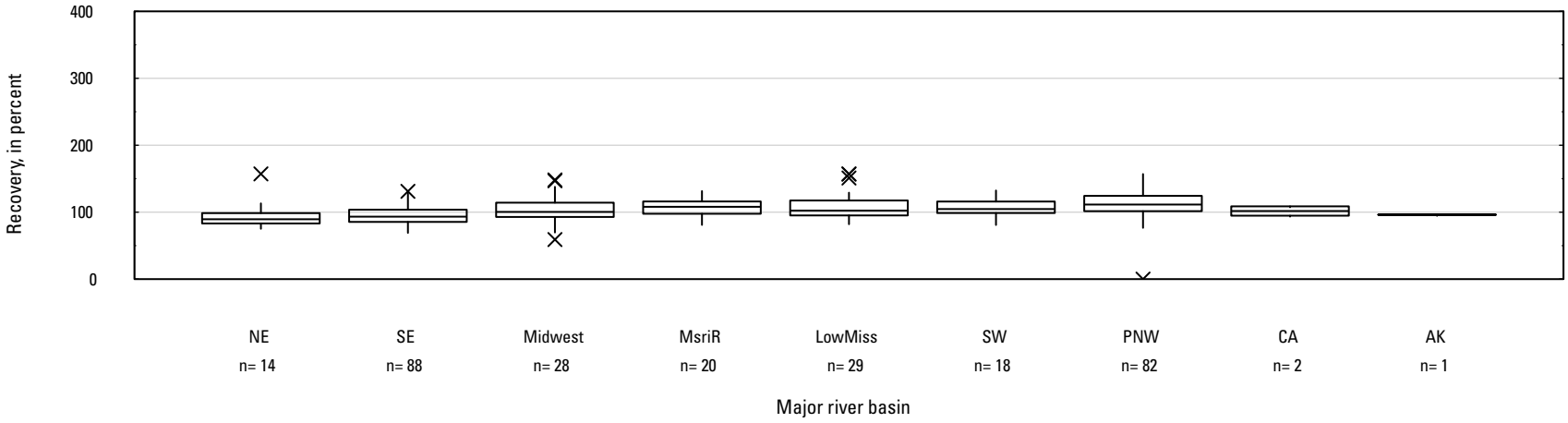


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

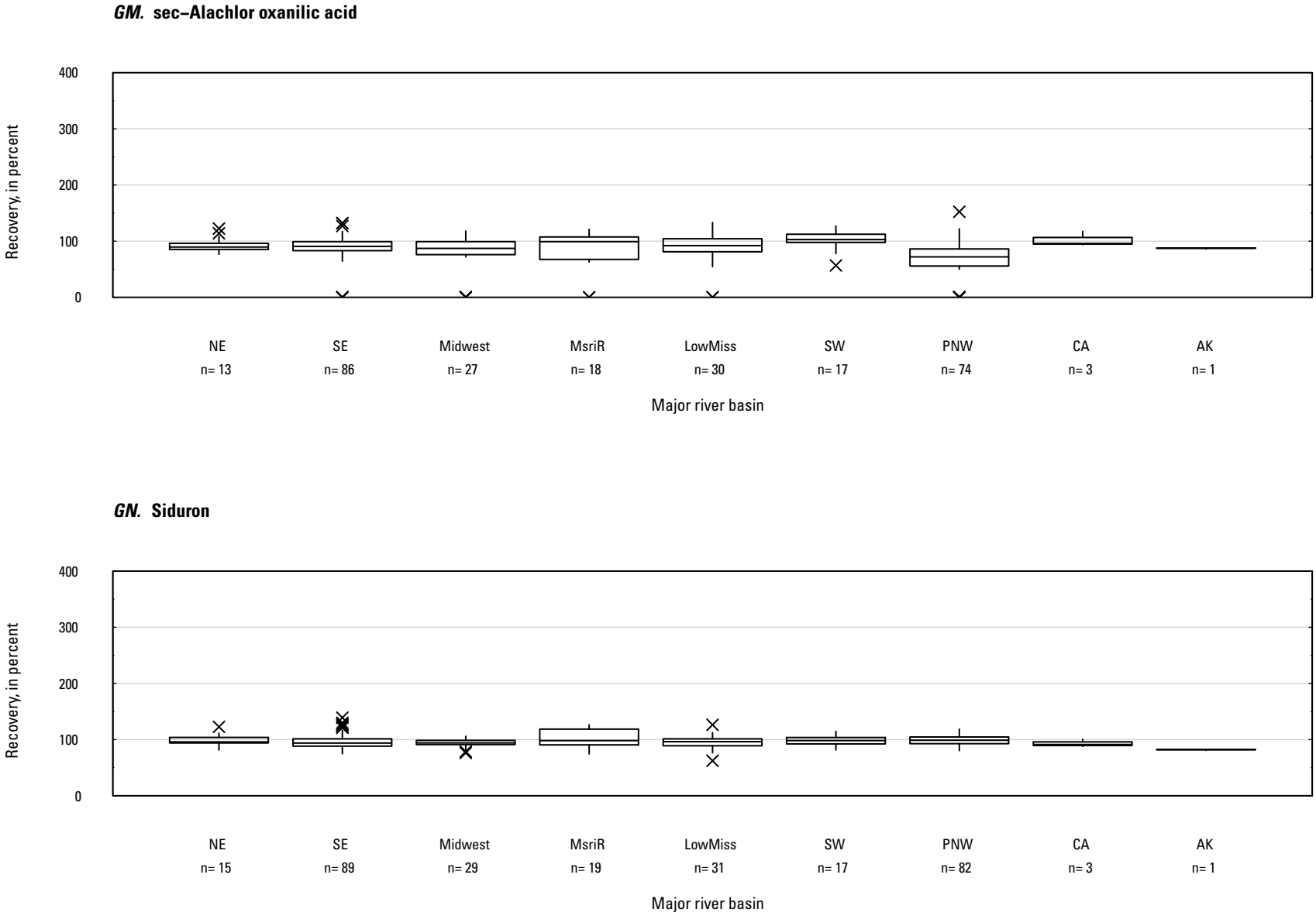
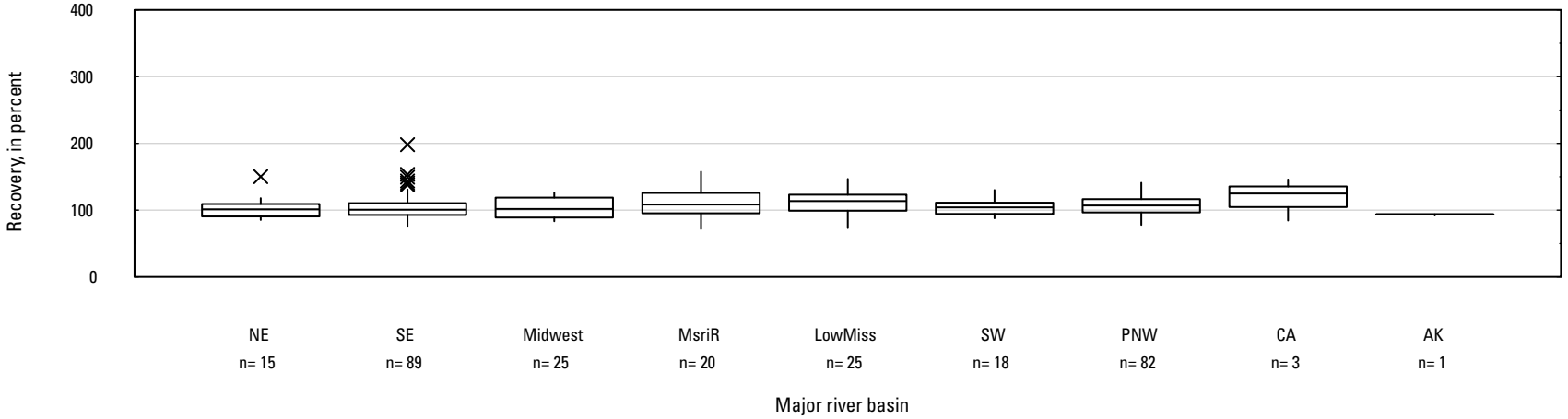


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

GO. **Simazine**



GP. **Sulfentrazone**

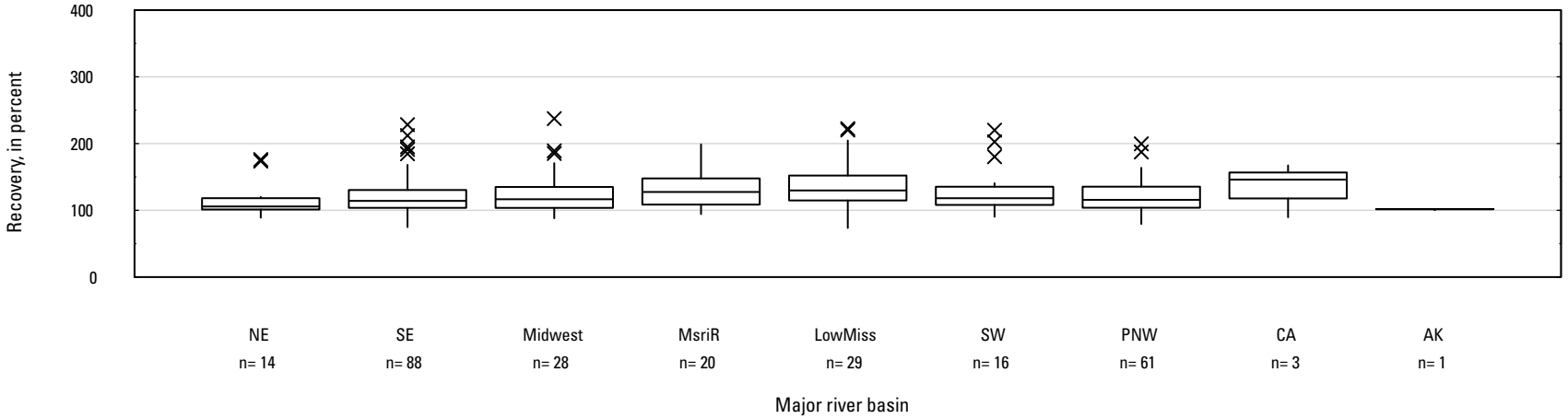
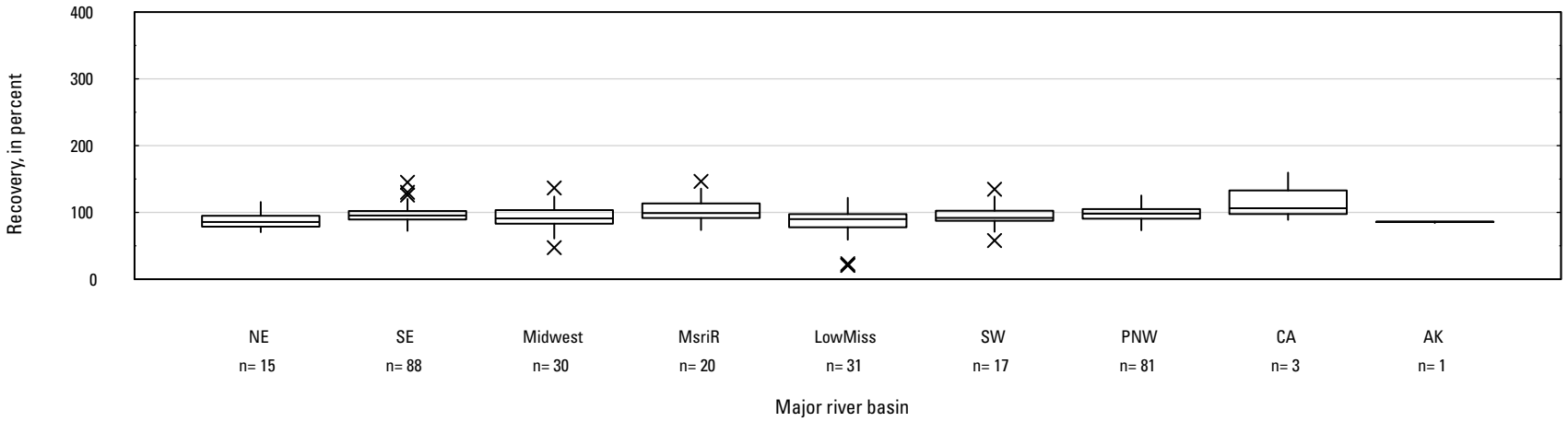


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

GQ. **Sulfometuron–methyl**



GR. **Sulfosulfuron**

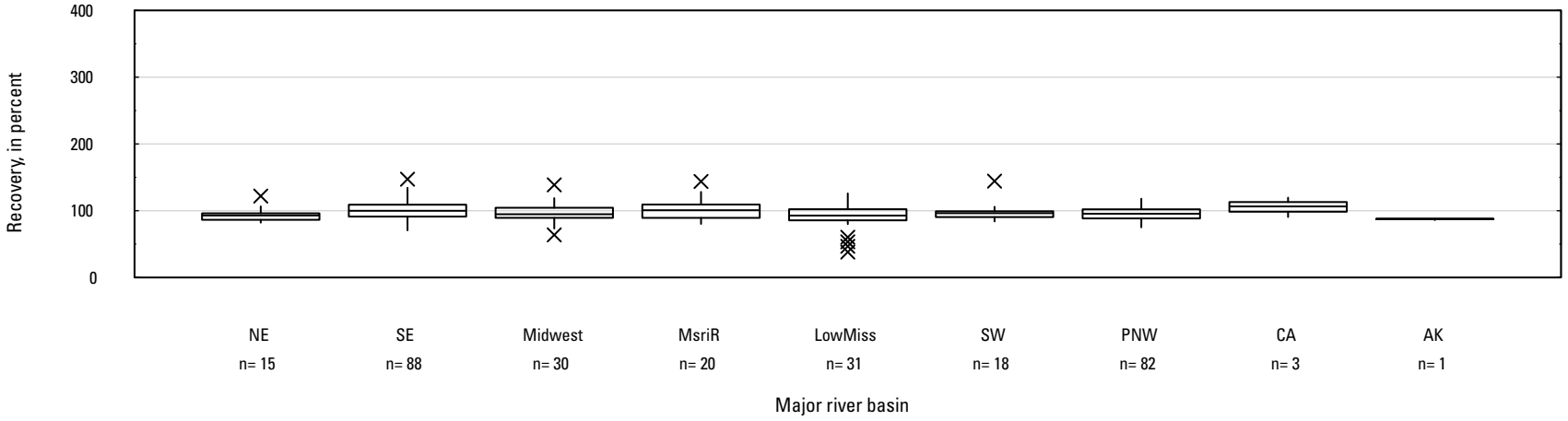


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

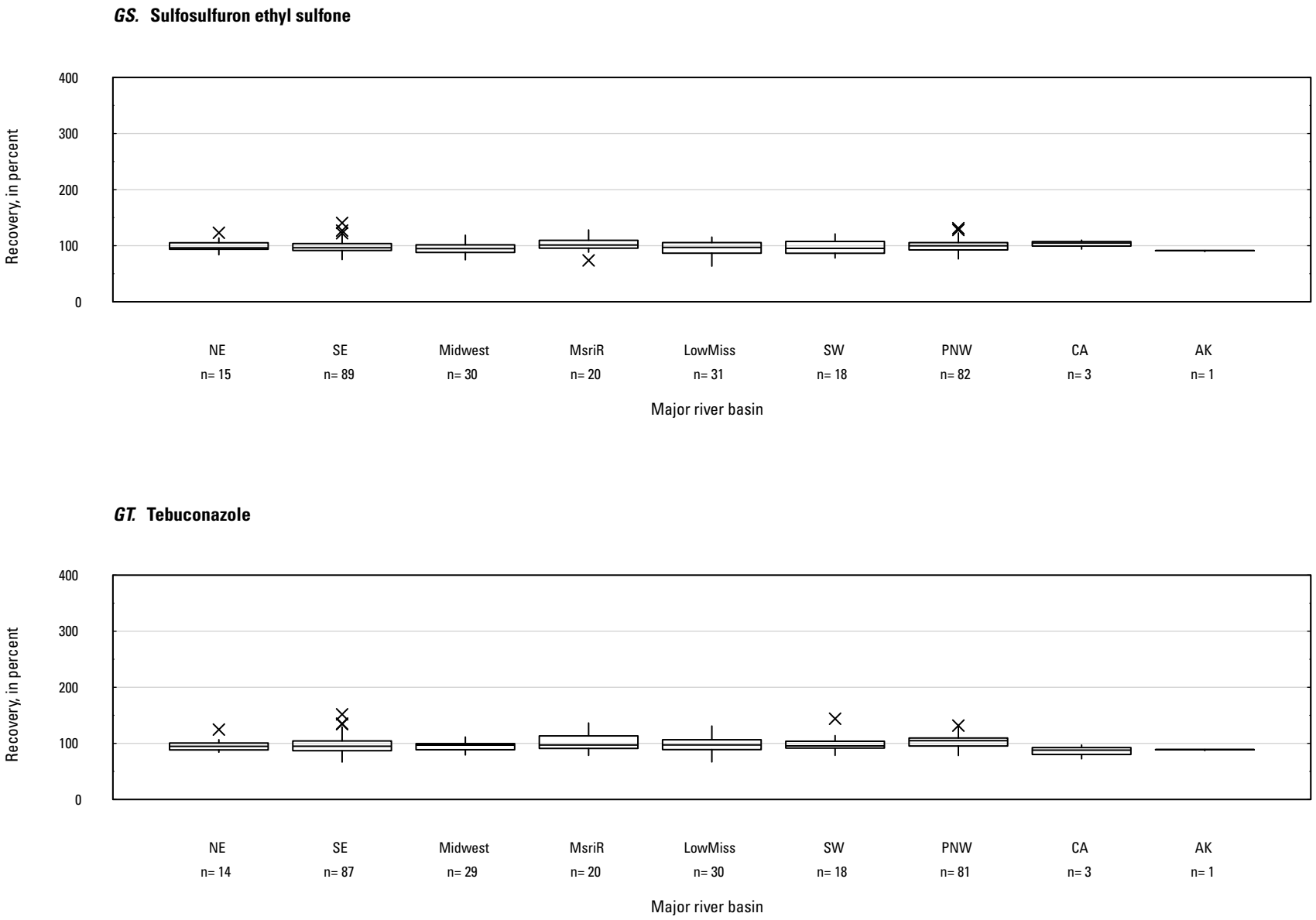
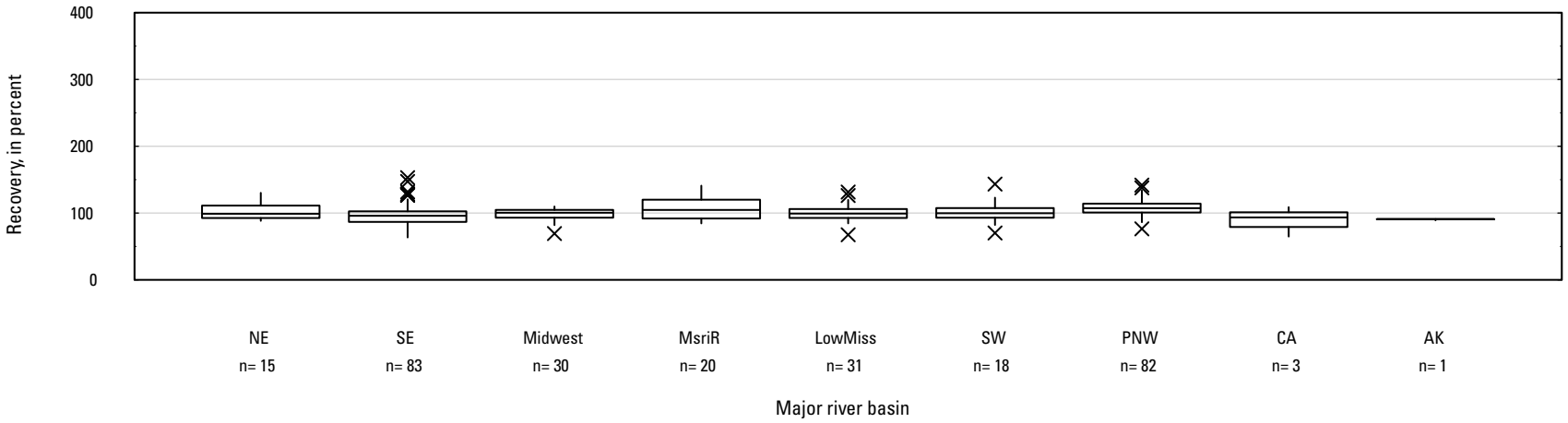


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

GU. **Tebufenozide**



GV. **Tebupirimphos**

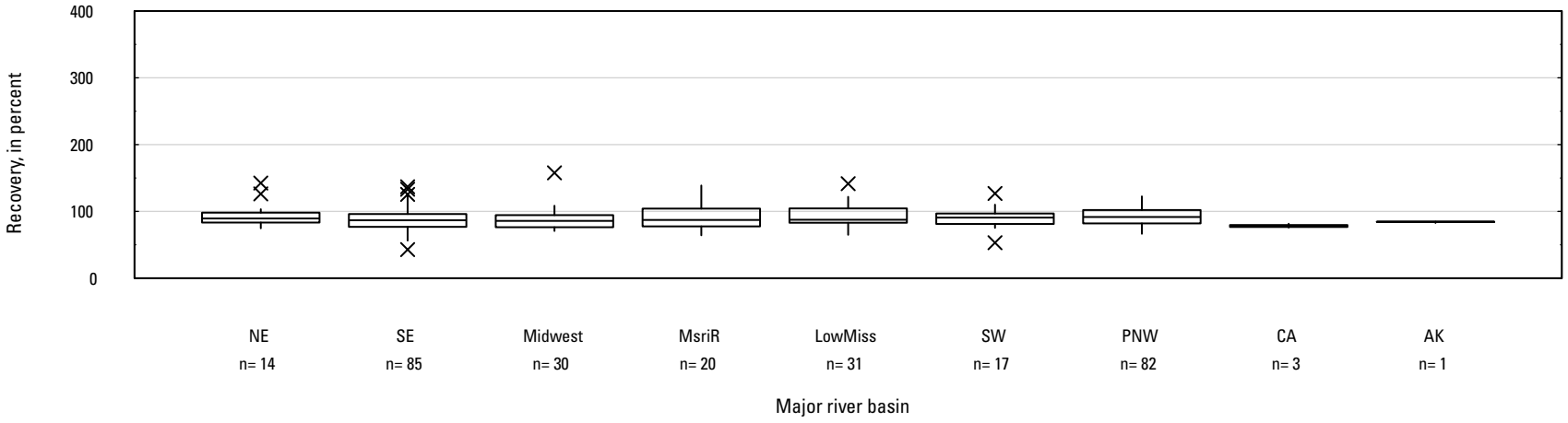
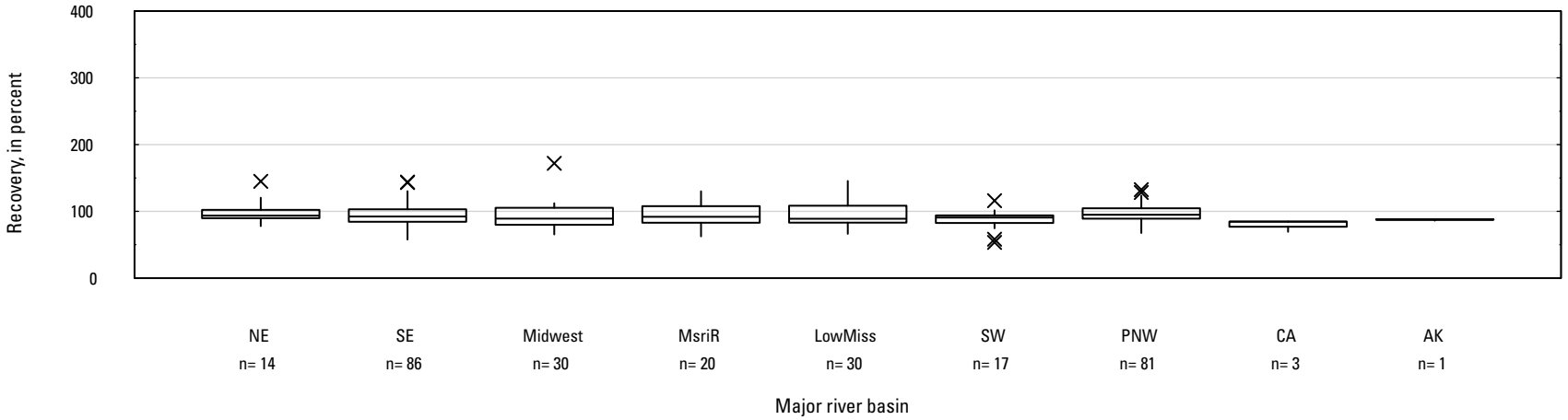


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

GW. **Tebupirimfos oxon**



GX. **Tebuthiuron**

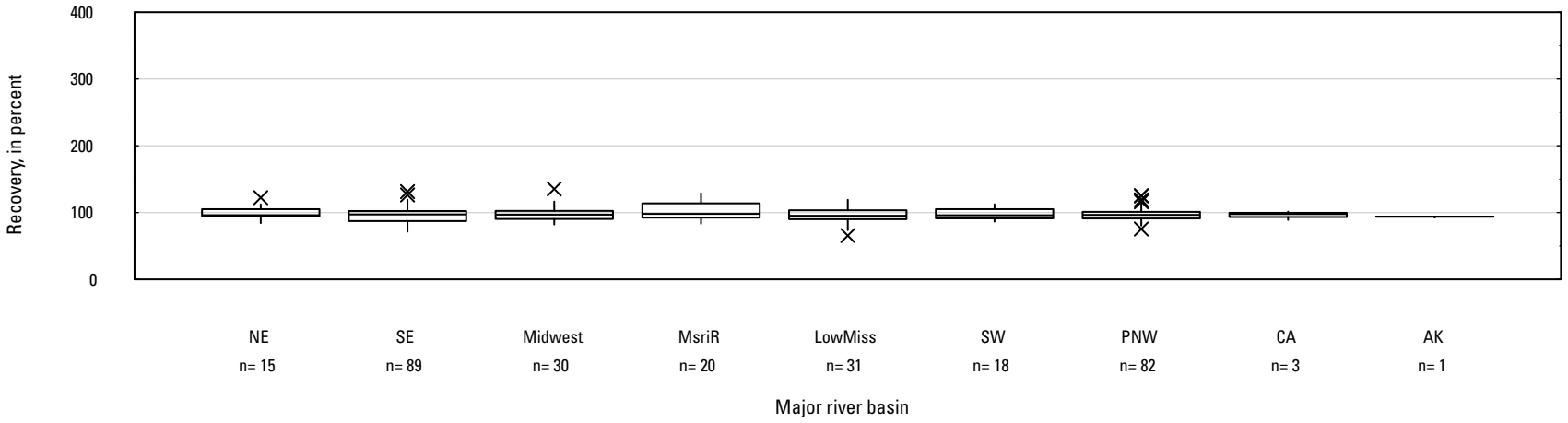
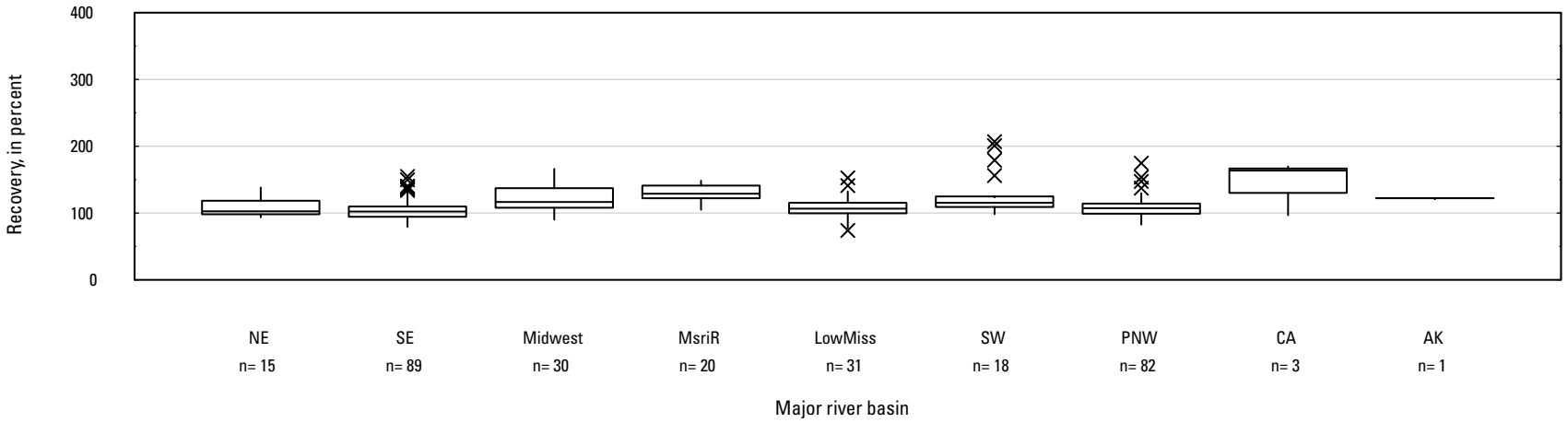


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

GY. **Tebuthiuron TP 104**



GZ. **Tebuthiuron Transformation Product 106**

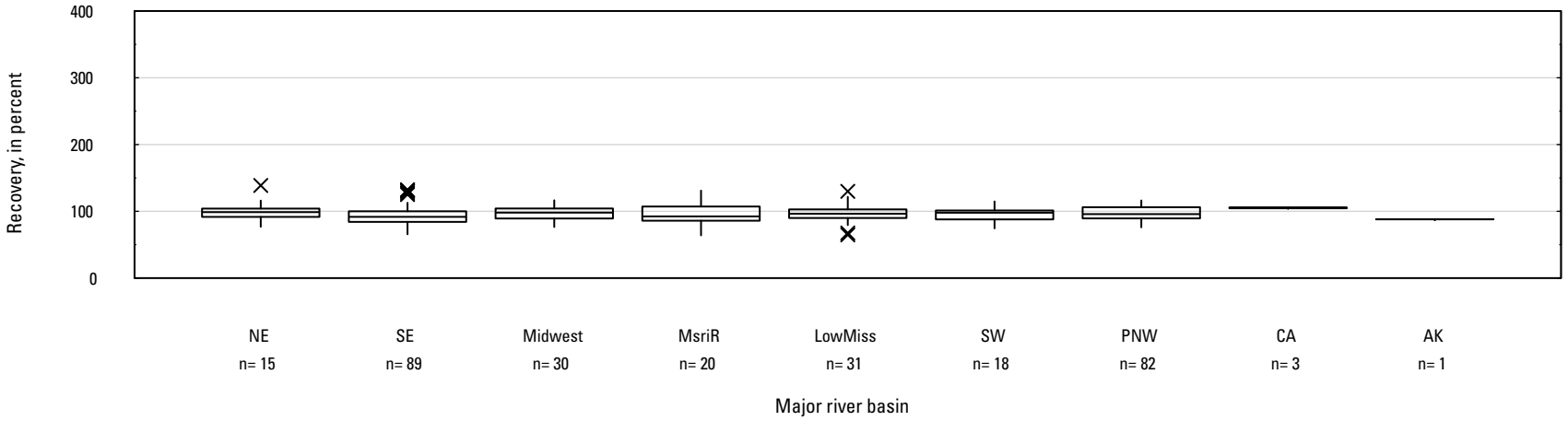
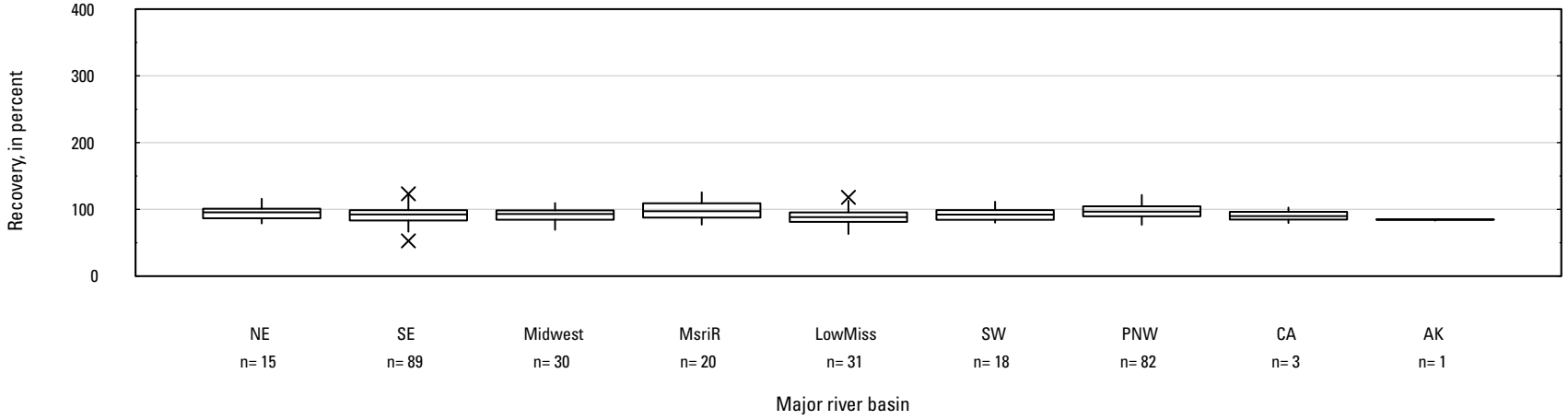


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

HA. **Tebuthiuron TP el108**



HB. **Tebuthiuron TP 109 (OH)**

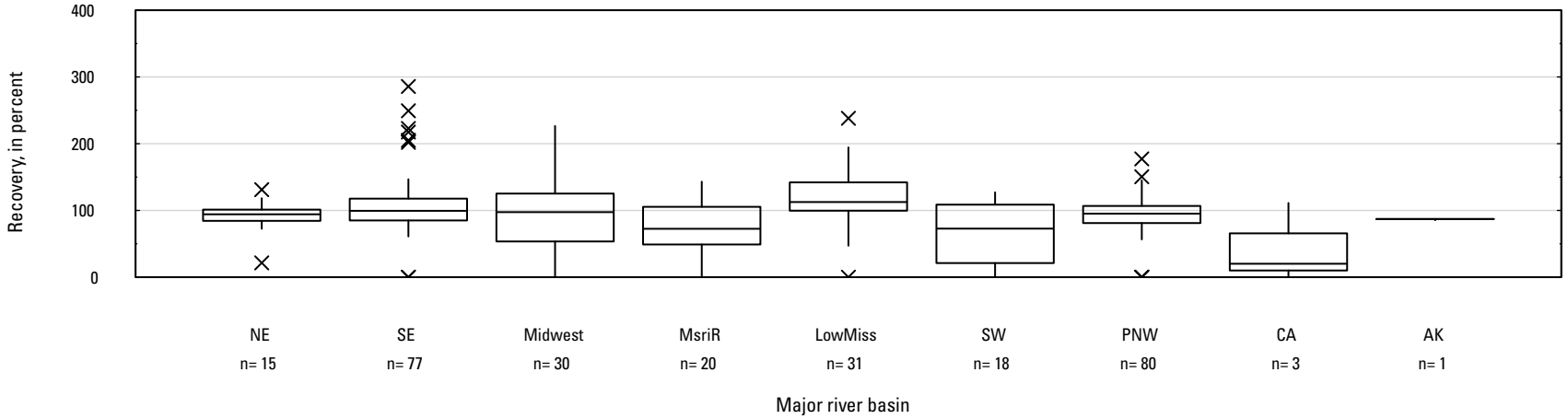
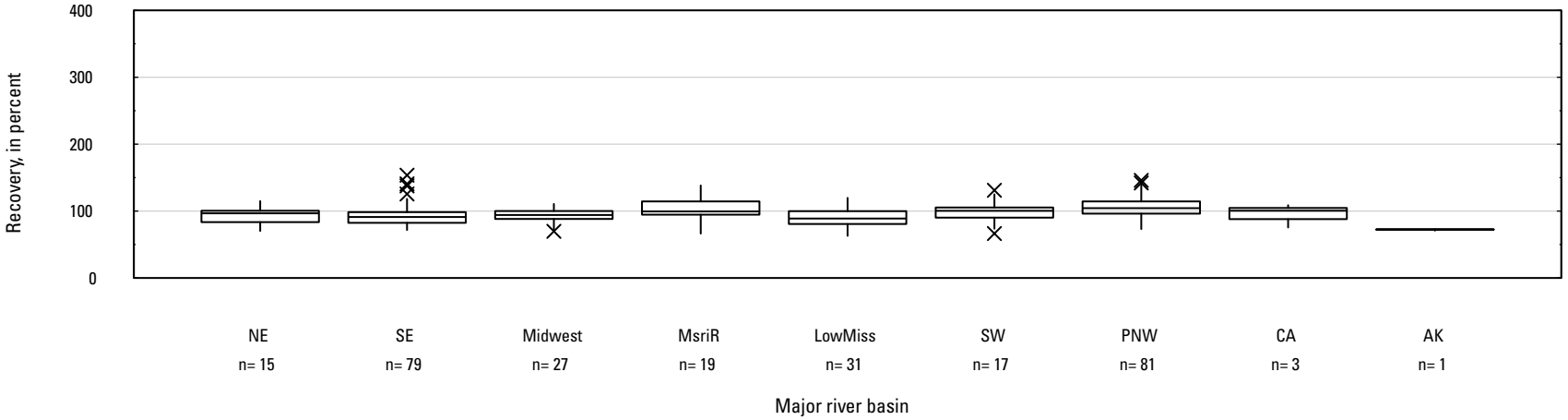


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

HC. **Terbacil**



HD. **Terbufos**

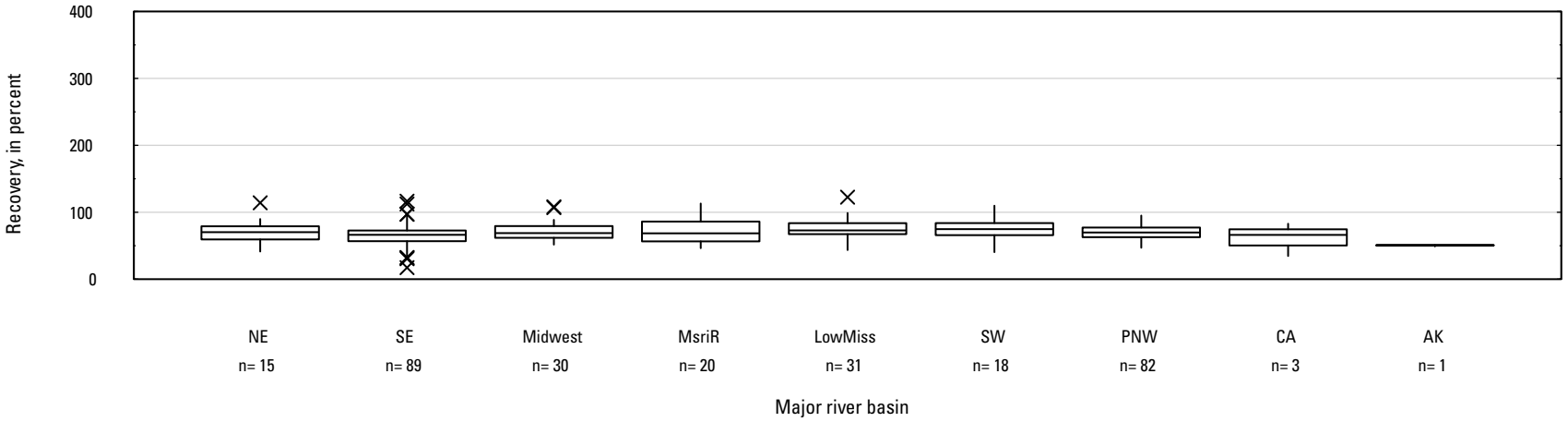
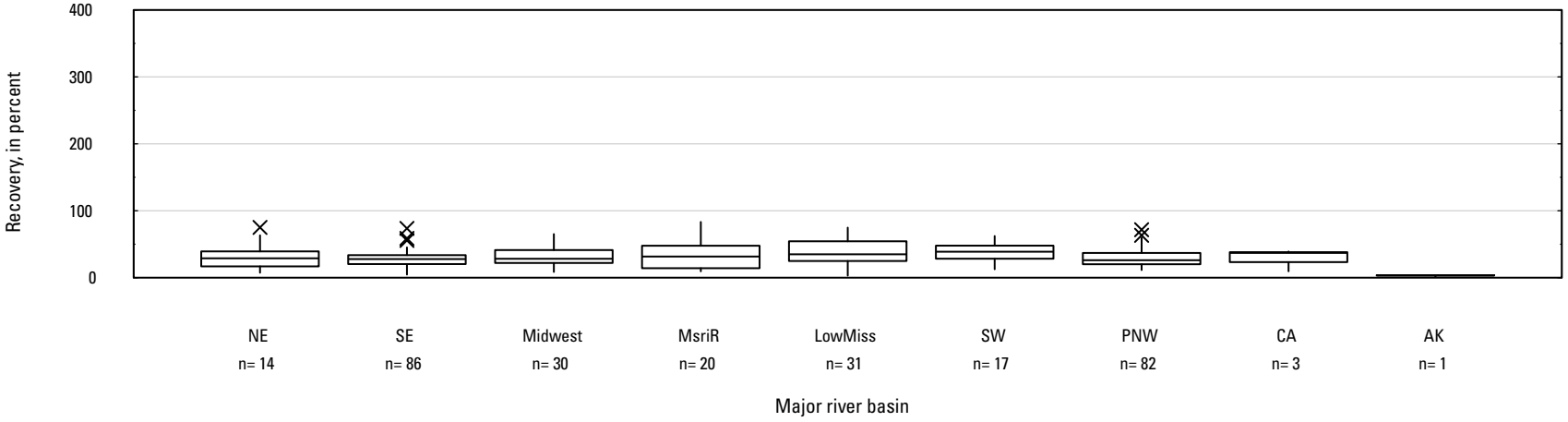


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

HE. **Terbufos oxon**



HF. **Terbufos oxon sulfone**

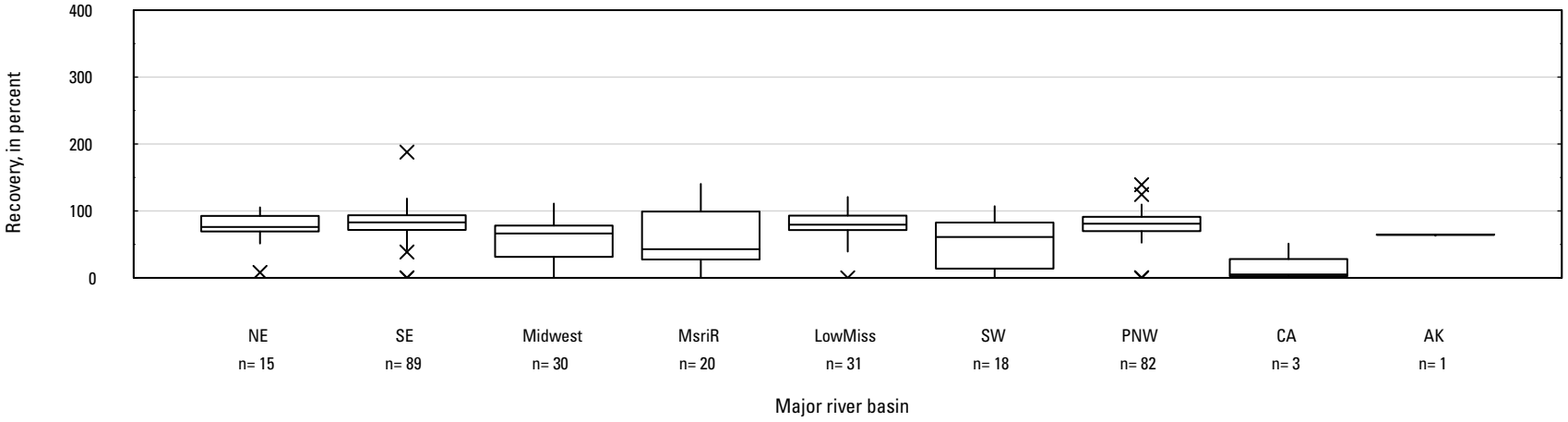
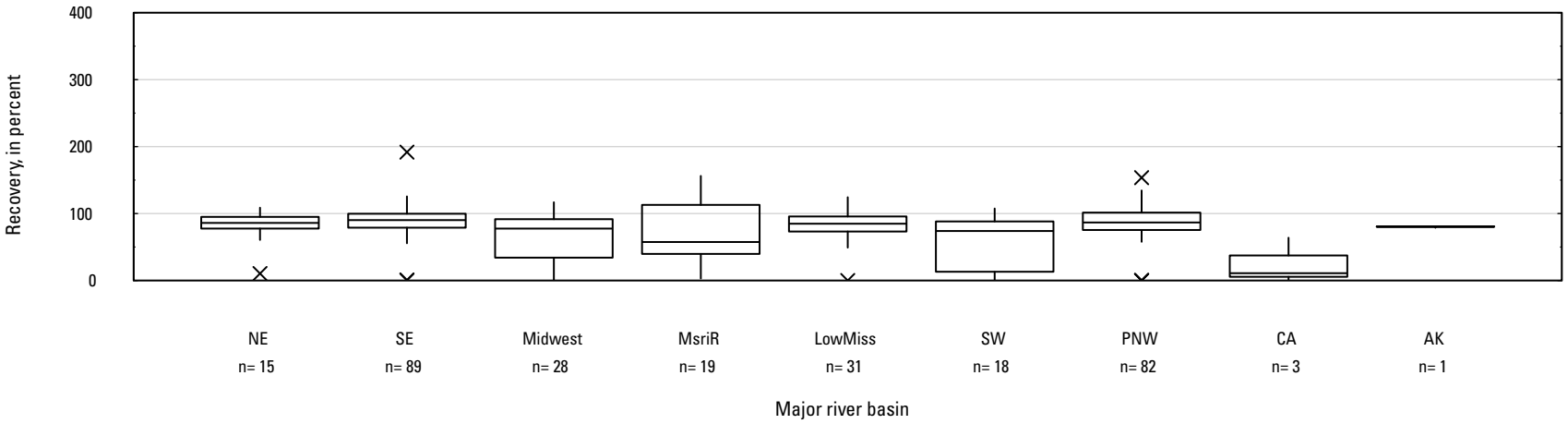


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

HG. **Terbufos oxon sulfoxide**



HH. **Terbufos sulfone**

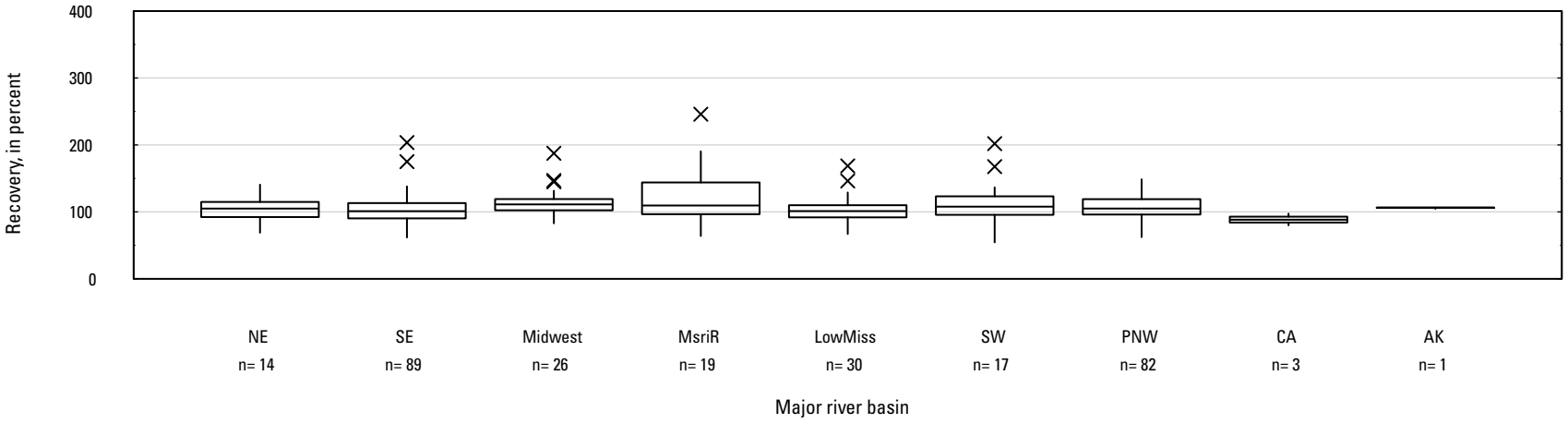
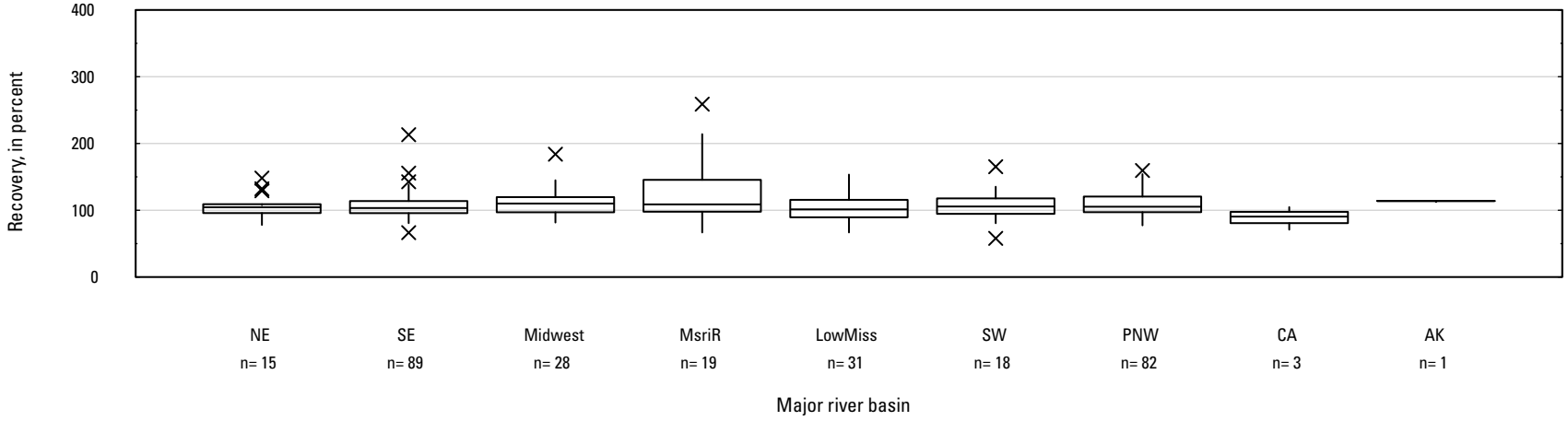


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

HI. **Terbufos sulfoxide**



HJ. **Terbuthylazine**

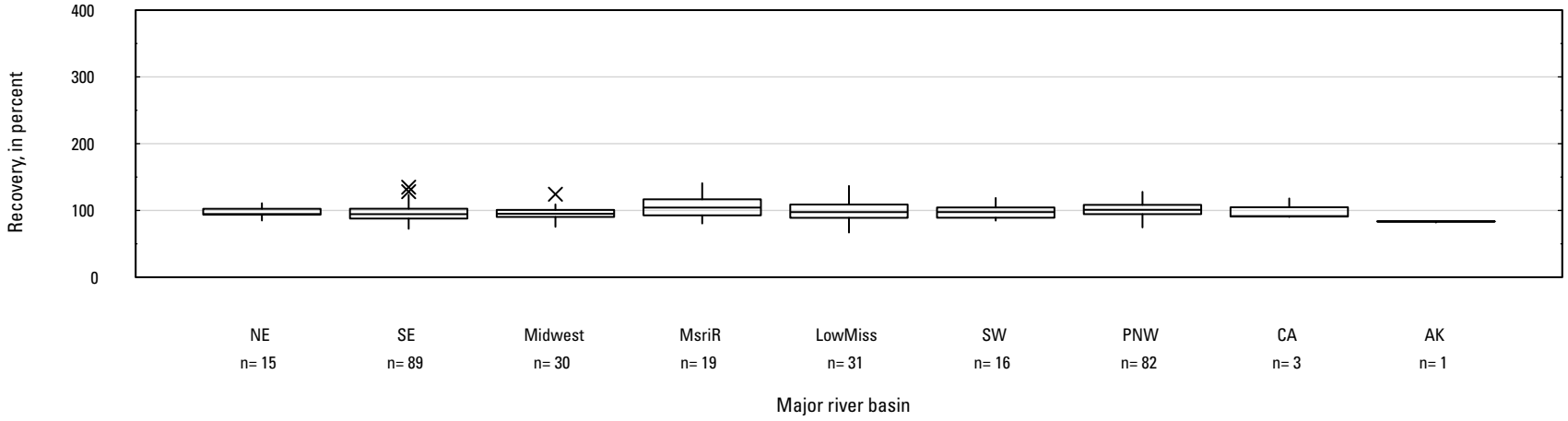
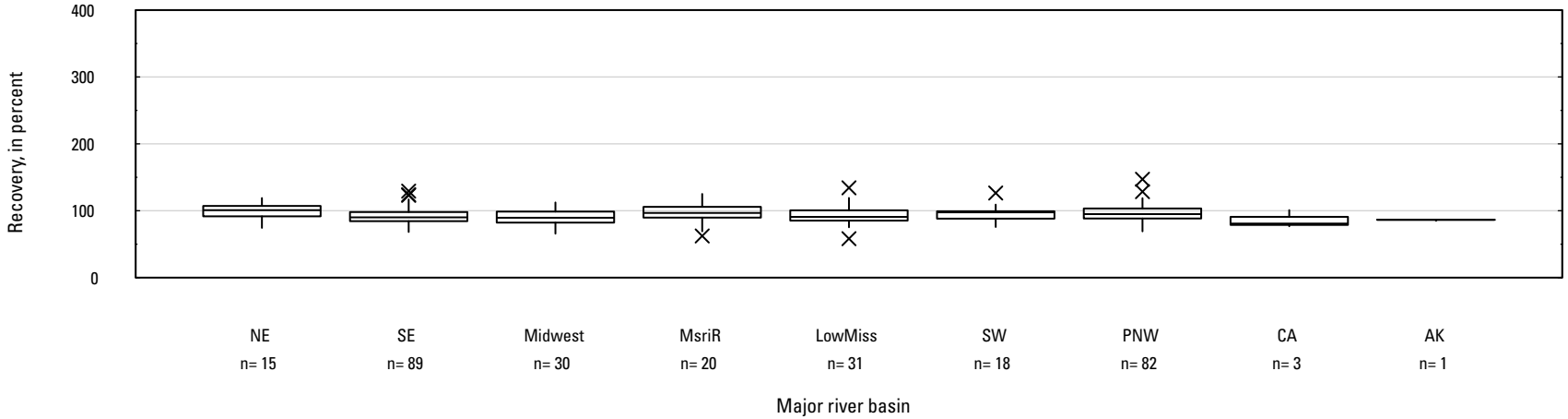


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

HK. **Tetraconazole**



HL. **Thiobencarb**

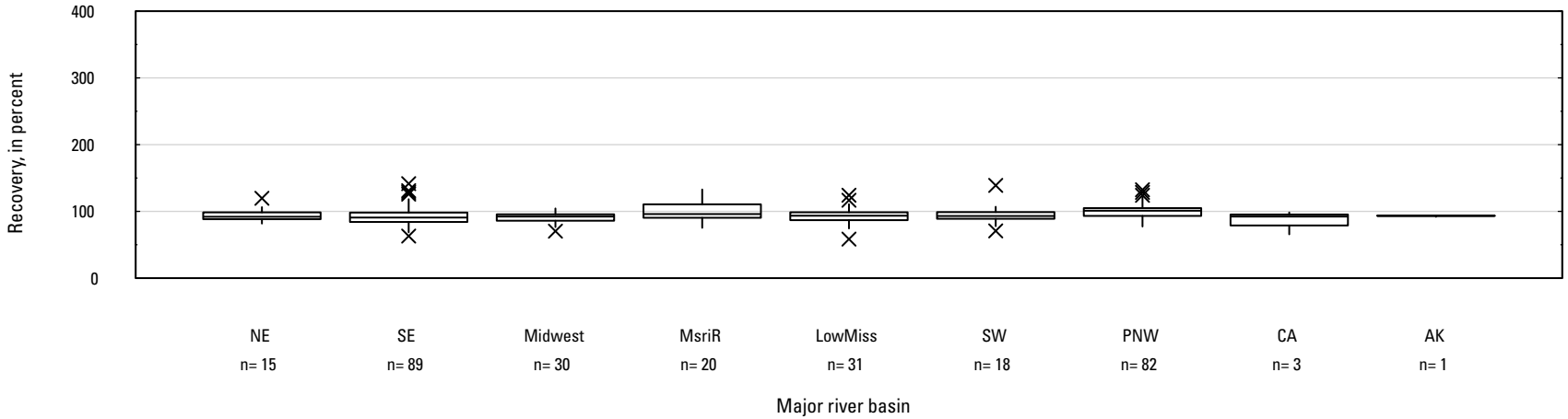


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

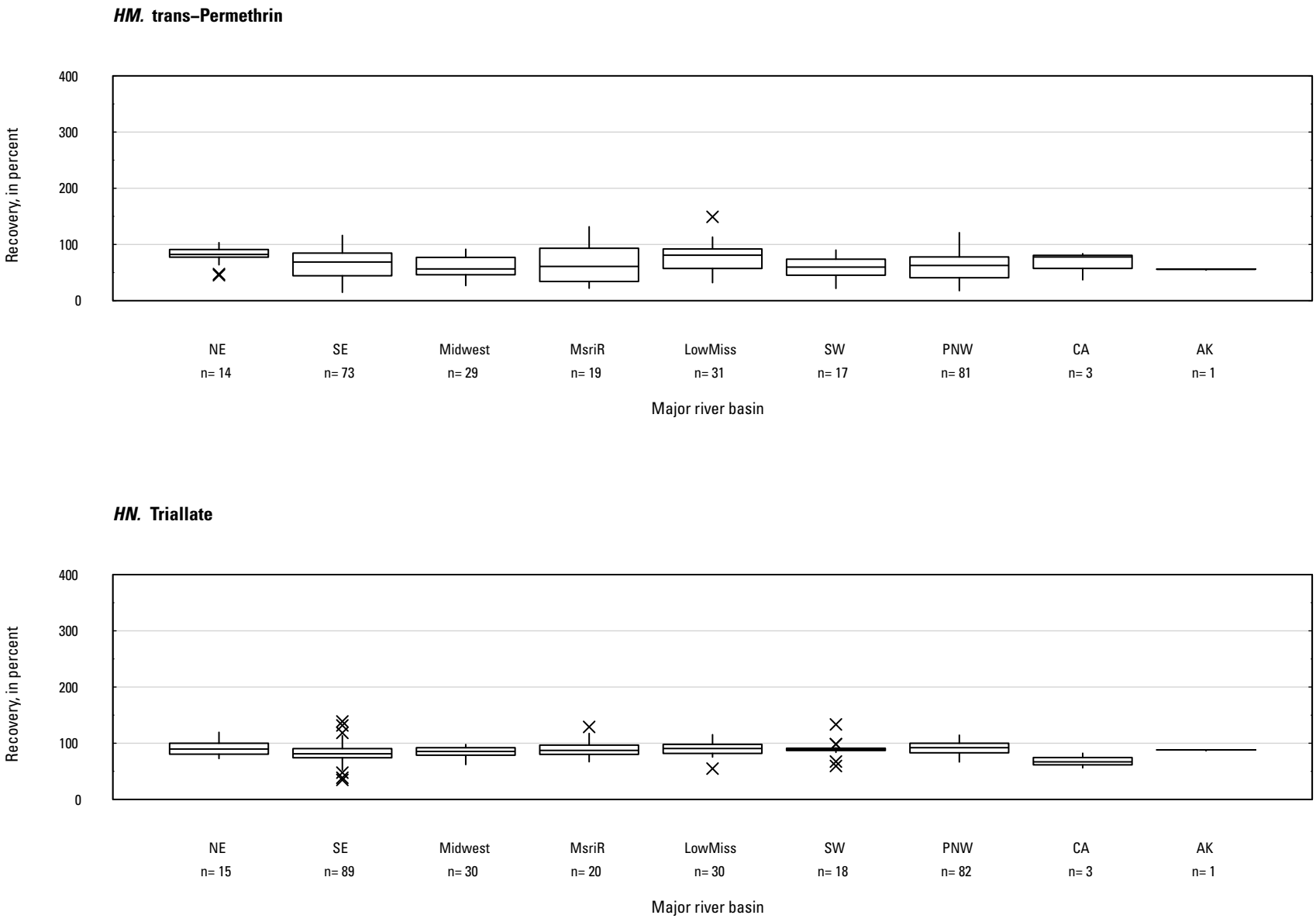
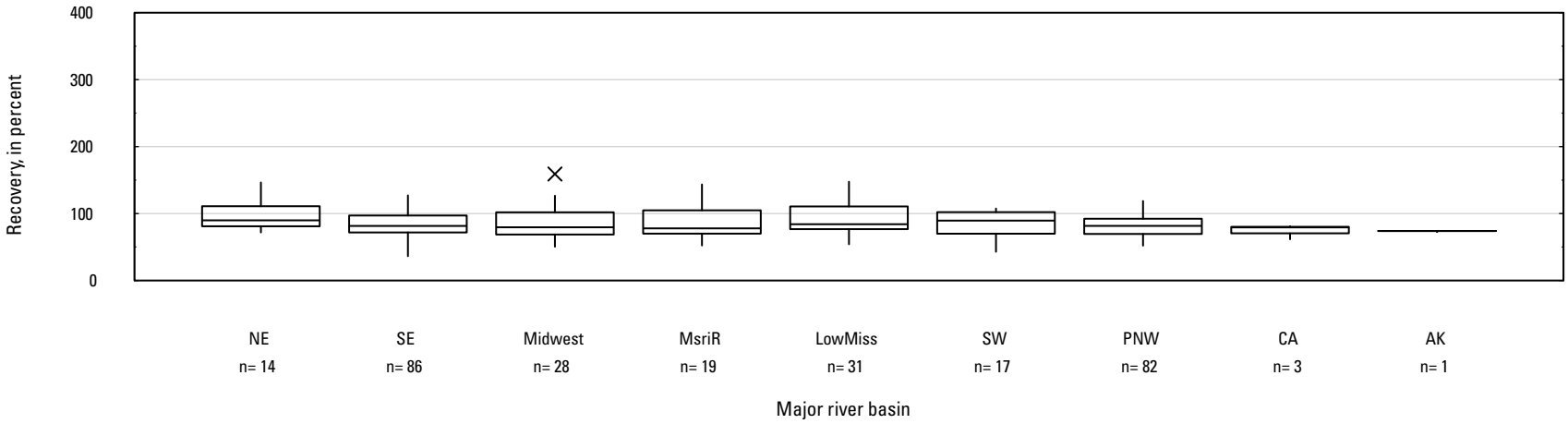


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

HO. **Tribufos**



HP. **Triclopyr**

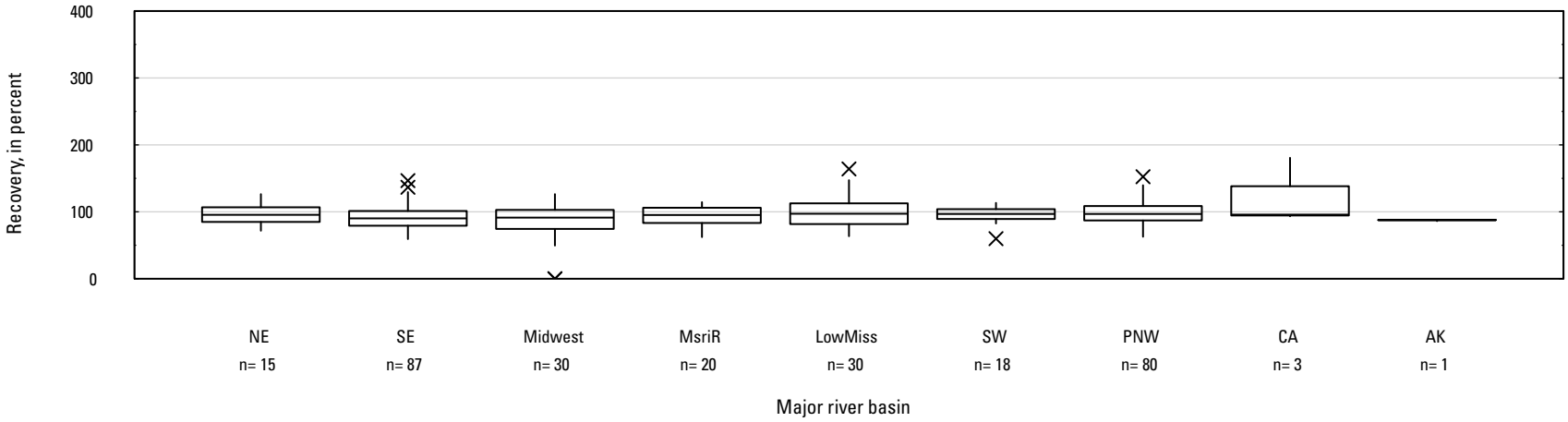


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

HQ. **Trifloxystrobin**

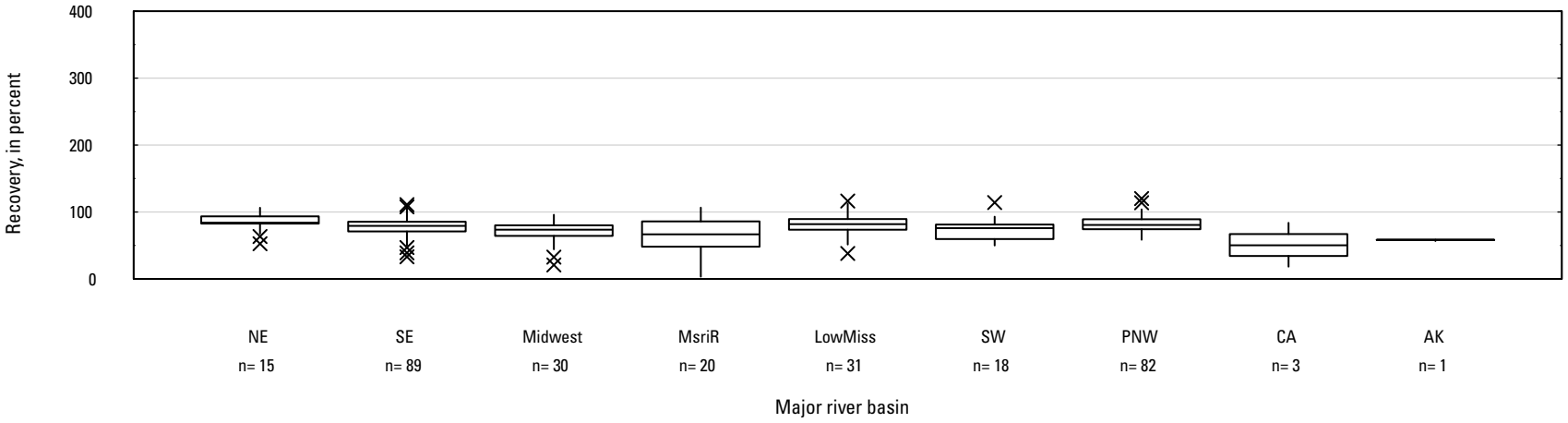


Figure 5. Graph showing distributions of recovery for pesticides in schedule 2437 in surface water by Major River Basin. Recovery values larger than 400 percent are not shown.—Continued

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Lab reagent spikes							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
61678	Chlorsulfuron	275	57.16	86.53	96.41	95.16	106.36	154.84	15.24
61679	Flumetsulam	275	64.25	91.39	99.93	98.73	109.31	137.17	13.69
61680	Halosulfuron-methyl	275	57.81	85.50	94.87	95.23	102.91	133.55	12.90
61682	Imazaquin	275	56.36	86.73	94.44	94.74	102.17	135.90	13.47
61683	Imazethapyr	275	56.37	88.51	99.24	98.45	109.76	157.23	17.28
61685	Nicosulfuron	275	44.43	87.67	96.49	96.19	105.43	141.21	14.39
61687	Prosulfuron	300	42.69	87.25	95.93	96.39	106.19	137.82	16.45
65064	Alachlor	275	64.51	84.59	94.46	94.06	102.77	129.91	12.83
65065	Atrazine	275	70.00	87.83	95.89	94.74	103.45	147.44	12.99
65066	Azinphos-methyl	275	67.54	88.55	101.11	99.31	109.78	193.00	17.75
65067	Bifenthrin	274	14.17	59.17	80.23	74.25	90.52	312.34	48.88
65068	Butylate	275	35.99	78.78	86.98	87.13	95.70	116.19	15.89
65069	Carbaryl	275	50.92	84.65	95.71	93.77	103.94	165.49	18.13
65070	Carbofuran	275	68.12	87.38	97.03	96.42	104.64	141.47	13.03
65072	Chlorpyrifos	275	45.41	79.53	87.84	87.42	96.30	137.12	14.92
65078	Diazinon	275	56.75	81.13	89.75	89.34	97.79	127.63	13.88
65080	EPTC	275	3.66	86.37	98.29	97.67	111.45	171.28	22.56
65084	Fonofos	275	56.75	82.53	93.24	91.98	101.66	153.35	15.50
65085	Hexazinone	275	66.28	87.43	95.17	95.56	101.64	129.33	11.23
65087	Malathion	275	22.38	78.10	89.07	90.64	100.92	164.55	26.25
65088	Methidathion	275	64.30	87.81	100.88	100.03	109.88	189.94	17.13
65090	Metolachlor	275	68.75	85.83	94.20	93.06	102.35	136.97	12.03
65091	Molinate	275	51.32	86.12	95.37	95.45	103.72	142.53	14.46
65093	Oxyfluorfen	327	0	64.61	88.43	86.96	109.54	226.87	39.86
65098	Pendimethalin	275	56.95	81.75	89.76	88.73	97.25	124.99	13.75
65102	Piperonyl butoxide	271	3.09	72.81	83.47	83.14	92.37	211.23	22.66
65103	Prometryn	275	60.97	85.12	92.35	92.55	98.62	127.96	11.45
65105	Simazine	275	66.63	85.91	94.41	92.97	102.36	148.93	13.64

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Groundwater							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
61678	Chlorsulfuron	42	57.27	84.78	100.73	99.33	109.28	189.16	22.72
61679	Flumetsulam	28	84.05	96.14	105.35	102.63	113.54	133.87	12.51
61680	Halosulfuron-methyl	39	38.26	80.45	90.07	86.55	98.38	147.88	19.66
61682	Imazaquin	39	71.20	82.70	94.98	90.64	105.31	162.20	17.72
61683	Imazethapyr	40	76.65	90.42	101.92	98.67	110.33	163.08	17.87
61685	Nicosulfuron	42	60.26	70.96	83.46	81.61	95.31	117.69	18.52
61687	Prosulfuron	42	52.80	77.38	94.31	90.84	106.70	161.09	25.95
65064	Alachlor	40	85.76	95.40	103.39	100.94	111.76	123.27	10.08
65065	Atrazine	40	80.26	91.39	101.10	98.82	111.39	144.23	12.78
65066	Azinphos-methyl	42	69.94	97.20	110.23	103.65	116.98	308.17	31.24
65067	Bifenthrin	36	7.91	18.87	35.34	26.72	46.27	136.37	77.85
65068	Butylate	34	67.57	82.65	93.68	96.76	100.06	112.13	12.57
65069	Carbaryl	42	8.79	84.71	98.18	96.41	123.95	135.24	25.85
65070	Carbofuran	42	49.36	91.06	96.53	95.33	103.03	120.57	13.13
65072	Chlorpyrifos	40	58.26	76.85	84.78	85.61	91.48	115.25	13.26
65078	Diazinon	41	67.40	83.25	95.40	92.10	104.07	143.67	18.47
65080	EPTC	16	61.79	92.96	108.60	110.48	123.27	151.38	21.78
65084	Fonofos	40	69.45	86.17	96.47	96.56	107.23	119.59	12.70
65085	Hexazinone	42	84.45	94.06	100.08	97.48	106.02	123.92	9.28
65087	Malathion	42	4.21	77.27	88.18	89.23	105.56	119.20	23.87
65088	Methidathion	42	56.43	95.94	106.76	100.72	111.92	333.02	36.68
65090	Metolachlor	42	84.07	93.73	99.60	98.54	106.44	118.66	9.03
65091	Molinate	42	66.04	87.63	98.82	96.80	109.22	132.20	15.07
65093	Oxyfluorfen	7	0	29.60	57.14	63.23	77.56	114.10	63.47
65098	Pendimethalin	38	69.18	77.91	86.61	85.42	94.99	116.19	13.04
65102	Piperonyl butoxide	38	68.20	76.16	86.00	85.99	95.69	111.83	14.23
65103	Prometryn	42	81.84	88.37	96.77	95.69	102.97	133.15	10.61
65105	Simazine	42	69.23	91.78	100.69	99.03	106.70	131.54	13.81

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Surface water							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
61678	Chlorsulfuron	289	17.11	89.18	100.43	99.23	110.22	169.13	20.84
61679	Flumetsulam	263	81.56	108.80	125.58	120.05	142.89	189.23	18.37
61680	Halosulfuron-methyl	276	20.97	80.77	89.54	89.11	97.44	141.58	18.14
61682	Imazaquin	267	62.61	89.96	100.34	99.59	108.75	153.00	15.28
61683	Imazethapyr	288	65.26	96.94	110.39	108.48	123.39	179.65	17.88
61685	Nicosulfuron	289	7.82	77.45	90.17	91.53	102.40	157.07	22.95
61687	Prosulfuron	282	6.49	79.00	96.83	96.88	112.09	218.19	27.60
65064	Alachlor	286	64.74	92.31	102.59	99.90	109.03	166.67	15.42
65065	Atrazine	262	47.94	90.94	98.45	98.08	105.75	148.65	13.64
65066	Azinphos-methyl	273	14.09	89.01	100.90	98.47	112.76	216.00	27.25
65067	Bifenthrin	282	6.86	39.49	68.54	64.02	95.63	170.40	52.64
65068	Butylate	247	23.32	82.45	91.25	92.07	99.15	148.46	17.24
65069	Carbaryl	287	0.00	69.69	78.72	82.39	96.37	172.94	39.22
65070	Carbofuran	289	10.38	83.21	91.07	93.38	102.23	151.63	25.43
65072	Chlorpyrifos	283	39.83	72.90	81.70	80.28	89.93	140.14	18.62
65078	Diazinon	276	55.55	82.02	92.46	90.74	99.98	182.02	16.63
65080	EPTC	271	0	84.65	98.42	98.11	113.96	165.89	26.60
65084	Fonofos	286	57.70	85.44	96.58	94.67	105.29	174.53	17.22
65085	Hexazinone	289	58.55	91.12	98.29	96.80	105.18	136.22	11.18
65087	Malathion	289	0	61.92	72.38	77.60	89.31	187.11	44.69
65088	Methidathion	289	42.53	88.76	102.15	98.48	112.53	252.28	21.73
65090	Metolachlor	266	57.73	90.50	97.55	96.30	103.34	140.93	11.16
65091	Molinate	283	38.22	91.38	100.12	99.09	109.14	175.28	16.88
65093	Oxyfluorfen	19	24.71	65.49	78.76	86.25	99.69	111.64	32.00
65098	Pendimethalin	275	35.29	73.79	82.71	82.18	91.80	125.82	17.44
65102	Piperonyl butoxide	256	0	81.01	90.08	87.51	96.73	160.12	20.86
65103	Prometryn	289	56.90	90.16	97.96	96.60	103.89	138.64	12.43
65105	Simazine	278	71.73	94.51	106.54	103.67	116.49	198.07	16.27

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Lab reagent spike							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
65107	Thiobencarb	275	59.73	85.64	93.56	93.48	100.60	123.17	11.94
66589	Azoxystrobin	275	66.97	86.75	94.08	92.73	100.05	132.53	11.77
66592	Cyanazine	275	15.32	83.57	94.38	94.97	106.00	148.67	19.04
66596	Dimethoate	275	67.73	92.24	103.68	101.98	113.08	191.86	16.62
66598	Diuron	275	68.09	87.79	95.66	95.00	101.67	211.52	13.67
66604	Fipronil	280	50.98	80.55	89.49	88.79	97.80	141.39	16.13
66607	Desulfinylfipronil	280	57.38	84.72	93.13	91.48	100.75	142.00	14.68
66610	Fipronil sulfide	280	50.50	78.96	87.90	87.55	95.04	136.75	16.22
66613	Fipronil sulfone	280	39.76	73.75	82.85	82.75	89.90	128.85	17.39
66620	Metconazole	261	66.61	86.51	93.63	93.28	98.87	131.93	12.21
66632	Myclobutanil	275	70.01	86.69	93.78	92.99	100.46	131.98	12.33
66641	Propanil	275	59.55	85.50	96.12	95.37	105.53	136.44	14.59
66643	Propiconazole	275	0.00	83.38	91.39	90.95	98.81	129.68	15.47
66646	Pyraclostrobin	275	61.77	82.66	90.45	90.27	96.24	124.94	12.09
66649	Tebuconazole	275	61.05	88.81	96.40	95.75	104.09	129.80	12.73
66651	Terbuthylazine	275	68.89	87.70	95.45	94.82	102.64	134.77	11.72
66654	Tetraconazole	275	67.42	82.46	91.24	90.77	98.25	127.70	12.63
66660	Trifloxystrobin	275	53.75	75.76	83.27	83.38	90.47	120.26	14.16
67595	Disulfoton	275	39.13	79.10	88.25	86.59	97.51	145.02	17.55
67670	Kresoxim-methyl	275	58.00	83.14	91.08	89.67	97.97	137.65	13.58
67685	Norflurazon	275	65.28	90.86	97.31	97.26	103.83	132.30	11.57
67702	Prometon	275	62.91	85.00	92.83	92.98	99.29	126.76	11.34
67706	Propyzamide	275	57.87	85.45	95.32	95.13	104.48	128.20	13.82
68211	Azinphos-methyl oxon	275	27.97	83.20	93.31	96.68	105.49	158.09	24.44
68216	Chlorpyrifos oxon	275	56.26	83.19	93.32	93.82	103.25	138.65	16.04
68226	3,4-Dichlorophenylurea	275	54.25	85.08	95.55	94.43	105.00	167.88	15.90
68231	N-(3,4-Dichlorophenyl)-N'-methylurea	275	55.99	85.79	96.18	94.52	101.18	256.14	21.80
68236	Diazinon oxon	275	44.70	82.41	92.21	93.40	103.41	135.99	17.83
68240	Malaoxon	273	1.92	71.72	82.63	87.63	100.12	158.36	36.47

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Groundwater							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
65107	Thiobencarb	42	75.65	86.89	94.53	94.60	101.68	117.83	10.09
66589	Azoxystrobin	42	84.36	91.71	97.85	96.90	104.72	127.26	9.33
66592	Cyanazine	34	72.16	84.84	102.55	97.05	114.87	219.51	27.40
66596	Dimethoate	42	67.81	93.33	108.66	104.28	113.49	303.17	31.35
66598	Diuron	35	83.60	94.90	102.28	100.86	109.26	128.41	10.17
66604	Fipronil	39	79.41	90.35	100.78	99.95	107.80	144.49	14.25
66607	Desulfinylfipronil	40	78.46	93.61	101.57	100.19	108.23	140.49	13.62
66610	Fipronil sulfide	39	77.74	88.50	99.31	99.64	106.83	143.45	15.36
66613	Fipronil sulfone	39	73.89	87.12	95.01	92.41	101.77	133.50	14.27
66620	Metconazole	42	81.48	90.69	97.18	96.42	106.10	122.43	10.12
66632	Myclobutanil	42	70.32	92.61	98.51	97.44	104.48	121.82	10.14
66641	Propanil	42	72.65	88.52	98.73	97.12	113.05	123.62	14.36
66643	Propiconazole	42	80.95	90.94	96.94	95.40	105.28	116.12	9.69
66646	Pyraclostrobin	42	78.65	84.69	92.21	90.72	99.46	112.10	9.78
66649	Tebuconazole	41	78.23	88.64	97.56	95.48	105.98	116.99	10.80
66651	Terbuthylazine	42	80.91	90.09	98.36	97.45	104.43	121.65	10.16
66654	Tetraconazole	42	73.94	87.91	95.25	94.42	102.50	118.22	11.11
66660	Trifloxystrobin	42	15.42	75.40	83.60	84.49	93.30	126.11	20.25
67595	Disulfoton	40	48.51	74.09	82.96	83.42	93.63	109.88	16.95
67670	Kresoxim-methyl	42	11.69	80.88	87.23	88.77	100.01	115.51	19.80
67685	Norflurazon	42	79.58	93.43	100.42	99.75	106.70	122.27	9.29
67702	Prometon	42	83.22	89.69	96.23	95.44	101.60	118.96	8.80
67706	Propyzamide	38	75.40	90.62	99.52	98.88	107.56	120.20	11.12
68211	Azinphos-methyl oxon	40	64.54	86.77	96.39	95.74	106.32	127.79	15.30
68216	Chlorpyrifos oxon	40	32.37	55.60	67.83	65.45	79.28	103.86	25.01
68226	3,4-Dichlorophenylurea	37	71.95	89.25	98.61	98.48	109.59	123.49	12.23
68231	N-(3,4-Dichlorophenyl)-N'-methylurea	41	46.81	79.44	96.75	95.47	106.22	237.30	35.77
68236	Diazinon oxon	42	45.61	71.10	82.80	81.35	95.16	138.71	25.03
68240	Malaoxon	38	0	53.70	69.04	69.46	88.49	146.29	42.47

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Surface water							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
65107	Thiobencarb	289	58.47	87.29	95.18	94.13	101.73	141.55	13.41
66589	Azoxystrobin	285	63.56	89.50	96.97	94.98	103.85	137.18	12.31
66592	Cyanazine	266	60.47	96.50	119.36	111.01	128.21	393.83	31.68
66596	Dimethoate	281	54.11	88.94	102.50	99.21	112.26	242.89	21.71
66598	Diuron	259	61.58	91.64	100.07	99.13	105.28	193.92	14.77
66604	Fipronil	279	9.65	83.69	91.14	92.23	102.75	154.85	23.79
66607	Desulfinylfipronil	280	66.13	86.65	96.30	94.65	104.92	156.74	14.29
66610	Fipronil sulfide	279	58.28	84.17	94.36	93.70	103.34	158.58	15.77
66613	Fipronil sulfone	282	56.09	80.24	90.40	88.51	99.67	152.60	16.83
66620	Metconazole	281	57.98	88.31	95.96	94.72	101.46	142.58	12.39
66632	Myclobutanil	289	58.73	90.52	98.42	97.56	105.08	151.11	12.28
66641	Propanil	281	66.79	90.48	100.18	98.42	108.81	157.66	15.48
66643	Propiconazole	284	55.58	88.34	95.74	94.80	101.07	153.34	12.60
66646	Pyraclostrobin	289	54.46	83.38	91.50	89.63	98.21	134.12	13.15
66649	Tebuconazole	283	66.77	89.96	98.72	97.50	106.50	151.75	13.45
66651	Terbuthylazine	286	66.88	90.75	98.64	97.46	106.91	140.81	12.71
66654	Tetraconazole	289	58.23	86.19	93.93	92.65	100.48	147.05	13.23
66660	Trifloxystrobin	289	3.42	69.53	77.45	79.12	86.91	120.05	21.44
67595	Disulfoton	283	28.60	70.52	80.47	78.65	88.31	159.33	20.70
67670	Kresoxim-methyl	289	1.93	72.19	80.30	81.55	89.93	127.71	21.54
67685	Norflurazon	286	60.26	93.72	101.72	100.96	109.18	142.90	12.12
67702	Prometon	289	56.34	89.86	97.67	95.55	103.86	190.26	13.18
67706	Propyzamide	278	65.50	89.18	98.66	97.38	106.99	161.63	14.64
68211	Azinphos-methyl oxon	289	0	70.66	81.21	84.64	96.62	183.34	36.84
68216	Chlorpyrifos oxon	272	0.00	60.32	68.29	72.07	84.51	121.55	35.10
68226	3,4-Dichlorophenylurea	285	58.02	87.56	96.57	96.05	104.90	175.23	14.48
68231	N-(3,4-Dichlorophenyl)-N'-methylurea	276	53.40	87.99	98.12	95.22	104.31	230.78	19.77
68236	Diazinon oxon	289	22.70	74.26	83.96	83.77	98.35	145.39	24.57
68240	Malaoxon	276	0	36.48	52.14	55.05	69.40	179.39	54.39

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Lab reagent spikes							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68336	4-Hydroxychlorothalonil	280	52.54	87.59	100.82	98.84	111.94	176.37	20.06
68426	Imidacloprid	275	64.38	84.27	93.23	93.05	101.12	140.14	13.66
68437	Metalaxyl	275	63.41	89.60	95.83	95.32	103.97	131.29	12.78
68498	1H-1,2,4-Triazole	275	35.24	62.52	81.94	78.99	99.46	155.43	31.21
68500	2,4-D	280	45.78	84.56	95.87	95.95	107.44	148.71	18.07
68502	2-Aminobenzimidazole	275	61.86	86.30	94.29	92.96	102.21	154.77	13.91
68503	2-Amino-N-isopropylbenzamide	275	62.69	86.73	95.10	94.67	102.35	135.97	12.91
68505	2-Isopropyl-6-methyl-4-pyrimidinol	275	63.14	93.57	105.53	102.98	115.35	214.31	18.43
68508	3-Hydroxycarbofuran	275	60.93	85.44	93.78	92.28	101.83	139.10	13.98
68511	4-(Hydroxymethyl)pendimethalin	280	32.76	81.83	96.02	95.25	107.69	173.93	22.96
68514	4-Chlorobenzylmethyl sulfoxide	275	62.94	91.00	99.18	99.11	106.97	132.14	12.12
68515	4-Hydroxy molinate	275	62.89	88.81	97.21	96.73	105.15	130.70	12.47
68517	4-Hydroxyhexazinone A	275	63.94	87.42	94.36	94.79	101.72	126.28	11.15
68519	Acephate	275	64.18	90.51	102.02	99.69	111.46	179.37	17.15
68520	Acetochlor	275	60.75	83.74	93.94	93.65	102.96	127.42	14.30
68521	2-Chloro-N-(2-ethyl-6-methylphenyl)acetamide	275	63.35	89.34	98.19	97.57	106.64	137.46	13.33
68522	Acetochlor oxanilic acid	280	49.32	82.91	93.86	94.52	104.97	146.51	18.26
68523	Acetochlor sulfonic acid	280	12.09	81.28	102.63	98.90	122.23	239.06	32.18
68524	Acetochlor sulfynilacetic acid	280	37.79	85.71	100.43	99.62	114.68	171.97	20.55
68525	2-Chloro-2',6'-diethylacetanilide	275	65.92	88.86	98.89	98.75	107.29	133.71	13.01
68526	Alachlor oxanilic acid	280	56.72	85.67	95.64	95.27	105.34	158.66	16.67
68527	Alachlor sulfynilacetic acid	280	52.77	83.06	96.46	94.78	109.31	151.98	19.72
68528	Aldicarb	275	63.53	86.34	95.41	94.49	103.04	145.48	14.72
68529	Aldicarb sulfone	275	70.60	89.23	99.31	97.31	106.95	150.86	14.36
68530	Aldicarb sulfoxide	275	64.74	88.34	96.75	95.62	103.66	143.41	12.80
68533	Ametryn	275	60.42	88.15	95.09	95.07	102.76	133.28	11.91
68536	Asulam	273	33.50	87.17	98.09	97.14	108.00	161.19	18.05
68538	Bentazone	280	58.23	93.44	106.17	103.50	116.24	172.63	17.55
68542	Bromacil	275	71.12	91.55	101.28	99.95	109.96	149.90	13.95
68543	Bromoxynil	280	56.91	87.07	99.06	97.34	109.24	170.34	17.46

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Groundwater							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68336	4-Hydroxychlorothalonil	41	61.11	89.62	101.75	97.94	114.95	148.91	19.39
68426	Imidacloprid	40	76.27	89.93	100.87	99.74	107.67	144.82	16.70
68437	Metalaxyl	42	76.25	86.69	97.19	96.98	102.91	157.50	15.53
68498	1H-1,2,4-Triazole	21	11.22	22.22	30.17	26.15	40.23	64.73	40.53
68500	2,4-D	38	0	66.82	87.32	94.83	108.95	147.66	40.81
68502	2-Aminobenzimidazole	40	77.81	87.52	100.80	96.99	106.88	179.90	20.41
68503	2-Amino-N-isopropylbenzamide	42	73.88	89.23	95.45	95.32	100.22	118.46	11.01
68505	2-Isopropyl-6-methyl-4-pyrimidinol	42	56.10	99.56	114.26	106.89	124.56	380.88	42.28
68508	3-Hydroxycarbofuran	42	7.70	80.24	86.47	89.75	97.57	120.98	22.79
68511	4-(Hydroxymethyl)pendimethalin	14	0	68.82	90.72	91.57	111.63	144.76	40.79
68514	4-Chlorobenzylmethyl sulfoxide	40	78.46	95.48	106.40	104.33	118.90	134.58	13.47
68515	4-Hydroxy molinate	40	80.66	89.96	98.94	98.53	106.25	117.85	9.94
68517	4-Hydroxyhexazinone A	42	81.31	92.52	98.99	97.29	105.14	123.06	9.13
68519	Acephate	42	73.00	98.97	117.46	114.38	129.65	328.80	32.36
68520	Acetochlor	42	72.41	86.44	97.19	93.55	107.48	128.13	14.60
68521	2-Chloro-N-(2-ethyl-6-methylphenyl)acetamide	42	78.93	89.14	98.70	97.84	107.32	122.61	12.59
68522	Acetochlor oxanilic acid	38	58.35	81.98	97.06	94.81	107.24	135.96	19.32
68523	Acetochlor sulfonic acid	1	93.89	93.89	93.89	93.89	93.89	93.89	
68524	Acetochlor sulfynilacetic acid	27	72.05	91.61	103.85	102.69	116.61	141.65	15.80
68525	2-Chloro-2',6'-diethylacetanilide	42	77.12	91.93	100.74	98.94	110.92	124.45	12.21
68526	Alachlor oxanilic acid	41	70.56	90.48	98.03	96.57	105.02	133.58	15.04
68527	Alachlor sulfynilacetic acid	28	59.39	86.82	97.93	97.69	113.24	136.09	18.82
68528	Aldicarb	42	60.23	82.24	90.63	91.69	97.36	111.24	12.74
68529	Aldicarb sulfone	40	60.82	87.86	97.03	98.86	104.77	132.66	16.30
68530	Aldicarb sulfoxide	42	79.09	88.34	95.97	95.62	103.63	124.16	10.90
68533	Ametryn	42	84.81	93.41	101.58	101.57	107.35	129.60	10.97
68536	Asulam	38	0	17.57	33.39	23.23	39.54	139.84	94.78
68538	Bentazone	39	54.07	93.11	104.36	102.93	117.39	137.97	16.74
68542	Bromacil	41	49.54	88.38	95.97	98.27	105.64	120.40	15.37
68543	Bromoxynil	42	66.71	84.17	96.95	94.82	107.37	149.19	18.20

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Surface water							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68336	4-Hydroxychlorothalonil	286	46.02	92.35	108.50	108.65	121.98	183.98	20.37
68426	Imidacloprid	287	65.98	103.35	119.94	113.87	134.51	241.12	20.91
68437	Metalaxyl	288	64.16	91.77	100.91	100.08	109.39	156.87	14.09
68498	1H-1,2,4-Triazole	73	0	22.56	49.62	39.34	71.01	171.89	76.52
68500	2,4-D	241	0	93.15	105.14	102.86	117.56	187.13	21.67
68502	2-Aminobenzimidazole	286	63.42	92.10	102.53	100.57	111.12	161.21	15.29
68503	2-Amino-N-isopropylbenzamide	289	52.86	90.68	99.82	99.36	108.32	147.92	14.81
68505	2-Isopropyl-6-methyl-4-pyrimidinol	288	41.23	86.03	99.65	96.66	111.11	287.50	25.94
68508	3-Hydroxycarbofuran	289	0	68.74	76.89	80.79	91.03	136.73	35.36
68511	4-(Hydroxymethyl)pendimethalin	263	0	78.01	91.08	89.55	104.79	175.20	26.86
68514	4-Chlorobenzylmethyl sulfoxide	289	51.34	91.63	101.62	102.04	112.89	164.18	15.62
68515	4-Hydroxy molinate	289	61.73	89.47	98.41	96.63	106.24	141.96	13.86
68517	4-Hydroxyhexazinone A	289	60.82	94.58	102.70	101.26	108.60	144.28	11.95
68519	Acephate	288	21.81	90.92	105.22	101.71	117.49	286.40	26.64
68520	Acetochlor	284	61.42	89.90	97.76	96.51	105.57	154.53	13.38
68521	2-Chloro-N-(2-ethyl-6-methylphenyl)acetamide	288	58.23	90.90	101.05	98.64	109.77	160.24	15.28
68522	Acetochlor oxanilic acid	265	56.89	83.27	98.38	97.38	109.67	209.99	20.64
68523	Acetochlor sulfonic acid	2	74.73	74.73	104.87	104.87	135.00	135.00	40.64
68524	Acetochlor sulfynilacetic acid	279	42.08	90.10	106.02	105.03	118.61	193.22	24.16
68525	2-Chloro-2',6'-diethylacetanilide	289	65.90	91.88	102.00	99.90	109.53	148.22	15.01
68526	Alachlor oxanilic acid	289	61.40	89.27	99.58	97.93	108.49	148.67	15.57
68527	Alachlor sulfynilacetic acid	285	54.35	85.10	96.84	96.94	107.07	151.59	18.33
68528	Aldicarb	289	55.64	84.02	93.92	92.52	99.77	162.34	16.43
68529	Aldicarb sulfone	276	14.00	88.78	97.70	98.38	109.43	162.76	24.49
68530	Aldicarb sulfoxide	289	9.65	86.25	93.37	95.45	103.14	152.35	22.84
68533	Ametryn	288	65.70	93.18	101.27	100.85	108.45	140.69	13.09
68536	Asulam	260	0	24.07	37.99	32.50	46.28	274.04	73.16
68538	Bentazone	264	35.73	95.54	112.68	108.35	126.86	210.48	23.39
68542	Bromacil	284	49.91	91.51	99.49	98.61	107.53	152.41	14.53
68543	Bromoxynil	289	50.33	89.97	101.43	99.66	110.84	174.13	17.60

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Lab reagent spikes							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68545	Butralin	274	53.52	79.57	87.84	87.25	96.19	125.08	13.82
68547	2-Chloro-4,6-diamino-s-triazine {CAAT} (Didealkylatrazine)	275	61.64	86.55	95.15	94.10	103.52	148.57	14.54
68548	Carbendazim	275	67.78	90.79	101.40	97.59	107.31	185.33	19.34
68549	Carboxy molinate	275	62.04	87.42	96.66	96.17	105.43	129.76	13.21
68550	2-Chloro-6-ethylamino-4-amino-s-triazine {CEAT}	275	57.66	86.05	95.28	93.76	104.77	135.92	14.30
68551	Chlorosulfonamide acid	282	46.03	85.20	95.59	95.27	105.26	151.95	16.59
68552	2-Chloro-4-isopropylamino-6-amino-s-triazine	275	63.23	87.80	95.17	94.90	102.89	129.54	12.37
68561	Dechlorofipronil	280	52.40	80.00	89.64	87.91	97.72	141.19	16.10
68562	Dechlorometolachlor	275	68.32	85.84	94.11	92.62	100.78	144.02	12.24
68563	Deiodo flubendiamide	275	45.47	75.48	85.23	85.75	94.01	128.06	16.45
68564	Deisopropyl prometryn	275	65.76	87.08	94.58	93.35	102.43	135.99	12.38
68566	Demethyl hexazinone B	275	64.68	88.74	96.26	97.04	102.55	129.68	10.95
68567	Demethyl norflurazon	275	62.31	84.15	92.39	92.25	100.04	131.56	12.58
68568	Desamino metribuzin	275	60.66	87.74	94.99	95.25	101.90	128.75	11.73
68569	Desamino-diketo metribuzin	273	19.59	78.79	94.71	94.06	109.74	194.43	25.20
68570	Desulfinylfipronil amide	280	58.41	87.52	97.96	96.70	106.77	146.51	15.98
68572	Dichlorvos	275	37.66	84.00	97.17	97.39	110.82	190.81	24.15
68573	Dicrotophos	275	66.76	91.09	102.77	101.46	112.05	187.46	16.55
68574	Didemethyl hexazinone F	275	61.41	85.70	93.28	92.60	100.69	128.73	12.37
68575	Tebuthiuron TP 104	275	70.35	89.56	97.04	96.26	103.79	133.47	11.84
68576	Diflubenzuron	275	62.74	83.93	91.11	91.02	97.29	133.79	12.08
68577	Diflufenzopyr	280	53.81	93.41	107.35	107.45	119.14	220.98	21.36
68578	Diketonitrile-isoxaflutole	280	64.02	95.54	125.26	112.83	140.19	285.88	33.19
68580	Dimethenamid	275	64.62	86.43	96.21	96.61	104.93	135.83	13.51
68581	Dimethenamid oxanilic acid	280	55.59	87.89	98.07	97.53	107.62	145.46	15.66
68582	Dimethenamid sulfonic acid	280	47.90	84.60	97.08	96.10	108.76	157.43	18.80
68583	Dimethenamid SAA	280	37.86	88.06	107.32	104.56	122.12	220.07	25.41
68586	Disulfoton oxon	275	64.04	90.46	103.30	102.70	112.26	206.68	17.74
68587	Disulfoton oxon sulfoxide	275	61.19	90.73	101.88	100.82	110.75	186.23	17.10
68588	Disulfoton oxon sulfone	275	50.36	82.96	95.03	95.20	105.61	147.35	18.20

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Groundwater							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68545	Butralin	42	70.44	84.64	97.05	95.56	100.81	155.07	21.17
68547	2-Chloro-4,6-diamino-s-triazine {CAAT} (Didealkylatrazine)	14	82.34	115.09	140.14	126.53	151.17	249.97	35.91
68548	Carbendazim	38	84.09	99.01	108.32	104.64	118.26	156.91	14.56
68549	Carboxy molinate	40	79.94	87.80	98.38	97.22	107.01	122.92	11.72
68550	2-Chloro-6-ethylamino-4-amino-s-triazine {CEAT}	39	78.01	87.90	98.62	97.08	106.05	131.77	13.63
68551	Chlorosulfonamide acid	40	0	23.77	56.35	49.85	86.31	154.00	72.59
68552	2-Chloro-4-isopropylamino-6-amino-s-triazine	35	69.87	93.56	98.39	98.18	106.51	120.76	10.86
68561	Dechlorofipronil	39	80.22	89.07	100.66	97.69	106.56	134.75	13.56
68562	Dechlorometolachlor	37	82.35	90.06	97.58	97.50	103.93	117.82	9.52
68563	Deiodo flubendiamide	38	64.65	82.41	94.06	95.25	106.22	122.27	17.15
68564	Deisopropyl prometryn	42	79.28	90.57	100.04	99.49	110.50	124.16	11.21
68566	Demethyl hexazinone B	42	87.45	96.63	102.01	100.91	107.23	122.29	8.13
68567	Demethyl norflurazon	42	77.20	90.86	99.76	95.75	105.88	163.69	14.98
68568	Desamino metribuzin	42	78.21	94.28	99.78	98.83	105.74	123.25	9.48
68569	Desamino-diketo metribuzin	17	66.39	81.67	99.17	100.10	110.13	137.41	21.48
68570	Desulfinylfipronil amide	36	76.28	84.88	94.63	92.15	102.21	133.08	13.13
68572	Dichlorvos	35	0	68.95	78.52	79.78	93.53	117.45	27.32
68573	Dicrotophos	42	64.32	95.76	111.01	105.88	116.92	339.73	35.41
68574	Didemethyl hexazinone F	40	77.20	89.72	96.63	94.57	102.31	127.06	11.43
68575	Tebuthiuron TP 104	40	89.98	96.44	105.96	104.72	113.42	141.58	11.17
68576	Diflubenzuron	42	78.65	87.76	94.35	93.28	99.51	111.01	9.49
68577	Diflufenzopyr	42	65.56	83.38	100.70	93.69	110.72	167.17	24.01
68578	Diketonitrile-isoxaflutole	42	85.18	117.05	143.63	138.97	169.54	245.77	25.45
68580	Dimethenamid	42	77.12	89.52	98.83	96.70	109.23	130.08	12.88
68581	Dimethenamid oxanilic acid	37	71.96	86.13	98.02	94.76	104.22	141.39	18.29
68582	Dimethenamid sulfonic acid	42	63.32	83.96	98.25	98.26	109.53	136.32	19.97
68583	Dimethenamid SAA	17	0	70.42	84.96	89.71	105.16	136.42	37.19
68586	Disulfoton oxon	42	65.89	93.20	106.41	101.73	112.03	314.82	33.61
68587	Disulfoton oxon sulfoxide	42	67.95	95.97	110.82	103.86	119.61	303.32	30.73
68588	Disulfoton oxon sulfone	42	13.13	79.78	89.69	89.57	101.51	129.71	22.59

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Surface water							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68545	Butralin	289	37.93	82.84	99.86	95.62	114.34	193.66	24.63
68547	2-Chloro-4,6-diamino-s-triazine {CAAT} (Didealkylatrazine)	170	34.49	126.58	160.32	148.26	183.08	421.09	36.11
68548	Carbendazim	277	0	95.02	107.54	106.67	116.01	179.68	20.04
68549	Carboxy molinate	285	63.22	88.00	98.06	97.68	105.74	154.86	15.71
68550	2-Chloro-6-ethylamino-4-amino-s-triazine {CEAT}	279	18.42	86.42	96.31	95.01	105.00	152.41	16.09
68551	Chlorosulfonamide acid	268	0	50.88	90.43	87.29	120.40	308.40	57.00
68552	2-Chloro-4-isopropylamino-6-amino-s-triazine	268	56.44	88.43	97.88	97.24	106.17	146.25	13.99
68561	Dechlorofipronil	279	10.77	85.02	92.16	94.42	104.39	155.75	24.12
68562	Dechlorometolachlor	268	0.20	83.33	92.27	92.08	98.93	135.91	14.78
68563	Deiodo flubendiamide	257	46.54	81.22	92.46	91.01	101.74	131.33	16.27
68564	Deisopropyl prometryn	289	52.66	96.67	107.76	106.80	117.14	171.48	14.68
68566	Demethyl hexazinone B	286	60.34	91.48	99.35	97.83	104.98	135.25	11.84
68567	Demethyl norflurazon	278	60.08	90.17	99.10	96.74	104.83	151.57	13.73
68568	Desamino metribuzin	288	55.40	89.28	98.05	97.60	105.45	141.22	13.54
68569	Desamino-diketo metribuzin	266	0	73.84	91.69	88.87	109.44	196.18	30.28
68570	Desulfinylfipronil amide	282	63.71	86.83	97.32	96.33	107.08	160.05	14.98
68572	Dichlorvos	278	0	68.37	79.33	81.90	94.82	194.14	36.91
68573	Dicrotophos	280	56.91	90.67	103.76	101.33	113.36	260.71	21.53
68574	Didemethyl hexazinone F	289	57.23	86.99	96.43	95.80	103.58	137.88	13.60
68575	Tebuthiuron TP 104	289	73.94	98.65	111.78	107.97	120.21	206.93	17.49
68576	Diflubenzuron	289	44.96	85.99	91.81	91.79	98.77	131.53	15.28
68577	Diflufenzopyr	289	45.49	87.42	101.58	99.11	115.59	226.24	24.18
68578	Diketonitrile-isoxaflutole	289	95.90	131.90	168.37	158.02	193.77	361.68	28.68
68580	Dimethenamid	289	62.10	90.15	99.18	97.19	107.02	161.10	14.73
68581	Dimethenamid oxanilic acid	282	61.90	88.95	100.14	98.54	110.94	152.93	16.81
68582	Dimethenamid sulfonic acid	288	65.30	86.36	97.09	95.89	104.96	185.58	16.55
68583	Dimethenamid SAA	262	15.74	82.90	100.18	98.20	115.35	174.99	25.55
68586	Disulfoton oxon	282	55.83	89.07	103.26	99.20	112.92	258.37	21.99
68587	Disulfoton oxon sulfoxide	286	46.39	91.20	105.90	103.51	118.75	246.75	22.33
68588	Disulfoton oxon sulfone	289	0	63.85	74.09	78.71	91.55	191.14	40.02

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Lab reagent spikes							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68589	Disulfoton sulfone	275	57.06	85.83	98.25	97.78	107.58	153.67	17.36
68590	Disulfoton sulfoxide	275	64.90	93.14	105.44	103.53	116.21	194.81	17.29
68591	Demethyl fluometuron	275	0.00	87.50	94.82	95.08	101.94	133.16	12.75
68594	EPTC degradate R248722	275	63.58	88.17	97.02	96.72	106.14	128.92	12.57
68595	2-[(2-Ethyl-6-methylphenyl)amino]-1-propanol	275	60.78	86.99	96.30	96.08	105.18	135.11	13.49
68596	Ethoprophos	275	61.24	86.71	95.87	95.21	104.55	147.64	14.47
68597	O-Ethyl-O-methyl-S-propylphosphorothioate	275	61.03	90.86	109.99	103.49	120.50	264.38	25.19
68598	Etoxazole	274	37.21	71.03	79.96	80.29	88.97	121.14	17.68
68599	Fenamiphos	275	59.79	84.04	93.64	92.60	101.99	148.24	14.15
68600	Fenamiphos sulfone	275	61.37	87.87	100.35	98.85	109.28	200.15	17.76
68601	Fenamiphos sulfoxide	275	61.44	89.83	101.26	98.85	109.64	181.96	16.89
68602	Fenbutatin oxide	275	14.22	68.10	104.81	92.98	125.93	357.55	51.74
68603	Fentin	275	57.48	83.56	93.54	92.72	101.99	158.84	15.51
68604	Fipronil amide	280	58.00	87.27	99.05	97.74	109.16	154.48	16.68
68605	Fipronil sulfonate	278	58.52	86.94	98.71	97.18	109.26	154.63	17.73
68606	Flubendiamide	280	43.85	80.11	93.75	91.30	104.03	170.84	20.50
68608	Fluometuron	275	44.22	88.37	94.57	95.16	100.78	132.20	11.67
68611	2-(1-Hydroxyethyl)-6-methylaniline	274	14.15	82.21	109.37	98.51	129.57	305.99	41.56
68612	Hexazinone Transformation Product C	275	65.21	86.05	93.66	93.44	99.56	124.76	11.01
68613	Hexazinone Transformation Product D	287	22.94	86.06	102.19	100.40	118.48	185.25	27.06
68614	Hexazinone Transformation Product E	270	49.25	85.53	96.32	94.39	106.95	145.06	17.39
68615	Hydroxyacetochlor	275	63.49	83.95	95.37	94.12	106.49	167.16	16.17
68616	Hydroxyalachlor	275	59.50	84.77	95.45	95.10	105.71	136.24	15.09
68617	Hydroxy monodemethyl fluometuron	275	50.21	81.94	89.49	90.02	96.98	128.47	14.48
68618	Hydroxydiazinon	275	67.54	87.31	98.13	97.05	108.95	161.85	16.24
68619	Hydroxy didemethyl fluometuron	275	56.87	82.39	92.71	92.41	100.44	151.29	16.05
68620	Hydroxyfluometuron	275	45.69	81.41	89.14	89.52	96.46	139.17	14.40
68621	Tebuthiuron TP 109	273	49.16	81.23	90.18	90.58	97.91	127.21	13.73
68622	Hydroxymetolachlor	275	72.49	86.08	94.66	93.49	101.49	144.22	12.04
68623	Hydroxyphthalazinone	275	68.92	88.95	95.64	95.14	101.78	141.34	11.66
68624	Hydroxysimazine	274	51.20	88.04	97.53	96.88	106.05	143.67	16.57

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Groundwater							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68589	Disulfoton sulfone	42	56.23	87.89	94.93	96.75	107.99	146.06	21.48
68590	Disulfoton sulfoxide	42	71.57	104.17	120.76	111.16	125.17	427.38	42.19
68591	Demethyl fluometuron	38	82.23	93.81	101.10	100.13	109.12	118.15	9.58
68594	EPTC degradate R248722	42	69.91	90.82	99.47	99.42	107.27	120.09	11.71
68595	2-[(2-Ethyl-6-methylphenyl)amino]-1-propanol	42	71.24	92.58	100.89	100.17	109.46	144.89	13.59
68596	Ethoprophos	42	65.34	91.87	98.87	98.30	105.74	132.37	12.73
68597	O-Ethyl-O-methyl-S-propylphosphorothioate	42	66.27	99.36	117.66	112.87	125.16	344.83	34.45
68598	Etoxazole	42	60.01	73.03	81.94	81.33	89.96	115.93	15.15
68599	Fenamiphos	42	68.15	87.13	95.96	95.32	103.90	126.51	13.40
68600	Fenamiphos sulfone	41	63.90	95.09	109.36	102.62	114.72	334.19	35.77
68601	Fenamiphos sulfoxide	42	71.87	97.27	111.78	106.54	115.19	361.06	37.88
68602	Fenbutatin oxide	35	0	24.55	45.92	36.42	64.57	148.94	75.61
68603	Fentin	42	64.41	79.71	89.19	87.82	97.99	125.77	16.72
68604	Fipronil amide	39	77.73	87.42	100.41	99.79	110.14	143.55	14.32
68605	Fipronil sulfonate	42	69.49	89.10	108.87	105.79	124.85	175.18	22.70
68606	Flubendiamide	40	76.29	92.59	105.08	103.42	117.85	143.86	15.93
68608	Fluometuron	35	84.55	93.91	101.26	98.47	108.00	123.94	8.82
68611	2-(1-Hydroxyethyl)-6-methylaniline	31	16.18	42.18	86.70	71.30	106.00	239.20	72.42
68612	Hexazinone Transformation Product C	42	81.53	94.18	100.07	99.56	105.64	122.08	9.62
68613	Hexazinone Transformation Product D	1	96.23	96.23	96.23	96.23	96.23	96.23	
68614	Hexazinone Transformation Product E	34	41.29	61.71	81.02	83.84	95.45	118.71	25.89
68615	Hydroxyacetochlor	36	66.51	82.69	95.32	94.20	106.61	122.85	16.20
68616	Hydroxyalachlor	42	63.38	78.77	93.14	93.61	108.39	121.15	17.34
68617	Hydroxy monodemethyl fluometuron	42	0	31.07	57.90	55.05	86.29	127.11	56.05
68618	Hydroxydiazinon	42	76.32	85.38	101.80	98.51	109.90	157.45	19.18
68619	Hydroxy didemethyl fluometuron	42	0	53.55	70.95	69.85	94.43	112.05	35.27
68620	Hydroxyfluometuron	40	0	15.19	48.35	42.82	78.40	127.07	77.53
68621	Tebuthiuron TP 109	40	8.62	81.21	88.41	88.92	98.69	142.95	22.22
68622	Hydroxymetolachlor	35	79.66	89.55	96.44	96.78	101.68	119.41	9.50
68623	Hydroxyphthalazinone	41	70.74	91.58	98.76	100.22	104.78	134.57	11.64
68624	Hydroxysimazine	42	63.73	96.11	109.32	108.63	120.63	162.92	18.47

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Surface water							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68589	Disulfoton sulfone	278	0	76.44	85.34	90.82	104.32	189.92	35.32
68590	Disulfoton sulfoxide	286	58.46	103.08	117.67	113.88	127.29	298.86	21.76
68591	Demethyl fluometuron	280	0.00	84.69	94.29	94.12	102.79	139.92	15.59
68594	EPTC degradate R248722	269	70.30	90.12	99.21	98.33	107.47	148.95	13.60
68595	2-[(2-Ethyl-6-methylphenyl)amino]-1-propanol	289	60.10	89.94	99.79	98.34	108.84	147.17	15.97
68596	Ethoprophos	288	53.62	89.40	100.63	96.93	110.97	187.50	17.13
68597	O-Ethyl-O-methyl-S-propylphosphorothioate	289	55.92	97.80	116.26	110.99	128.10	271.61	24.76
68598	Etoxazole	288	31.46	69.83	81.43	80.37	92.34	130.97	21.63
68599	Fenamiphos	280	56.40	86.76	97.40	94.32	105.57	186.83	16.80
68600	Fenamiphos sulfone	289	56.17	92.79	106.56	102.84	115.93	234.67	21.12
68601	Fenamiphos sulfoxide	287	53.87	96.04	109.36	105.33	118.82	261.62	21.35
68602	Fenbutatin oxide	283	0	48.93	74.95	72.97	95.44	280.52	50.13
68603	Fentin	287	51.02	79.20	89.73	88.07	97.41	137.75	17.13
68604	Fipronil amide	276	60.34	93.56	103.47	102.32	111.49	149.96	14.30
68605	Fipronil sulfonate	288	69.28	100.21	116.84	113.42	132.86	186.23	19.84
68606	Flubendiamide	281	52.25	88.33	104.93	101.14	116.26	217.87	23.68
68608	Fluometuron	251	66.52	91.66	98.90	98.54	104.98	134.52	12.15
68611	2-(1-Hydroxyethyl)-6-methylaniline	211	0	48.47	92.72	95.45	124.78	268.35	53.43
68612	Hexazinone Transformation Product C	287	62.04	96.21	104.14	102.23	111.05	147.63	13.01
68613	Hexazinone Transformation Product D	3	83.34	83.34	98.81	99.92	113.15	113.15	15.11
68614	Hexazinone Transformation Product E	254	27.79	70.93	85.55	85.52	98.00	145.53	24.19
68615	Hydroxyacetochlor	257	0	83.06	95.46	94.89	105.15	212.23	20.48
68616	Hydroxyalachlor	284	59.84	86.01	97.26	95.66	107.69	162.10	17.13
68617	Hydroxy monodemethyl fluometuron	288	0	48.20	59.91	62.49	74.94	121.28	36.84
68618	Hydroxydiazinon	289	55.42	84.57	97.03	93.64	107.23	173.03	18.59
68619	Hydroxy didemethyl fluometuron	288	0	56.57	68.43	67.26	80.75	145.86	28.49
68620	Hydroxyfluometuron	287	0	28.69	50.55	54.72	72.49	133.11	54.90
68621	Tebuthiuron TP 109	289	0	68.89	75.45	80.49	91.36	135.10	34.38
68622	Hydroxymetolachlor	258	61.97	85.90	94.64	94.13	101.67	139.02	13.42
68623	Hydroxyphthalazinone	271	62.92	93.19	99.94	99.15	106.51	135.20	12.30
68624	Hydroxysimazine	280	70.77	103.04	120.31	115.31	132.42	270.00	21.85

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Lab reagent spikes							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68625	Imazamox	275	61.44	90.04	101.37	99.16	111.23	160.43	16.69
68627	Indoxacarb	275	31.44	69.53	78.53	78.14	88.15	143.73	20.88
68632	Isoxaflutole	273	0	70.34	76.78	85.24	97.03	142.89	42.49
68633	Isoxaflutole acid metabolite RPA 203328	280	57.17	86.42	96.49	97.19	105.65	140.90	14.89
68638	Lactofen	273	1.26	52.18	66.76	71.45	83.95	140.19	40.56
68639	Linuron	275	71.46	87.74	95.04	94.80	101.66	132.20	11.58
68641	MCPA	251	62.67	86.47	98.65	97.61	109.41	162.92	16.38
68644	Methamidophos	275	61.42	90.53	103.79	102.40	112.90	195.44	17.88
68645	Methomyl	275	43.72	87.66	96.48	95.89	104.45	141.49	14.84
68647	Methoxyfenozide	275	64.64	92.10	100.41	100.44	108.95	133.20	12.65
68648	Methyl paraoxon	275	57.14	89.06	102.47	98.19	113.48	211.10	20.19
68649	Metolachlor hydroxy morpholinone	275	57.73	81.59	93.16	94.22	103.76	145.30	16.37
68650	Metolachlor oxanilic acid	278	52.49	86.89	97.63	95.88	107.39	147.47	16.23
68651	Metolachlor sulfonic acid	280	56.49	90.10	101.17	98.62	112.11	159.41	17.27
68652	Metribuzin	275	61.68	87.01	95.81	94.06	104.06	156.30	14.04
68653	Metribuzin DK	244	43.03	84.90	98.59	99.25	113.55	167.10	20.89
68654	Naled	268	0	44.51	66.94	74.09	94.93	146.80	57.01
68655	Novaluron	275	0	66.70	86.58	83.67	106.81	215.38	38.93
68656	2-Hydroxy-6-ethylamino-4-amino-s-triazine	274	43.94	85.44	95.00	94.28	103.24	169.40	16.10
68657	O-Ethyl-S-methyl-S-propyl phosphorodithioate	275	58.29	90.47	101.91	100.02	110.05	196.92	17.01
68658	O-Ethyl-S-propyl phosphorothioate	275	64.08	89.71	104.85	101.32	117.49	224.74	21.82
68659	2-Hydroxy-4-isopropylamino-6-amino-s-triazine	275	65.00	85.34	93.91	93.22	102.67	137.19	13.27
68660	2-Hydroxy-4-isopropylamino-6-ethylamino-s-triazine {OIET}	275	65.49	84.39	93.05	92.73	100.88	135.05	13.42
68661	Omethoate (Dimethoate oxon)	275	40.57	83.65	94.21	94.84	104.20	150.38	20.24
68662	Orthosulfamuron	275	44.13	90.75	99.47	100.80	111.95	138.98	19.35
68663	Oryzalin	280	57.99	91.62	102.50	101.53	112.42	161.97	17.29
68664	Oxamyl	275	45.35	81.43	90.51	90.22	99.31	128.45	15.51
68665	Oxamyl oxime	275	64.67	90.96	98.77	96.99	106.52	136.20	13.18
68666	Paraoxon	275	65.01	91.76	103.34	101.93	113.00	185.65	17.13

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Groundwater							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68625	Imazamox	42	70.19	88.43	105.32	98.38	120.97	189.55	22.85
68627	Indoxacarb	42	0.73	49.89	67.20	68.48	84.18	125.90	36.45
68632	Isoxaflutole	33	0.71	48.56	70.46	72.88	101.01	122.82	48.84
68633	Isoxaflutole acid metabolite RPA 203328	35	75.18	84.42	95.72	92.51	103.11	129.86	14.95
68638	Lactofen	40	1.25	45.46	65.22	64.78	79.53	150.33	43.25
68639	Linuron	42	81.04	90.35	96.27	95.76	104.78	116.45	9.21
68641	MCPA	29	70.56	89.91	103.09	99.93	110.71	144.96	17.68
68644	Methamidophos	40	70.85	99.33	113.09	108.60	119.59	290.09	29.03
68645	Methomyl	42	25.09	85.80	92.27	92.01	102.62	128.31	20.31
68647	Methoxyfenozide	42	78.37	92.56	101.87	102.71	111.72	123.63	11.37
68648	Methyl paraoxon	32	73.09	93.40	109.03	104.78	112.68	295.27	33.33
68649	Metolachlor hydroxy morpholinone	36	68.00	88.40	97.48	98.70	103.56	125.24	13.26
68650	Metolachlor oxanilic acid	33	73.36	86.10	97.14	94.57	102.97	133.22	15.11
68651	Metolachlor sulfonic acid	32	67.37	86.15	99.40	98.15	107.66	154.32	20.75
68652	Metribuzin	40	70.17	87.59	95.30	93.38	102.70	128.62	12.39
68653	Metribuzin DK	5	43.06	51.43	72.42	56.25	104.68	106.69	42.44
68654	Naled	39	0	0	16.80	10.50	28.92	68.14	125.98
68655	Novaluron	42	27.88	46.55	65.25	62.98	79.24	119.61	32.88
68656	2-Hydroxy-6-ethylamino-4-amino-s-triazine	42	22.42	156.73	216.94	217.48	258.43	518.22	44.91
68657	O-Ethyl-S-methyl-S-propyl phosphorodithioate	42	69.96	96.36	110.17	102.27	117.12	340.91	35.83
68658	O-Ethyl-S-propyl phosphorothioate	36	78.62	99.18	122.95	118.13	132.70	427.20	45.40
68659	2-Hydroxy-4-isopropylamino-6-amino-s-triazine	42	75.65	93.54	106.81	102.71	116.52	169.30	19.17
68660	2-Hydroxy-4-isopropylamino-6-ethylamino-s-triazine {OIET}	42	73.95	93.62	101.17	101.39	109.56	124.88	11.42
68661	Omethoate (Dimethoate oxon)	41	24.59	80.63	88.61	85.87	101.80	125.47	21.29
68662	Orthosulfamuron	42	24.68	49.93	64.20	65.37	76.68	113.88	30.33
68663	Oryzalin	25	86.19	100.78	112.11	111.27	118.90	147.74	14.44
68664	Oxamyl	39	0	64.03	77.53	83.12	90.41	152.62	35.08
68665	Oxamyl oxime	42	79.27	94.37	101.97	100.06	110.79	128.33	12.50
68666	Paraoxon	39	79.72	99.92	112.61	107.56	120.28	306.26	30.71

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Surface water							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68625	Imazamox	289	67.60	102.80	120.06	116.76	135.18	205.06	19.67
68627	Indoxacarb	277	0	44.27	57.50	58.13	70.32	112.95	37.16
68632	Isoxaflutole	209	0	36.13	60.17	66.42	85.18	134.17	54.25
68633	Isoxaflutole acid metabolite RPA 203328	248	68.73	90.93	100.89	99.37	110.34	158.19	15.26
68638	Lactofen	282	0	34.54	50.06	50.45	65.90	122.01	53.34
68639	Linuron	288	60.62	90.70	98.33	97.10	104.98	135.76	11.32
68641	MCPA	223	62.41	96.75	112.58	109.19	125.91	185.38	21.06
68644	Methamidophos	286	51.32	90.58	105.97	103.38	118.18	249.37	22.31
68645	Methomyl	285	48.39	87.80	98.18	96.14	104.44	160.19	15.46
68647	Methoxyfenozide	289	63.71	94.19	103.27	102.62	111.20	155.89	14.00
68648	Methyl paraoxon	240	16.53	86.09	100.01	99.93	113.28	227.22	28.51
68649	Metolachlor hydroxy morpholinone	277	58.35	85.18	96.72	96.18	105.11	166.49	16.65
68650	Metolachlor oxanilic acid	262	0	88.19	101.86	97.62	115.46	185.07	20.48
68651	Metolachlor sulfonic acid	237	56.16	89.90	103.93	101.28	116.25	182.35	20.15
68652	Metribuzin	282	43.07	82.76	90.88	90.71	100.07	121.34	14.94
68653	Metribuzin DK	126	0	66.47	75.08	80.78	94.93	124.84	41.96
68654	Naled	251	0	0	12.74	0	20.07	119.00	146.48
68655	Novaluron	284	0.98	44.52	70.68	66.84	91.32	163.08	47.17
68656	2-Hydroxy-6-ethylamino-4-amino-s-triazine	275	0	127.34	173.86	154.74	209.70	508.73	42.00
68657	O-Ethyl-S-methyl-S-propyl phosphorodithioate	284	0	91.93	105.13	101.85	114.88	264.86	22.96
68658	O-Ethyl-S-propyl phosphorothioate	276	0	100.63	120.26	115.04	131.93	389.36	29.11
68659	2-Hydroxy-4-isopropylamino-6-amino-s-triazine	283	71.43	103.61	118.94	114.32	130.13	231.54	19.63
68660	2-Hydroxy-4-isopropylamino-6-ethylamino-s-triazine {OIET}	284	55.44	90.63	102.11	100.56	112.77	167.41	16.26
68661	Omethoate (Dimethoate oxon)	281	0	70.36	78.23	82.31	96.27	206.14	37.34
68662	Orthosulfamuron	289	0	59.07	75.67	79.02	94.23	164.31	37.27
68663	Oryzalin	270	13.46	95.97	105.59	107.13	120.05	179.90	26.51
68664	Oxamyl	276	0	50.14	64.10	70.35	82.18	145.87	43.04
68665	Oxamyl oxime	289	66.34	102.01	114.48	111.29	123.64	213.21	17.12
68666	Paraoxon	276	54.70	93.53	107.72	104.99	118.11	260.16	21.86

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Lab reagent spikes							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68668	Phorate	275	33.68	77.67	86.29	85.67	95.17	126.73	16.17
68669	Phorate oxon	275	41.02	86.96	97.57	97.36	107.60	191.15	19.20
68670	Phorate oxon sulfone	273	0	79.58	88.62	93.00	104.41	143.21	28.62
68671	Phorate oxon sulfoxide	273	4.48	79.91	87.83	91.45	102.94	147.15	30.95
68672	Phorate sulfone	275	58.38	90.87	103.65	101.09	115.00	189.73	19.18
68673	Phorate sulfoxide	275	62.87	91.51	103.74	101.33	112.34	201.20	17.54
68675	Phthalazinone	275	63.97	85.25	94.92	93.98	104.39	143.21	14.65
68676	Profenofos	273	0	67.86	72.33	80.35	89.45	115.57	39.49
68677	Propargite	274	24.02	68.96	78.17	79.01	88.30	128.28	20.27
68678	Propazine	275	67.43	86.61	94.79	93.57	101.65	132.54	12.17
68679	Propoxur	275	64.05	90.92	101.83	99.95	110.77	183.26	17.52
68682	Pyridaben	274	43.89	73.61	83.33	83.19	92.51	127.58	18.29
68683	Pyriproxyfen	275	57.76	82.69	89.86	89.20	96.35	125.42	12.72
68684	sec-Acetochlor oxanilic acid	280	55.90	90.87	102.21	100.51	111.92	154.22	16.72
68685	sec-Alachlor oxanilic acid	275	0	90.26	101.10	100.44	111.14	157.06	18.59
68686	Siduron	275	70.77	86.57	94.77	94.18	101.55	132.37	11.75
68687	Sulfentrazone	280	51.59	95.27	106.87	106.28	117.63	173.62	18.08
68688	Sulfometuron-methyl	275	56.39	90.48	99.14	99.30	106.33	134.04	12.37
68689	Sulfosulfuron	275	62.83	86.27	95.15	94.43	103.95	130.86	13.62
68690	Sulfosulfuron ethyl sulfone	275	60.98	89.54	97.12	97.23	104.59	133.89	11.60
68691	2,3,3-Trichloro-2-propene-1-sulfonic acid (TCPSA)	280	59.83	88.94	99.29	98.45	107.25	174.03	15.94
68692	Tebufenozide	275	61.13	91.58	100.06	99.43	108.72	141.62	13.55
68693	Tebupirimphos	275	50.78	75.98	84.86	83.90	93.38	130.22	15.13
68694	Tebupirimfos oxon	275	55.61	83.44	92.53	91.23	101.55	147.66	15.03
68695	Tebuthiuron	275	69.88	87.36	95.08	95.27	101.46	131.09	11.16
68696	Tebuthiuron TP el108	275	68.08	88.89	95.42	95.35	101.89	130.49	11.52
68697	Tebuthiuron TP 109 (OH)	275	43.56	82.46	91.67	91.37	100.26	137.20	16.18
68698	Terbacil	275	57.98	87.90	99.73	98.98	110.26	150.17	15.55

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Groundwater							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68668	Phorate	40	46.36	73.23	79.00	80.00	87.60	101.32	15.19
68669	Phorate oxon	42	0	40.98	57.15	61.45	74.83	202.32	61.55
68670	Phorate oxon sulfone	34	45.52	68.22	78.67	77.33	91.24	122.06	21.52
68671	Phorate oxon sulfoxide	42	1.61	68.61	73.38	78.76	88.07	120.47	39.40
68672	Phorate sulfone	41	67.12	93.20	111.93	110.36	121.14	304.16	31.78
68673	Phorate sulfoxide	42	65.58	96.57	111.04	104.36	118.25	350.24	36.42
68675	Phthalazinone	37	58.78	92.05	102.99	105.21	116.12	140.41	16.49
68676	Profenofos	41	14.16	56.45	70.22	70.32	85.87	111.18	26.79
68677	Propargite	42	10.36	69.26	78.50	80.20	87.26	124.25	25.97
68678	Propazine	42	81.23	89.13	97.72	97.94	105.61	119.85	10.43
68679	Propoxur	42	74.28	89.92	97.80	97.00	105.76	123.97	12.28
68682	Pyridaben	42	53.33	68.36	78.80	78.16	88.84	128.03	19.46
68683	Pyriproxyfen	42	71.51	82.67	90.54	89.96	95.28	138.25	13.20
68684	sec-Acetochlor oxanilic acid	41	65.07	87.81	96.17	92.06	104.53	132.97	17.74
68685	sec-Alachlor oxanilic acid	33	0	79.29	93.38	97.91	105.62	145.96	27.13
68686	Siduron	42	80.80	92.22	98.37	97.05	106.02	117.52	8.98
68687	Sulfentrazone	35	86.84	103.10	116.82	111.95	128.11	181.48	20.68
68688	Sulfometuron-methyl	42	73.04	84.82	94.24	92.21	98.30	152.41	15.40
68689	Sulfosulfuron	39	76.12	86.79	96.20	92.24	103.94	128.01	12.28
68690	Sulfosulfuron ethyl sulfone	42	79.32	95.28	101.77	99.70	106.54	138.53	11.25
68691	2,3,3-Trichloro-2-propene-1-sulfonic acid (TCPSA)	40	75.16	85.41	96.97	95.72	103.15	163.47	16.49
68692	Tebufenozide	42	80.24	93.32	101.94	100.69	111.99	126.04	11.60
68693	Tebupirimphos	42	62.09	83.22	89.06	88.65	95.44	122.22	13.11
68694	Tebupirimfos oxon	42	61.63	84.46	91.78	92.74	100.16	125.86	15.46
68695	Tebuthiuron	42	84.50	95.38	100.38	99.70	105.37	114.07	7.57
68696	Tebuthiuron TP el108	42	84.12	92.05	98.84	96.42	104.37	130.20	9.55
68697	Tebuthiuron TP 109 (OH)	42	4.56	81.41	91.31	90.49	100.59	151.40	27.62
68698	Terbacil	39	66.23	85.35	94.41	94.47	105.85	115.52	13.81

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Surface water							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68668	Phorate	271	26.52	69.96	78.29	76.61	86.09	138.67	19.73
68669	Phorate oxon	289	0	49.78	61.51	60.86	74.06	156.45	38.69
68670	Phorate oxon sulfone	257	0	57.01	66.41	70.46	81.87	166.90	42.46
68671	Phorate oxon sulfoxide	286	0	61.54	70.34	75.13	87.64	178.62	43.09
68672	Phorate sulfone	271	50.78	92.51	107.22	105.59	118.99	274.67	22.47
68673	Phorate sulfoxide	286	57.99	94.32	108.21	104.45	117.80	259.13	21.36
68675	Phthalazinone	257	74.14	93.02	102.05	100.46	108.52	146.99	13.37
68676	Profenofos	289	0	54.71	62.70	66.28	78.30	128.82	40.45
68677	Propargite	282	0	58.05	67.60	71.23	82.69	132.27	37.49
68678	Propazine	289	63.74	89.01	97.13	96.97	105.09	141.01	13.33
68679	Propoxur	289	17.90	87.60	97.15	98.50	108.95	180.12	25.23
68682	Pyridaben	288	28.11	64.43	78.82	78.94	93.33	143.27	27.20
68683	Pyriproxyfen	289	34.10	78.72	88.47	87.91	97.44	135.21	17.46
68684	sec-Acetochlor oxanilic acid	282	0	91.77	103.63	101.73	114.84	157.17	17.95
68685	sec-Alachlor oxanilic acid	269	0	74.69	82.34	87.73	100.14	152.32	37.67
68686	Siduron	286	62.34	90.43	97.54	96.02	103.60	139.06	11.42
68687	Sulfentrazone	260	73.53	104.09	124.83	116.33	138.18	237.37	24.49
68688	Sulfometuron-methyl	286	20.67	86.92	95.55	95.09	103.83	159.56	17.50
68689	Sulfosulfuron	288	38.11	88.79	97.24	95.96	104.50	147.20	14.12
68690	Sulfosulfuron ethyl sulfone	289	63.58	91.54	98.47	97.15	105.38	140.62	11.26
68691	2,3,3-Trichloro-2-propene-1-sulfonic acid (TCPSA)	289	56.15	91.91	102.54	100.81	111.75	171.84	15.47
68692	Tebufenozide	283	63.50	92.17	101.75	101.24	109.84	153.02	14.42
68693	Tebupirimphos	283	42.84	79.64	90.62	88.27	98.49	157.72	17.75
68694	Tebupirimfos oxon	282	53.41	84.69	94.80	92.46	103.35	171.94	17.02
68695	Tebuthiuron	289	65.48	90.39	97.34	96.30	102.69	135.30	10.98
68696	Tebuthiuron TP el108	289	52.78	85.65	93.74	93.43	100.66	125.56	12.53
68697	Tebuthiuron TP 109 (OH)	275	0	78.47	96.28	97.29	113.74	285.74	44.03
68698	Terbacil	273	62.92	86.18	97.50	96.57	105.71	153.59	16.82

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Lab reagent spikes							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68699	Terbufos	275	36.13	74.38	82.70	81.64	91.99	121.37	15.46
68700	Terbufos oxon	275	17.99	76.14	84.57	85.17	94.91	136.95	20.02
68701	Terbufos oxon sulfone	275	40.88	82.85	92.63	93.61	104.64	150.22	20.79
68702	Terbufos oxon sulfoxide	275	30.03	82.04	93.68	96.16	106.66	147.08	22.83
68703	Terbufos sulfone	275	57.57	88.15	101.99	101.19	112.50	208.25	18.63
68704	Terbufos sulfoxide	275	65.53	91.93	103.48	101.63	113.30	207.02	17.39
68708	trans-Permethrin	274	29.19	59.24	70.98	70.65	79.43	150.68	24.37
68710	Triallate	275	54.03	78.37	86.98	86.54	95.67	122.38	13.94
68711	Tribufos	274	20.08	68.77	76.44	76.66	85.53	113.19	20.00
68712	Triclopyr	280	54.87	86.17	96.19	96.42	105.97	136.42	15.59
68713	Hexazinone Transformation Product G	275	59.70	84.62	92.90	93.09	100.16	133.76	14.01
68714	Tebuthiuron Transformation Product 106	275	63.24	86.51	94.25	93.30	100.52	124.17	11.73
68769	cis-Permethrin	274	29.94	59.56	71.79	70.81	82.41	144.35	23.76
68871	Alachlor sulfonic acid	300	0	69.60	101.86	99.98	129.21	299.06	45.83
68872	Chlorimuron-ethyl	275	40.95	88.43	97.01	97.06	107.81	129.62	16.03
68873	3-Phenoxybenzoic acid	280	60.27	85.78	95.25	94.12	103.15	146.00	14.57
68553	cis-Bifenthrin acid/cis-Cyhalothrin acid/cis-Teflu-thrin acid	259	0	84.48	94.15	92.88	103.98	168.65	21.46
68560	Dacthal monoacid	323	0	70.57	106.61	101.01	131.38	407.65	53.07
68571	Dicamba	302	0	78.22	98.48	98.73	117.12	200.73	32.49
68646	Methonyl oxime	161	0	84.68	92.92	96.45	113.39	153.90	33.43

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Groundwater							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68699	Terbufos	42	41.43	61.17	68.31	69.03	75.89	104.12	18.94
68700	Terbufos oxon	42	4.09	21.04	28.57	30.78	36.11	51.91	45.90
68701	Terbufos oxon sulfone	40	20.78	77.57	86.90	90.84	96.39	127.38	21.21
68702	Terbufos oxon sulfoxide	42	43.52	84.37	92.19	90.47	104.03	133.88	17.95
68703	Terbufos sulfone	38	67.06	96.14	110.39	104.41	115.37	282.66	30.27
68704	Terbufos sulfoxide	42	68.38	98.23	112.58	106.70	119.75	311.84	30.58
68708	trans-Permethrin	42	18.14	41.57	55.13	55.32	67.45	98.89	35.80
68710	Triallate	41	62.73	85.40	91.64	91.65	98.48	112.06	10.90
68711	Tribufos	42	57.07	69.46	80.60	79.81	89.91	115.73	18.26
68712	Triclopyr	42	60.41	80.22	91.35	91.40	98.64	134.89	16.30
68713	Hexazinone Transformation Product G	40	74.16	86.52	94.91	94.87	103.68	116.26	11.59
68714	Tebuthiuron Transformation Product 106	42	75.13	88.49	97.24	96.37	103.74	130.02	12.23
68769	cis-Permethrin	42	19.66	39.52	52.09	48.98	63.87	89.36	35.87
68871	Alachlor sulfonic acid	1	76.31	76.31	76.31	76.31	76.31	76.31	
68872	Chlorimuron-ethyl	41	54.60	70.00	86.41	85.41	100.99	136.10	24.19
68873	3-Phenoxybenzoic acid	41	73.67	85.19	97.25	96.26	107.07	124.11	14.47
68553	cis-Bifenthrin acid/cis-Cyhalothrin acid/cis-Teflu-thrin acid								
68560	Dacthal monoacid								
68571	Dicamba								
68646	Methonyl oxime								

Table 4. Summary statistics for the recovery of schedule 2437 pesticides in lab reagent spikes, and groundwater and surface-water field matrix spike samples.—Continued

[, values that do not meet method validation data-quality objectives; , recovery values in which the first quartile is greater than or third quartile is less than 100 percent]

Pcode	Parameter name	Surface water							
		Count	Minimum	First quartile	Mean	Median	Third quartile	Maximum	Relative standard deviation
68699	Terbufos	289	17.25	60.03	69.34	68.58	78.43	122.51	22.30
68700	Terbufos oxon	284	3.14	20.74	30.84	28.66	38.85	83.31	49.65
68701	Terbufos oxon sulfone	289	0	63.42	74.17	78.35	92.25	187.88	38.89
68702	Terbufos oxon sulfoxide	286	0	70.06	81.29	85.22	99.29	191.74	36.77
68703	Terbufos sulfone	281	54.52	92.78	107.32	104.18	117.81	245.91	22.08
68704	Terbufos sulfoxide	286	57.92	95.51	108.58	104.85	118.39	258.90	20.71
68708	trans-Permethrin	268	14.82	44.81	65.31	66.26	84.12	149.14	38.91
68710	Triallate	288	34.80	78.99	87.71	87.76	96.24	138.74	16.43
68711	Tribufos	281	36.33	71.61	85.17	81.95	97.46	159.06	23.07
68712	Triclopyr	284	0	83.30	94.78	94.92	106.25	180.70	20.87
68713	Hexazinone Transformation Product G	282	54.59	82.70	91.80	90.49	100.64	127.43	14.43
68714	Tebuthiuron Transformation Product 106	289	63.95	88.56	95.98	94.86	103.61	138.71	13.04
68769	cis-Permethrin	278	15.76	43.29	65.54	66.78	85.14	133.42	38.44
68871	Alachlor sulfonic acid	3	51.90	51.90	91.85	101.08	122.59	122.59	39.45
68872	Chlorimuron-ethyl	285	4.89	81.01	91.28	94.46	104.70	164.78	25.05
68873	3-Phenoxybenzoic acid	283	0	89.22	97.48	96.50	106.01	143.43	14.78
68553	cis-Bifenthrin acid/cis-Cyhalothrin acid/cis-Teflu-thrin acid								
68560	Dacthal monoacid								
68571	Dicamba								
68646	Methonyl oxime								

Appendix 1. Supporting Tables and Figures

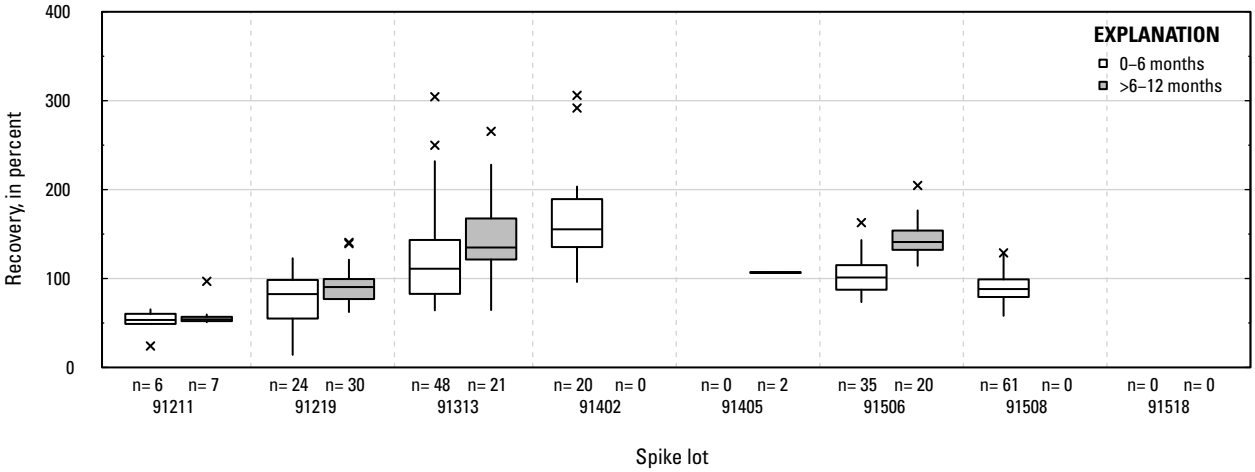
Figures

Tables

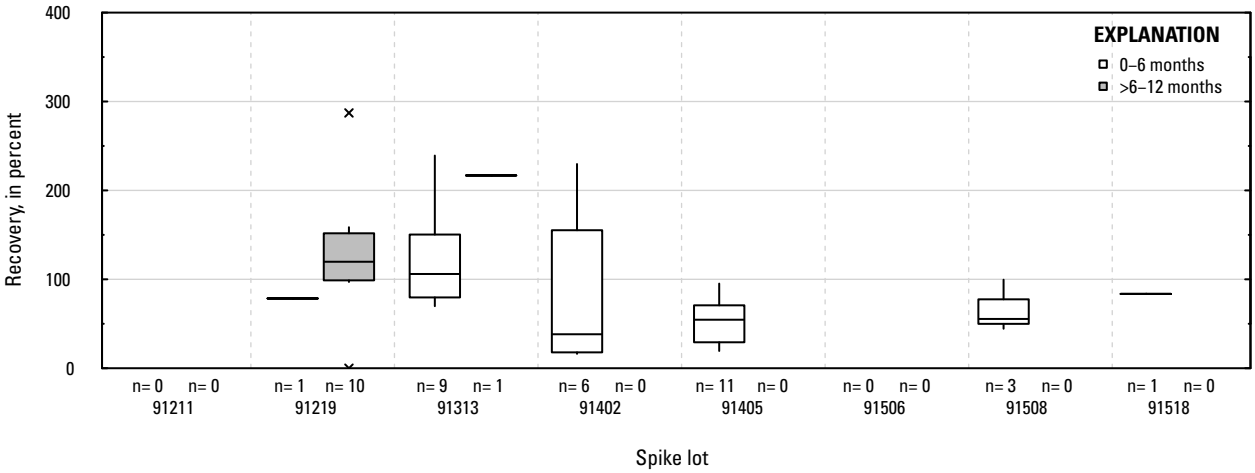
Table 1–1. Number of pesticides in each analytical method group.

Analytical method group	Number of pesticides
Acetanilide and amide	28
Acid	8
Carbamate and thiocarbamate	22
Fungicide	15
Miscellaneous	28
Organophosphate	50
Pyrethroid, organochlorine and phenylpyrazine	14
Sulfonylurea and urea	32
Triazine	28

A. **2–(1–Hydroxyethyl)–6–methylaniline: laboratory reagent spikes**



B. **2–(1–Hydroxyethyl)–6–methylaniline: groundwater field matrix spikes**



C. **2–(1–Hydroxyethyl)–6–methylaniline: surface water field matrix spikes**

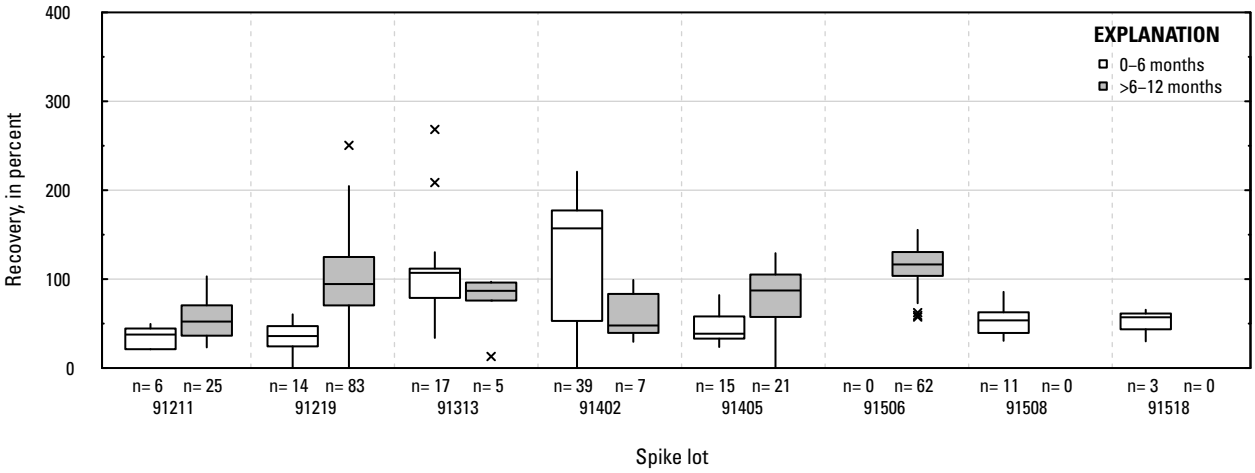
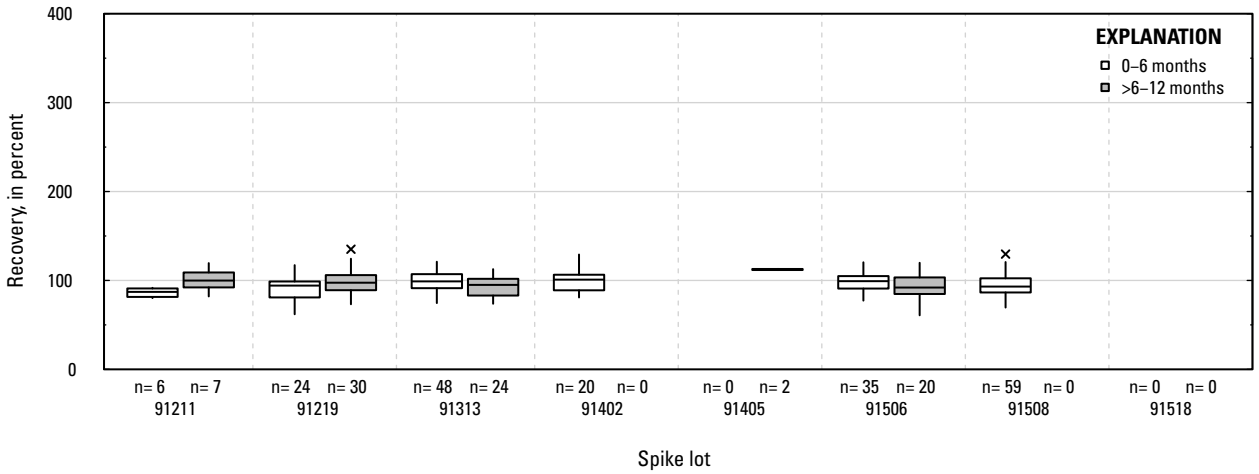
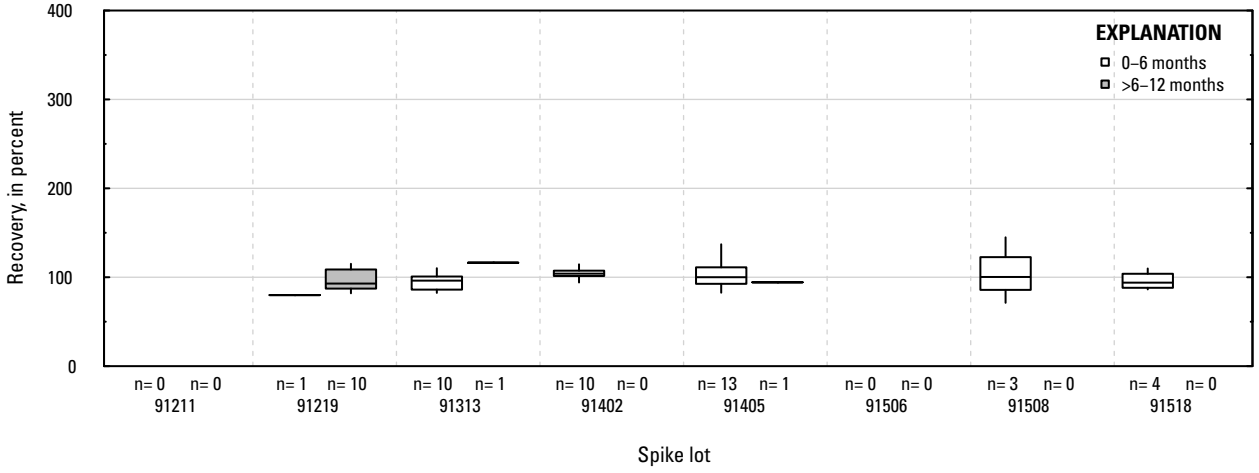


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.

D. **2–[(2–Ethyl–6–methylphenyl)amino]–1–propanol: laboratory reagent spikes**



E. **2–[(2–Ethyl–6–methylphenyl)amino]–1–propanol: groundwater field matrix spikes**



F. **2–[(2–Ethyl–6–methylphenyl)amino]–1–propanol: surface water field matrix spikes**

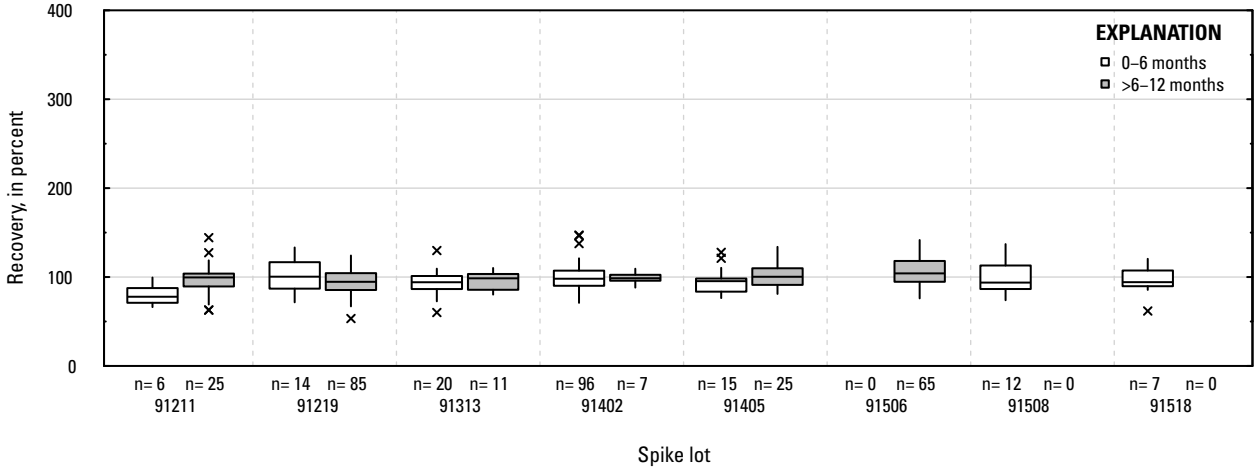
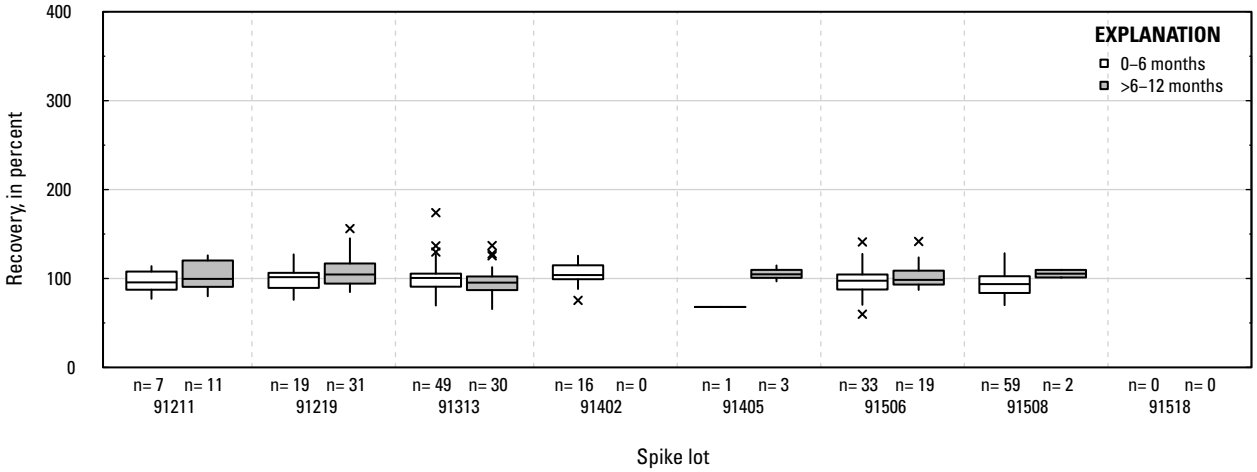
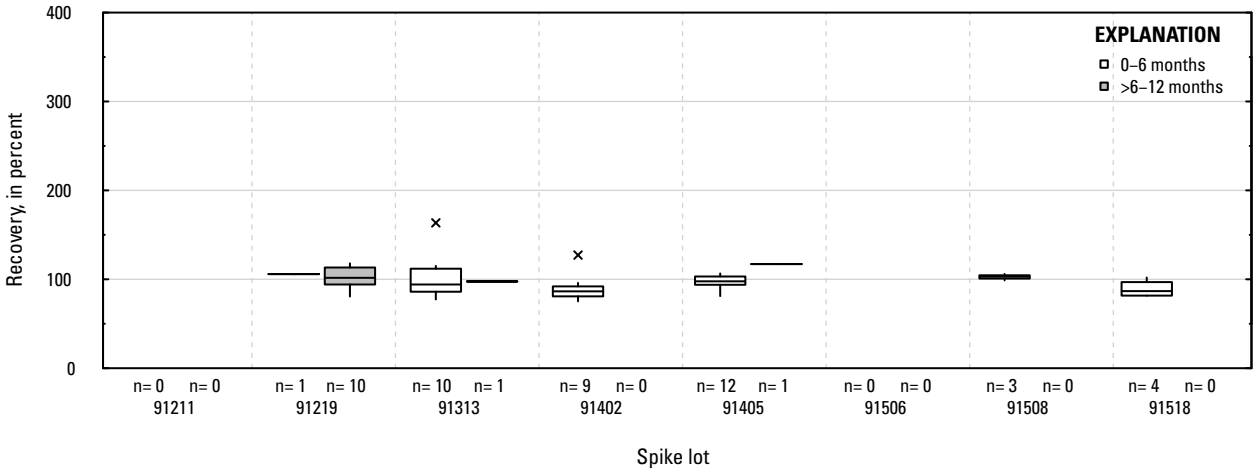


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

G. **2,3,3–Trichloro–2–propene–1–sulfonic acid (TCPSA): laboratory reagent spikes**



H. **2,3,3–Trichloro–2–propene–1–sulfonic acid (TCPSA): groundwater field matrix spikes**



I. **2,3,3–Trichloro–2–propene–1–sulfonic acid (TCPSA): surface water field matrix spikes**

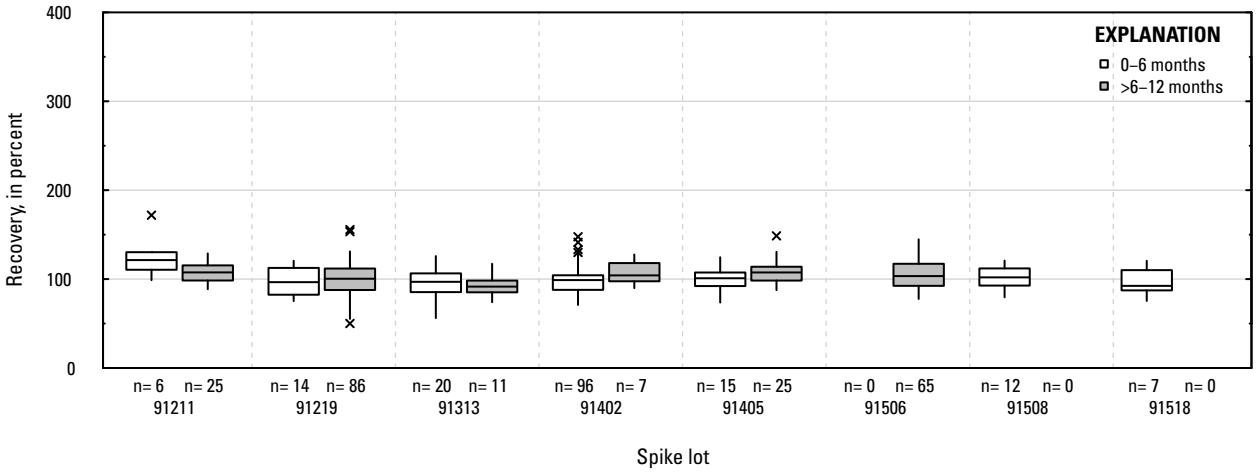
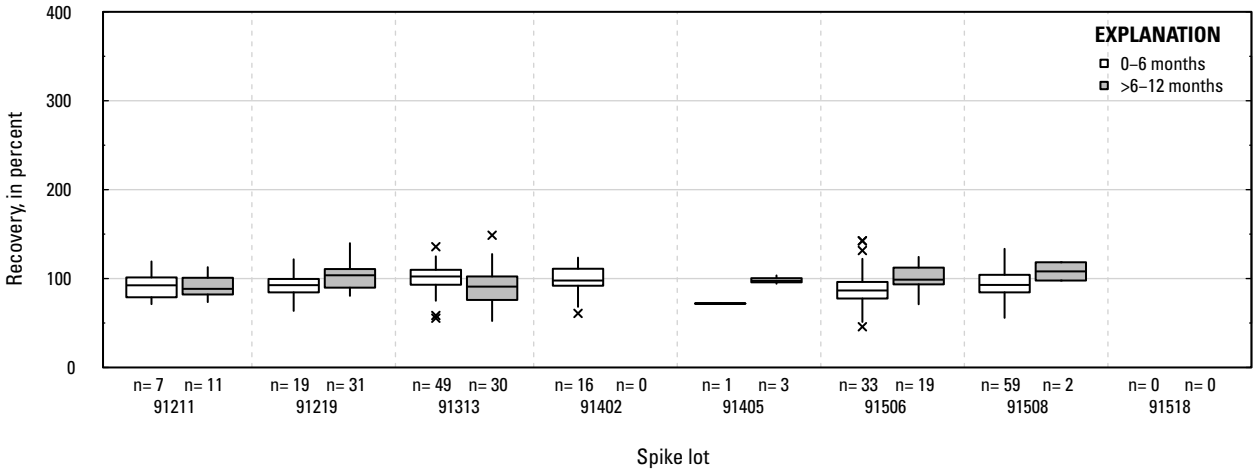
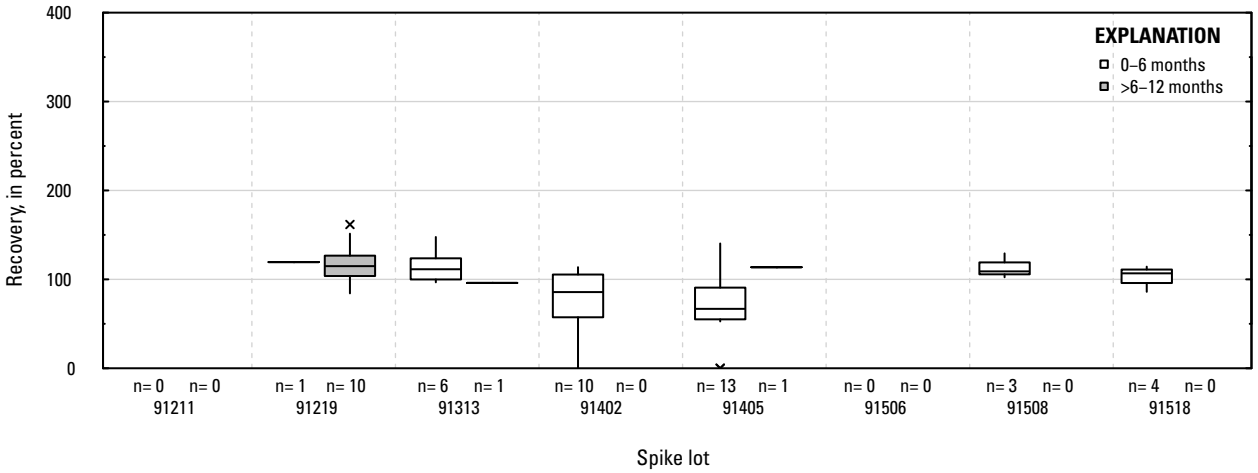


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

***J.* 2,4–D: laboratory reagent spikes**



***K.* 2,4–D: groundwater field matrix spikes**



***L.* 2,4–D: surface water field matrix spikes**

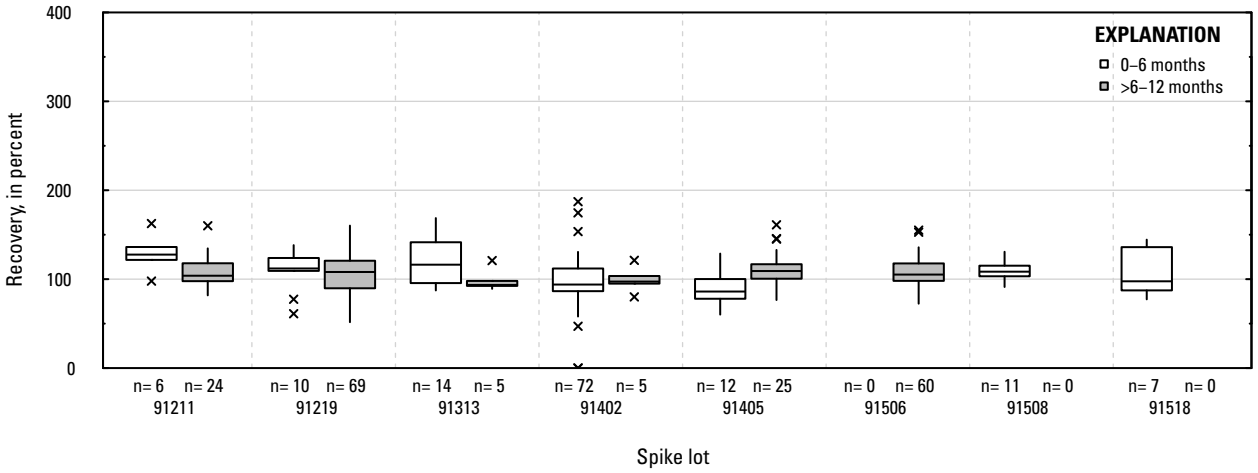
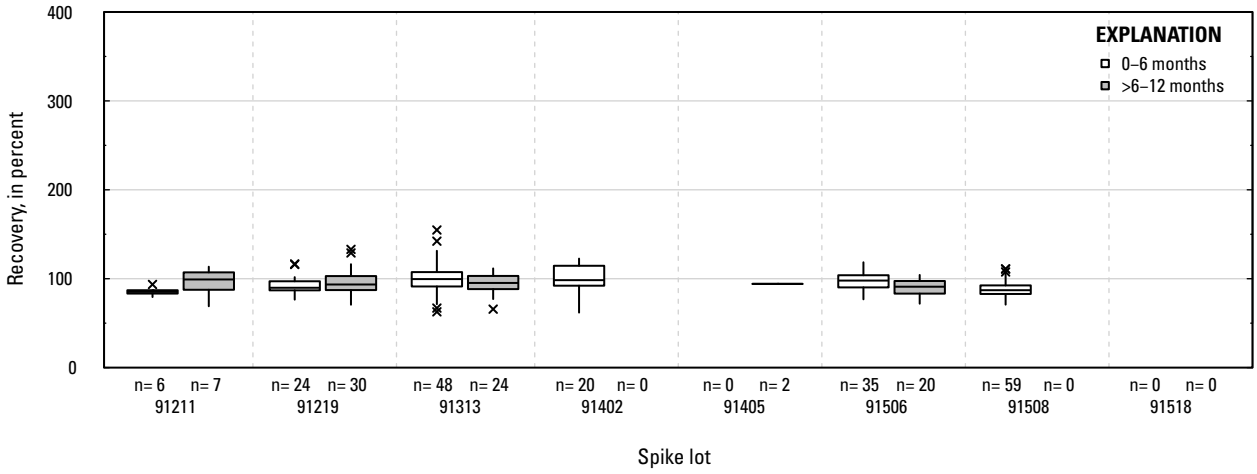
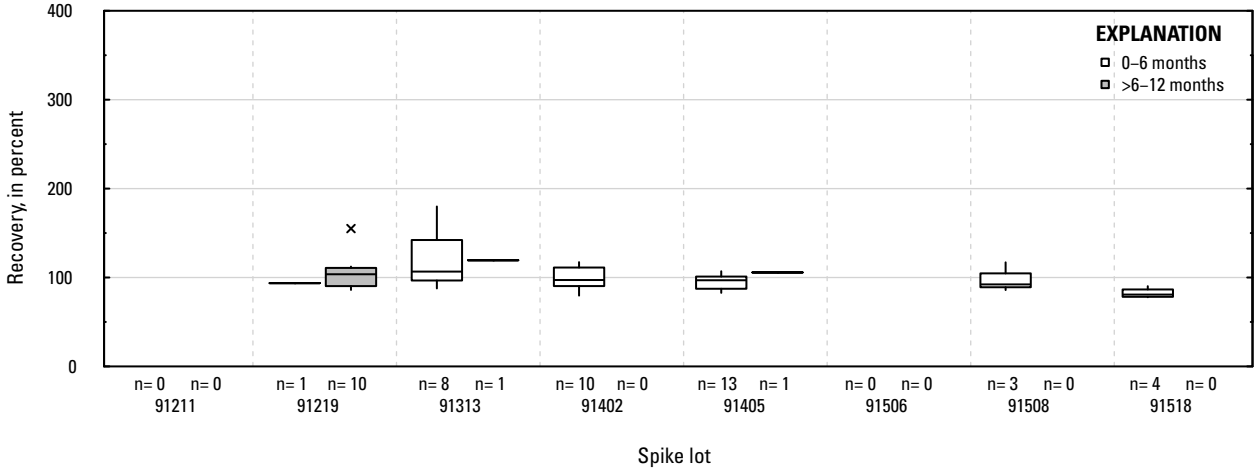


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

M. **2–Aminobenzimidazole: laboratory reagent spikes**



N. **2–Aminobenzimidazole: groundwater field matrix spikes**



O. **2–Aminobenzimidazole: surface water field matrix spikes**

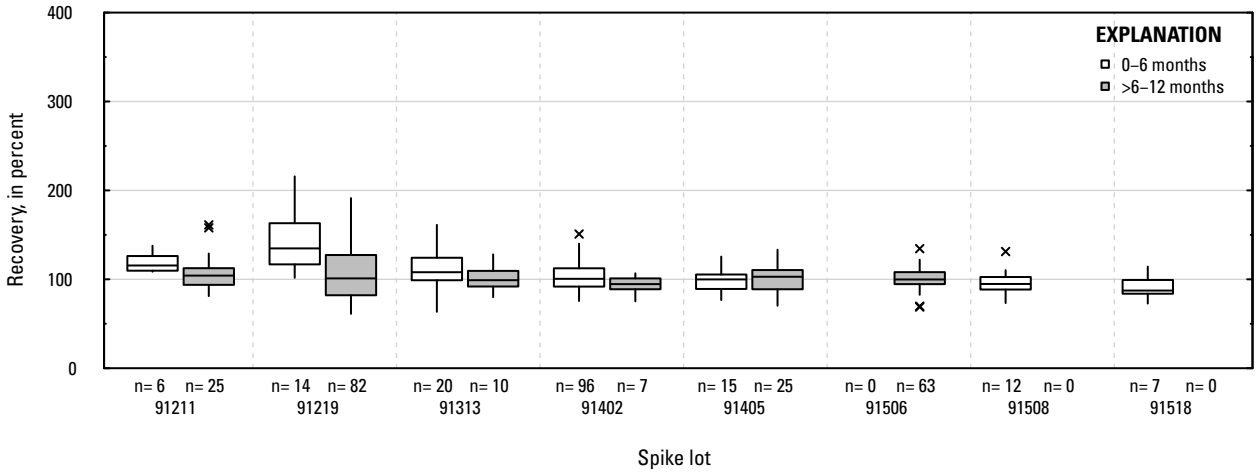
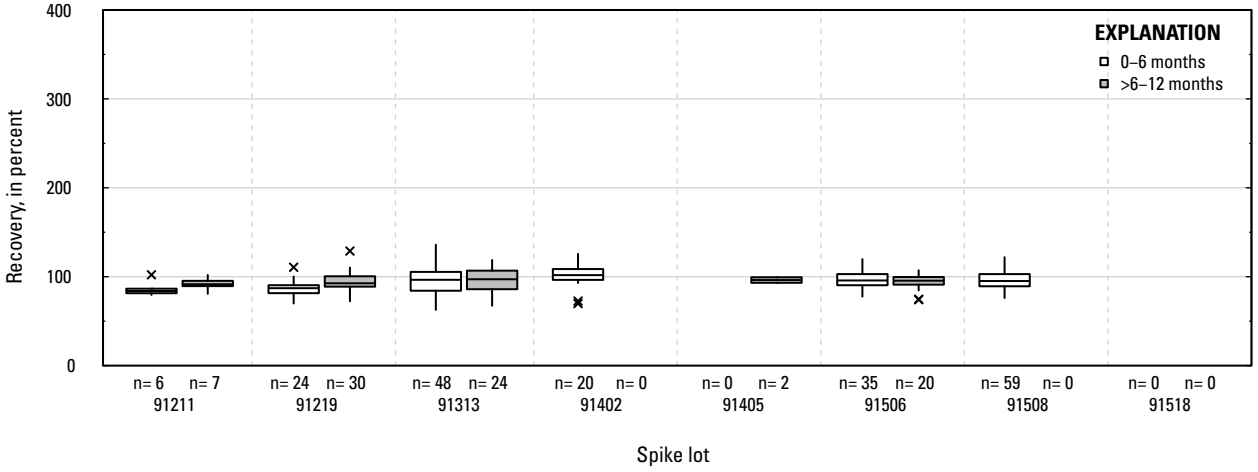
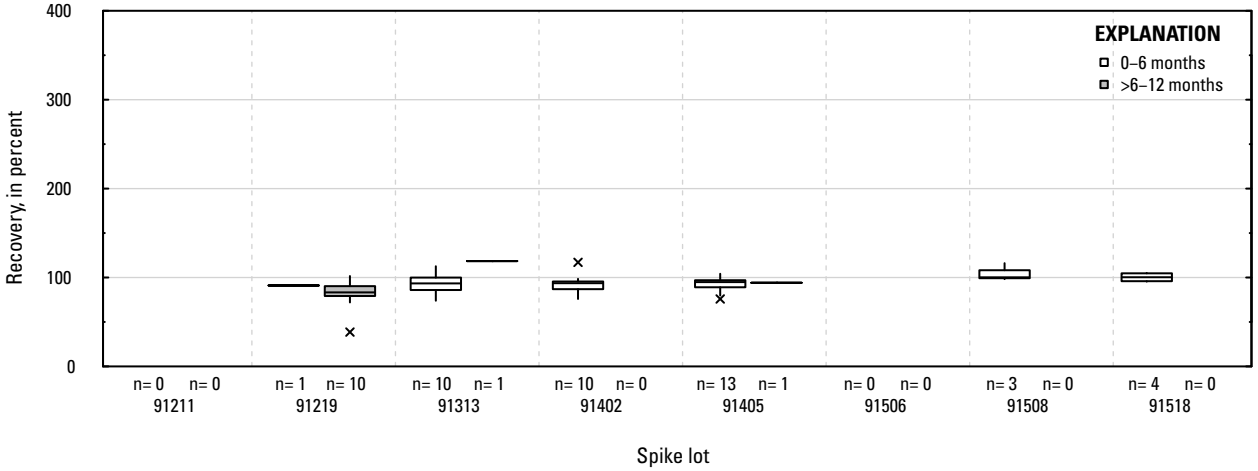


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

P. **2–Amino–N–isopropylbenzamide: laboratory reagent spikes**



Q. **2–Amino–N–isopropylbenzamide: groundwater field matrix spikes**



R. **2–Amino–N–isopropylbenzamide: surface water field matrix spikes**

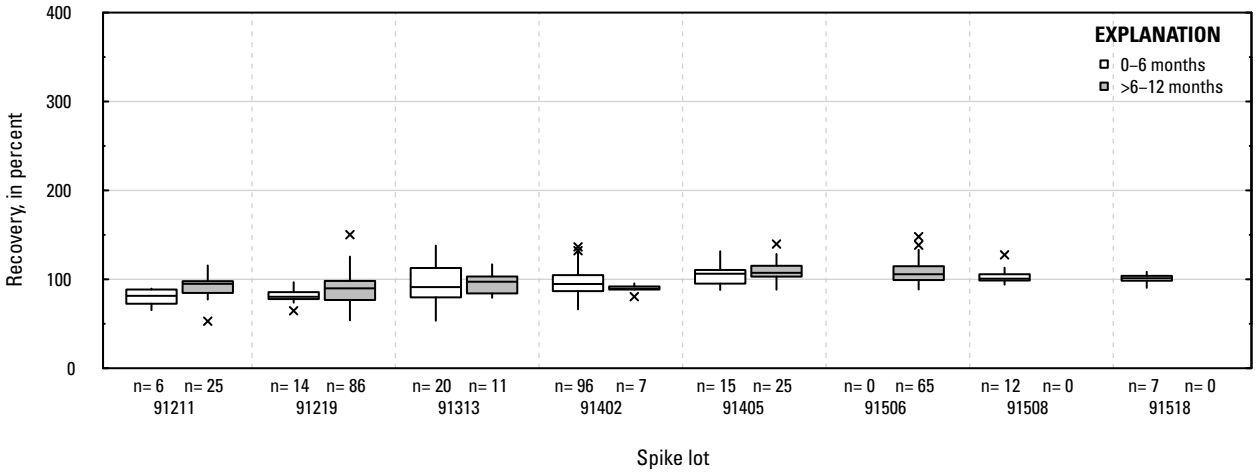
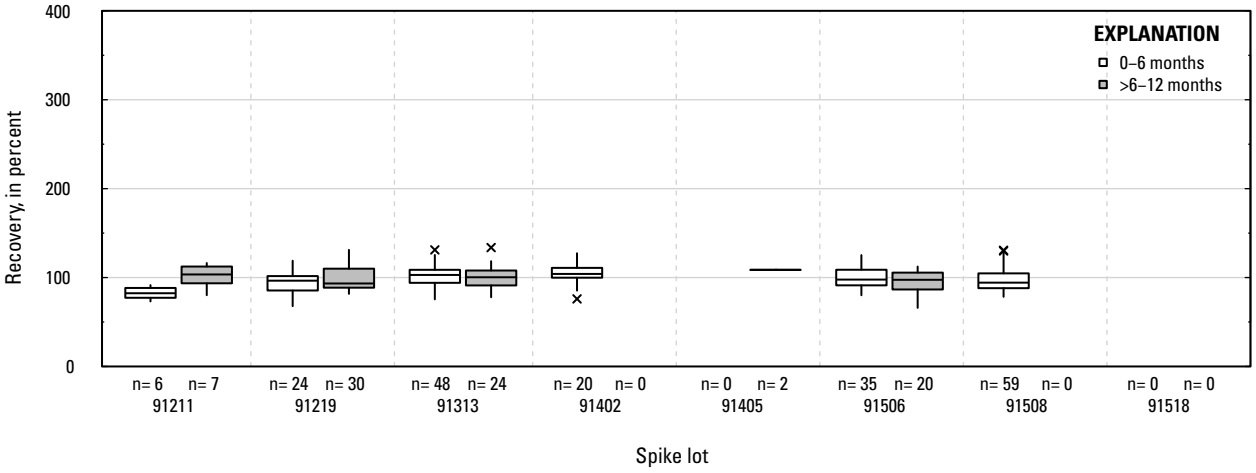
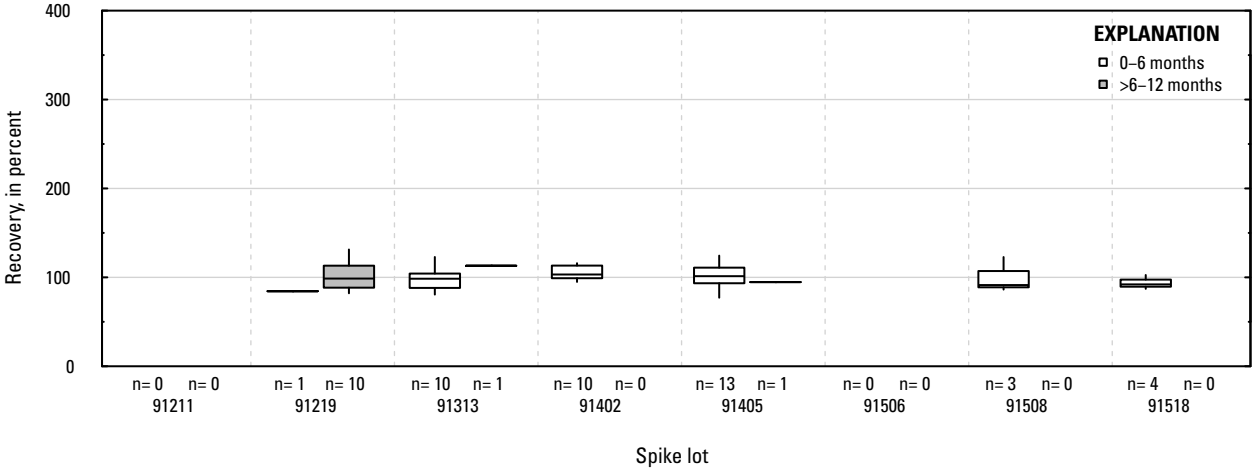


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

S. **2–Chloro–2',6'–diethylacetanilide: laboratory reagent spikes**



T. **2–Chloro–2',6'–diethylacetanilide: groundwater field matrix spikes**



U. **2–Chloro–2',6'–diethylacetanilide: surface water field matrix spikes**

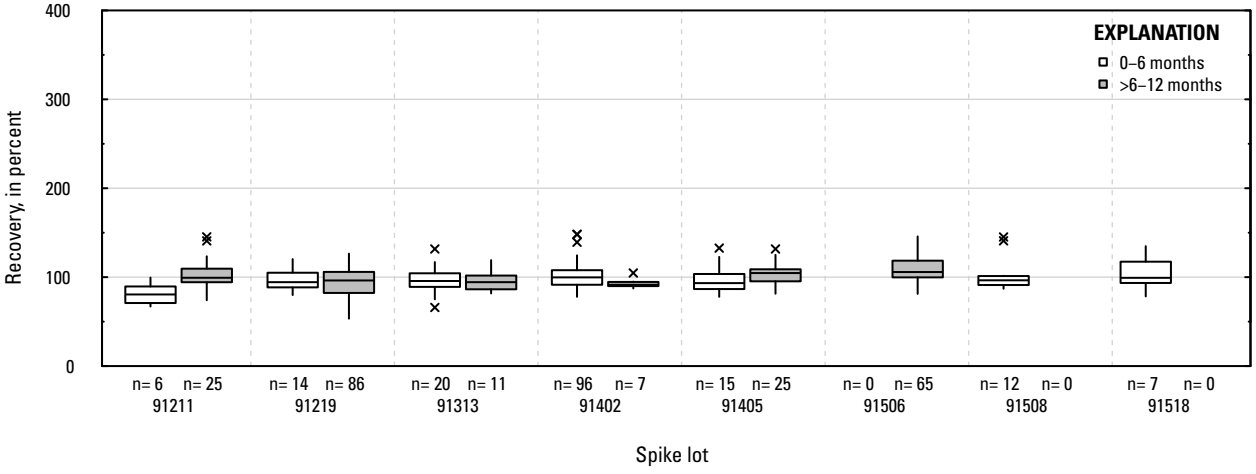
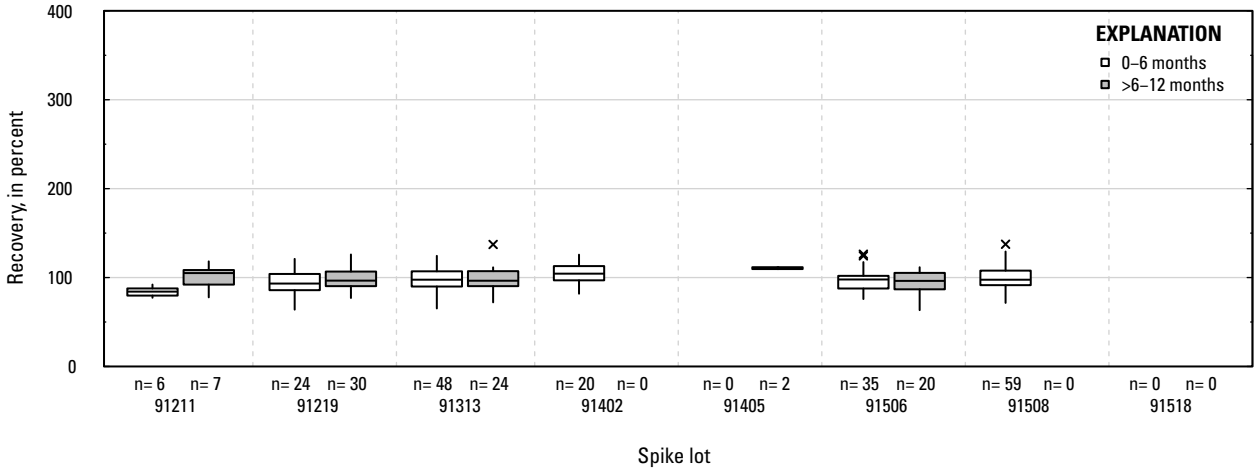
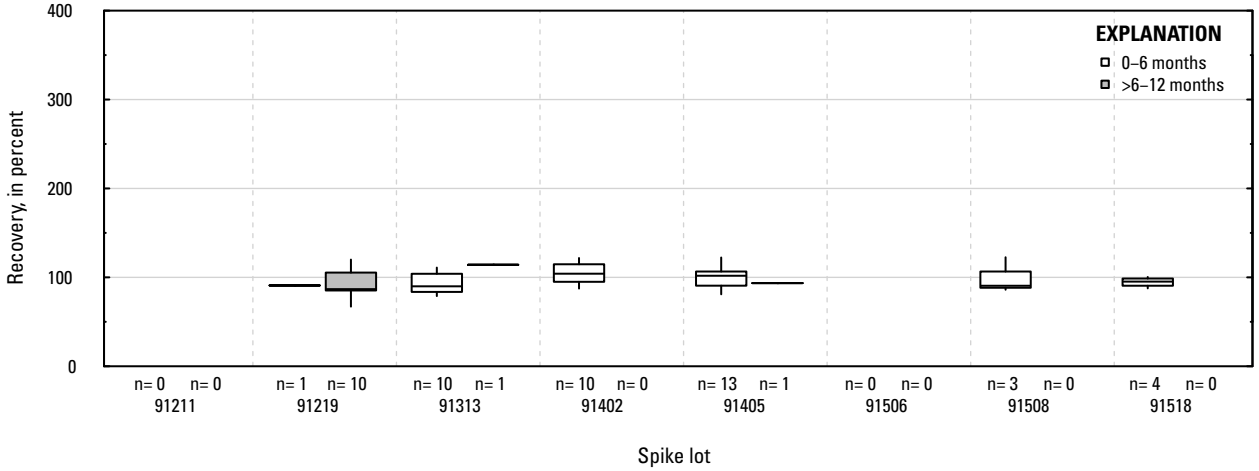


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

V. **2–Chloro–N–(2–ethyl–6–methylphenyl)acetamide: laboratory reagent spikes**



W. **2–Chloro–N–(2–ethyl–6–methylphenyl)acetamide: groundwater field matrix spikes**



X. **2–Chloro–N–(2–ethyl–6–methylphenyl)acetamide: surface water field matrix spikes**

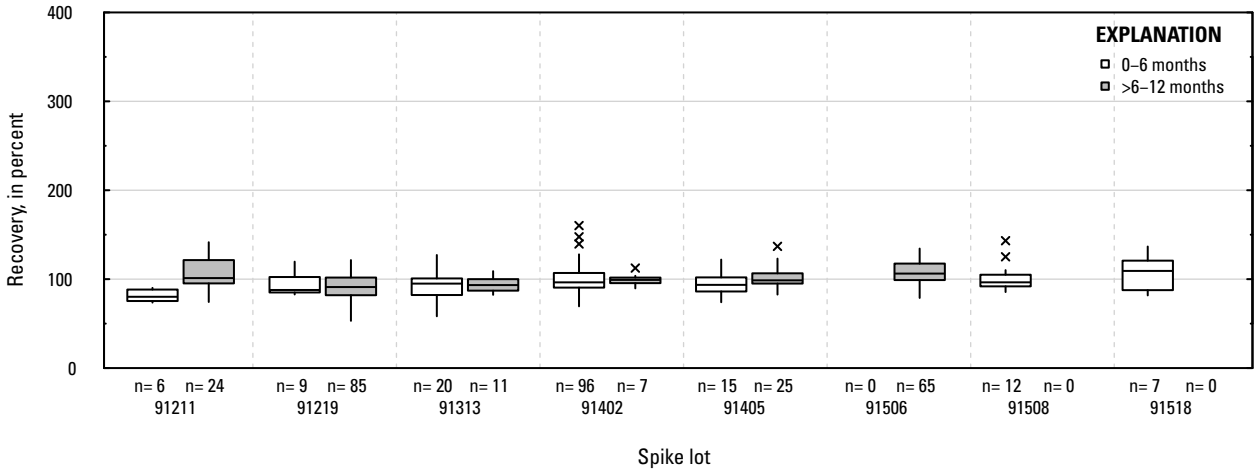
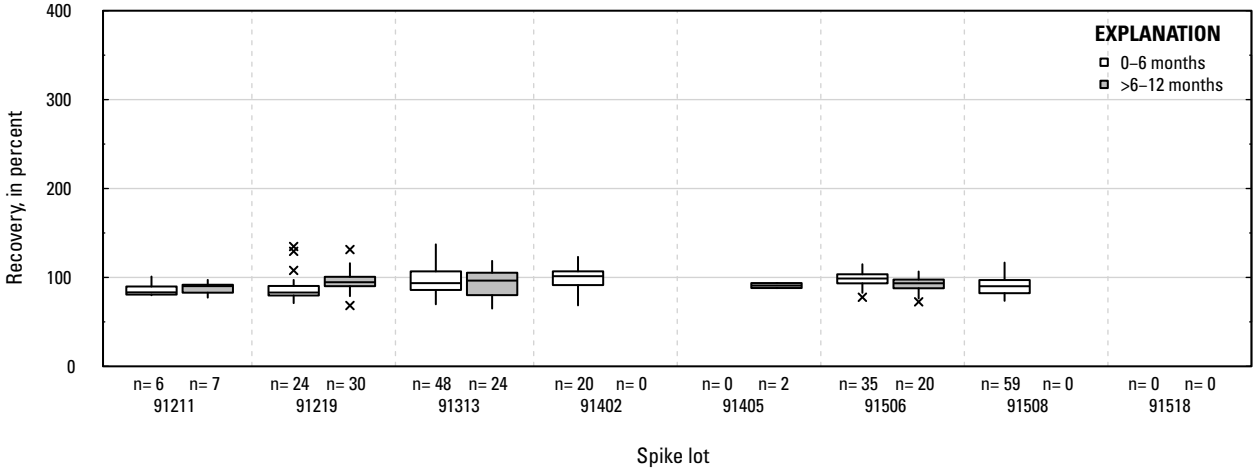
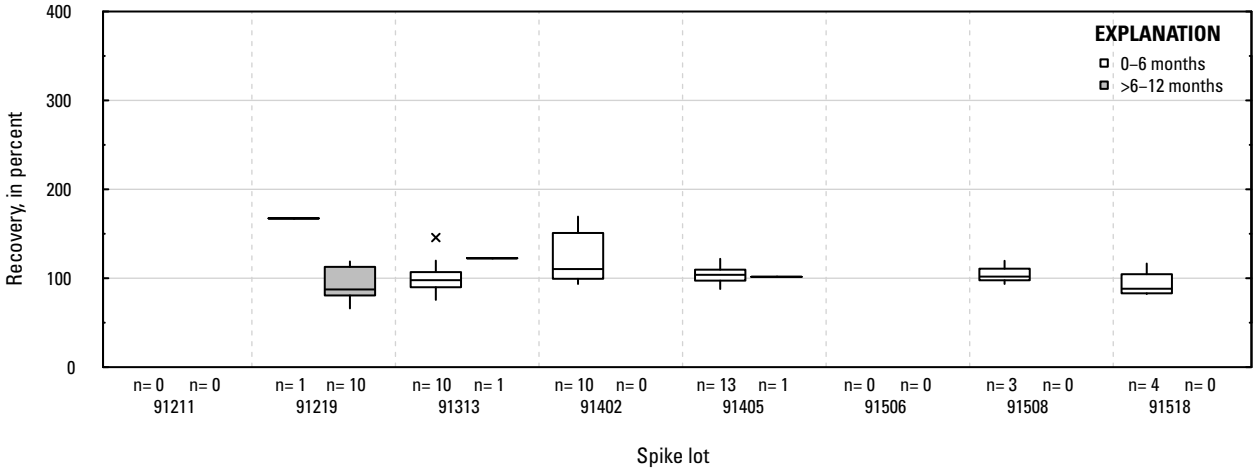


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

Y. **2–Hydroxy–4–isopropylamino–6–amino–s–triazine: laboratory reagent spikes**



Z. **2–Hydroxy–4–isopropylamino–6–amino–s–triazine: groundwater field matrix spikes**



AA. **2–Hydroxy–4–isopropylamino–6–amino–s–triazine: surface water field matrix spikes**

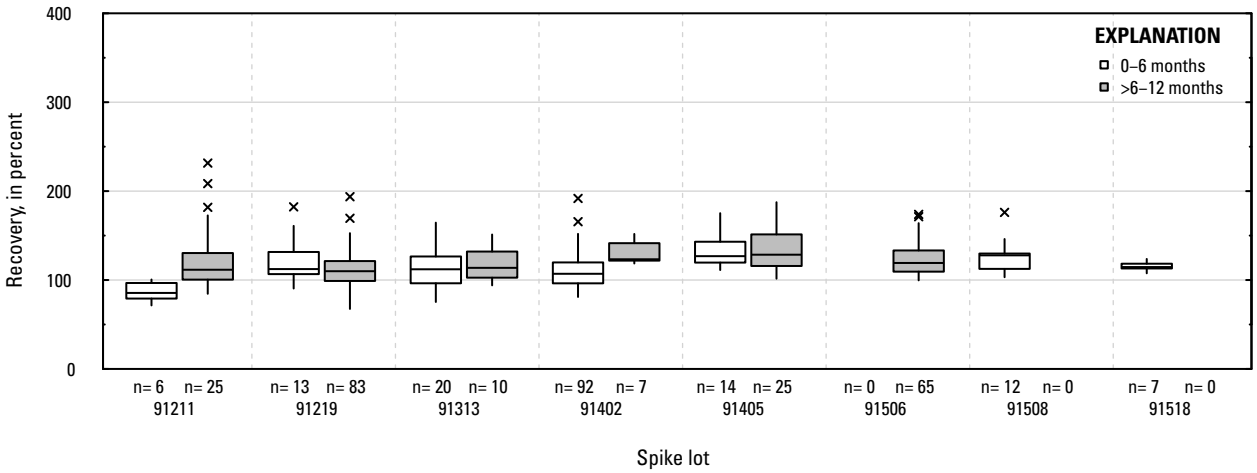
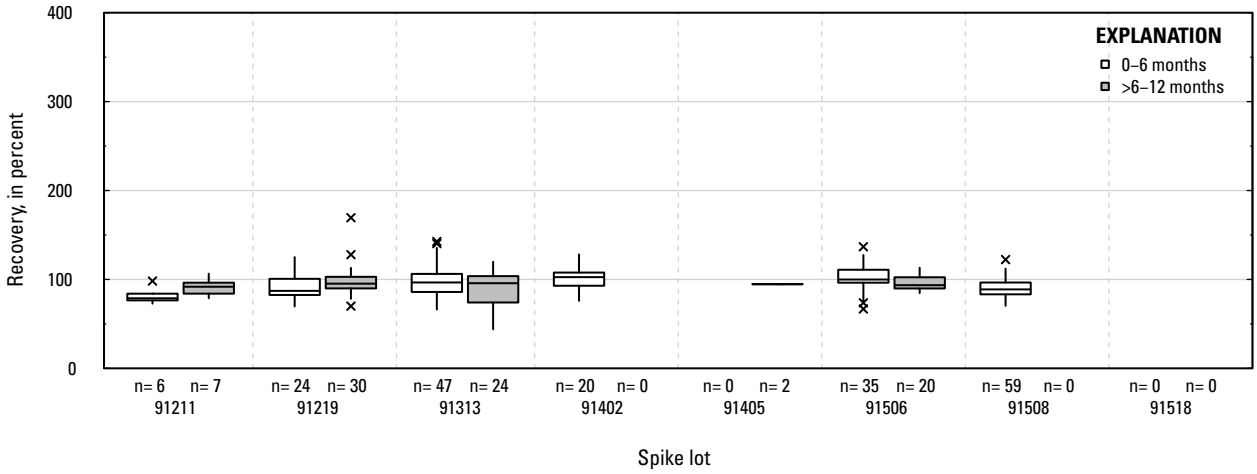
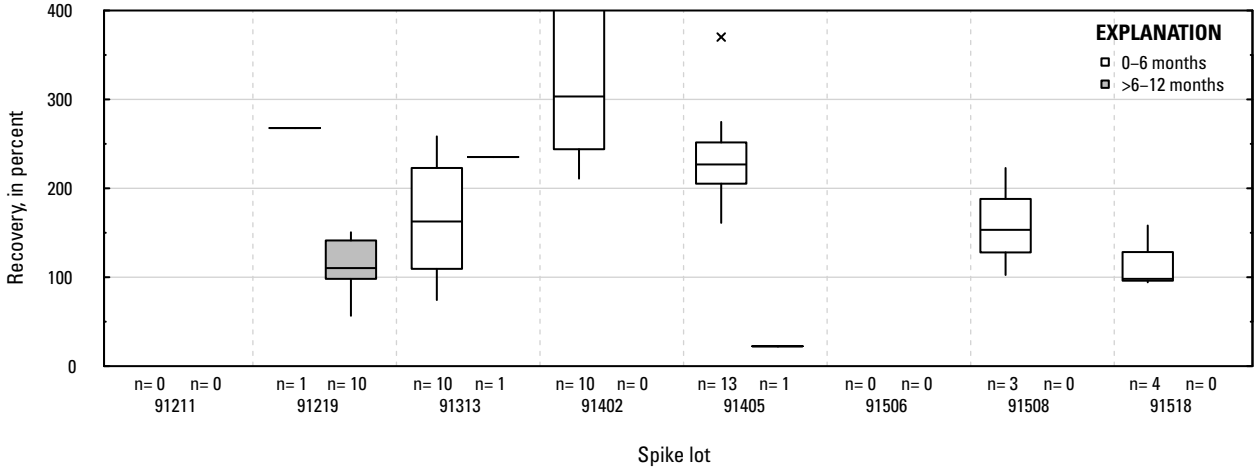


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

AB. **2–Hydroxy–6–ethylamino–4–amino–s–triazine: laboratory reagent spikes**



AC. **2–Hydroxy–6–ethylamino–4–amino–s–triazine: groundwater field matrix spikes**



AD. **2–Hydroxy–6–ethylamino–4–amino–s–triazine: surface water field matrix spikes**

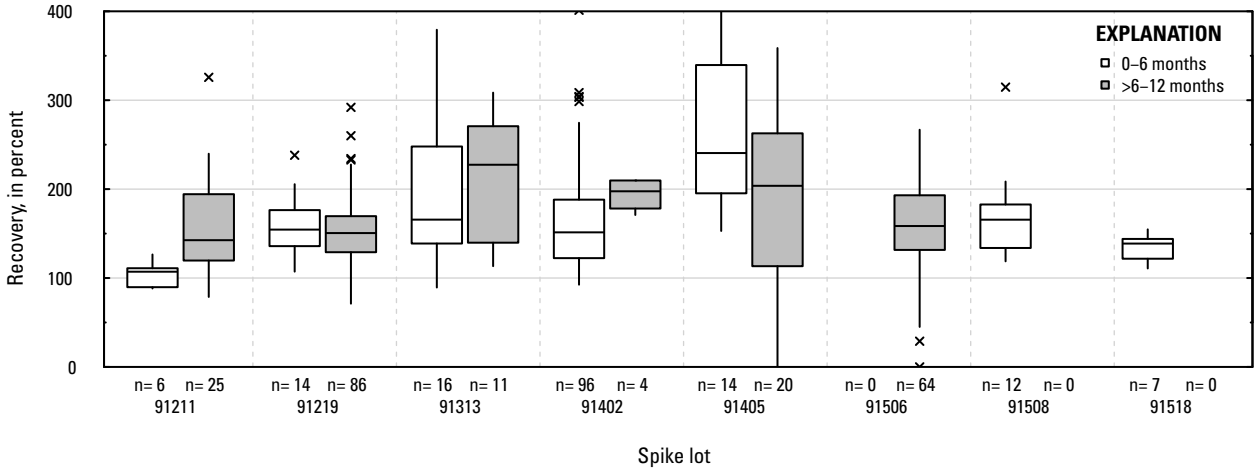
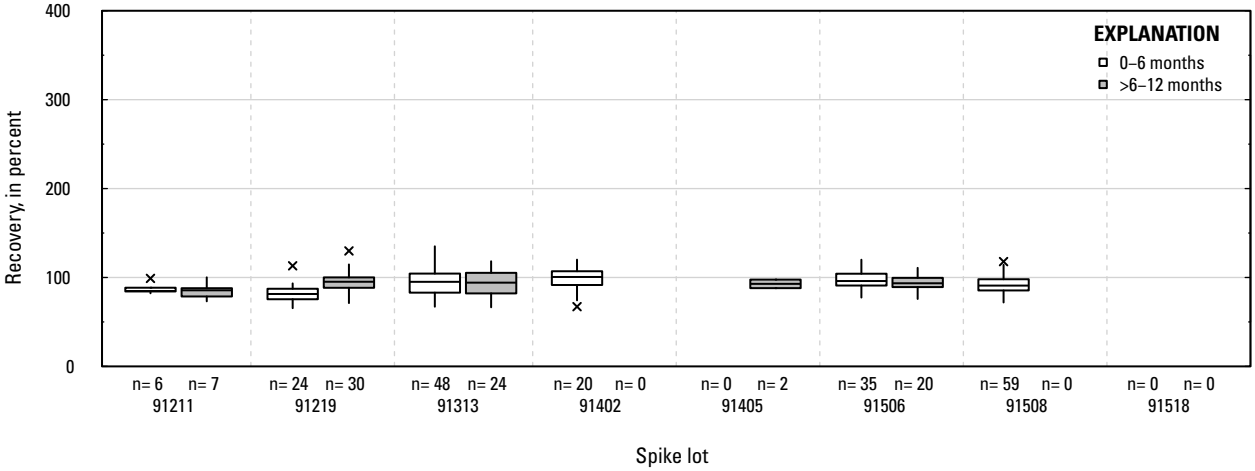
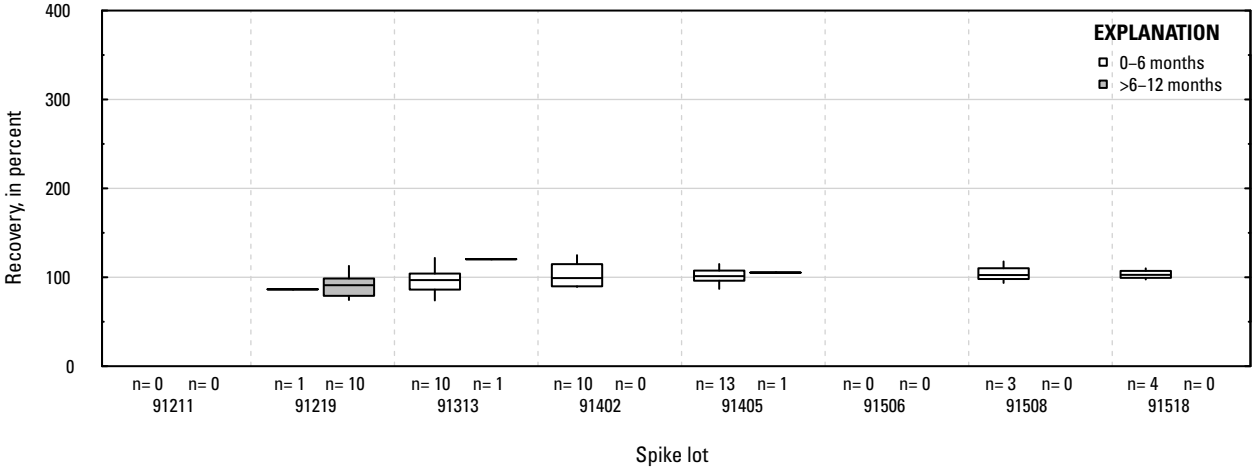


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

AE. **2–Hydroxy–4–isopropylamino–6–ethylamino–s–triazine {OIET}: laboratory reagent spikes**



AF. **2–Hydroxy–4–isopropylamino–6–ethylamino–s–triazine {OIET}: groundwater field matrix spikes**



AG. **2–Hydroxy–4–isopropylamino–6–ethylamino–s–triazine {OIET}: surface water field matrix spikes**

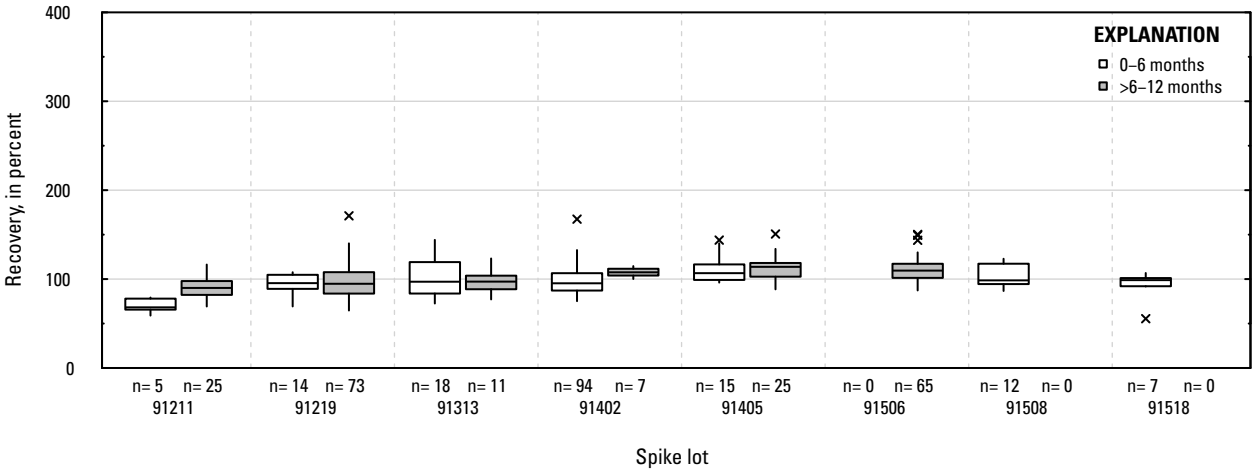
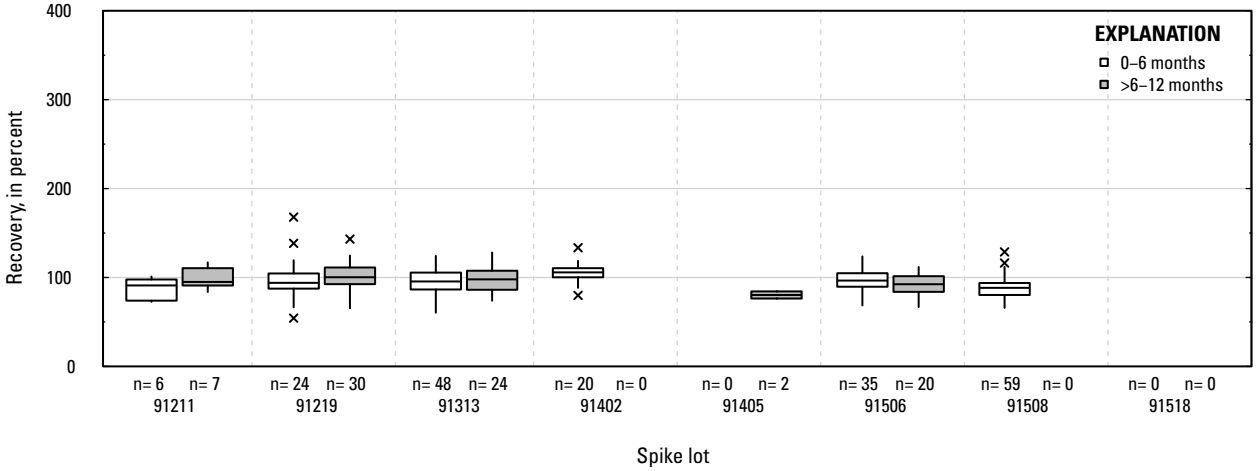
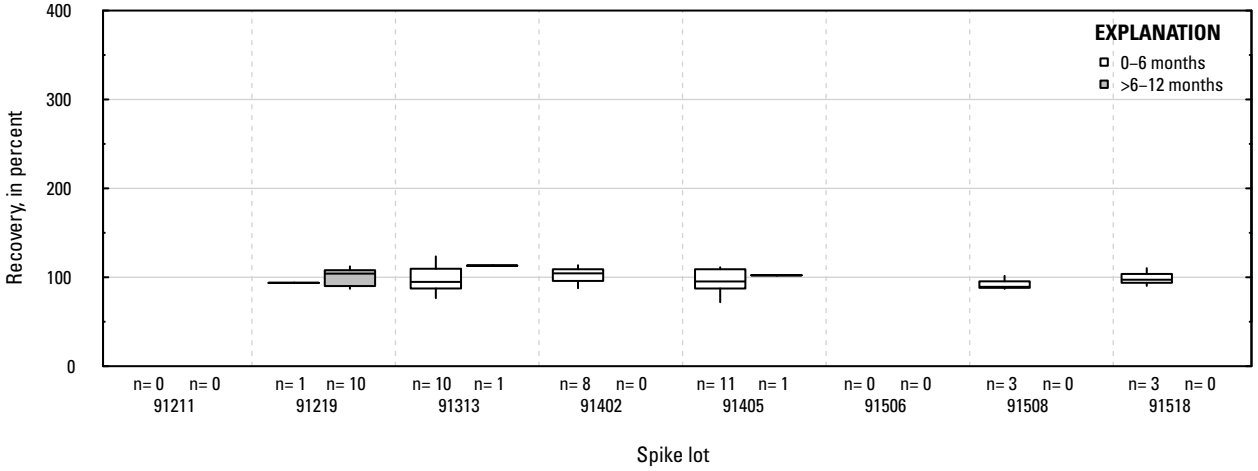


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

AH. **3,4–Dichlorophenylurea: laboratory reagent spikes**



AI. **3,4–Dichlorophenylurea: groundwater field matrix spikes**



AJ. **3,4–Dichlorophenylurea: surface water field matrix spikes**

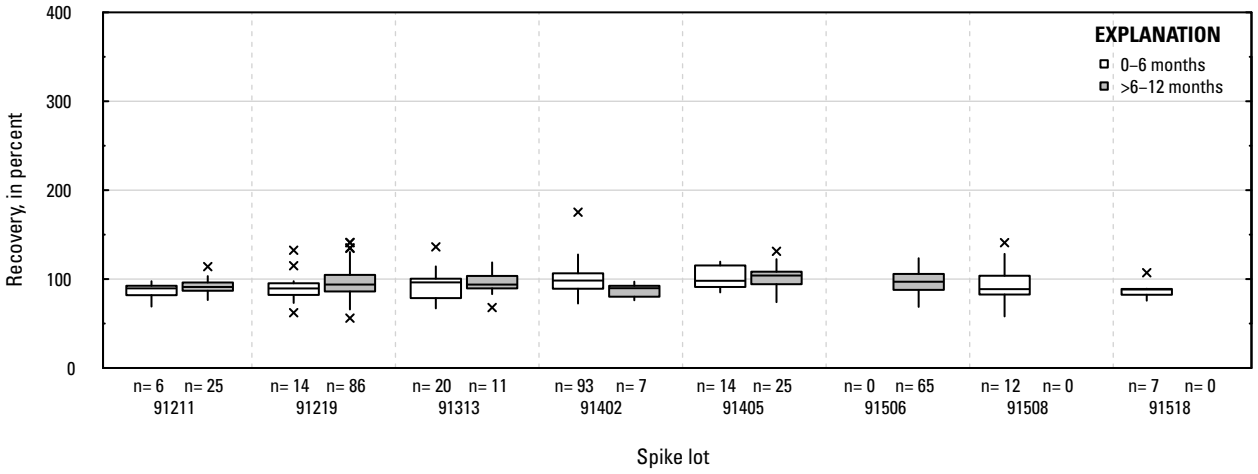
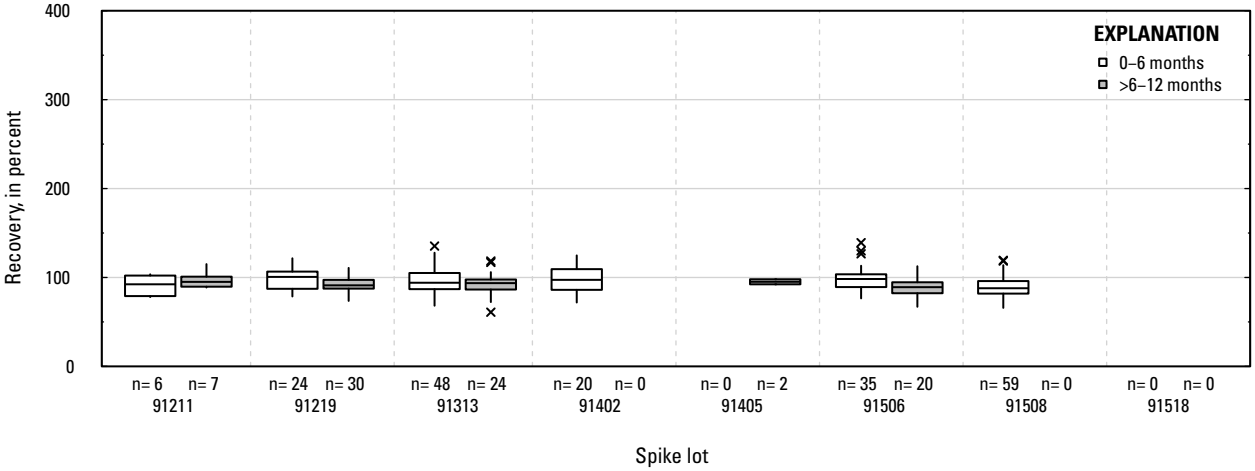
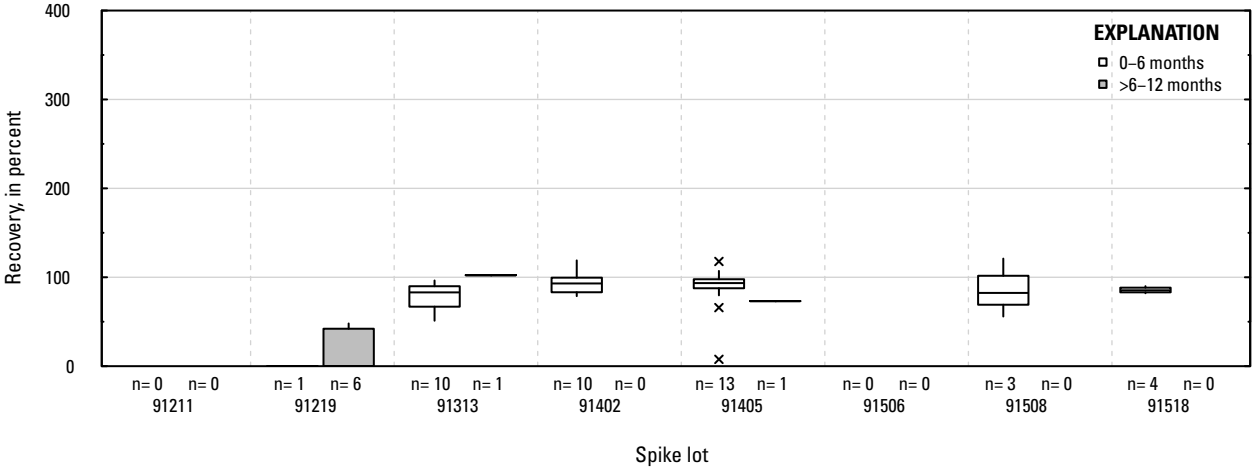


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

AK. **3–Hydroxycarbofuran: laboratory reagent spikes**



AL. **3–Hydroxycarbofuran: groundwater field matrix spikes**



AM. **3–Hydroxycarbofuran: surface water field matrix spikes**

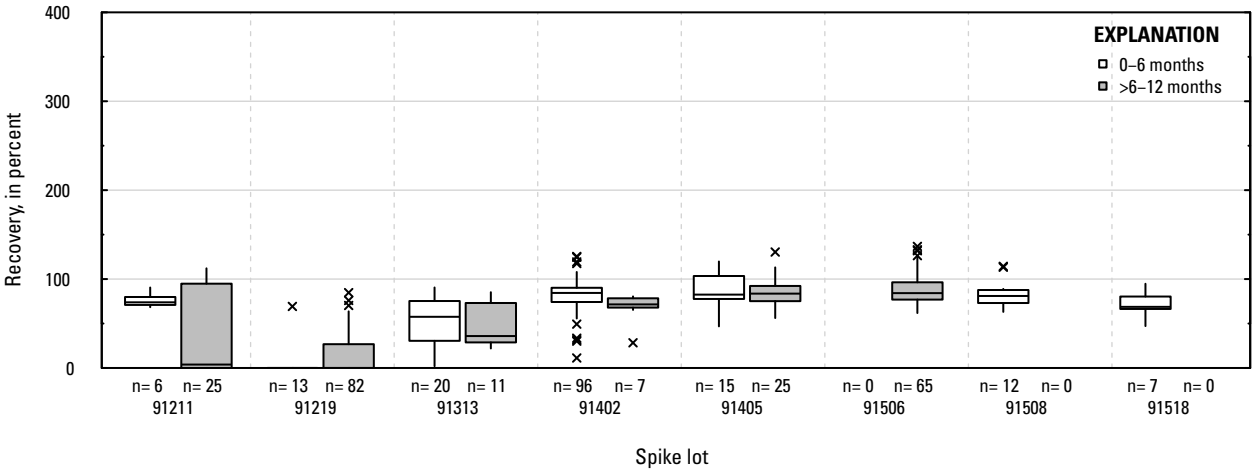
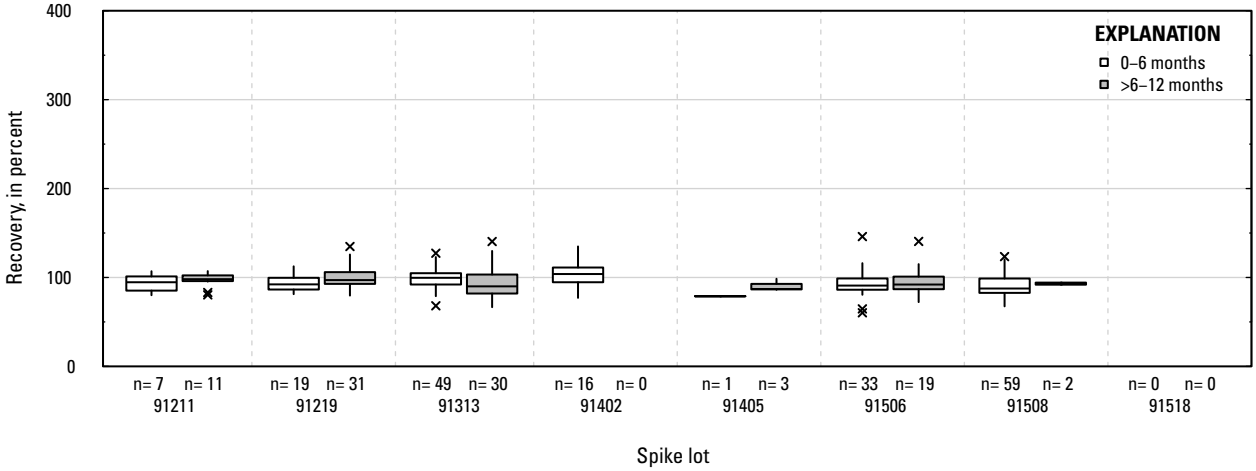
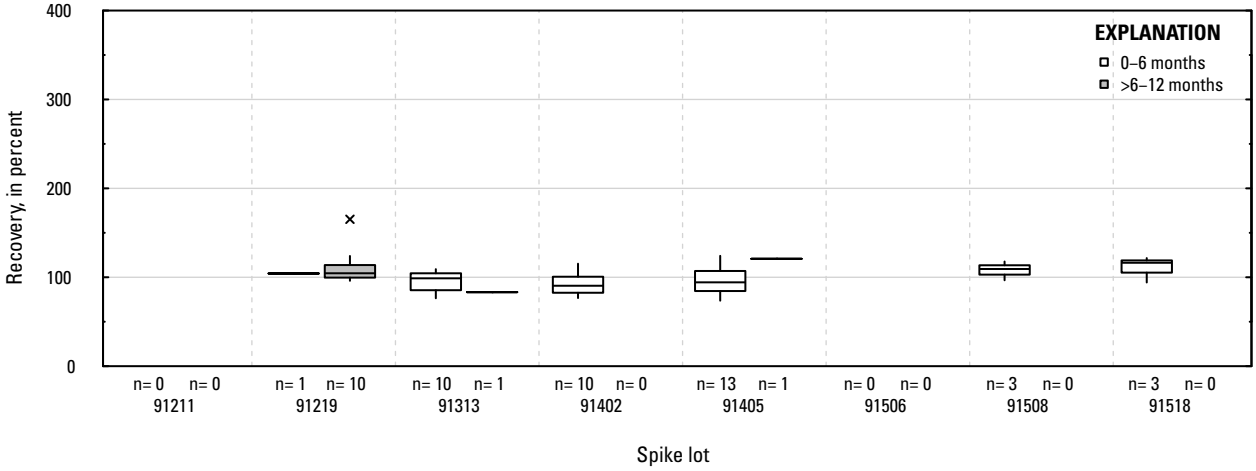


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

AN. **3–Phenoxybenzoic acid: laboratory reagent spikes**



AO. **3–Phenoxybenzoic acid: groundwater field matrix spikes**



AP. **3–Phenoxybenzoic acid: surface water field matrix spikes**

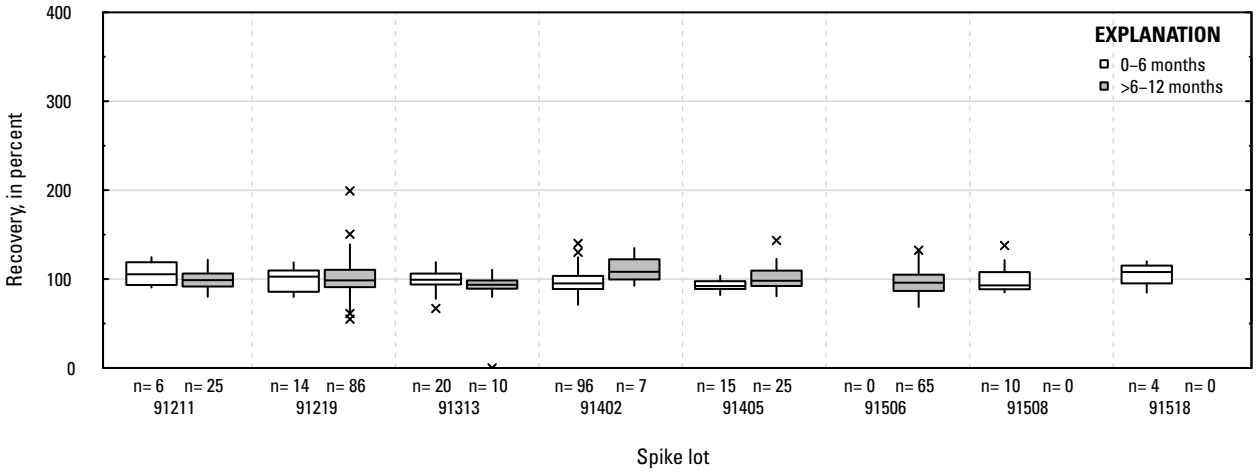
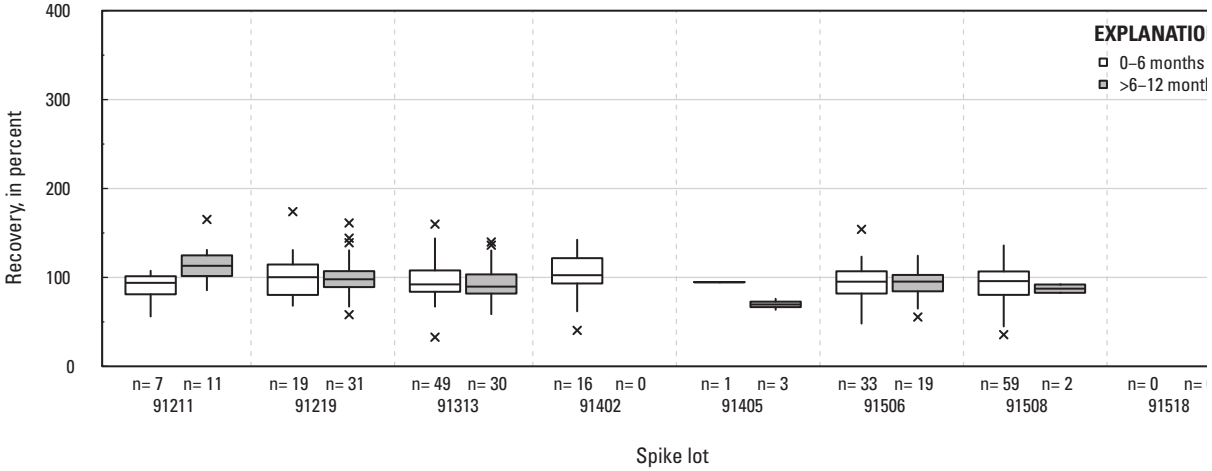
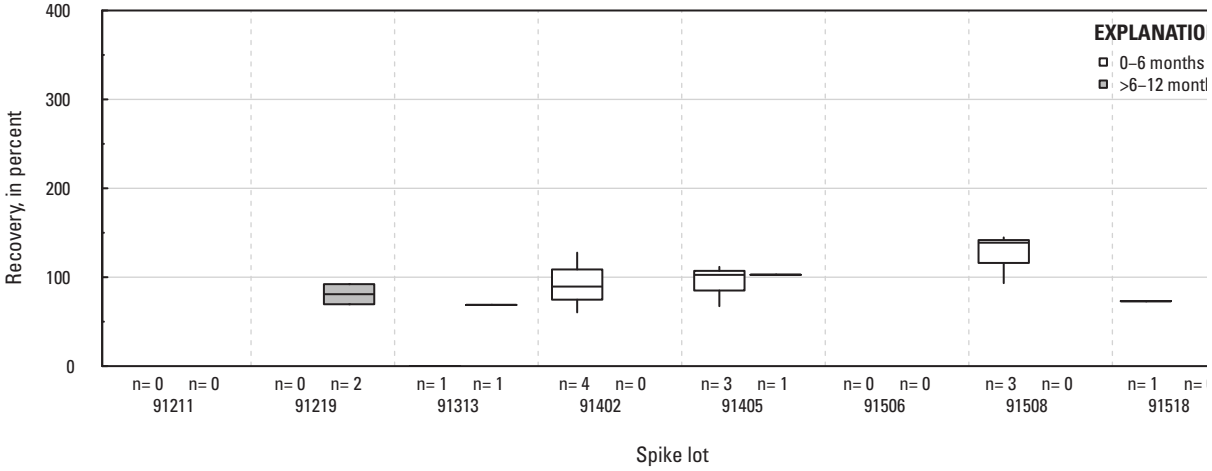


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

AQ. **4–(Hydroxymethyl)pendimethalin: laboratory reagent spikes**



AR. **4–(Hydroxymethyl)pendimethalin: groundwater field matrix spikes**



AS. **4–(Hydroxymethyl)pendimethalin: surface water field matrix spikes**

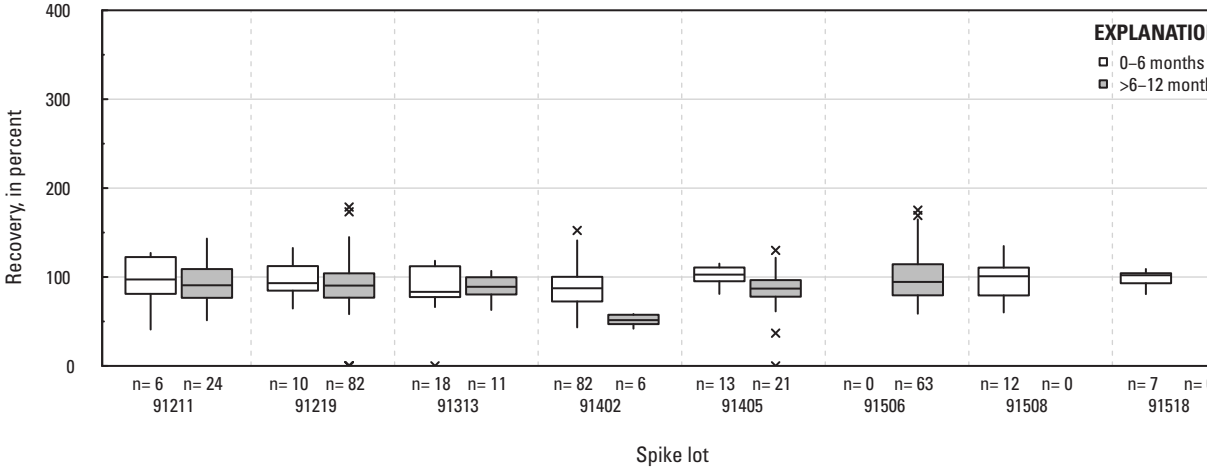
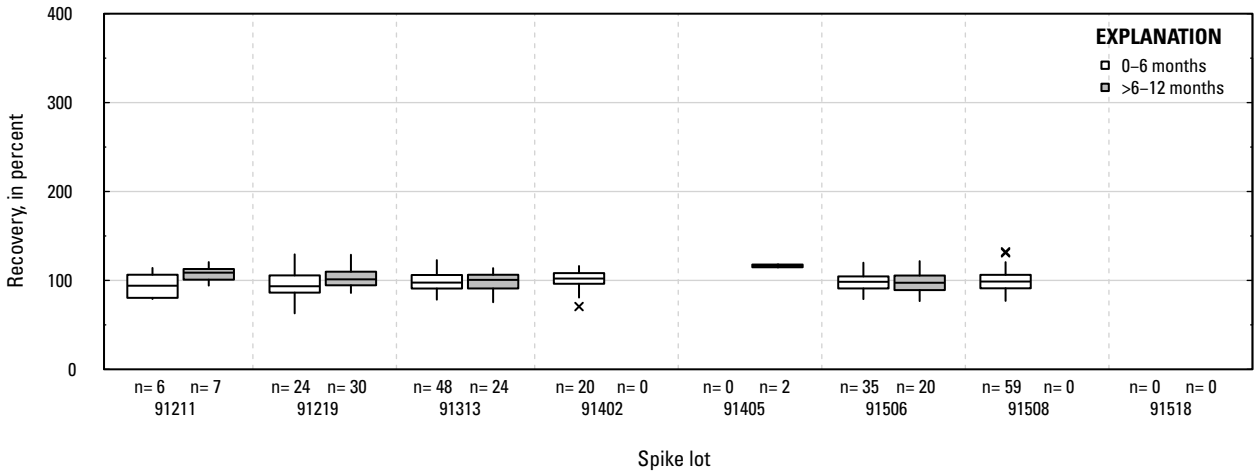
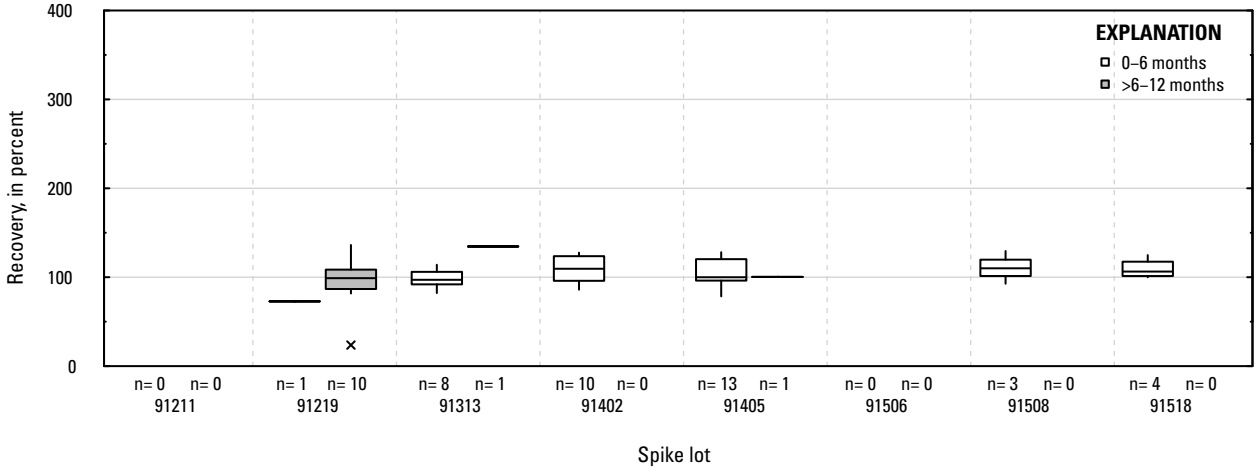


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

AT. **4–Chlorobenzylmethyl sulfoxide: laboratory reagent spikes**



AU. **4–Chlorobenzylmethyl sulfoxide: groundwater field matrix spikes**



AV. **4–Chlorobenzylmethyl sulfoxide: surface water field matrix spikes**

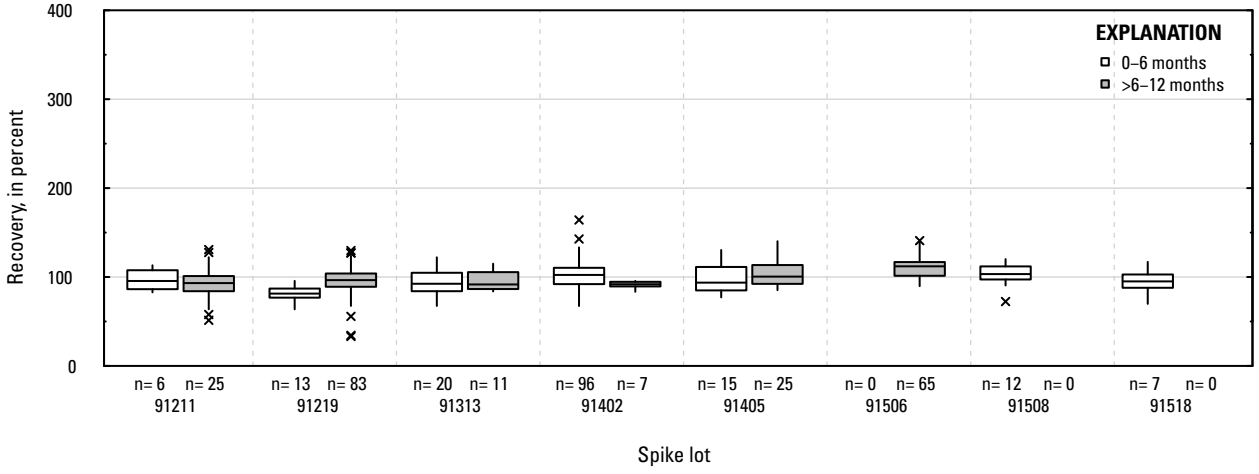
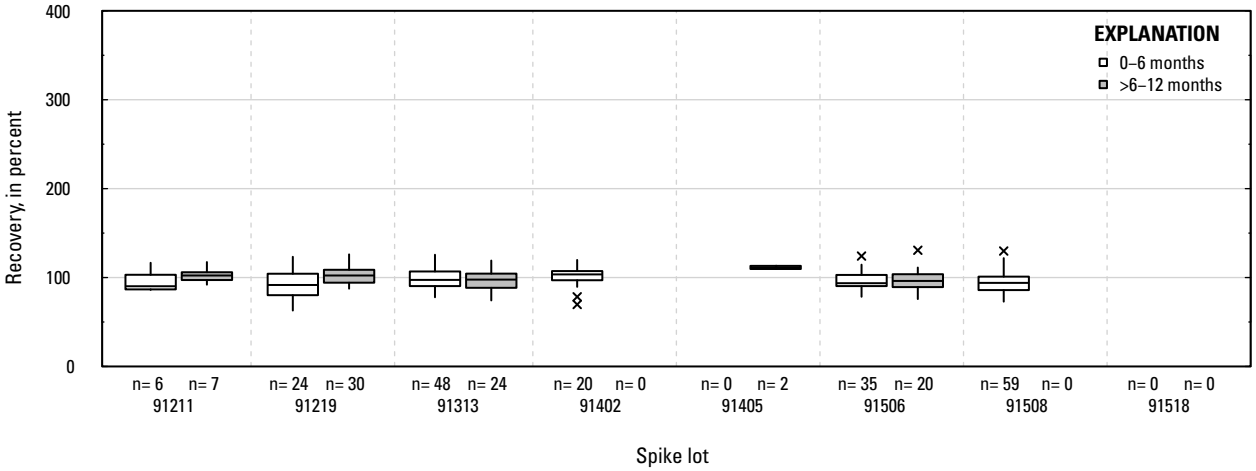
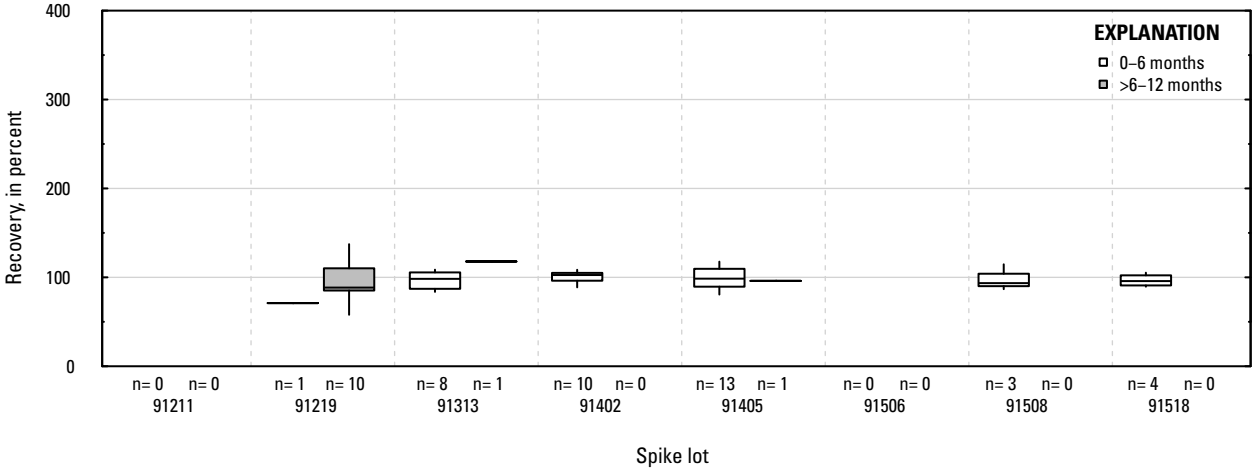


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

AW. **4–Hydroxy molinate: laboratory reagent spikes**



AX. **4–Hydroxy molinate: groundwater field matrix spikes**



AY. **4–Hydroxy molinate: surface water field matrix spikes**

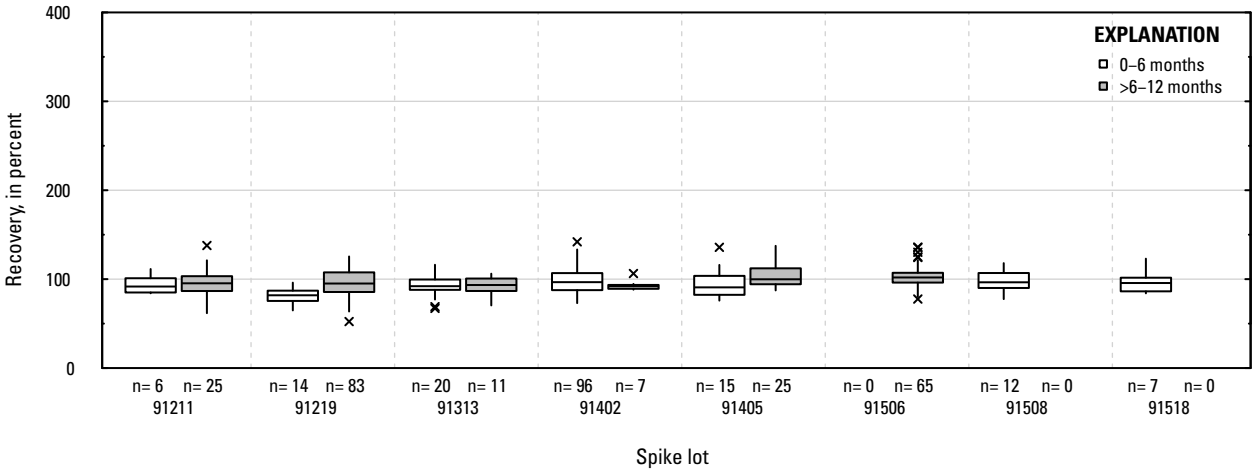
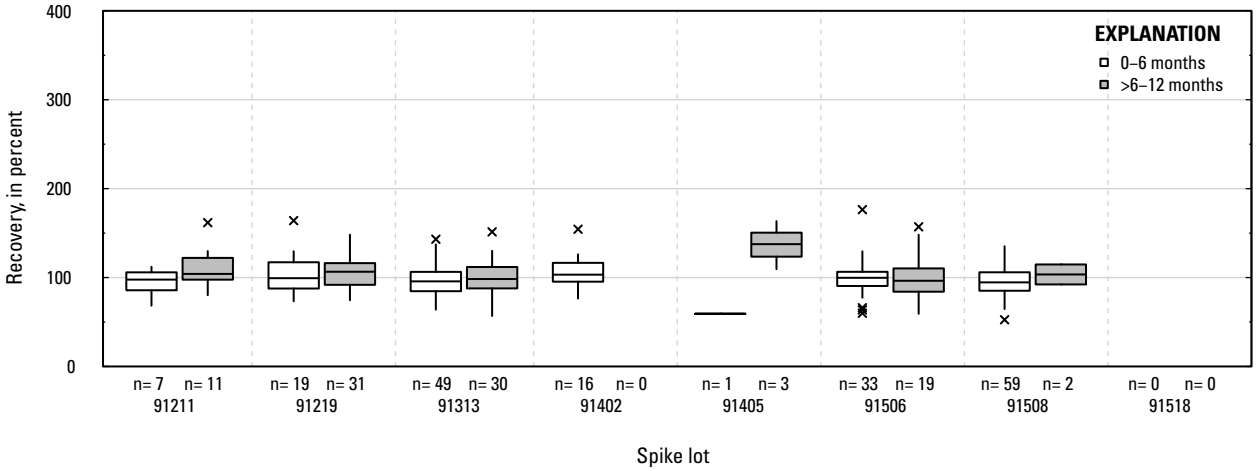
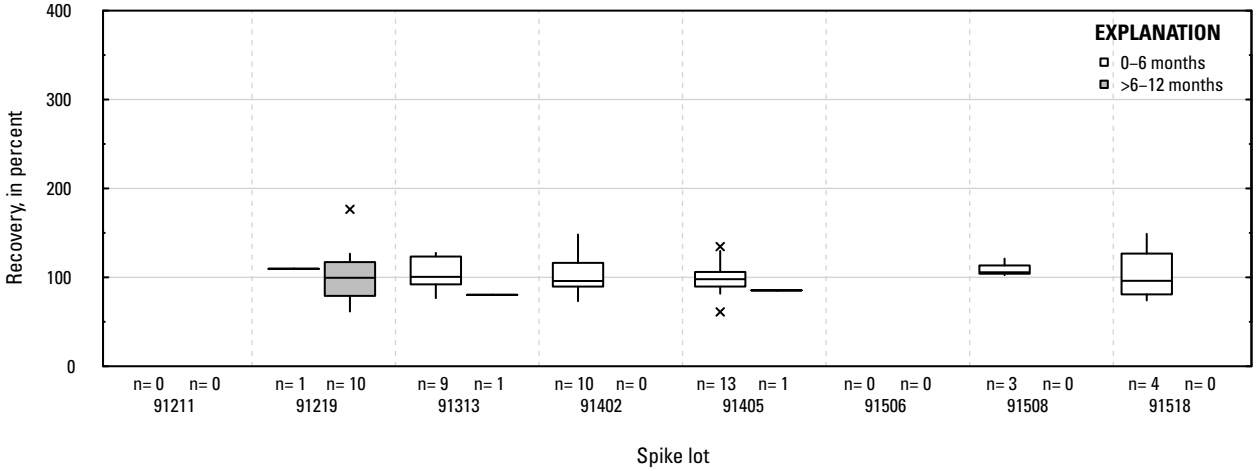


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

AZ. **4–Hydroxychlorothalonil: laboratory reagent spikes**



BA. **4–Hydroxychlorothalonil: groundwater field matrix spikes**



BB. **4–Hydroxychlorothalonil: surface water field matrix spikes**

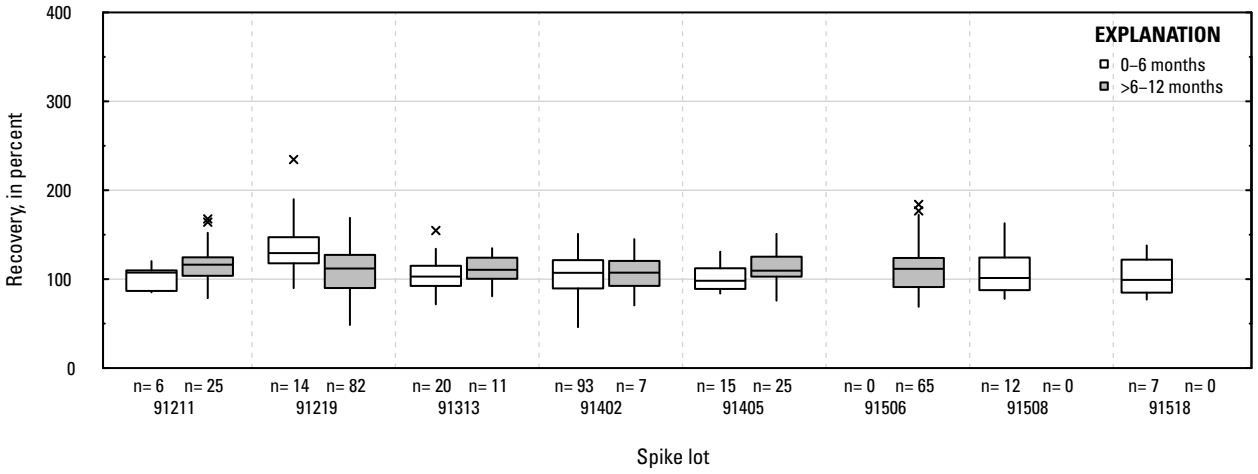
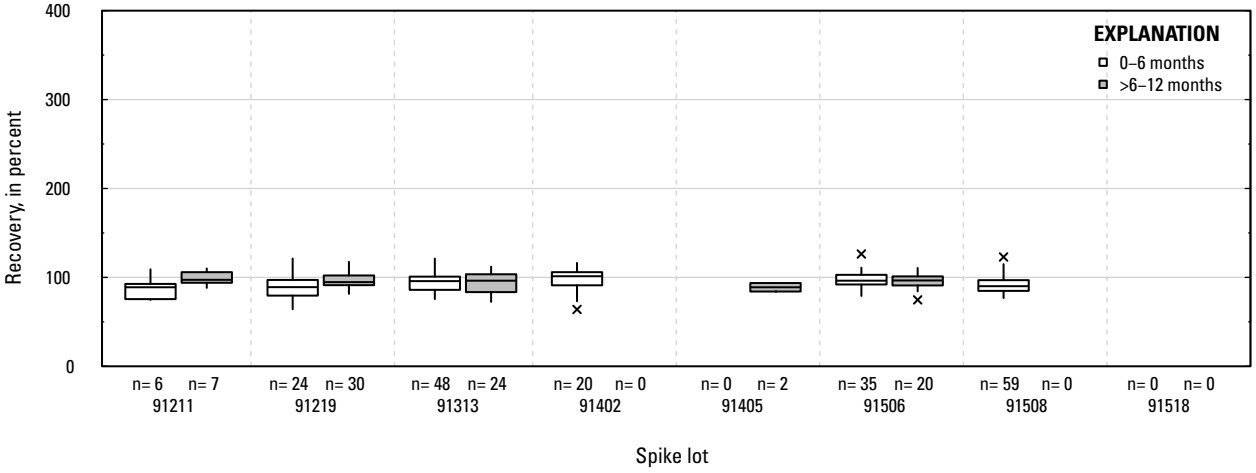
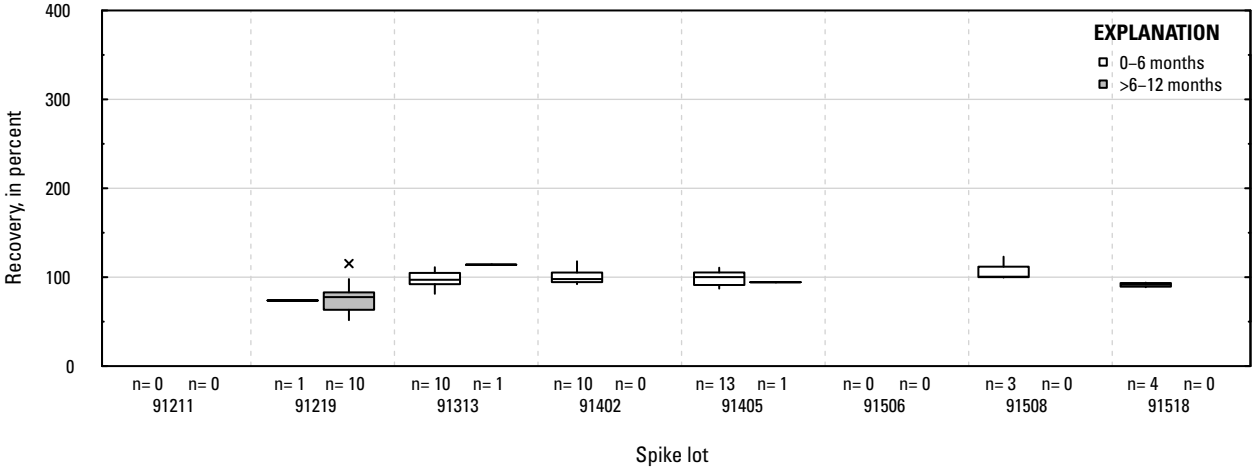


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

BC. **4–Hydroxyhexazinone A: laboratory reagent spikes**



BD. **4–Hydroxyhexazinone A: groundwater field matrix spikes**



BE. **4–Hydroxyhexazinone A: surface water field matrix spikes**

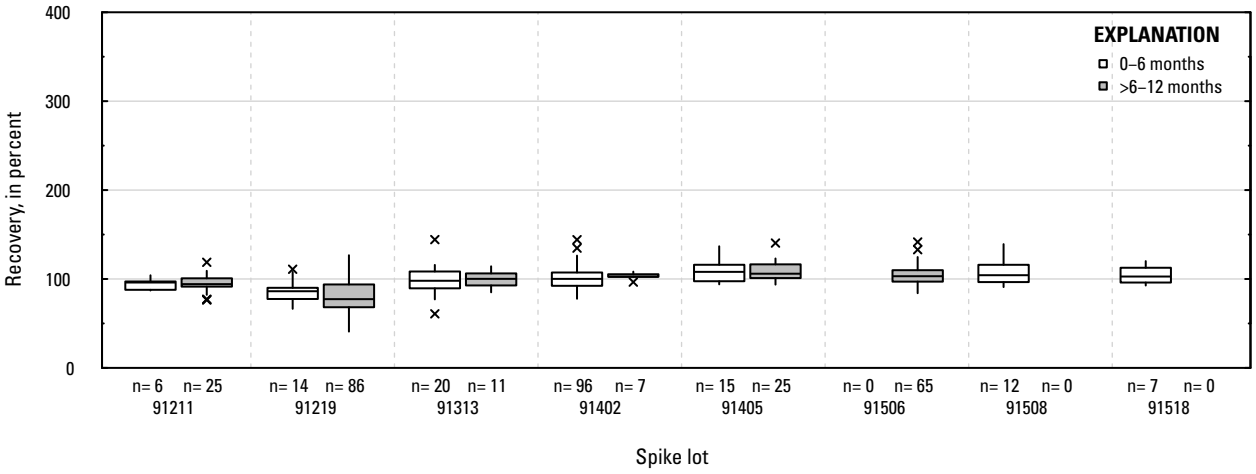
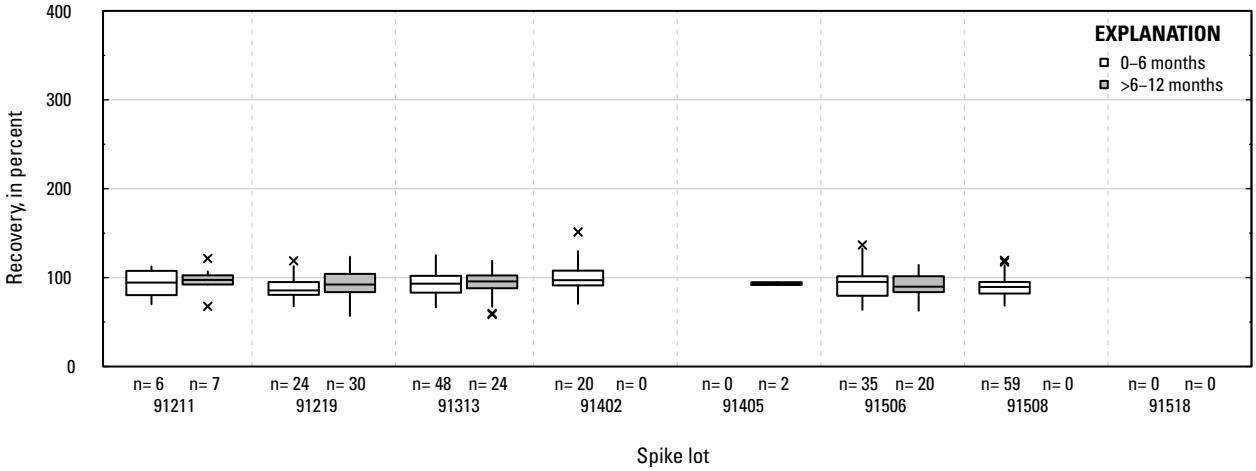
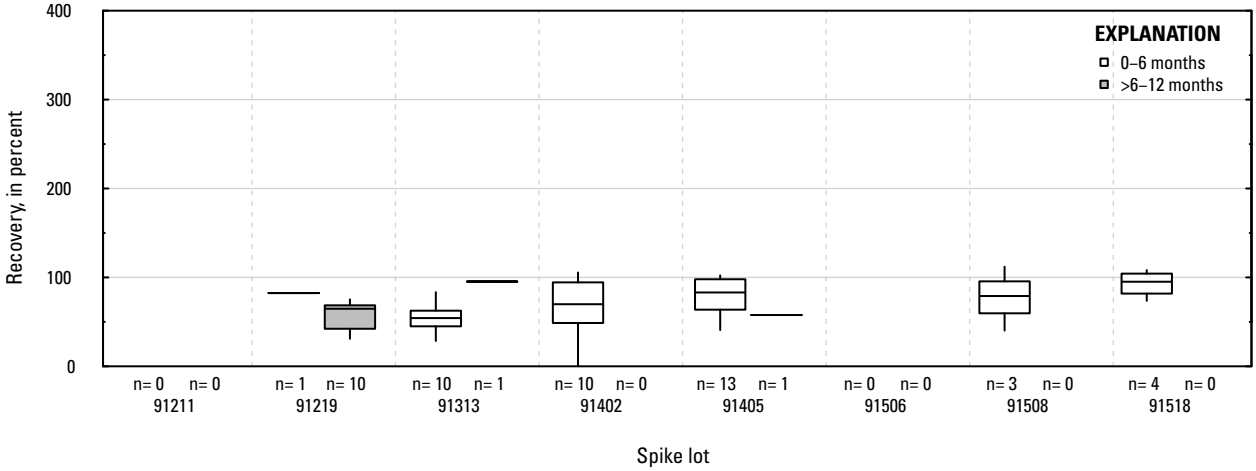


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

BF. **Hydroxy didemethyl fluometuron: laboratory reagent spikes**



BG. **Hydroxy didemethyl fluometuron: groundwater field matrix spikes**



BH. **Hydroxy didemethyl fluometuron: surface water field matrix spikes**

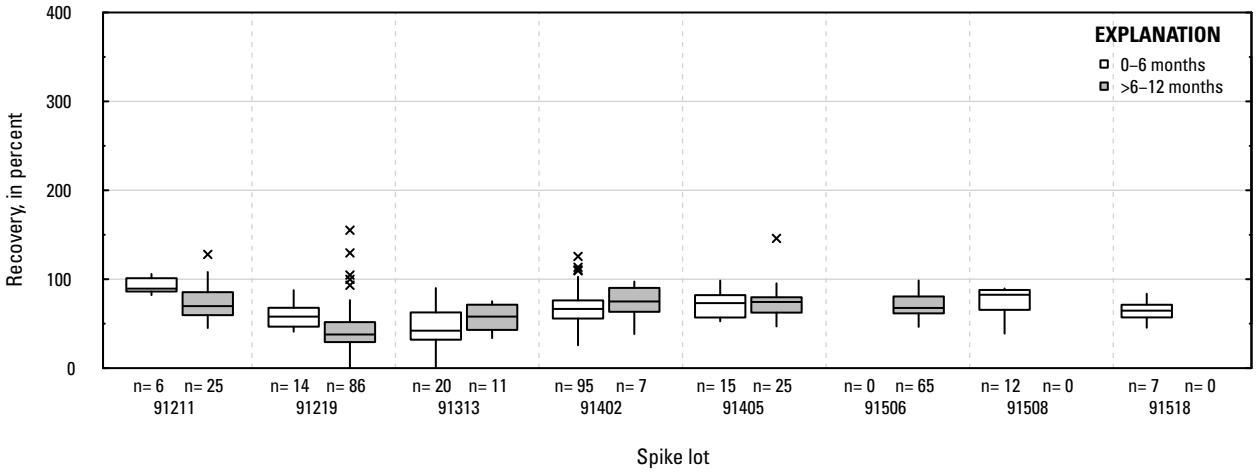
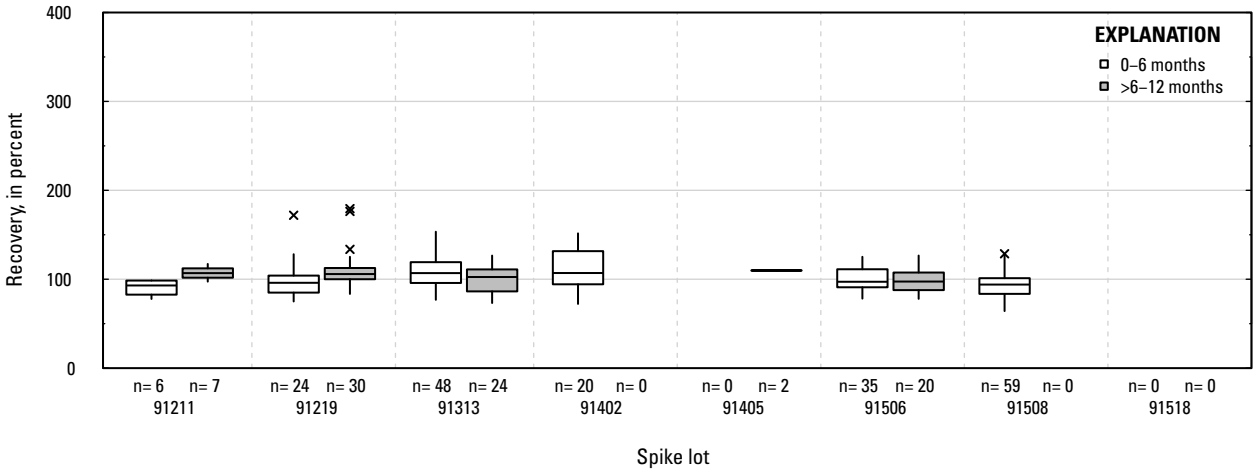
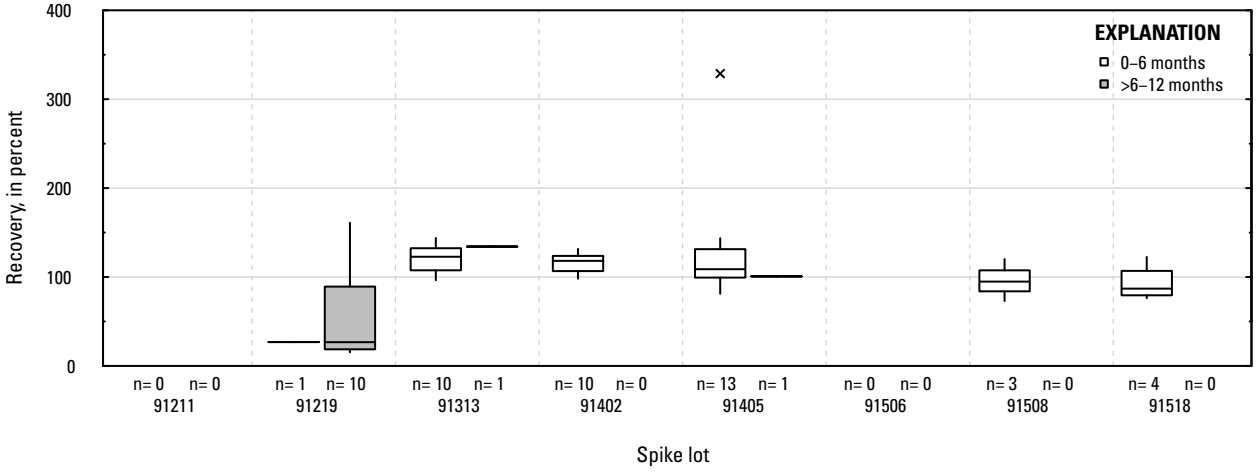


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

BI. **Acephate: laboratory reagent spikes**



BJ. **Acephate: groundwater field matrix spikes**



BK. **Acephate: surface water field matrix spikes**

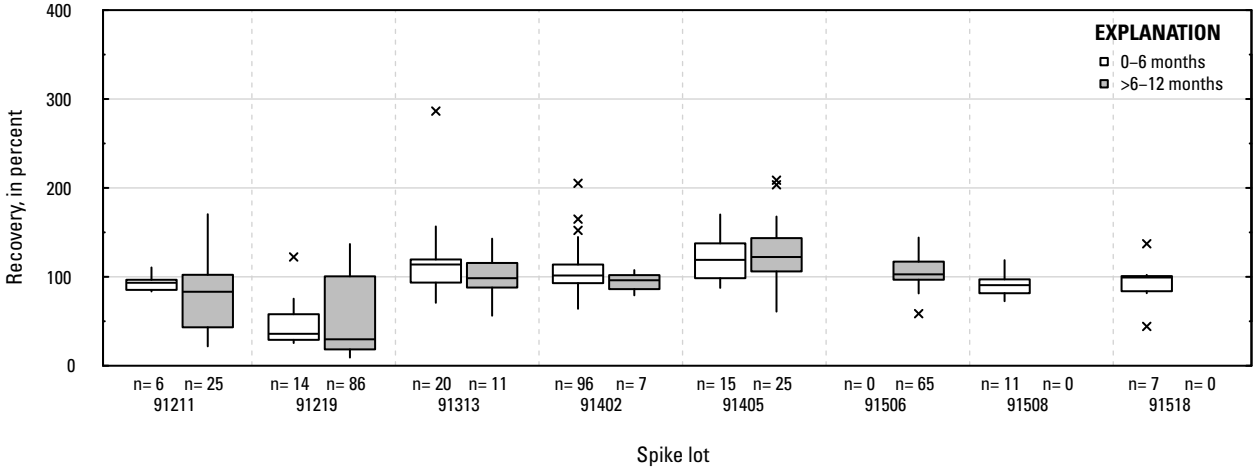
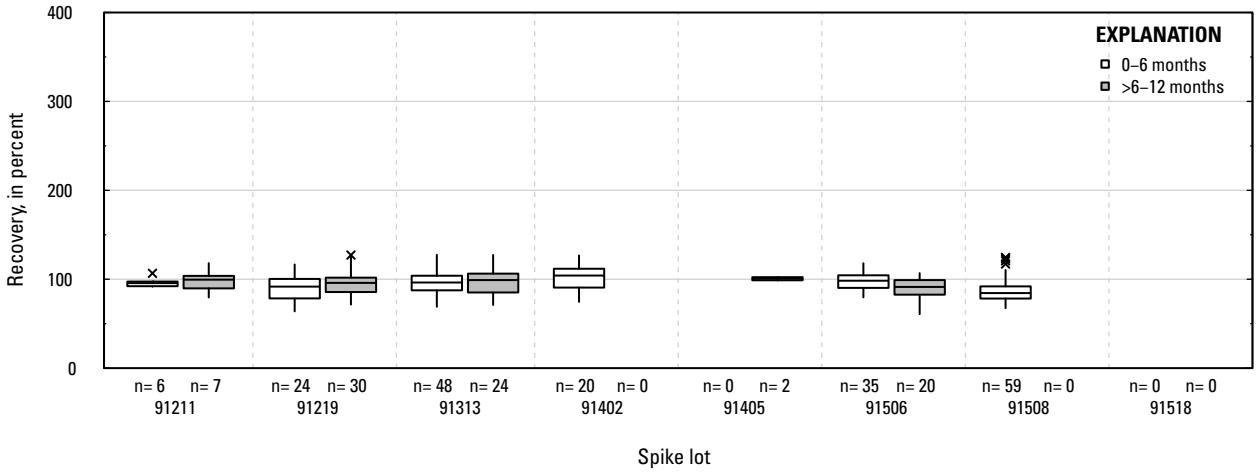
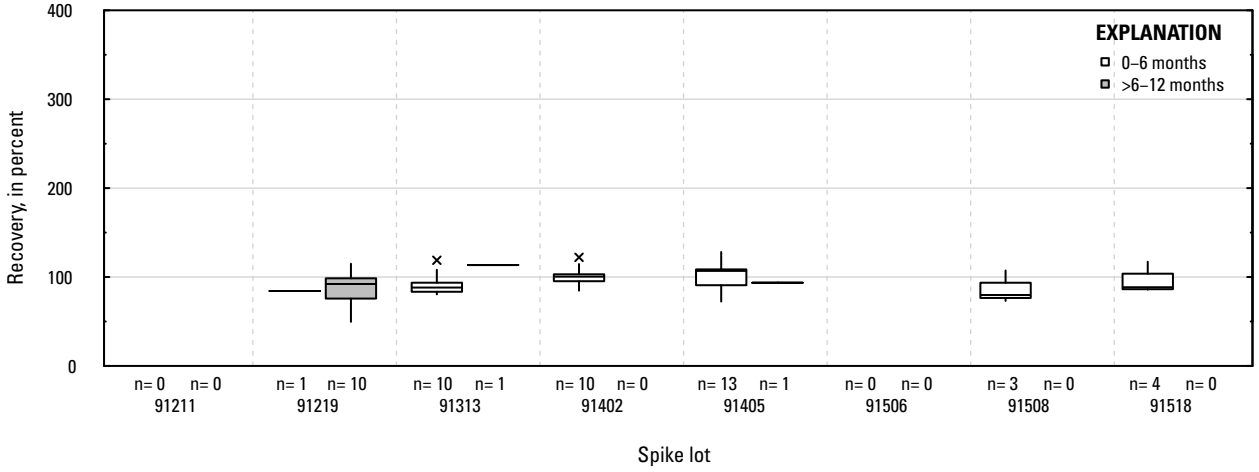


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

BL. **Acetochlor: laboratory reagent spikes**



BM. **Acetochlor: groundwater field matrix spikes**



BN. **Acetochlor: surface water field matrix spikes**

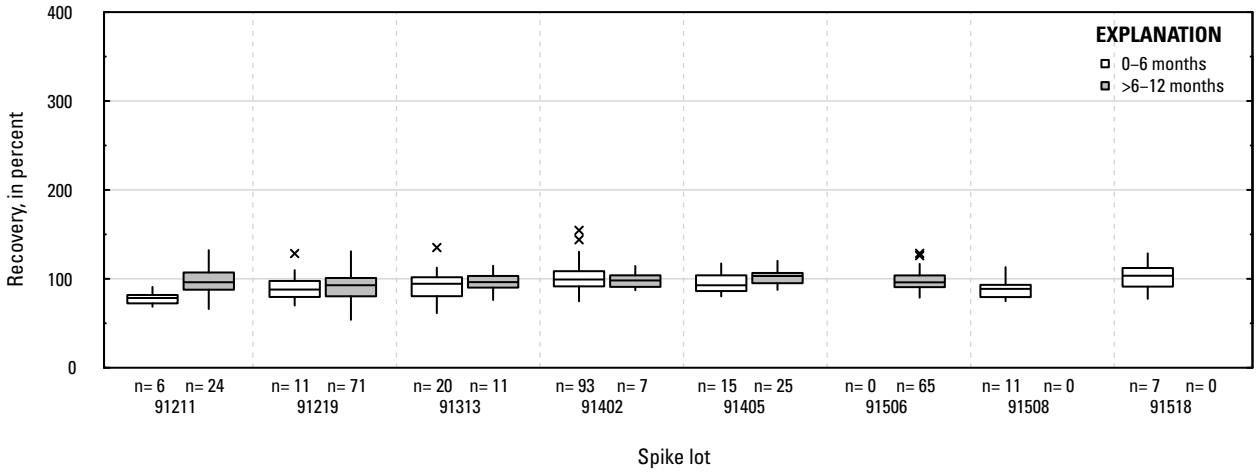
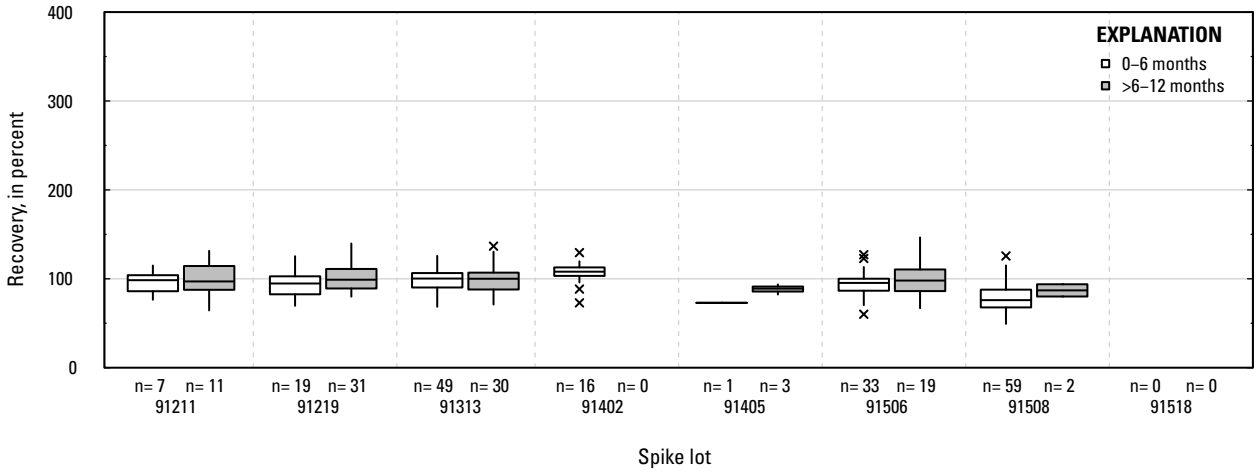
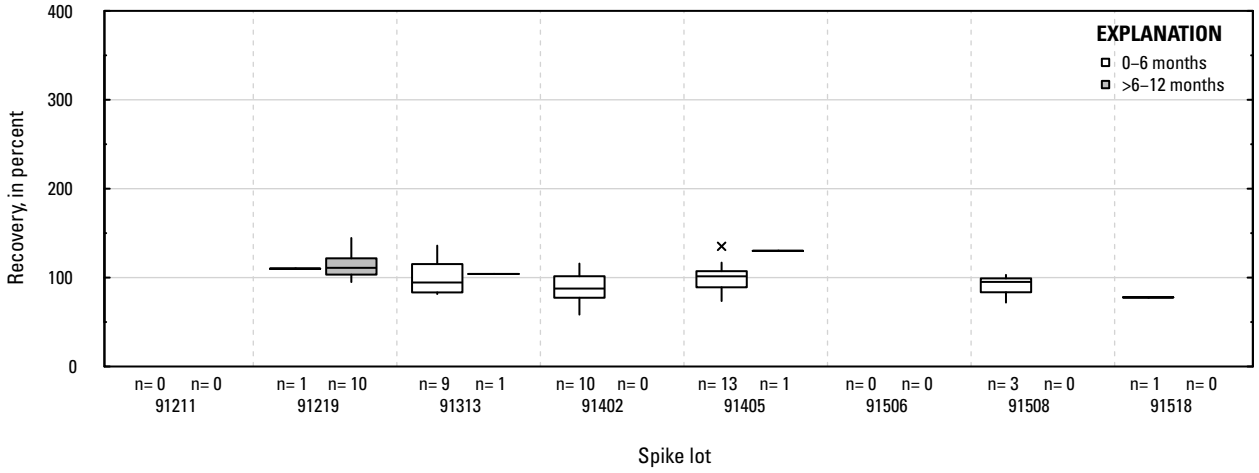


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

BO. **Acetochlor oxanilic acid: laboratory reagent spikes**



BP. **Acetochlor oxanilic acid: groundwater field matrix spikes**



BQ. **Acetochlor oxanilic acid: surface water field matrix spikes**

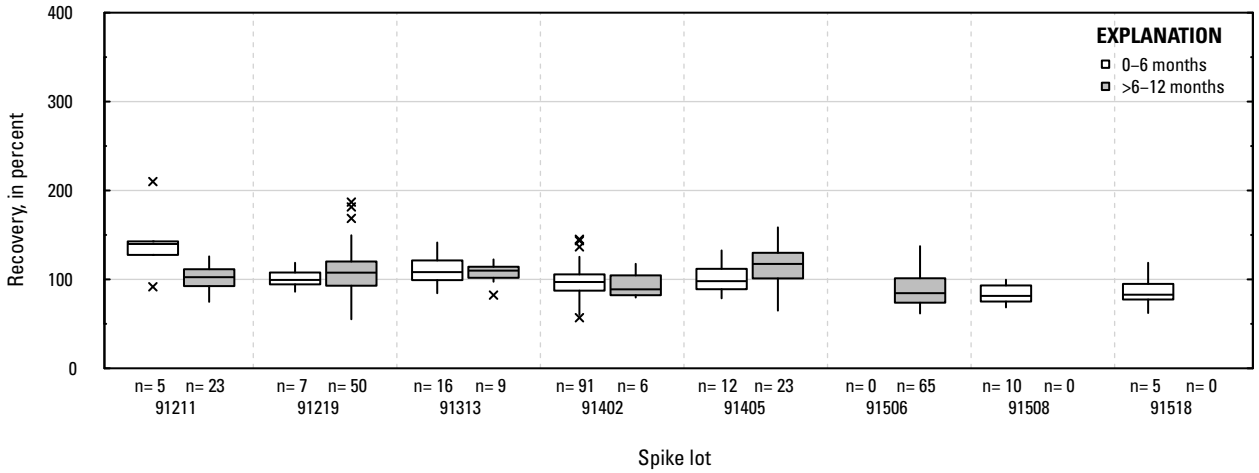
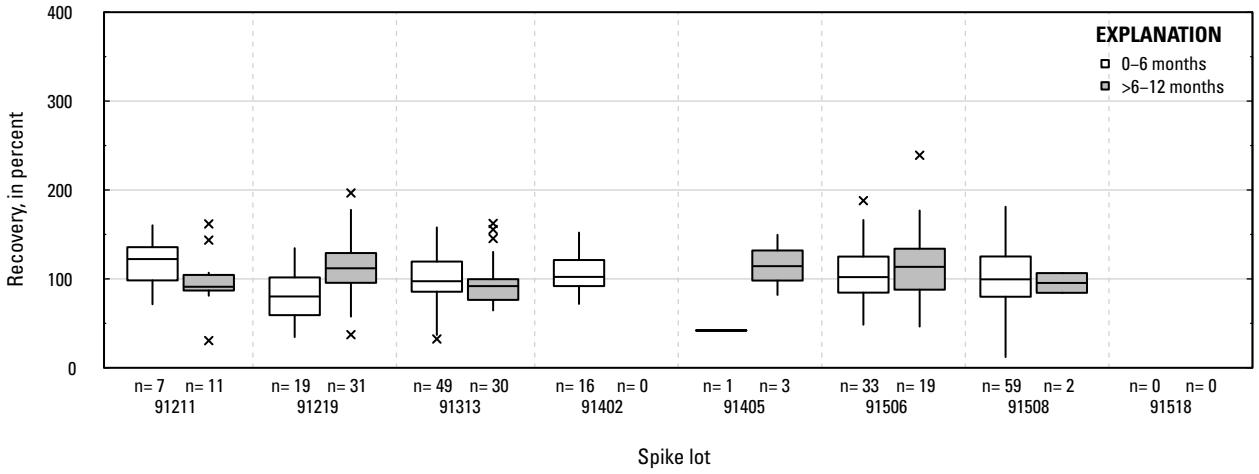
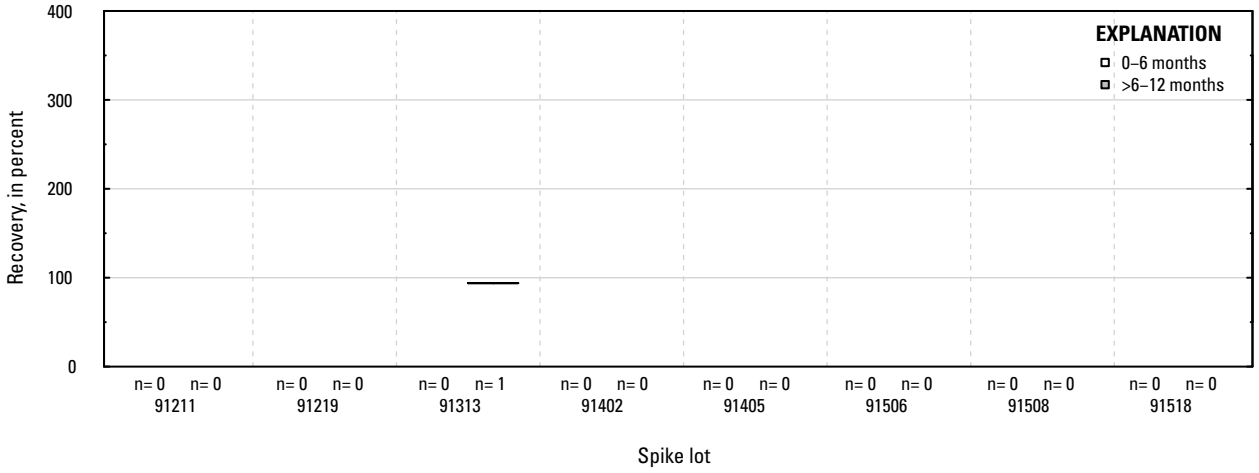


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

BR. **Acetochlor sulfonic acid: laboratory reagent spikes**



BS. **Acetochlor sulfonic acid: groundwater field matrix spikes**



BT. **Acetochlor sulfonic acid: surface water field matrix spikes**

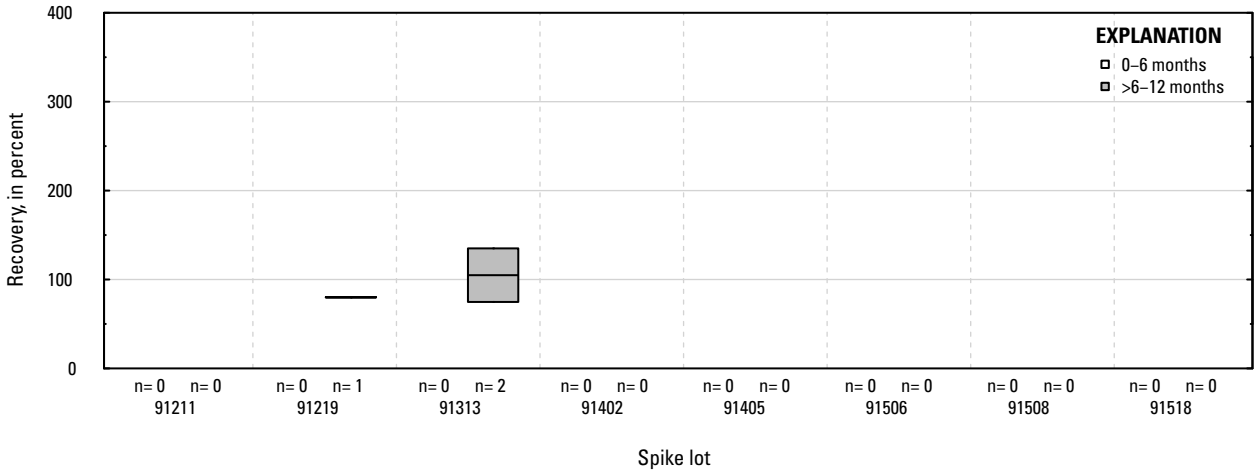
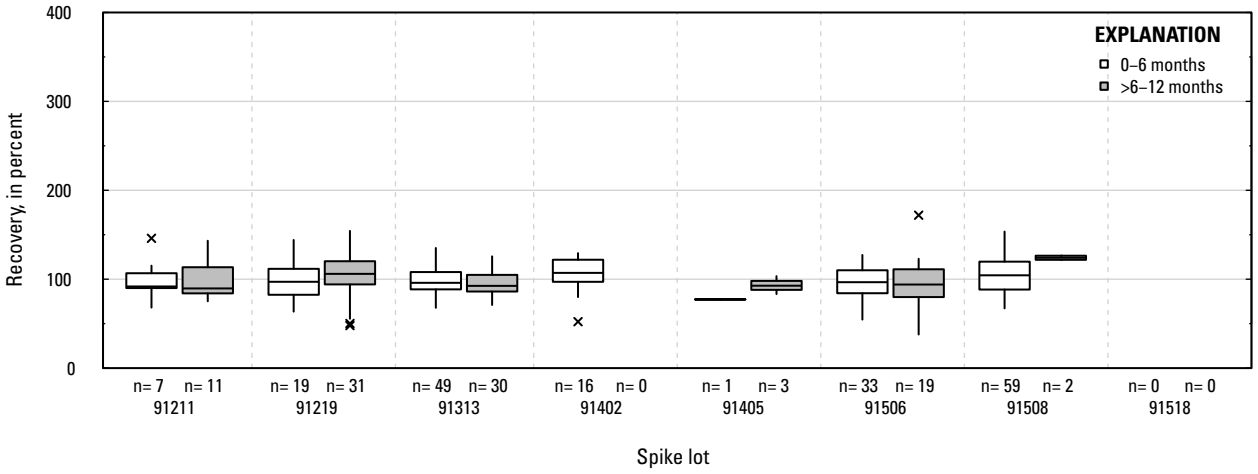
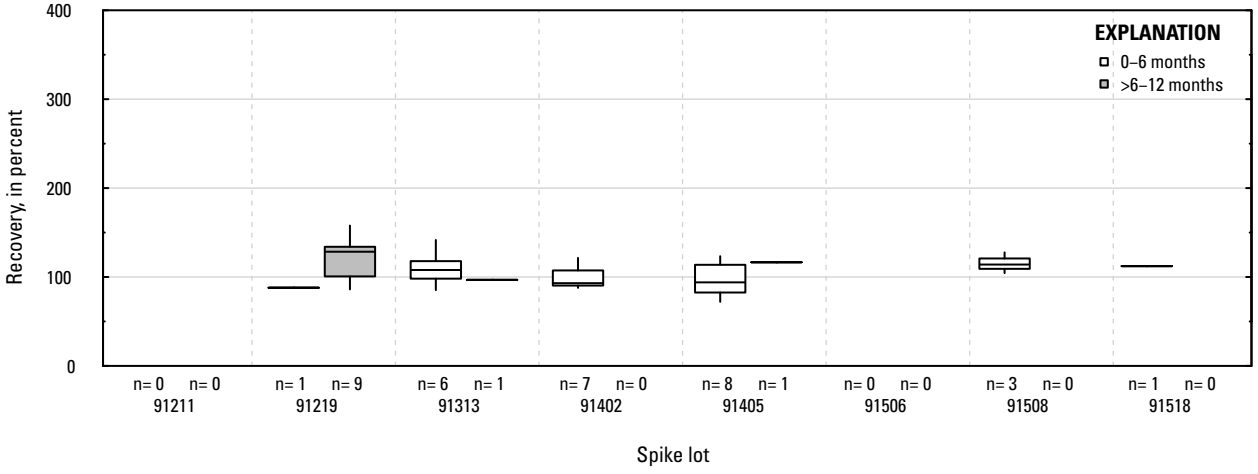


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

BU. **Acetochlor sulfynilacetic acid: laboratory reagent spikes**



BV. **Acetochlor sulfynilacetic acid: groundwater field matrix spikes**



BW. **Acetochlor sulfynilacetic acid: surface water field matrix spikes**

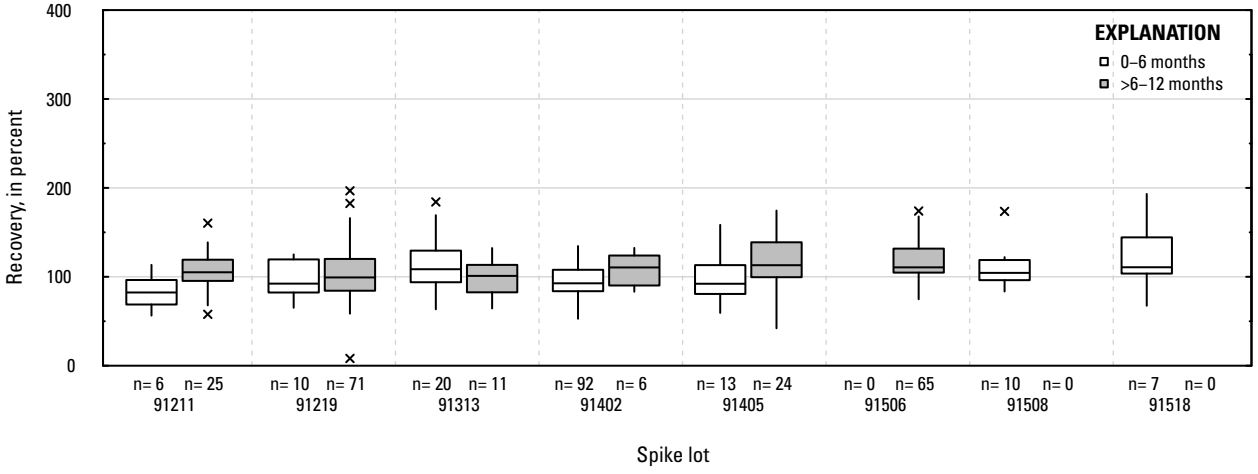
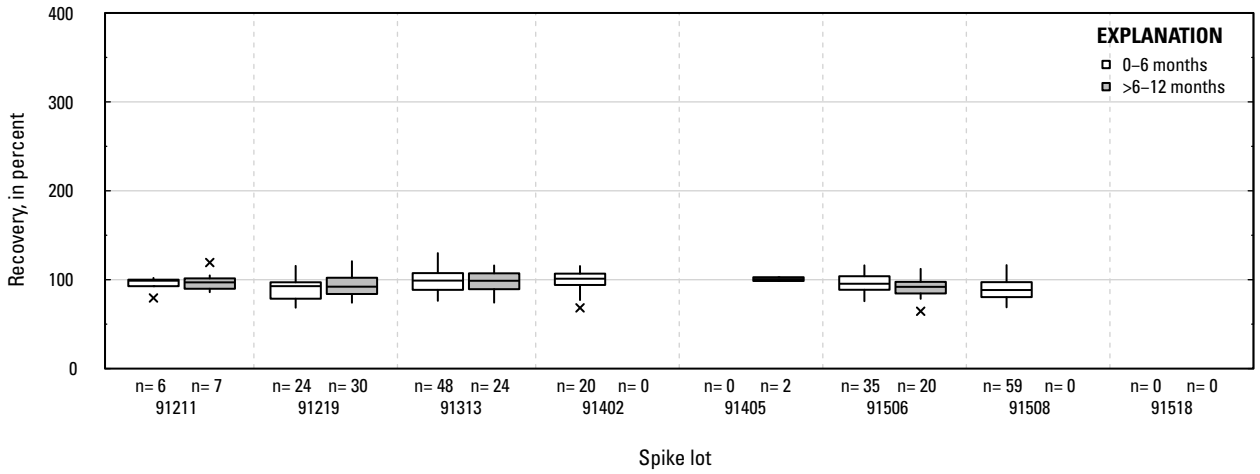
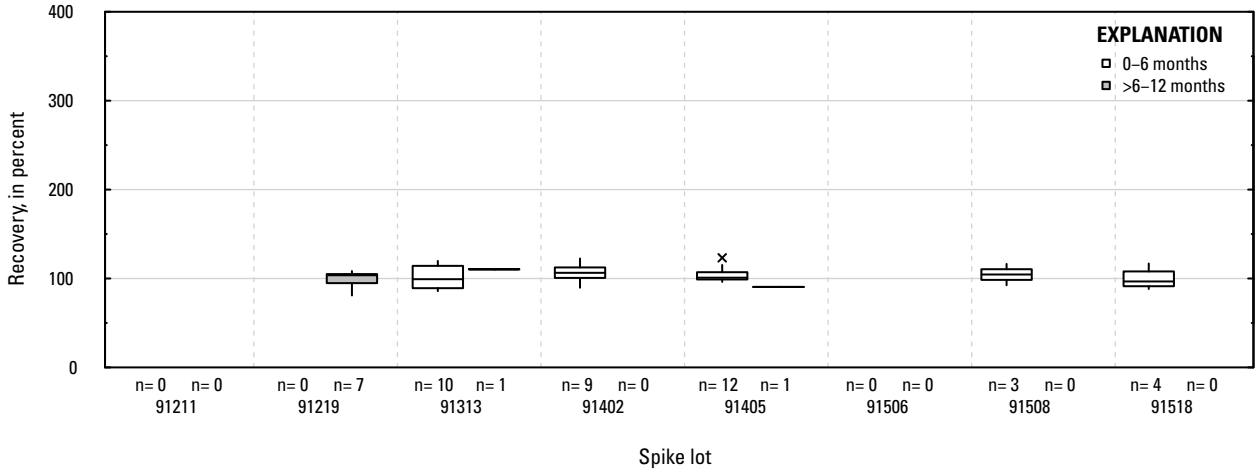


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

BX. **Alachlor: laboratory reagent spikes**



BY. **Alachlor: groundwater field matrix spikes**



BZ. **Alachlor: surface water field matrix spikes**

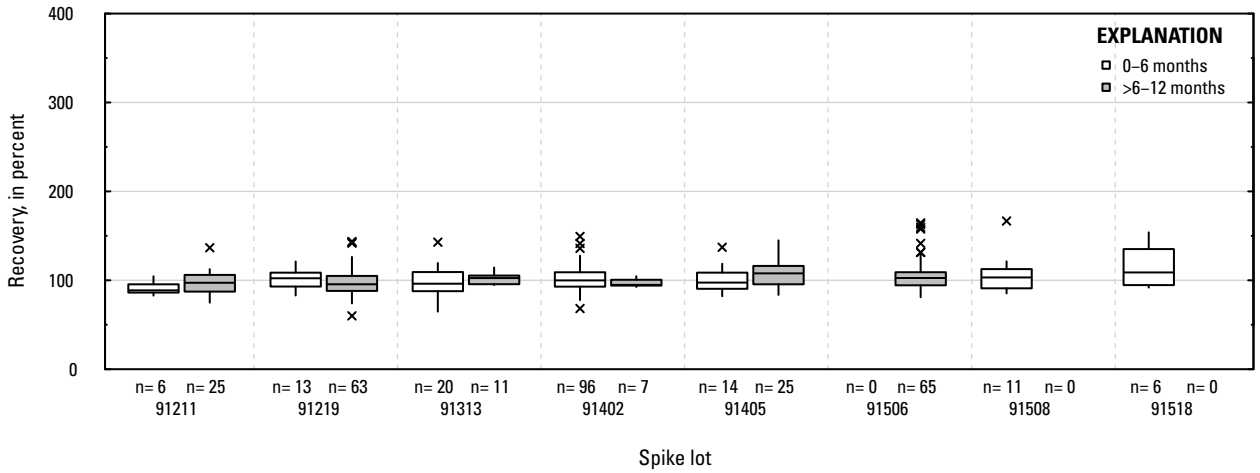
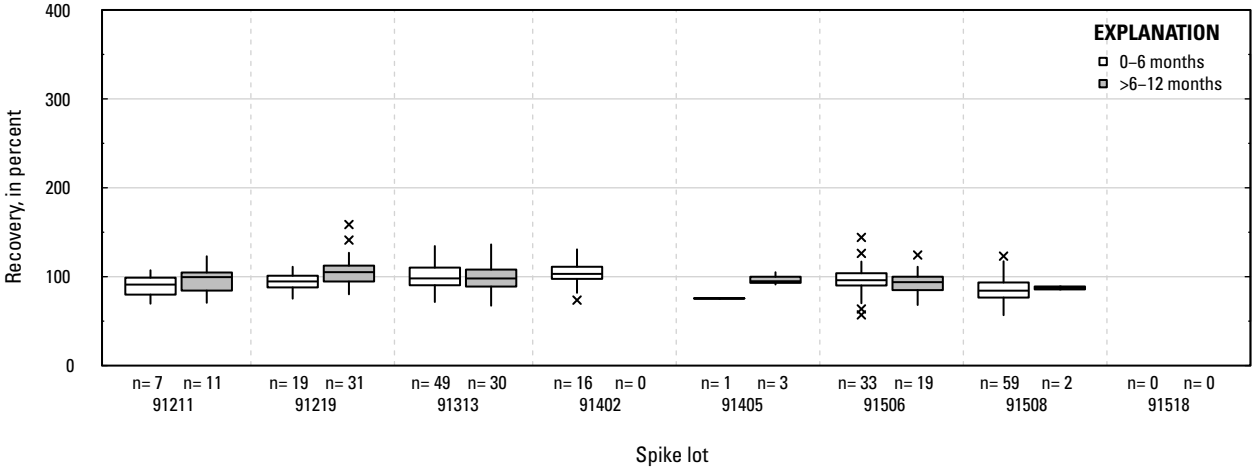
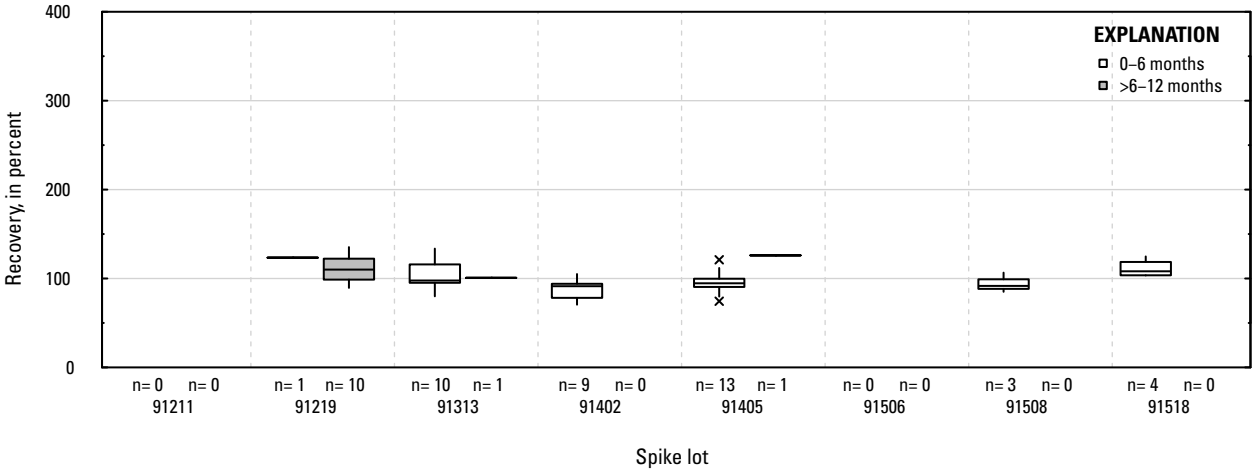


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

CA. **Alachlor oxanilic acid: laboratory reagent spikes**



CB. **Alachlor oxanilic acid: groundwater field matrix spikes**



CC. **Alachlor oxanilic acid: surface water field matrix spikes**

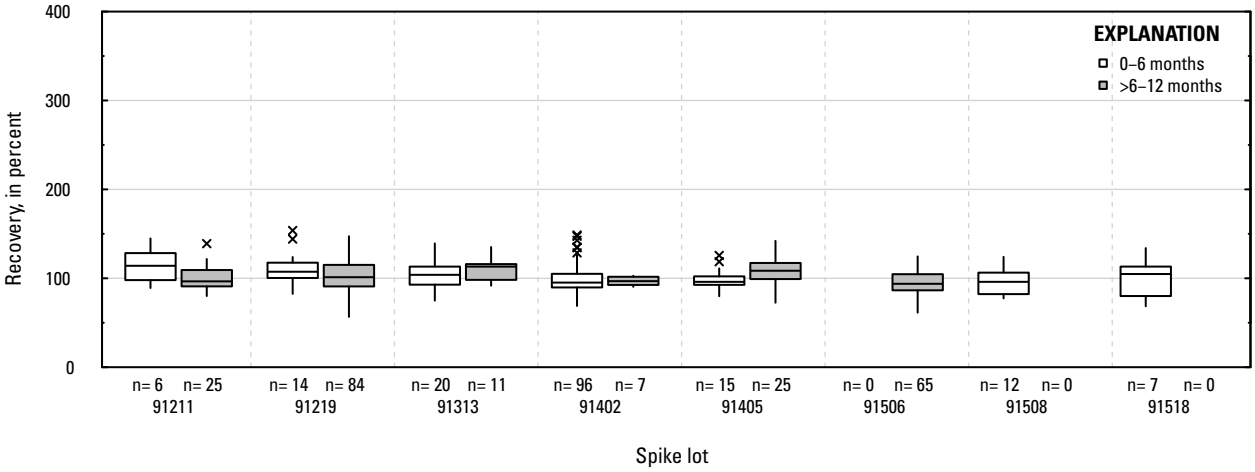
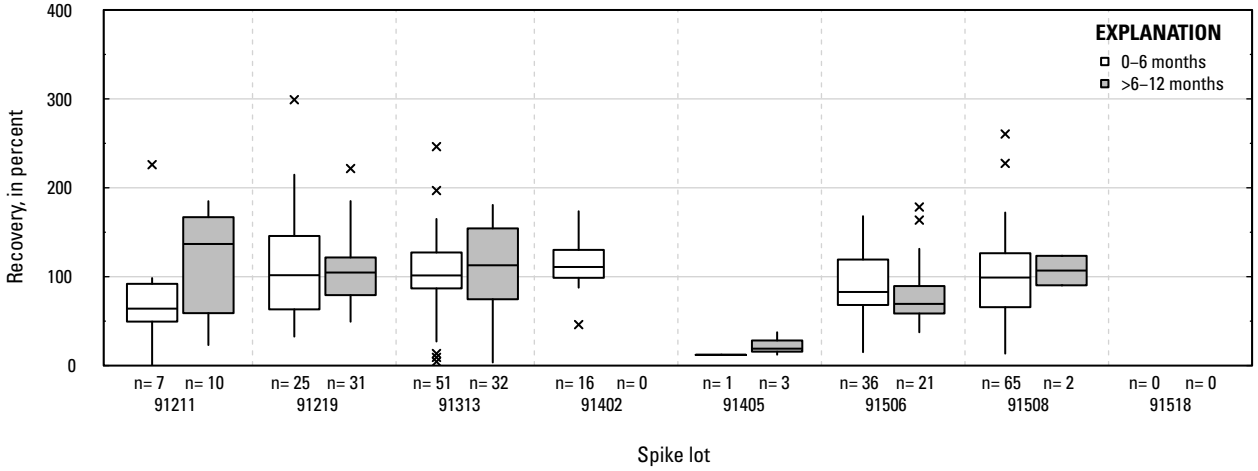
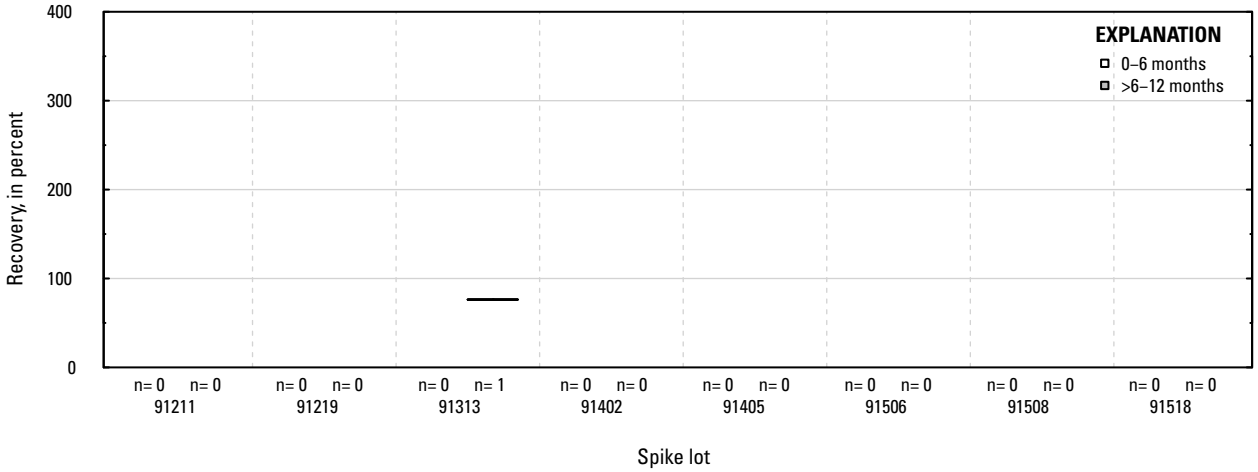


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

CD. **Alachlor sulfonic acid: laboratory reagent spikes**



CE. **Alachlor sulfonic acid: groundwater field matrix spikes**



CF. **Alachlor sulfonic acid: surface water field matrix spikes**

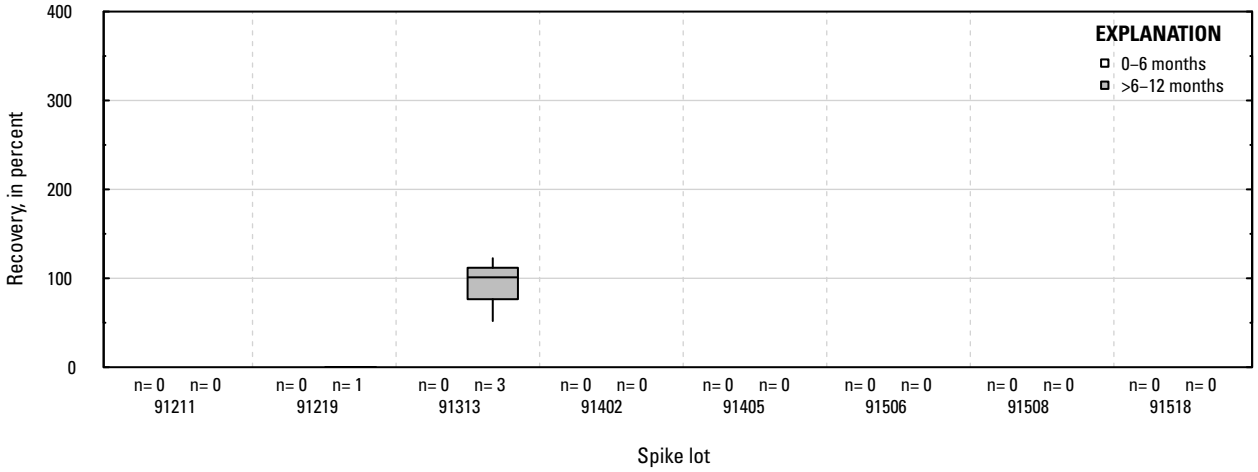
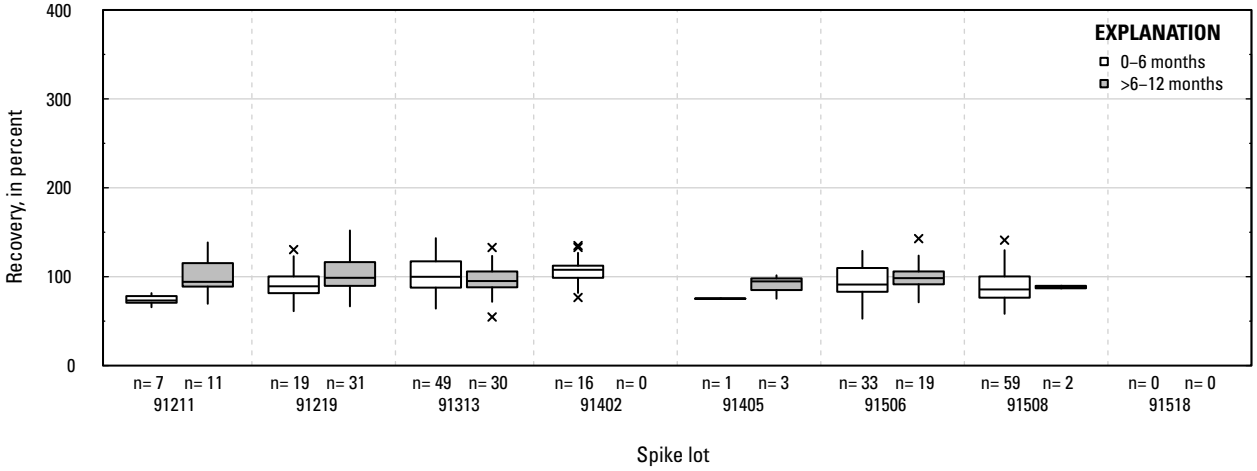
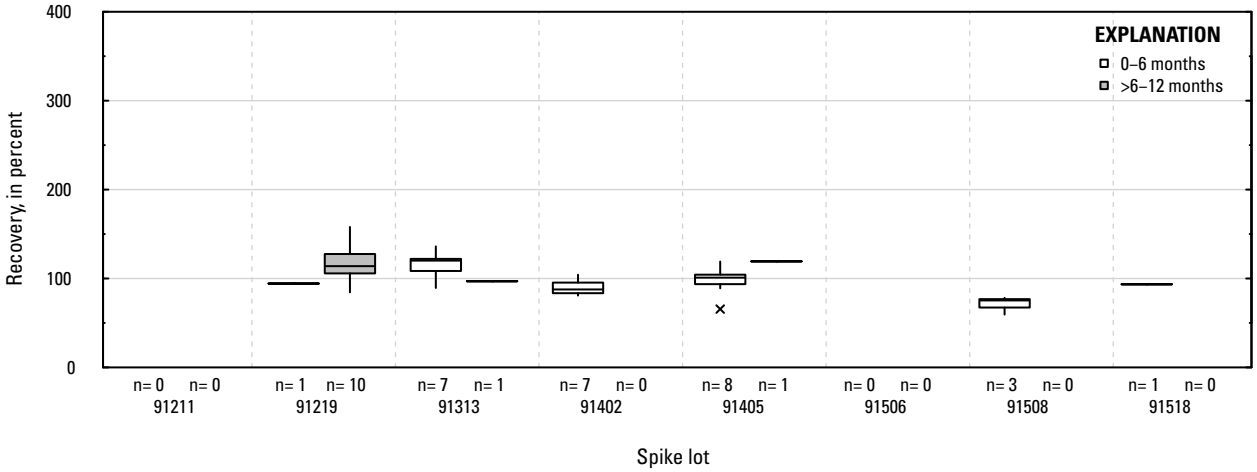


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

CG. **Alachlor sulfynilacetic acid: laboratory reagent spikes**



CH. **Alachlor sulfynilacetic acid: groundwater field matrix spikes**



CI. **Alachlor sulfynilacetic acid: surface water field matrix spikes**

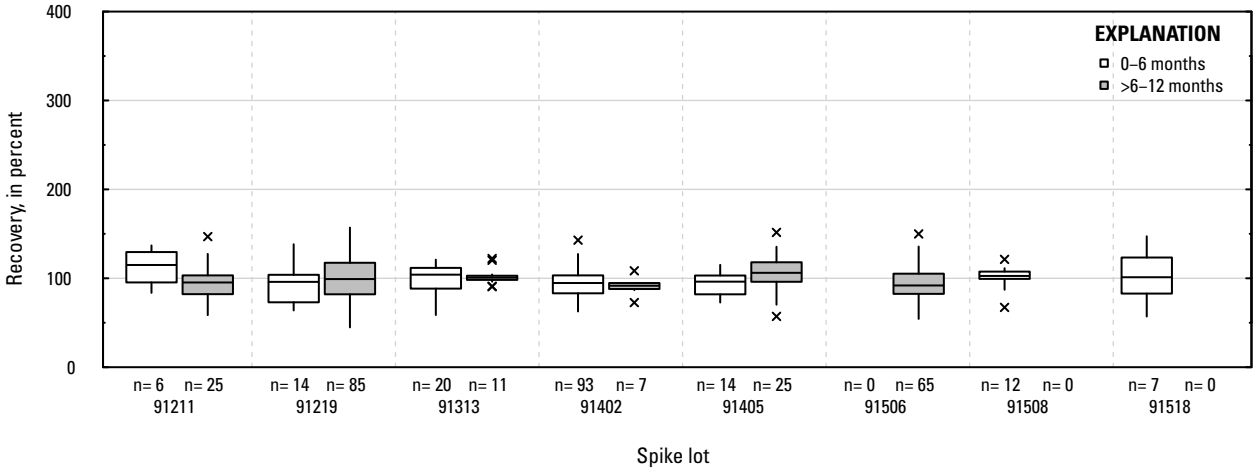
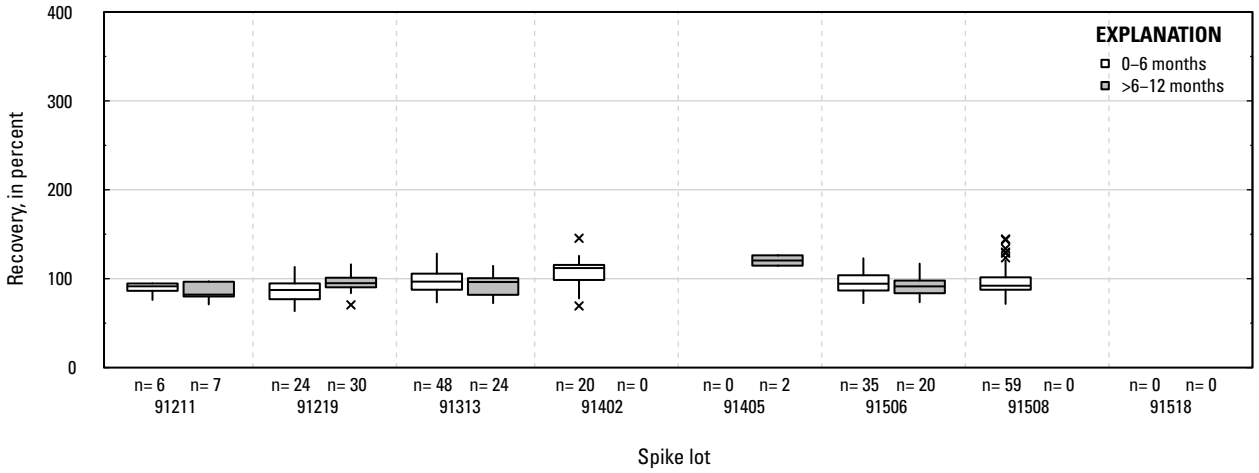
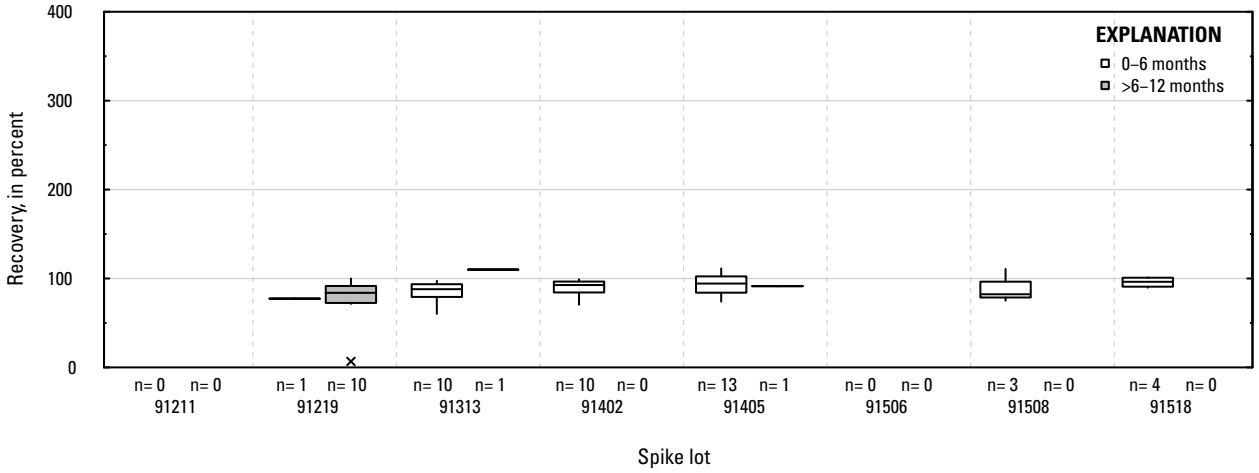


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

CJ. **Aldicarb: laboratory reagent spikes**



CK. **Aldicarb: groundwater field matrix spikes**



CL. **Aldicarb: surface water field matrix spikes**

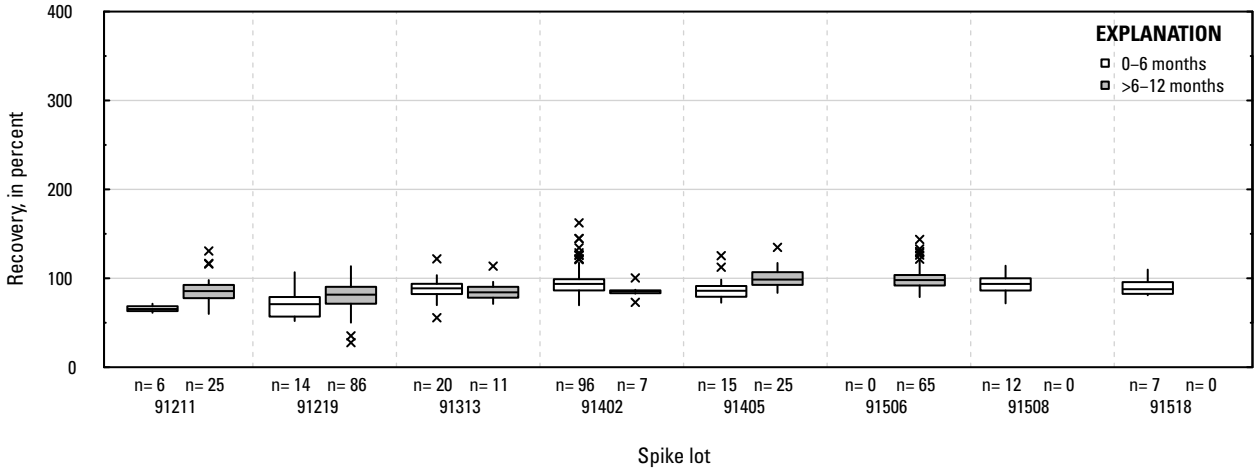
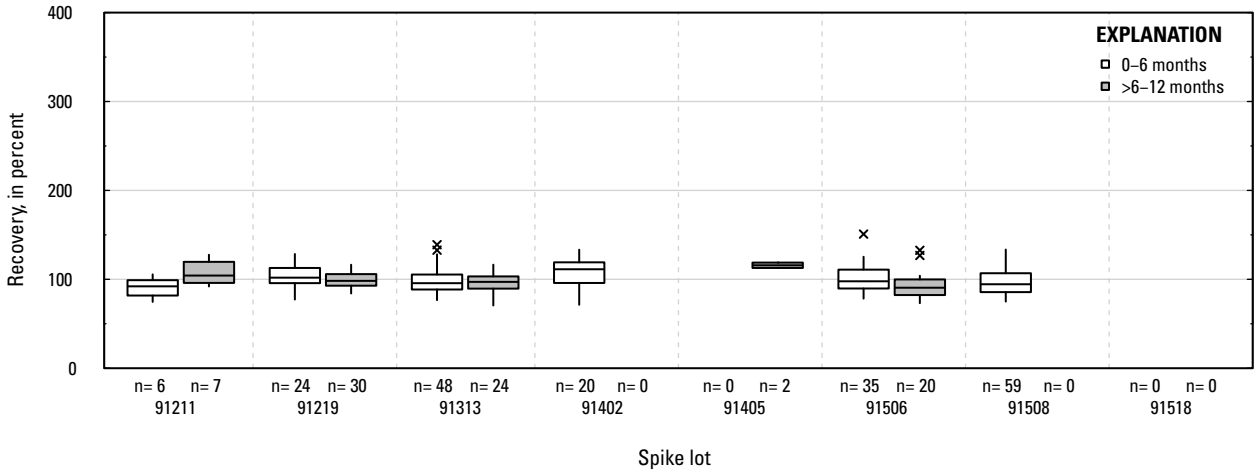
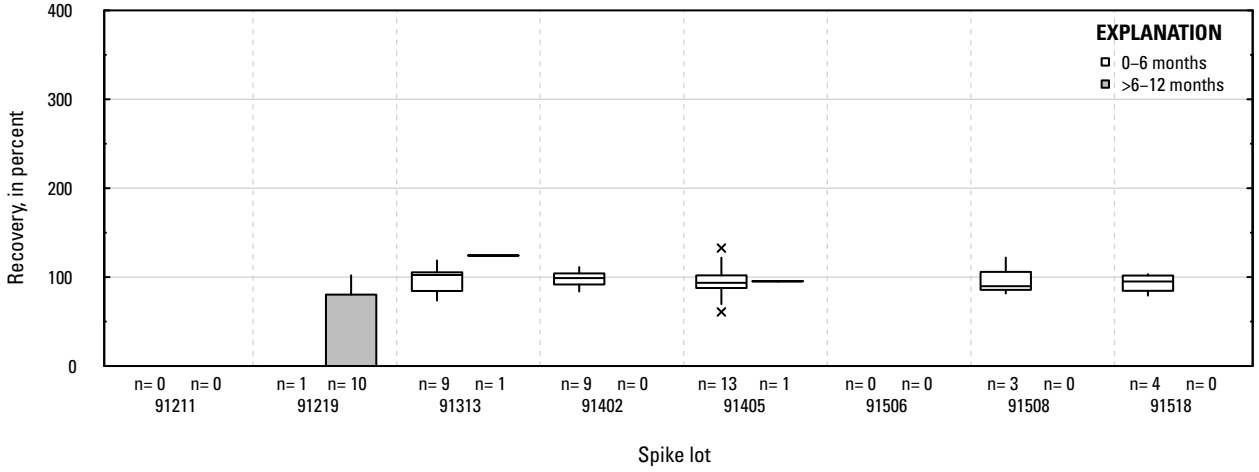


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

CM. **Aldicarb sulfone: laboratory reagent spikes**



CN. **Aldicarb sulfone: groundwater field matrix spikes**



CO. **Aldicarb sulfone: surface water field matrix spikes**

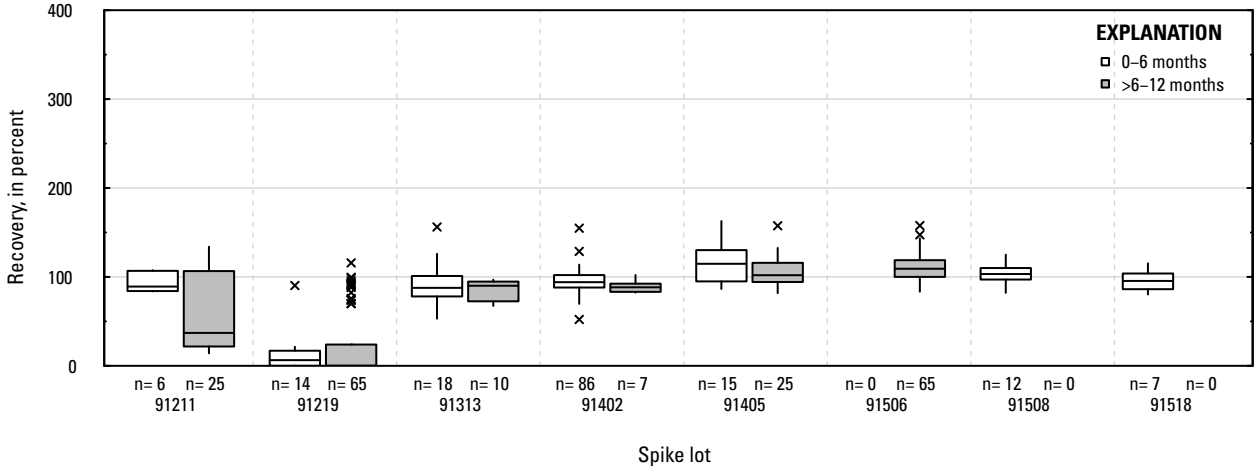
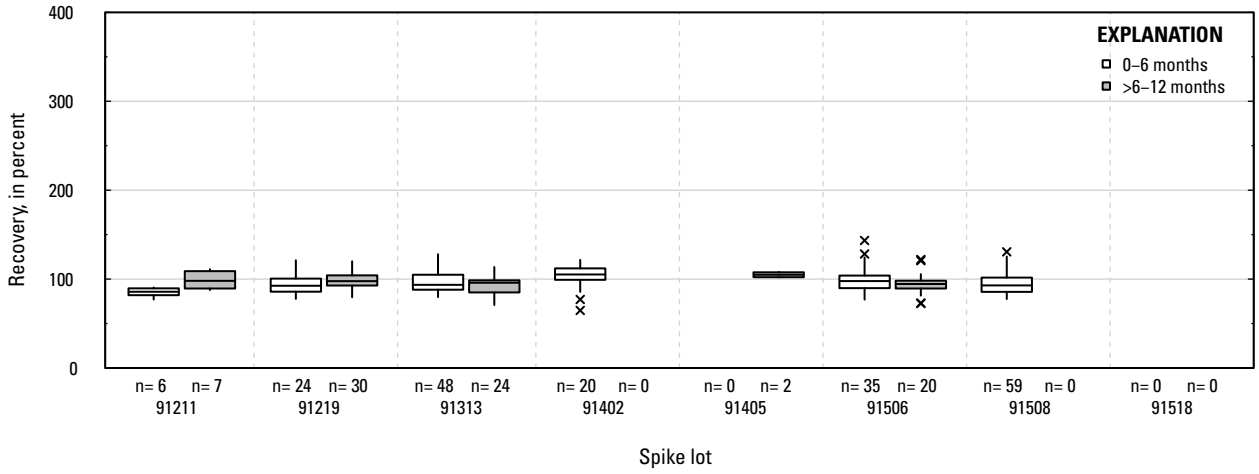
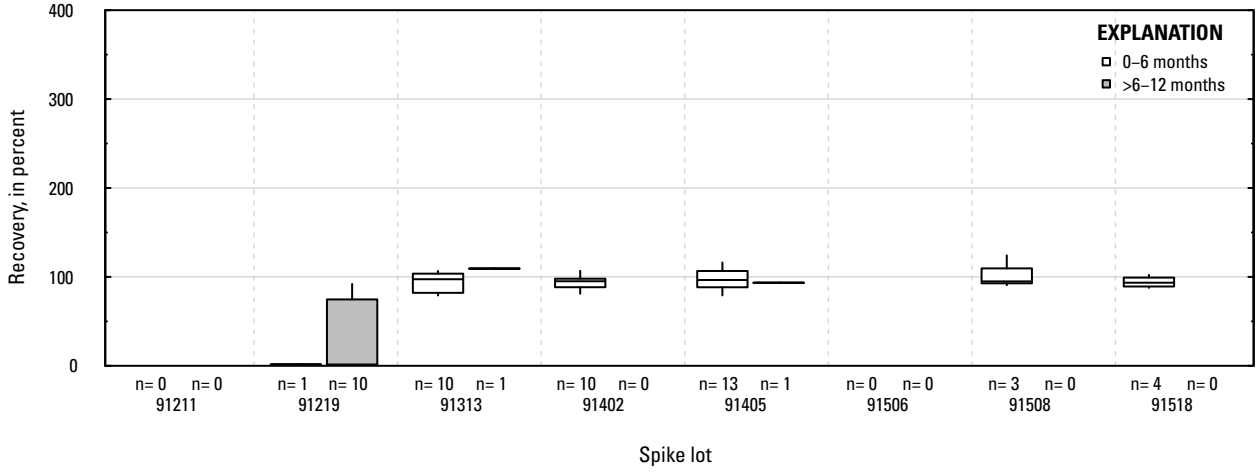


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

CP. **Aldicarb sulfoxide: laboratory reagent spikes**



CQ. **Aldicarb sulfoxide: groundwater field matrix spikes**



CR. **Aldicarb sulfoxide: surface water field matrix spikes**

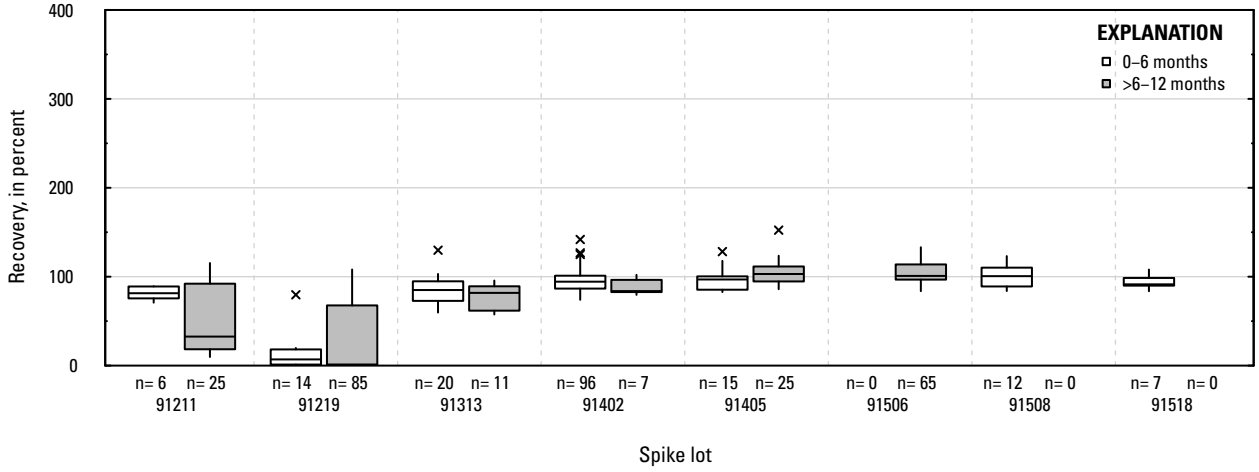
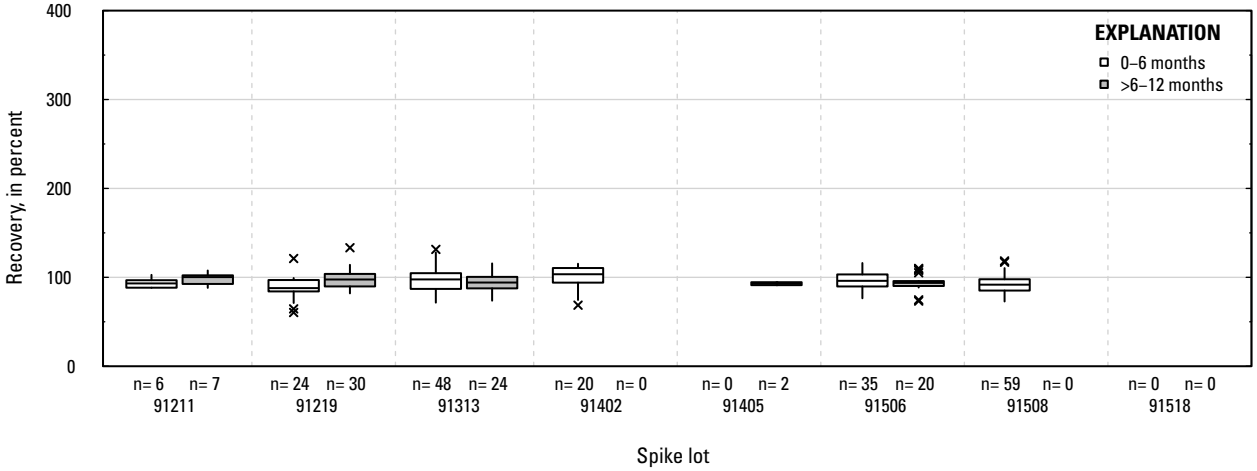
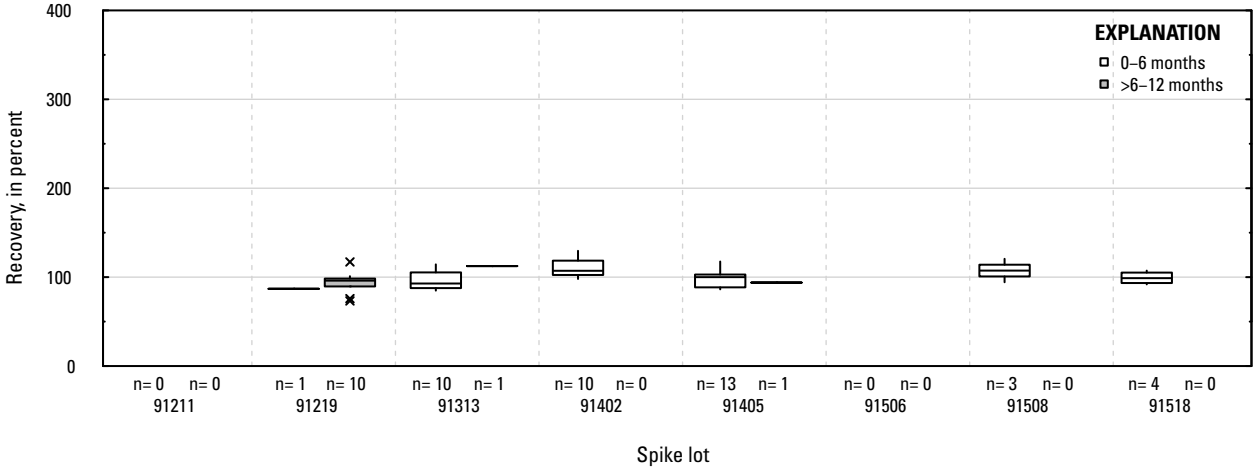


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

CS. **Ametryn: laboratory reagent spikes**



CT. **Ametryn: groundwater field matrix spikes**



CU. **Ametryn: surface water field matrix spikes**

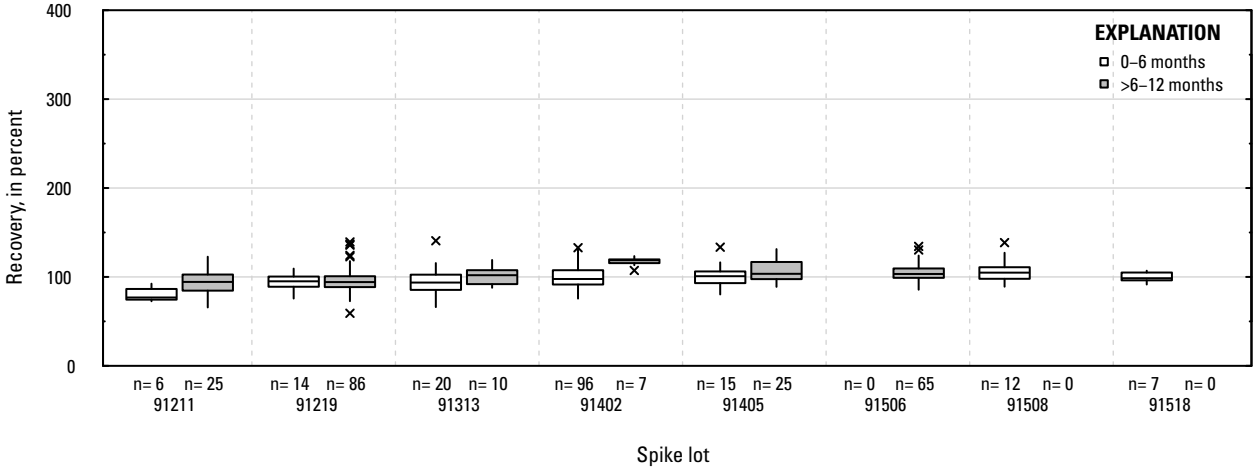
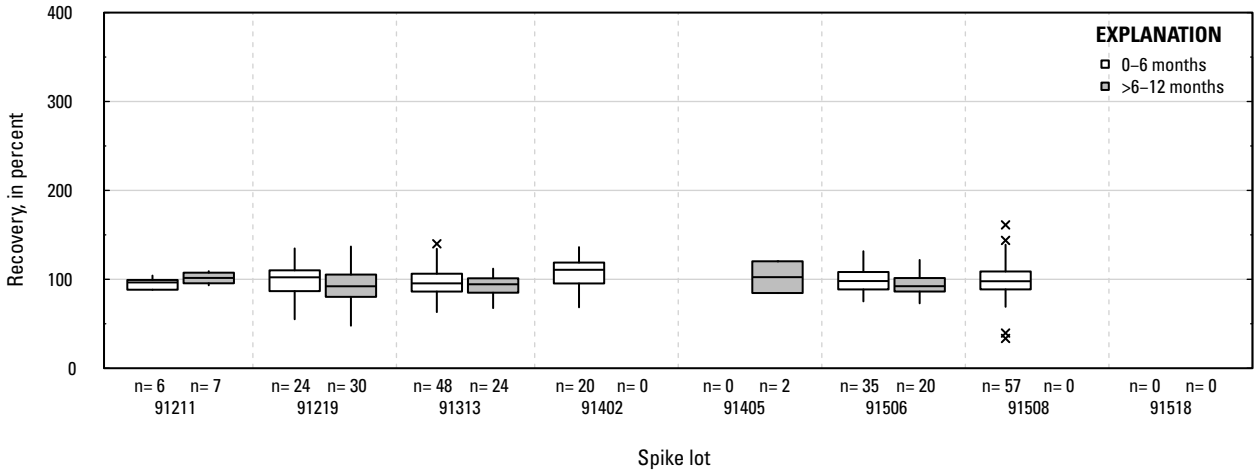
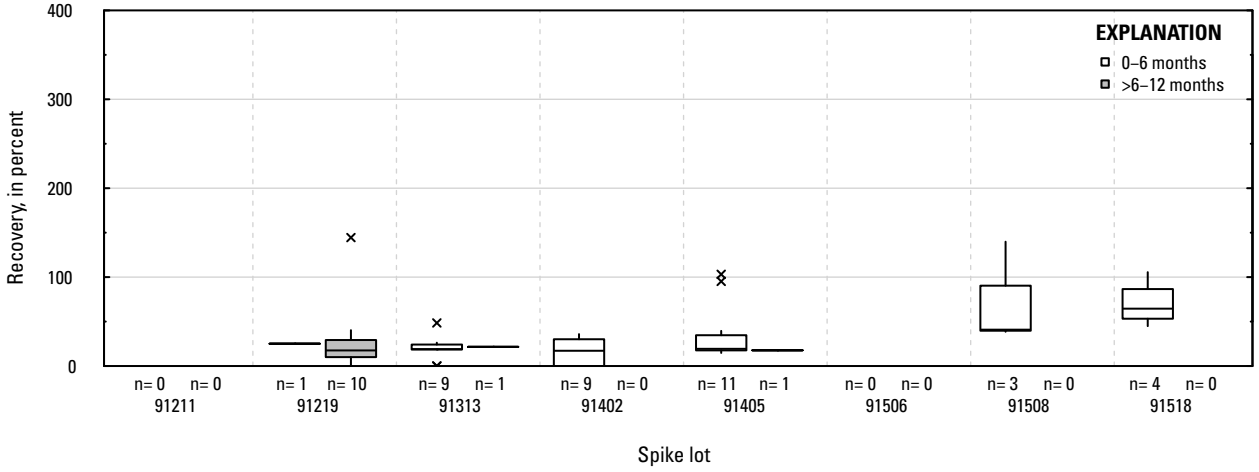


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

CV. **Asulam: laboratory reagent spikes**



CW. **Asulam: groundwater field matrix spikes**



CX. **Asulam: surface water field matrix spikes**

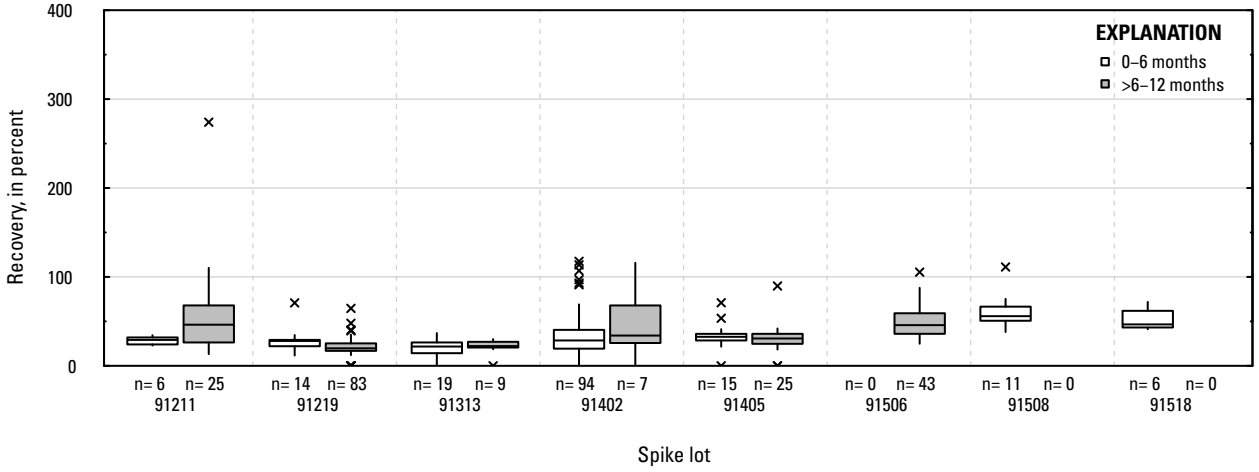
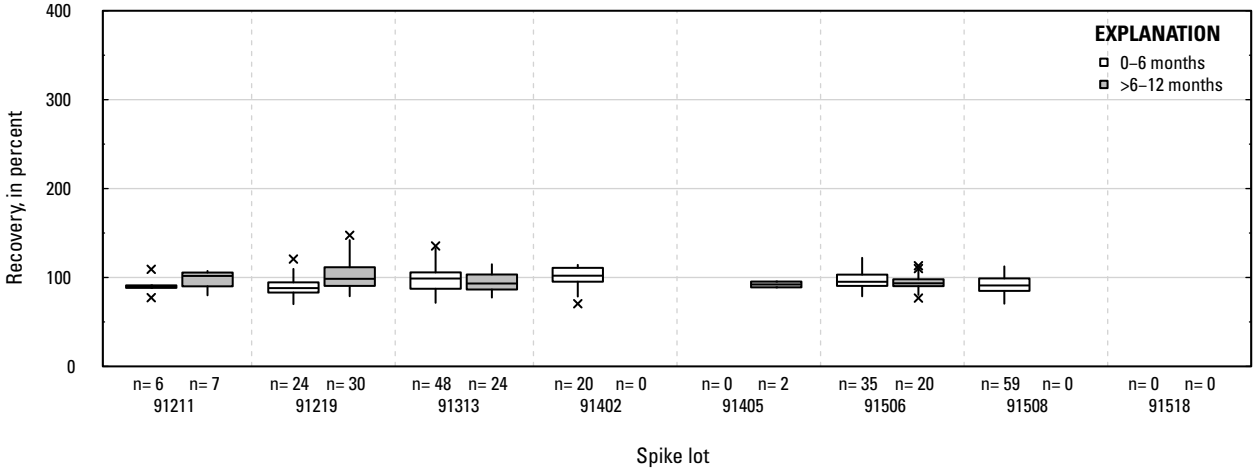
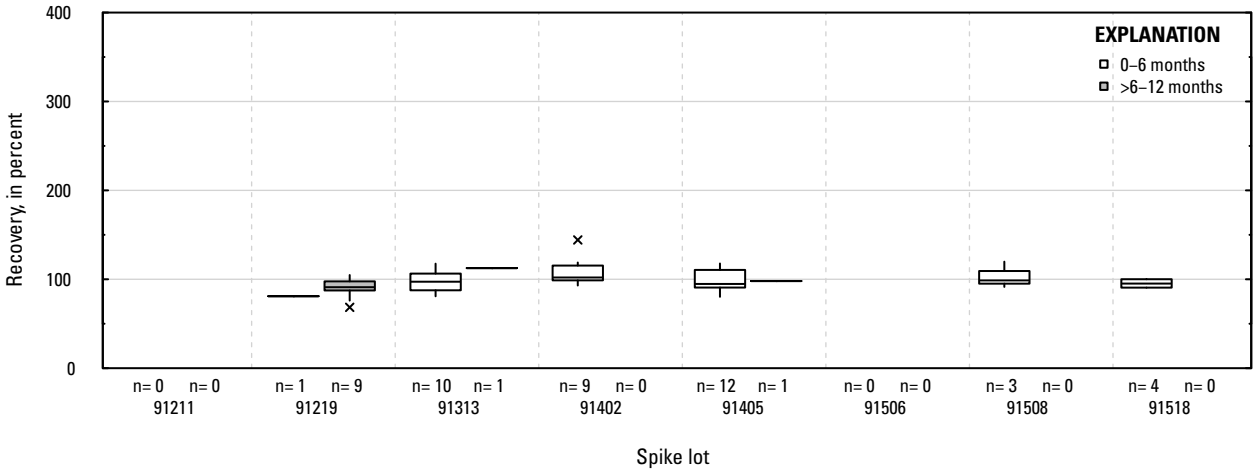


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

CY. **Atrazine: laboratory reagent spikes**



CZ. **Atrazine: groundwater field matrix spikes**



DA. **Atrazine: surface water field matrix spikes**

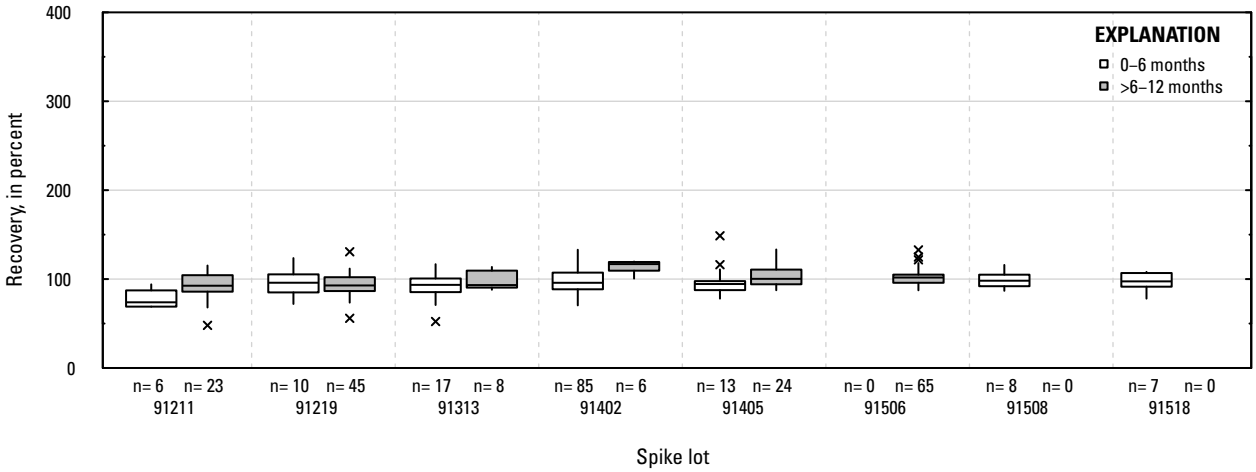
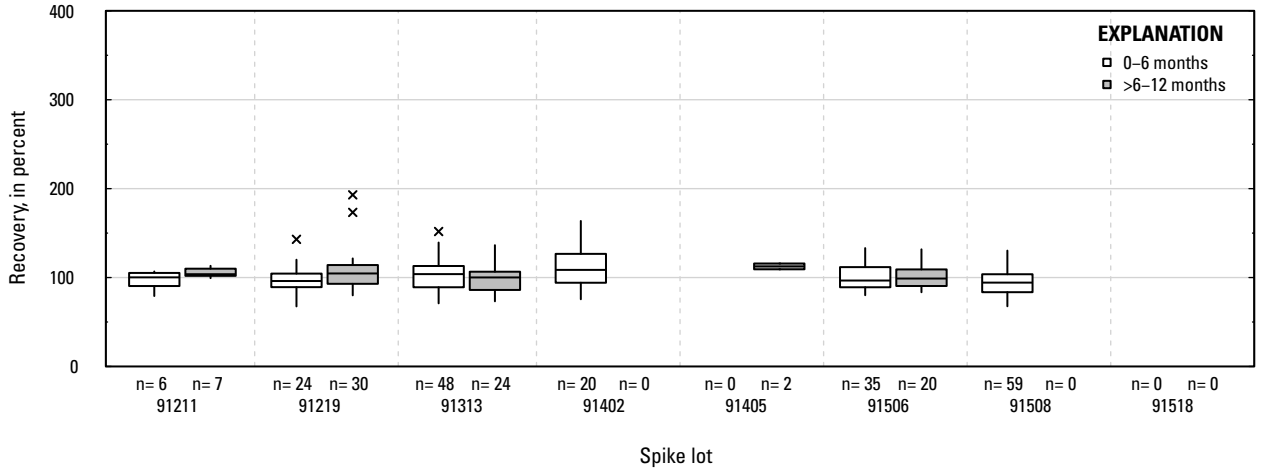
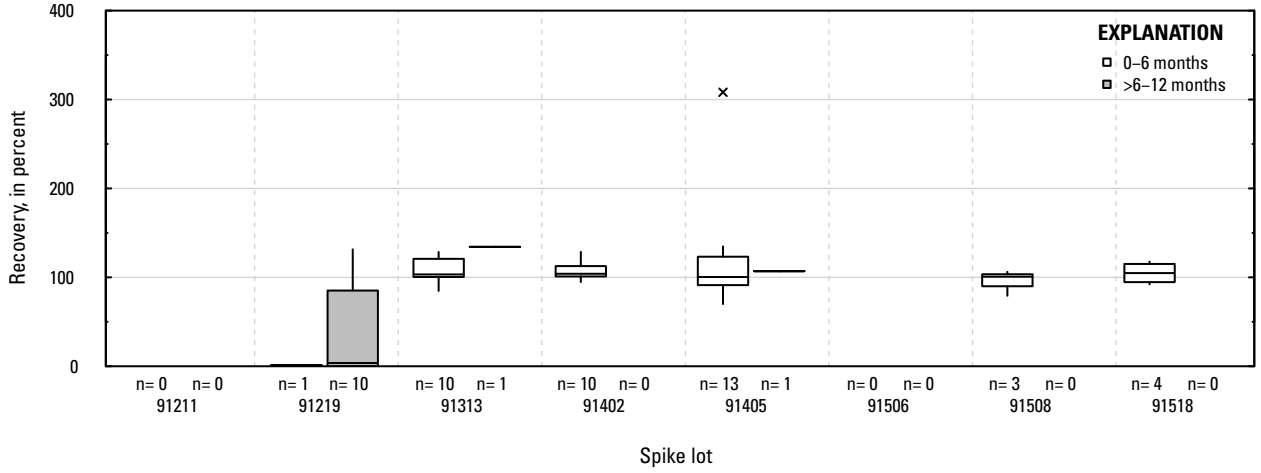


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

DB. **Azinphos–methyl: laboratory reagent spikes**



DC. **Azinphos–methyl: groundwater field matrix spikes**



DD. **Azinphos–methyl: surface water field matrix spikes**

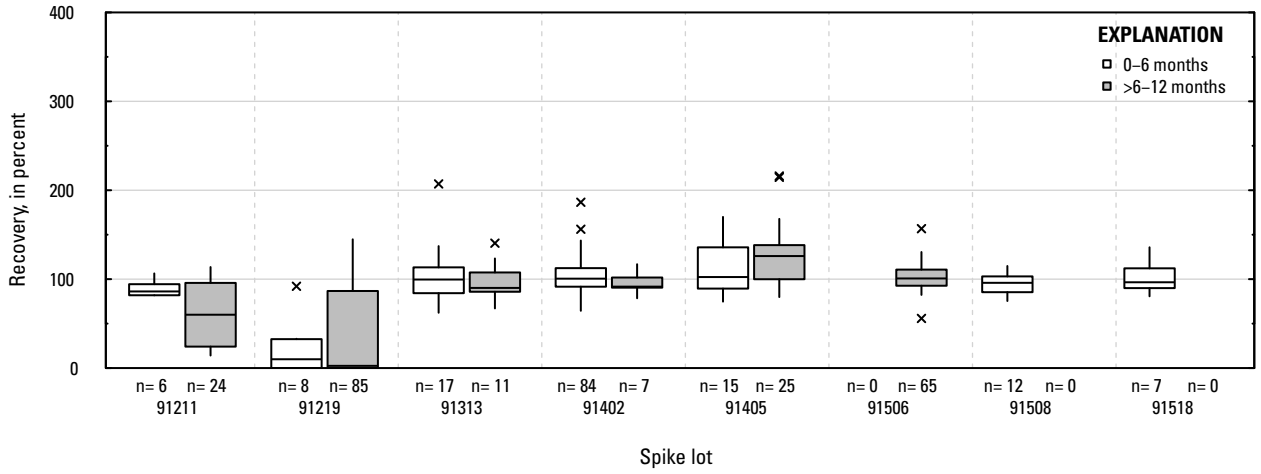
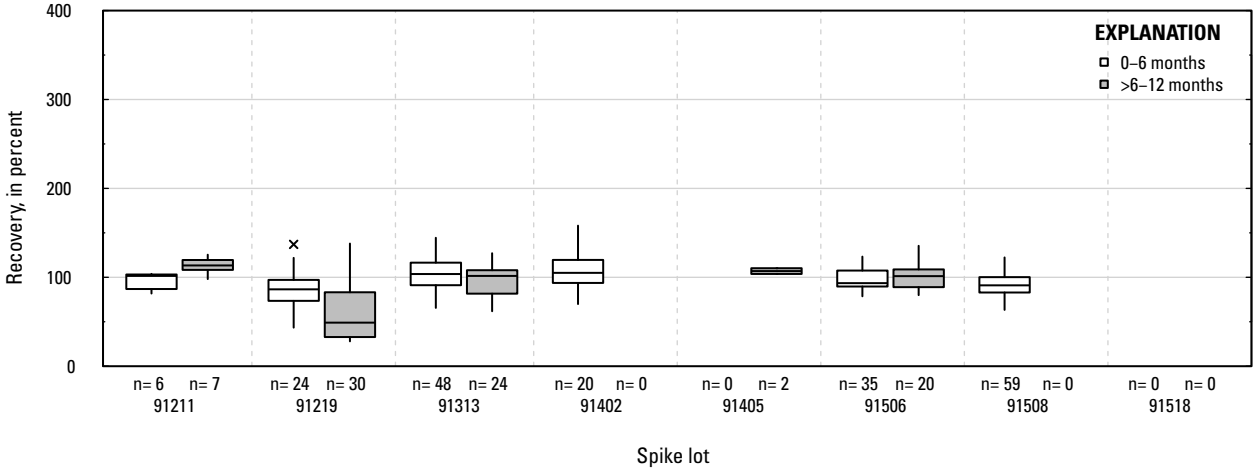
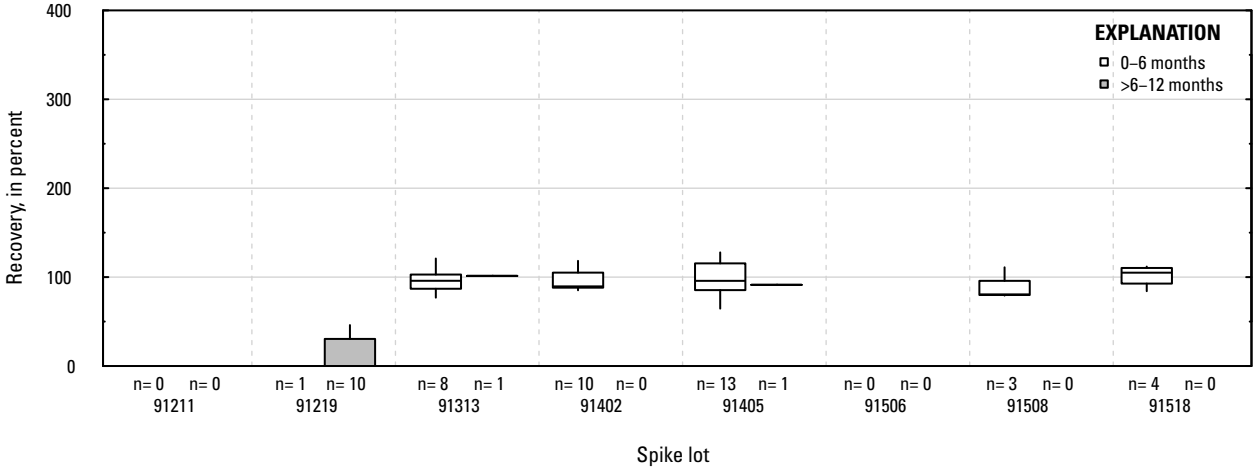


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

DE. **Azinphos–methyl oxon: laboratory reagent spikes**



DF. **Azinphos–methyl oxon: groundwater field matrix spikes**



DG. **Azinphos–methyl oxon: surface water field matrix spikes**

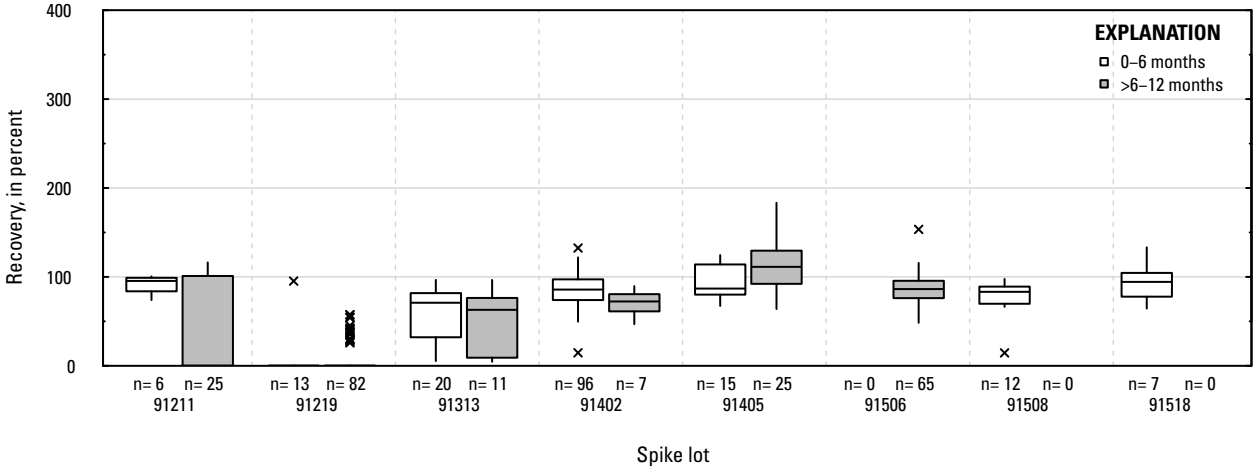
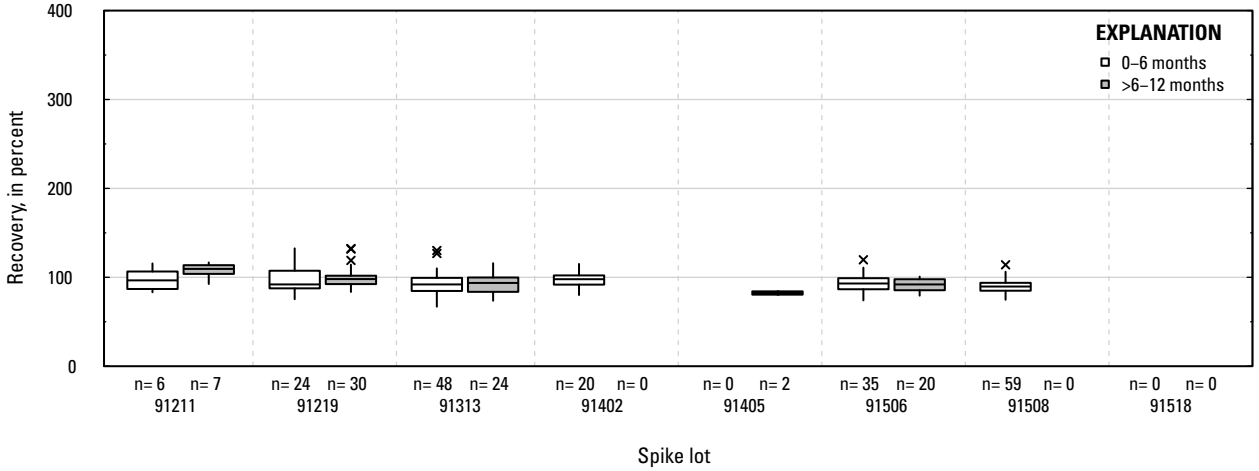
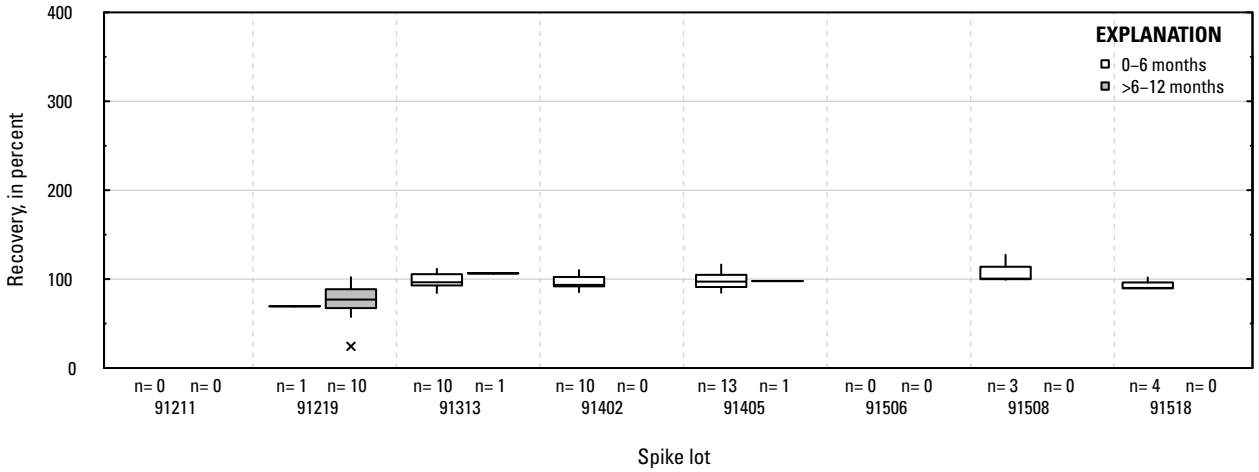


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

DH. **Azoxystrobin: laboratory reagent spikes**



DI. **Azoxystrobin: groundwater field matrix spikes**



DJ. **Azoxystrobin: surface water field matrix spikes**

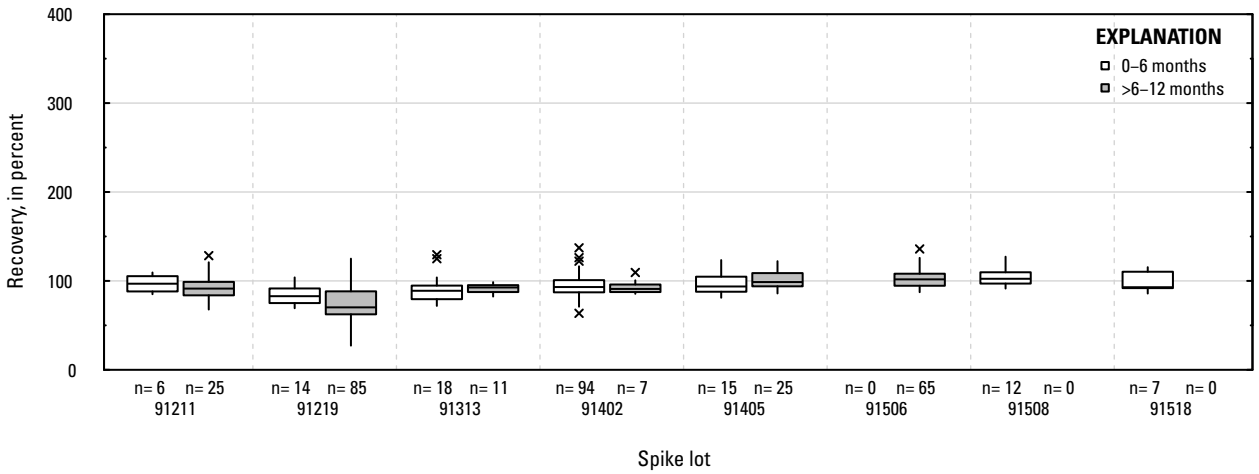
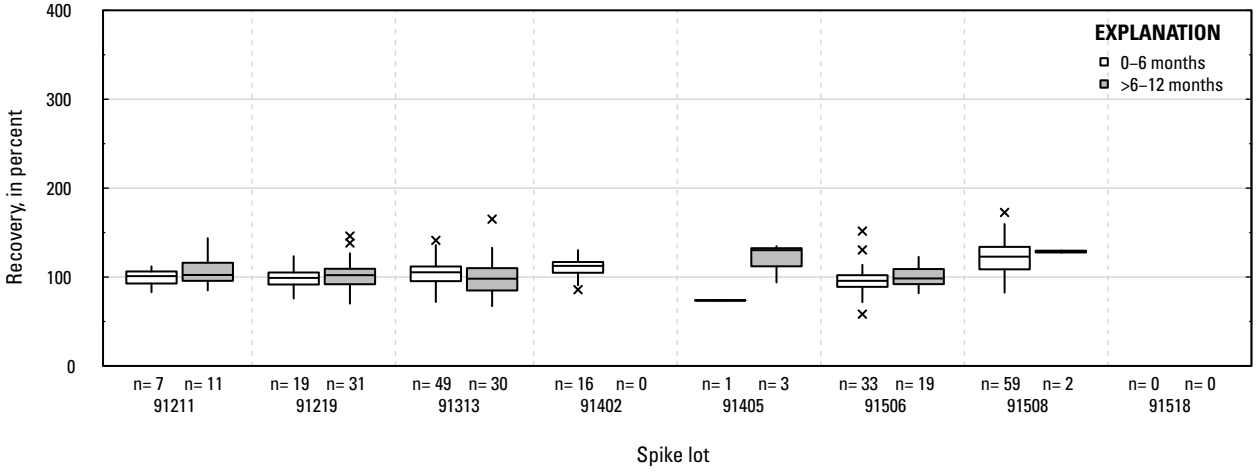
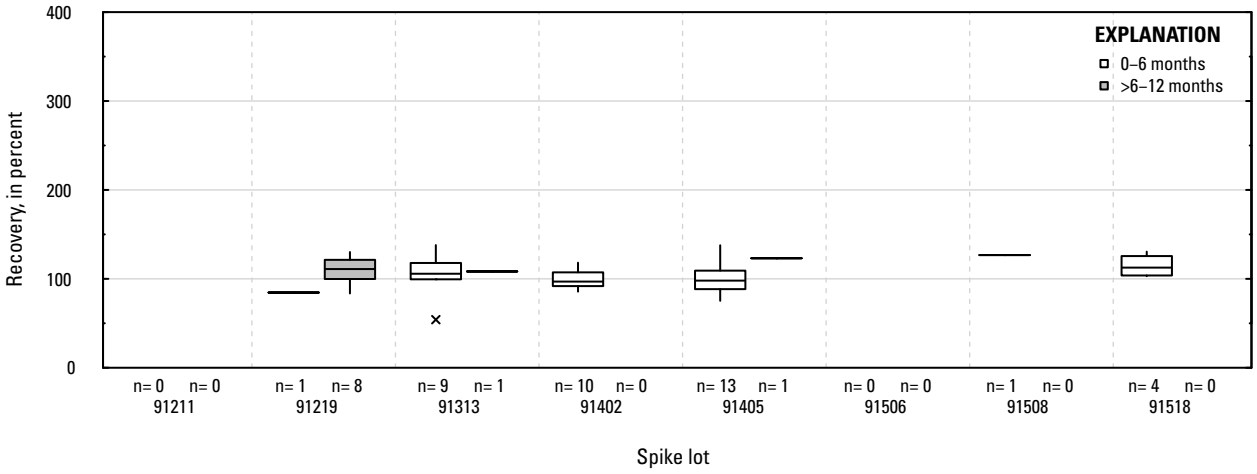


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

DK. **Bentazone: laboratory reagent spikes**



DL. **Bentazone: groundwater field matrix spikes**



DM. **Bentazone: surface water field matrix spikes**

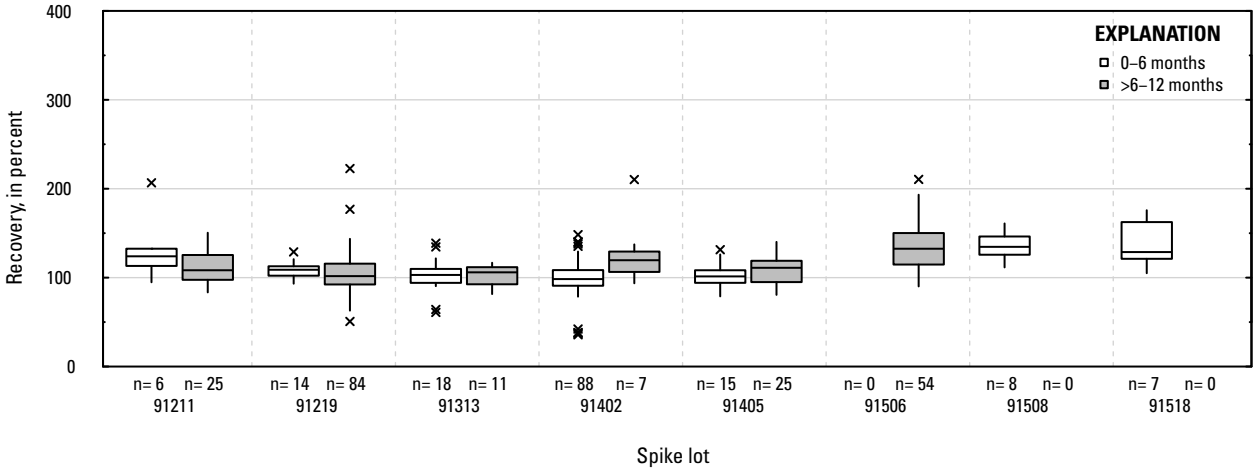
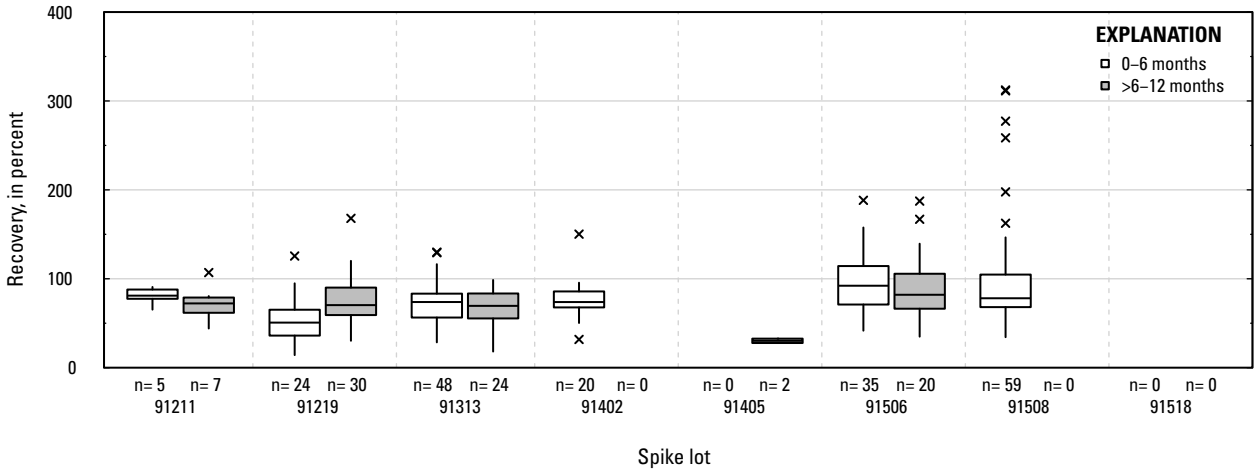
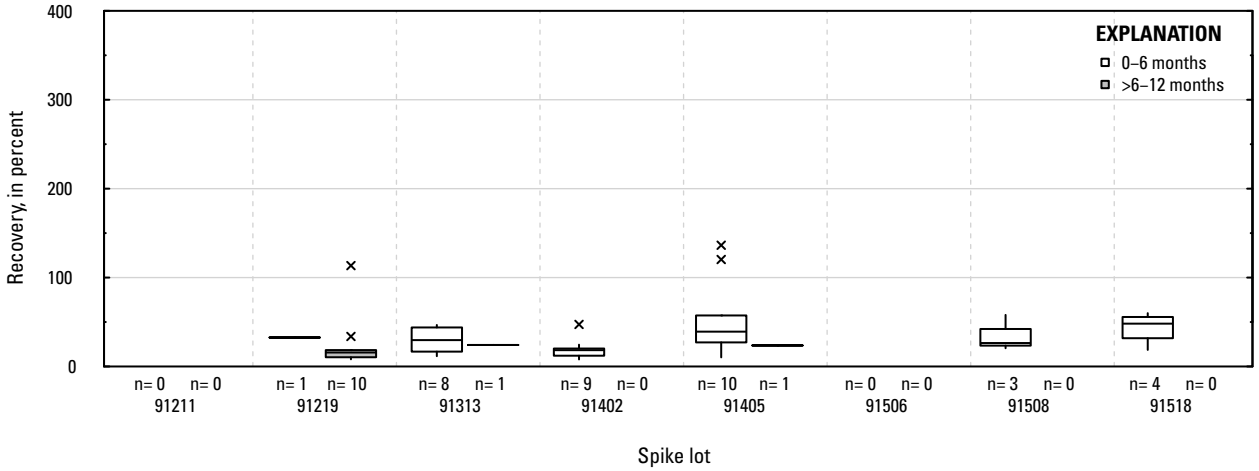


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

DN. **Bifenthrin: laboratory reagent spikes**



DO. **Bifenthrin: groundwater field matrix spikes**



DP. **Bifenthrin: surface water field matrix spikes**

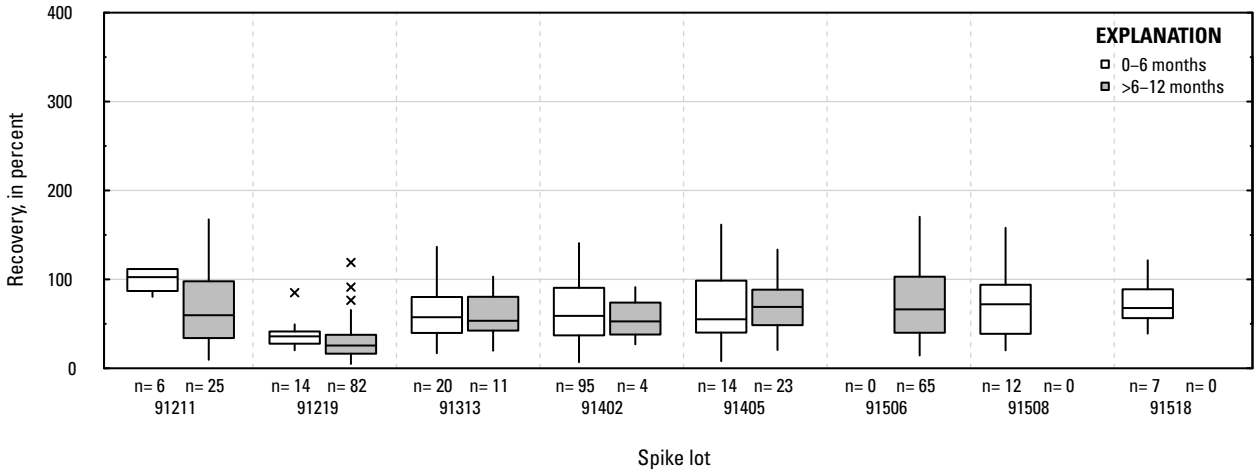
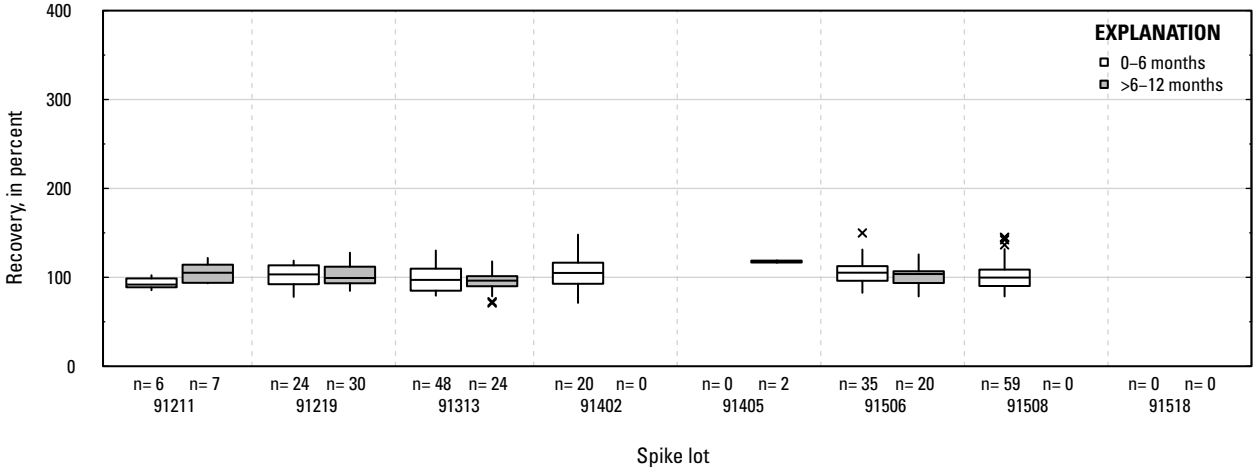
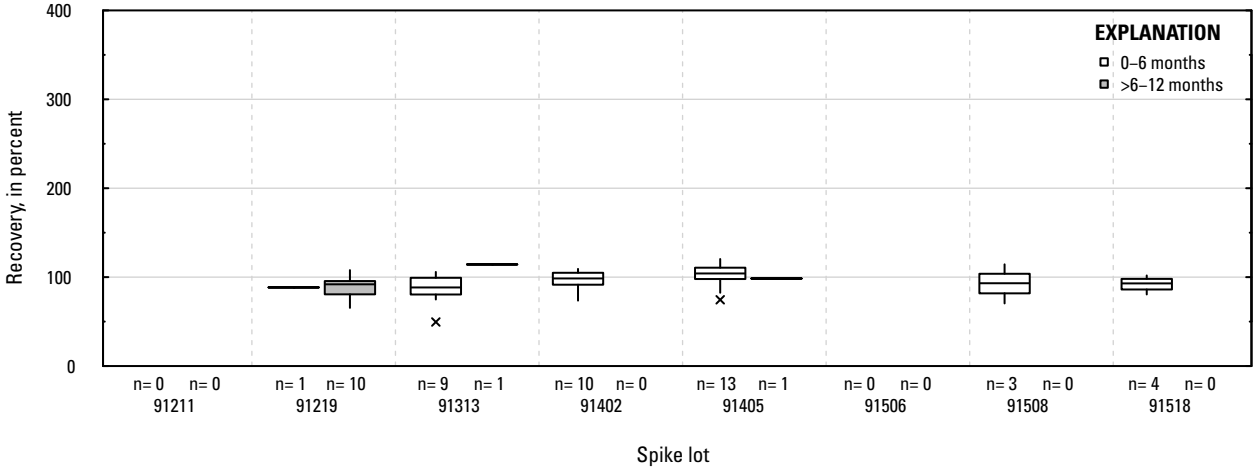


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

DQ. **Bromacil: laboratory reagent spikes**



DR. **Bromacil: groundwater field matrix spikes**



DS. **Bromacil: surface water field matrix spikes**

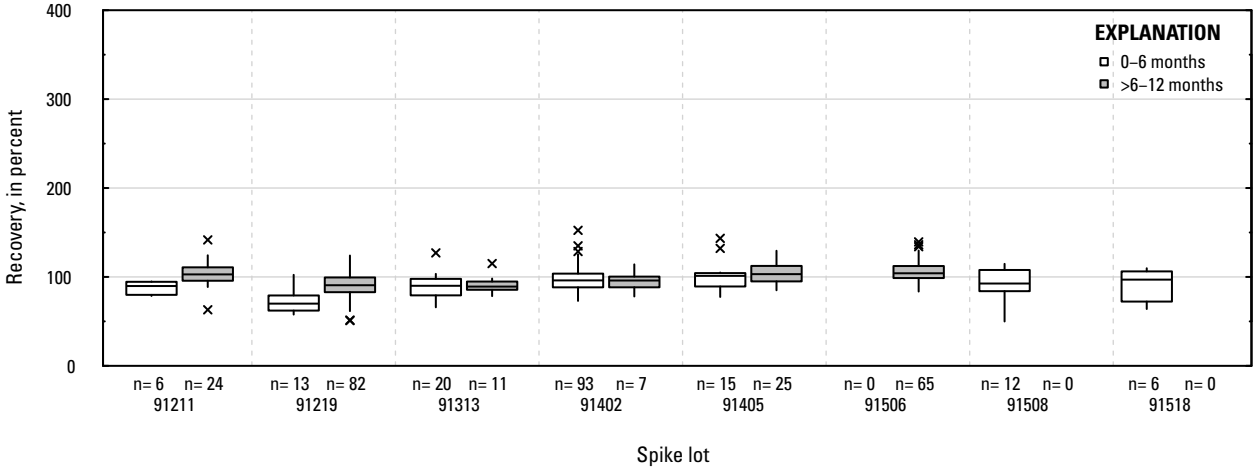
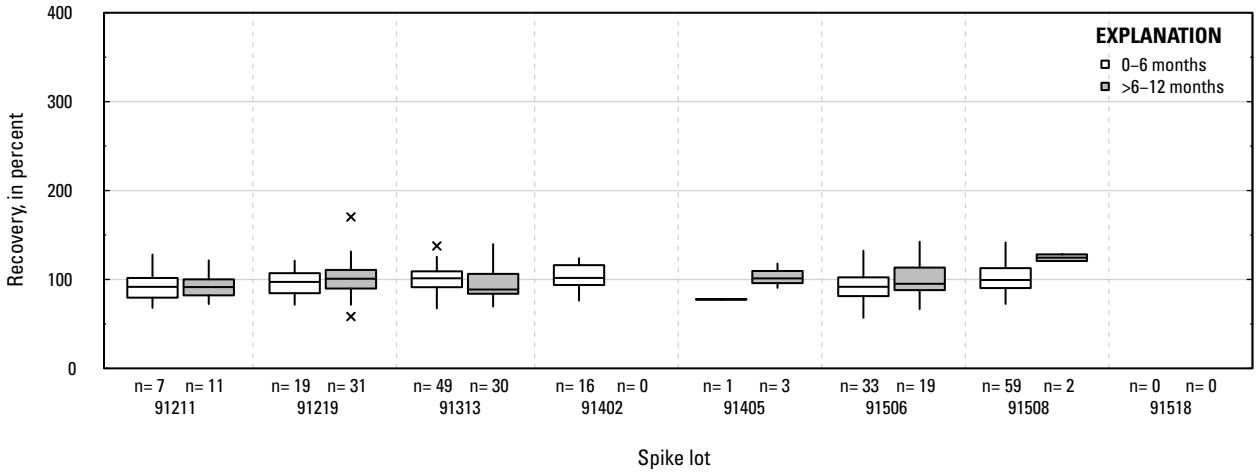
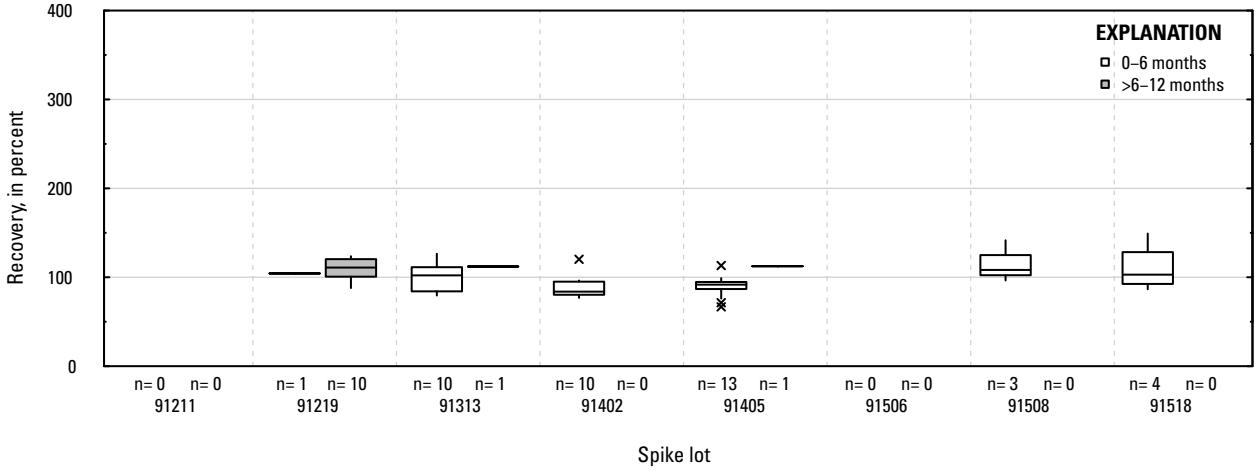


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

DT. **Bromoxynil: laboratory reagent spikes**



DU. **Bromoxynil: groundwater field matrix spikes**



DV. **Bromoxynil: surface water field matrix spikes**

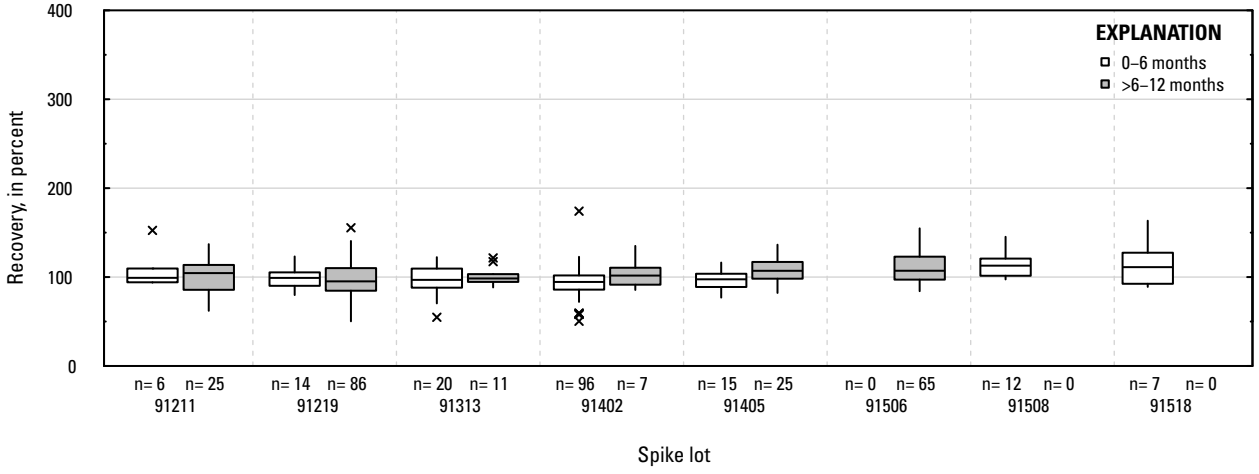
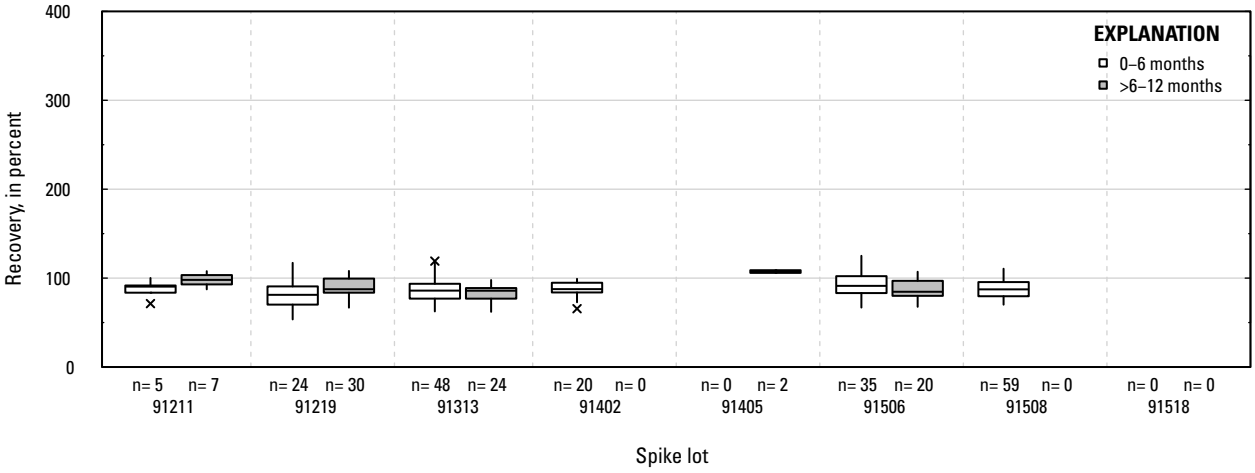
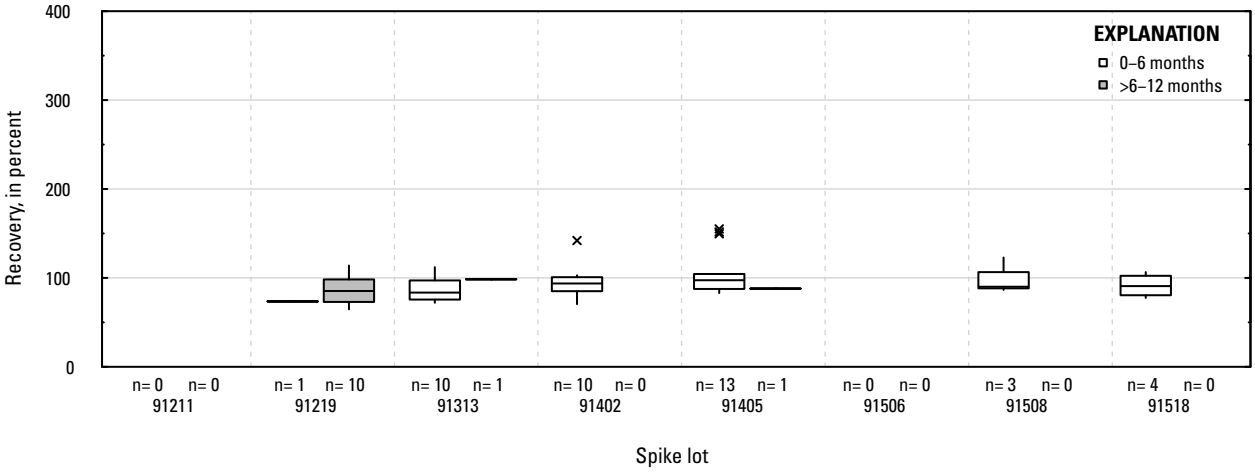


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

DW. **Butralin: laboratory reagent spikes**



DX. **Butralin: groundwater field matrix spikes**



DY. **Butralin: surface water field matrix spikes**

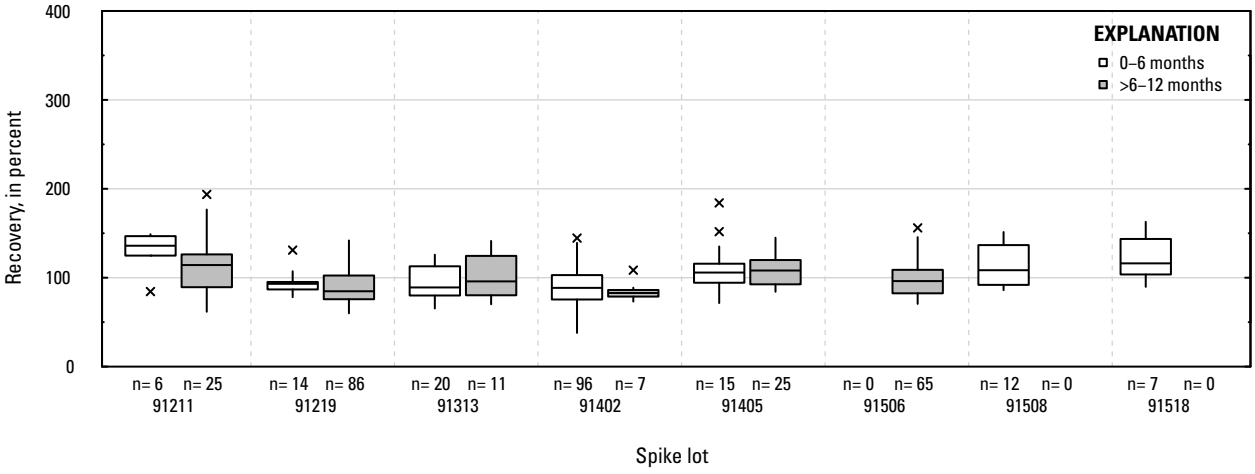
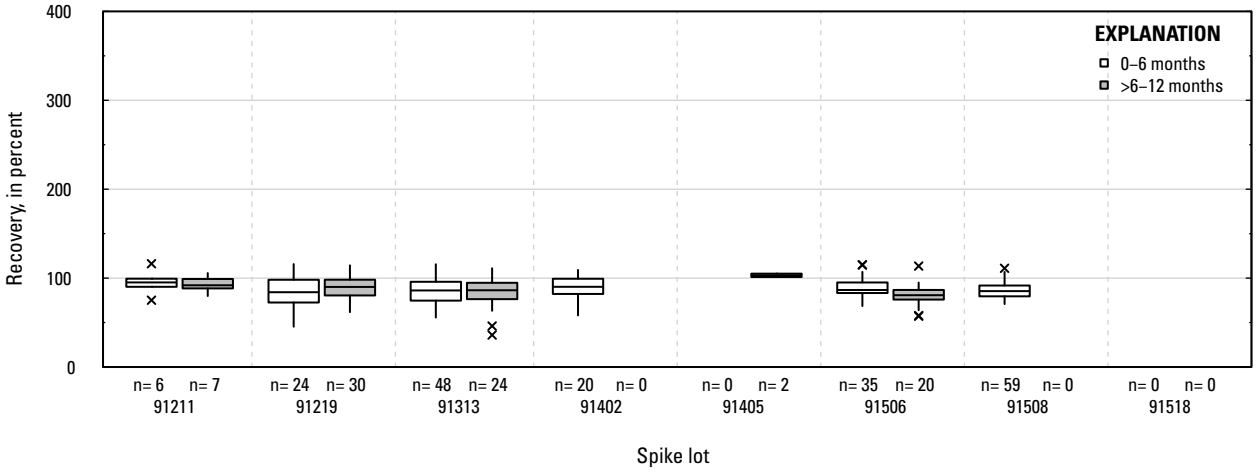
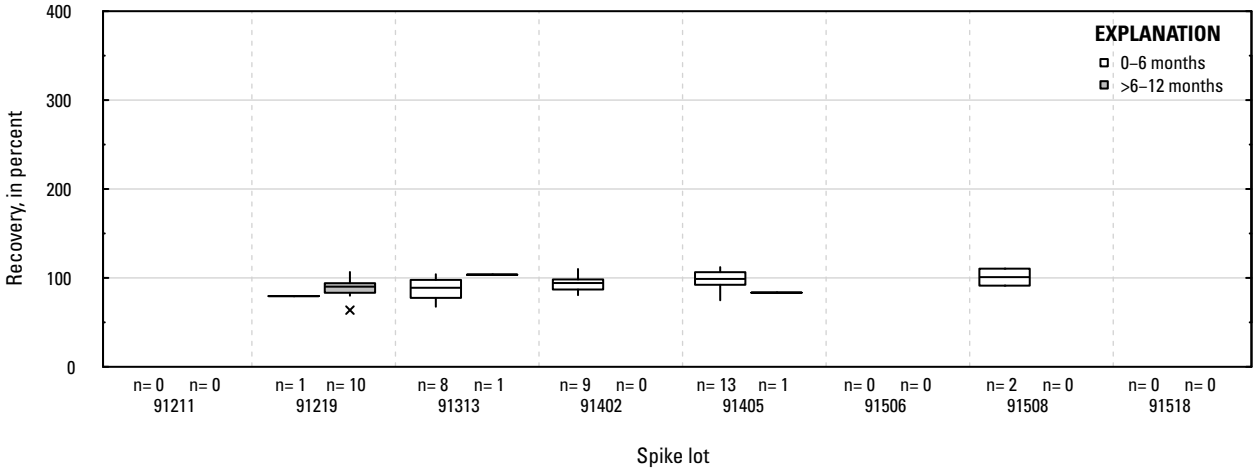


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

DZ. **Butylate: laboratory reagent spikes**



EA. **Butylate: groundwater field matrix spikes**



EB. **Butylate: surface water field matrix spikes**

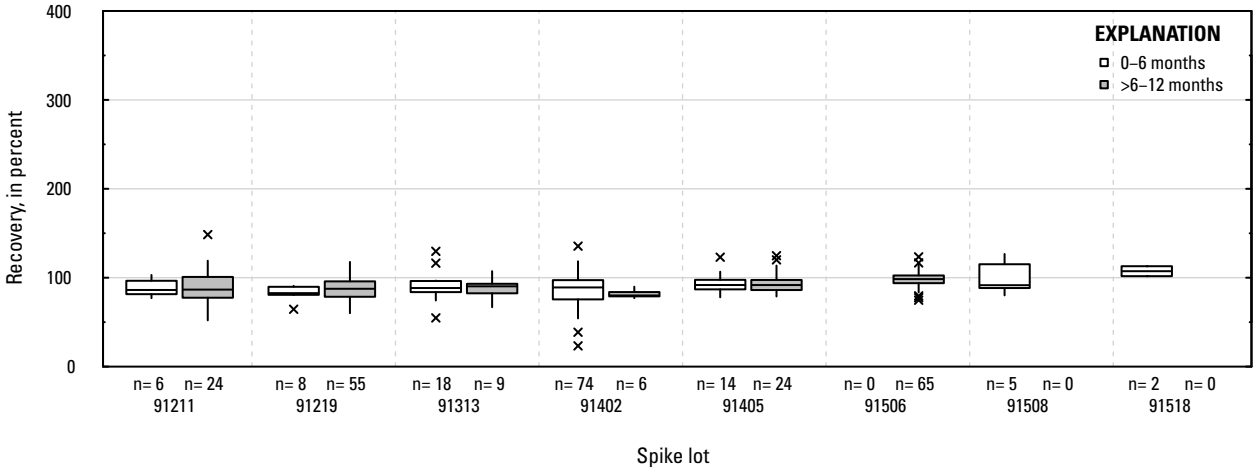
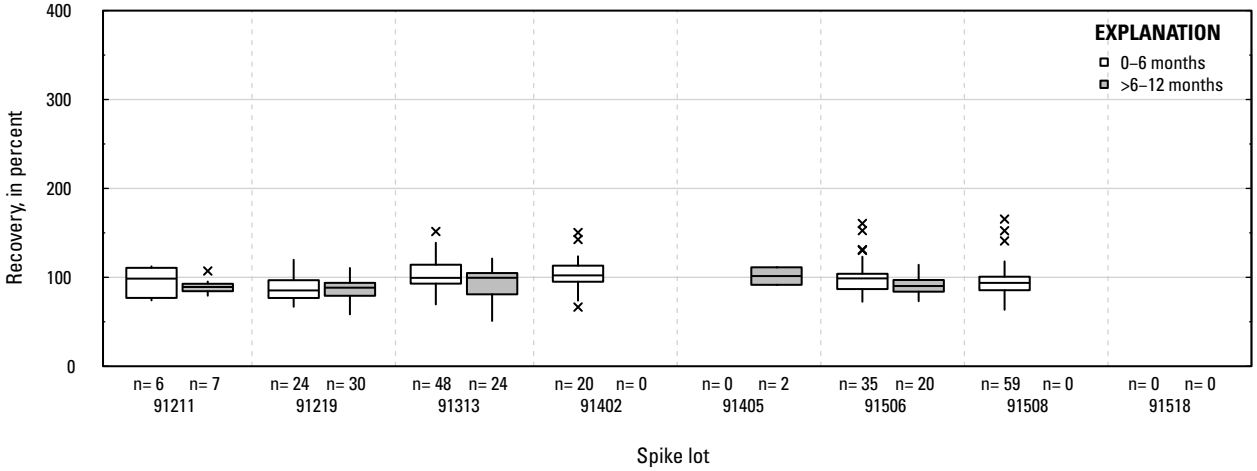
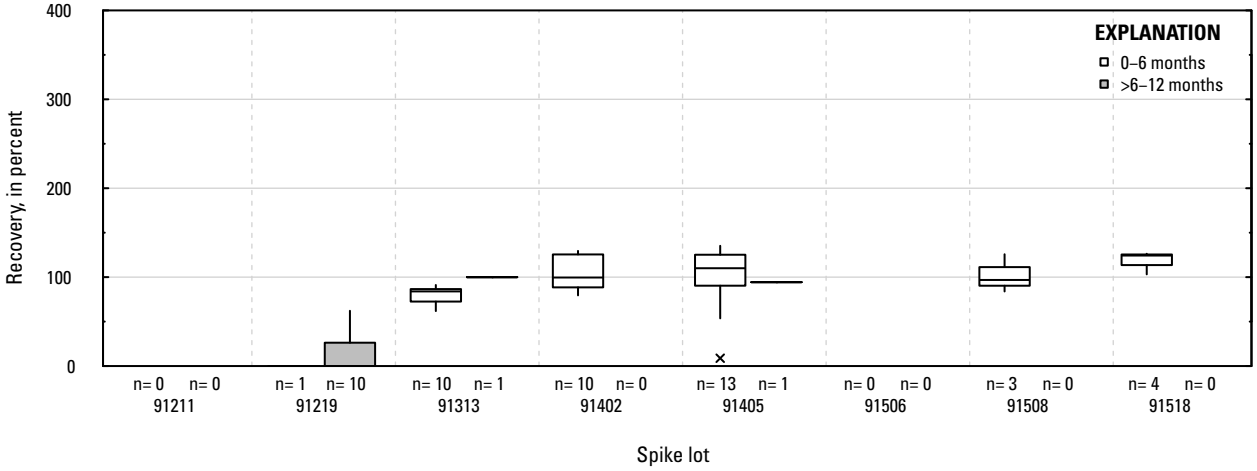


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

EC. **Carbaryl: laboratory reagent spikes**



ED. **Carbaryl: groundwater field matrix spikes**



EE. **Carbaryl: surface water field matrix spikes**

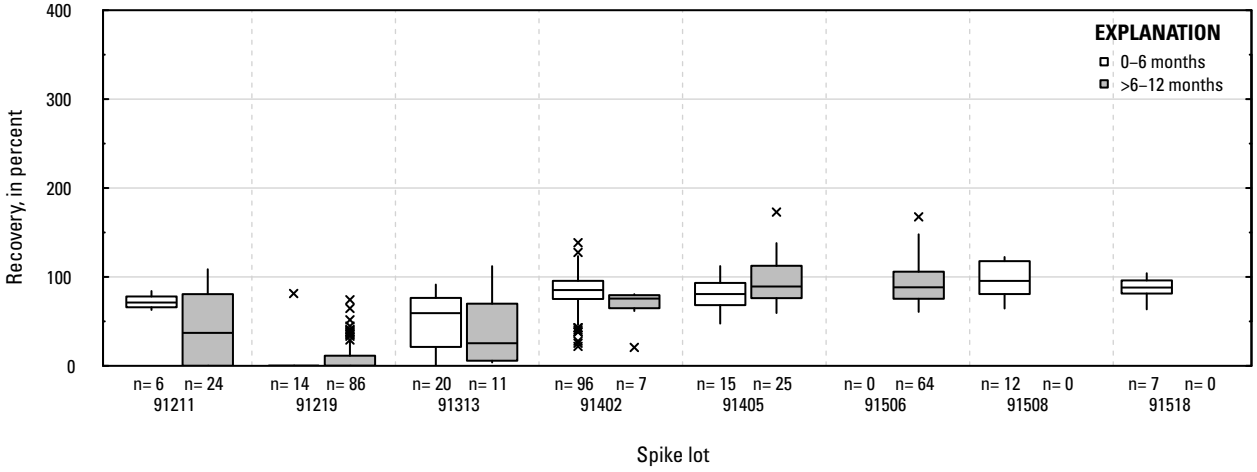
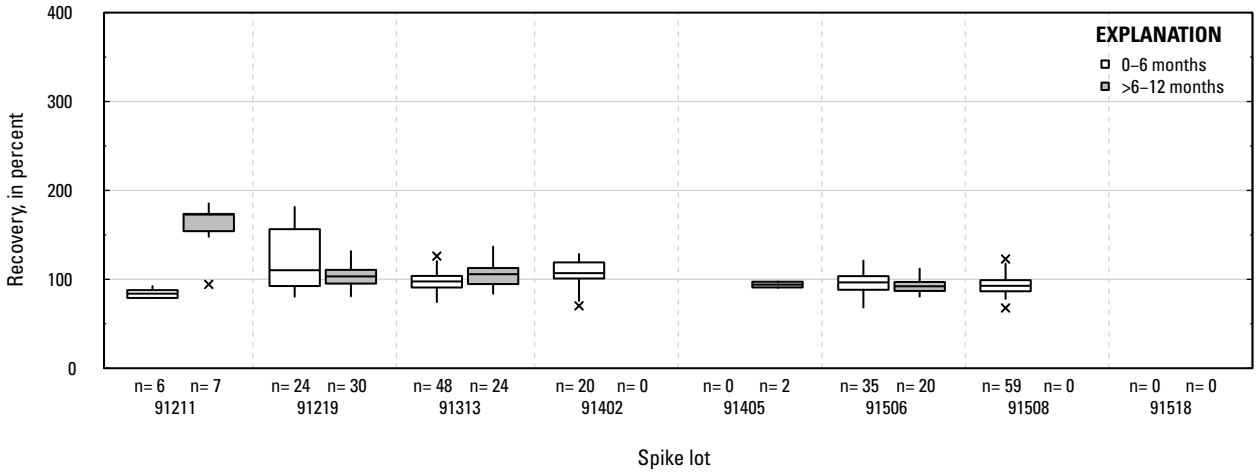
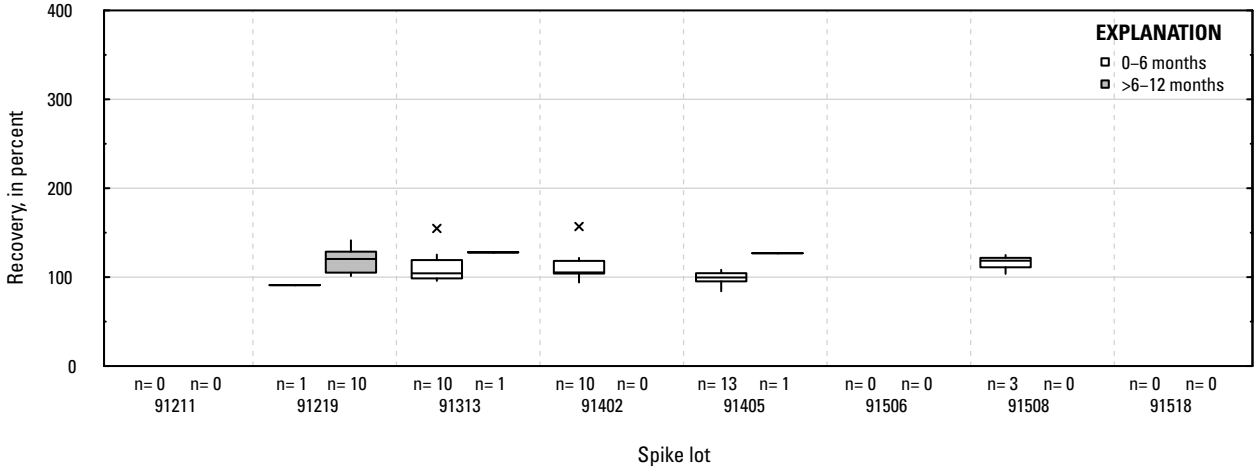


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

EF. **Carbendazim: laboratory reagent spikes**



EG. **Carbendazim: groundwater field matrix spikes**



EH. **Carbendazim: surface water field matrix spikes**

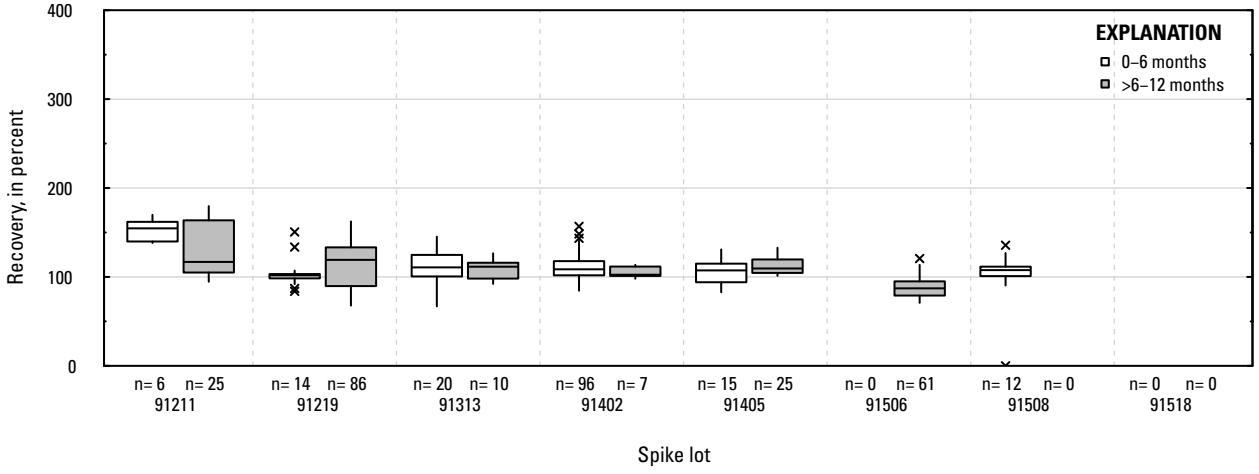
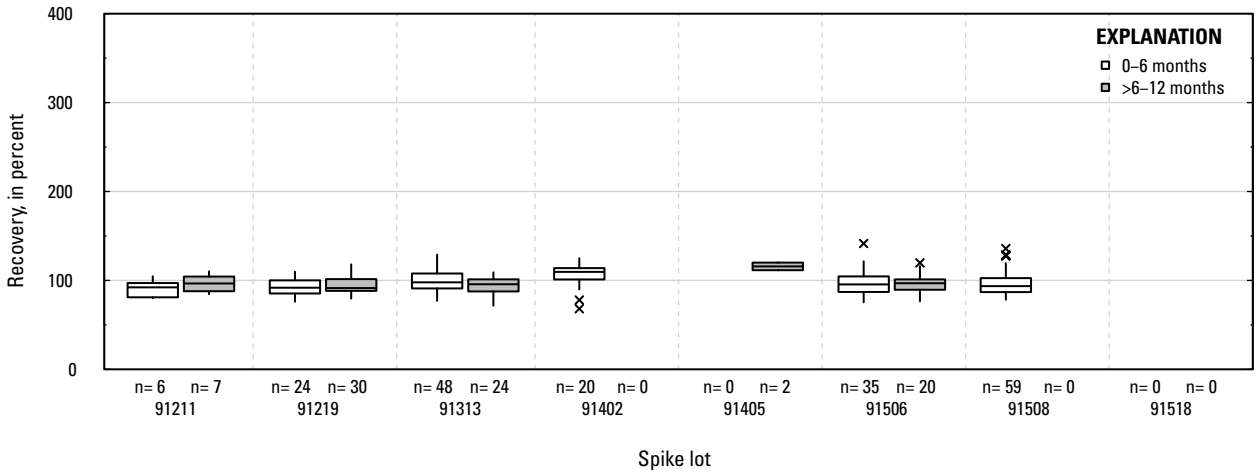
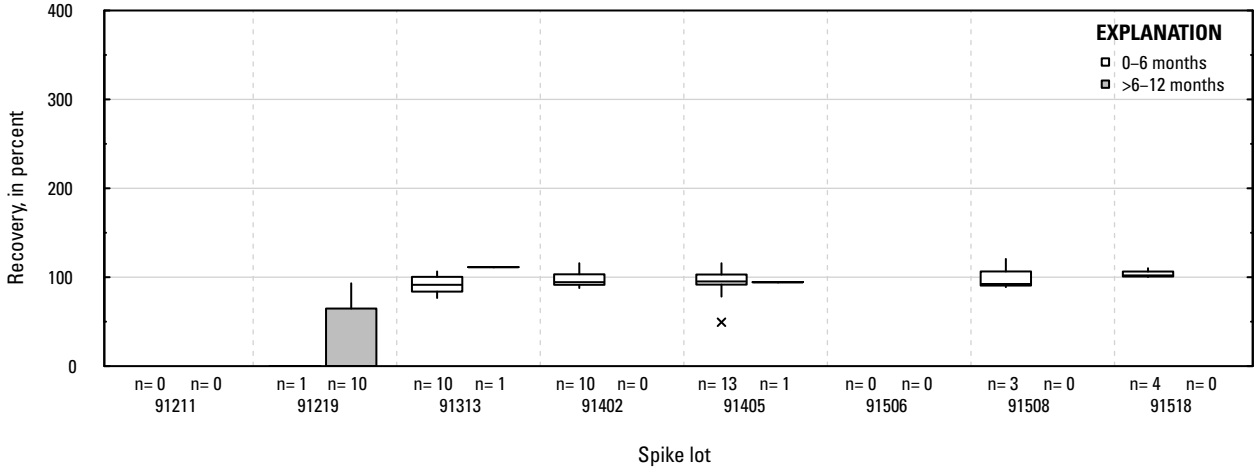


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

EI. **Carbofuran: laboratory reagent spikes**



EJ. **Carbofuran: groundwater field matrix spikes**



EK. **Carbofuran: surface water field matrix spikes**

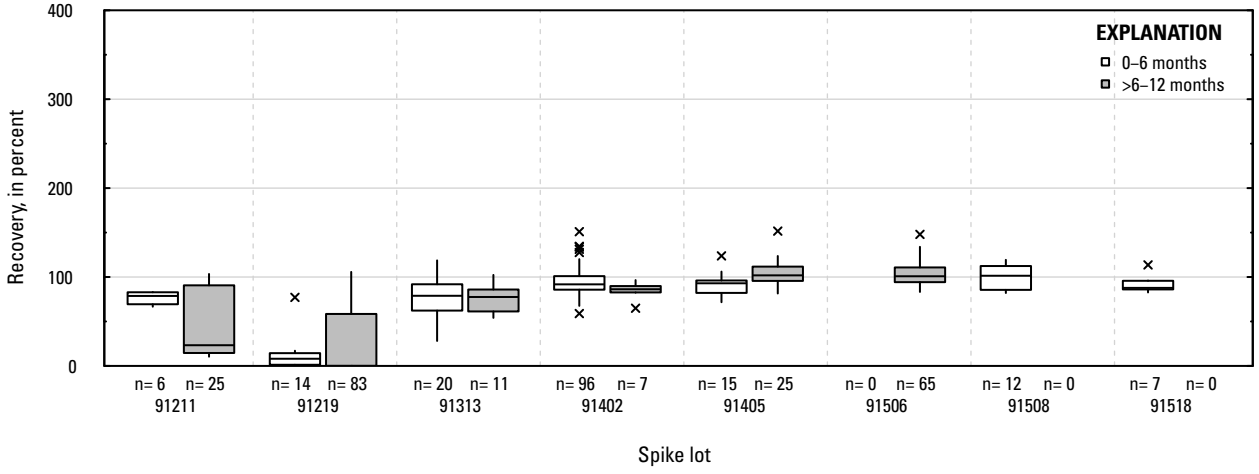
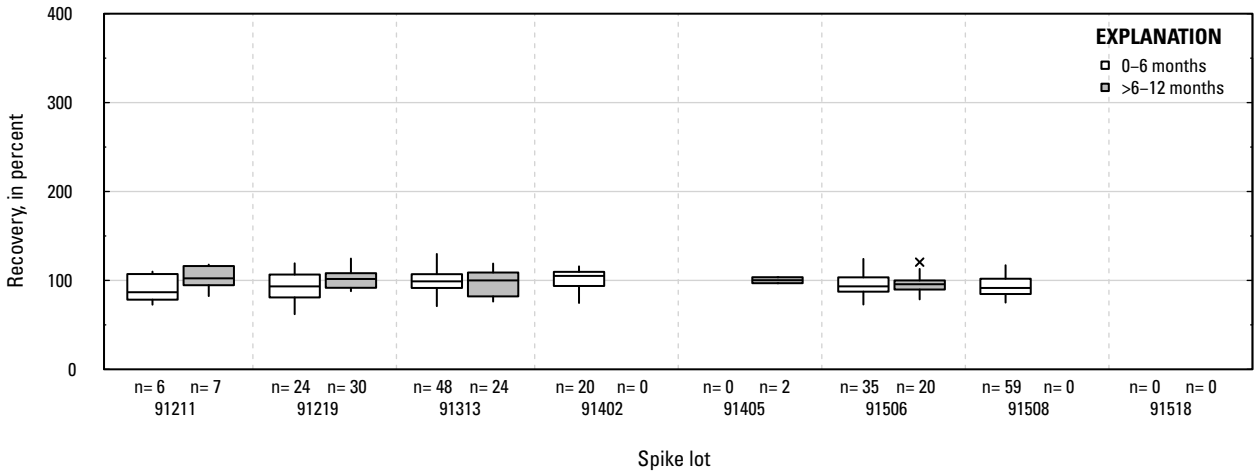
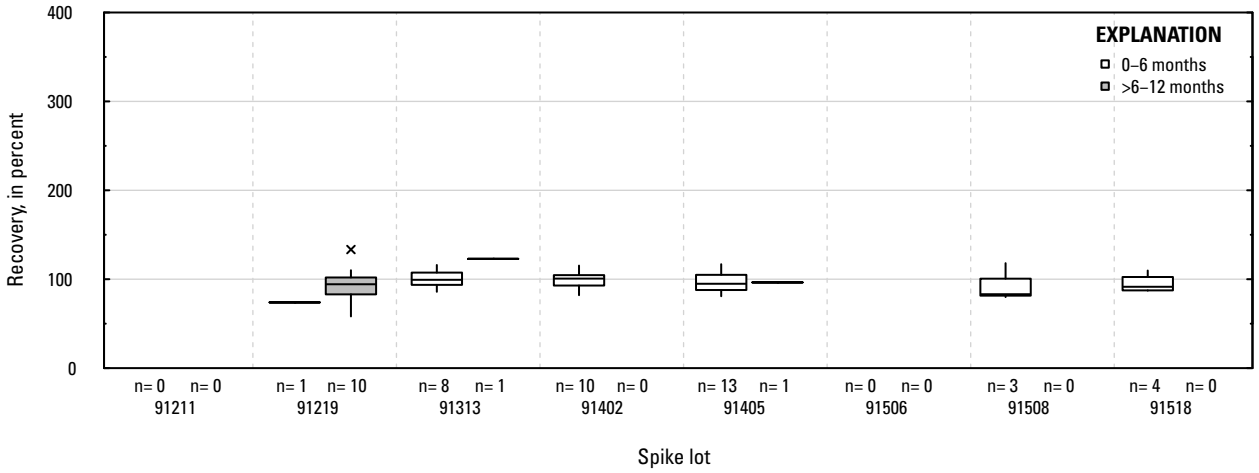


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

EL. **Carboxy molinate: laboratory reagent spikes**



EM. **Carboxy molinate: groundwater field matrix spikes**



EN. **Carboxy molinate: surface water field matrix spikes**

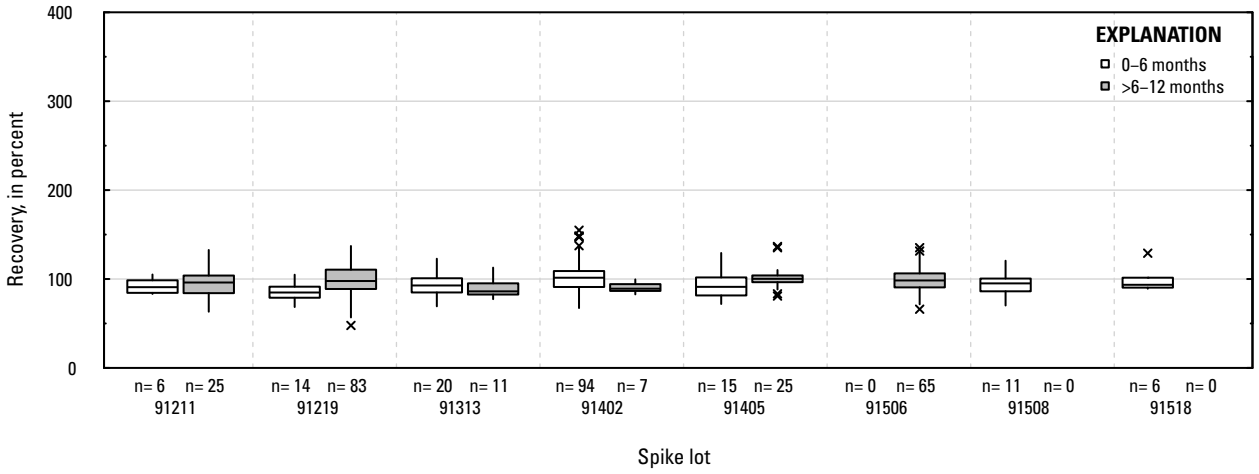
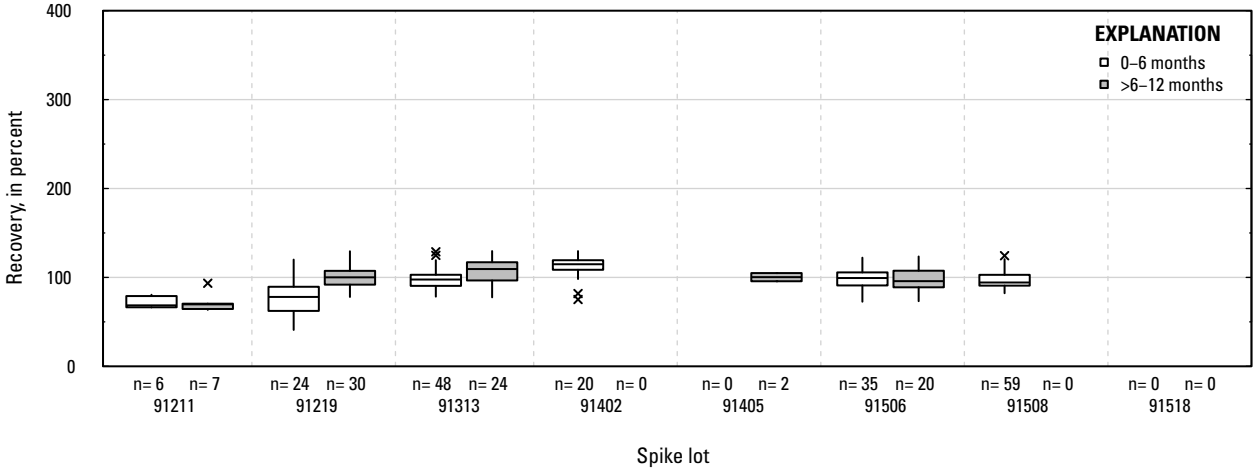
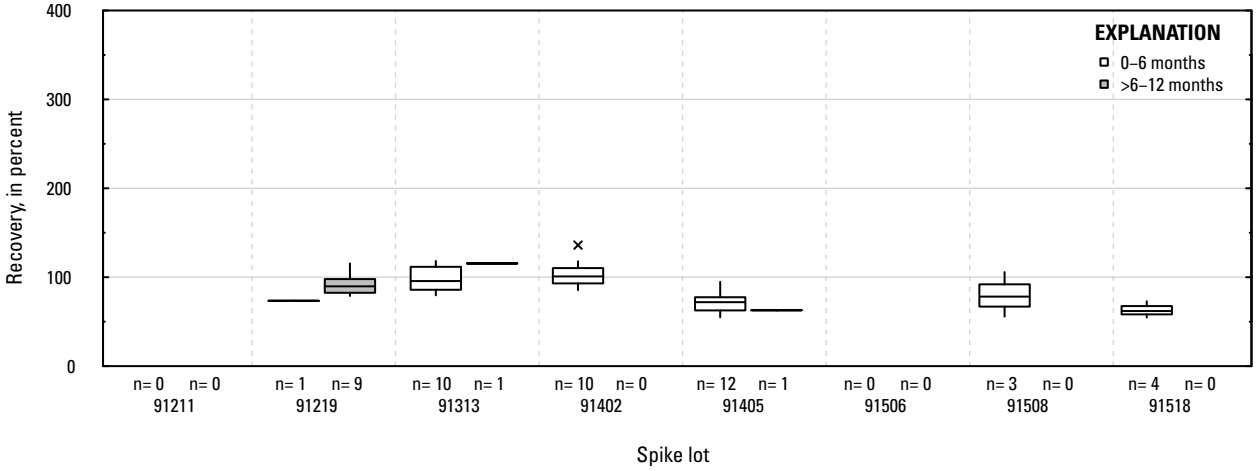


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

EO. **Chlorimuron–ethyl: laboratory reagent spikes**



EP. **Chlorimuron–ethyl: groundwater field matrix spikes**



EQ. **Chlorimuron–ethyl: surface water field matrix spikes**

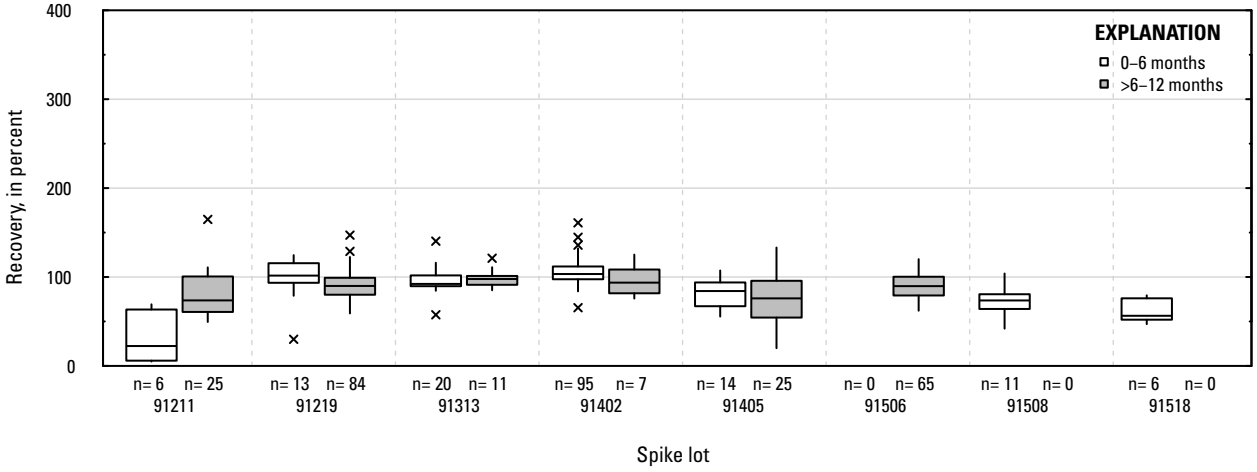
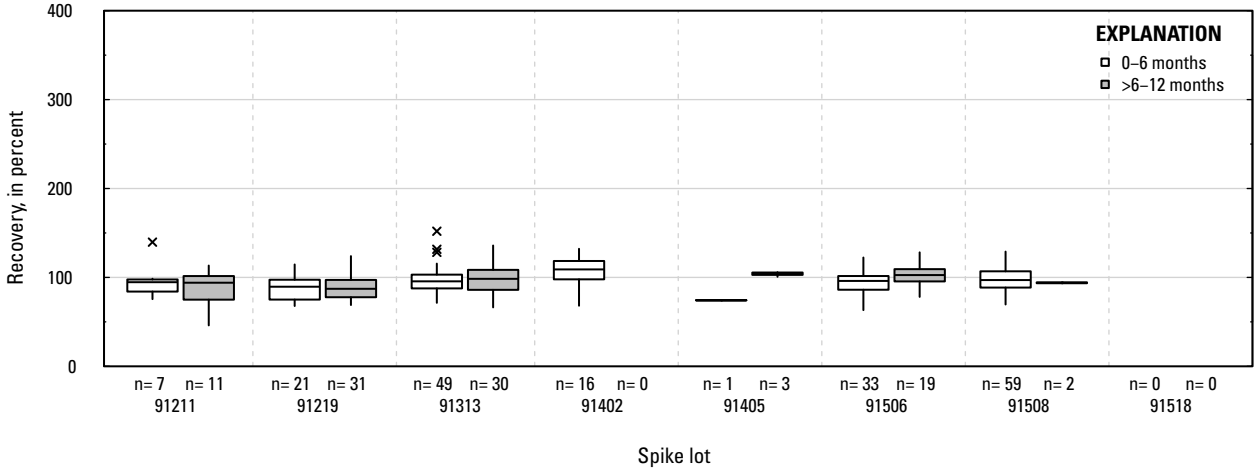
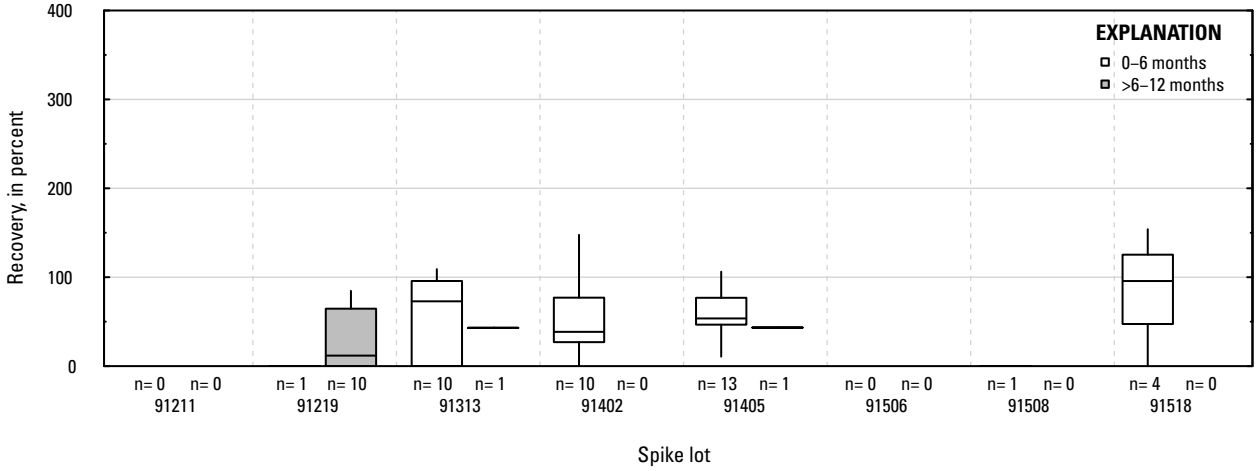


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

ER. **Chlorosulfonamide acid: laboratory reagent spikes**



ES. **Chlorosulfonamide acid: groundwater field matrix spikes**



ET. **Chlorosulfonamide acid: surface water field matrix spikes**

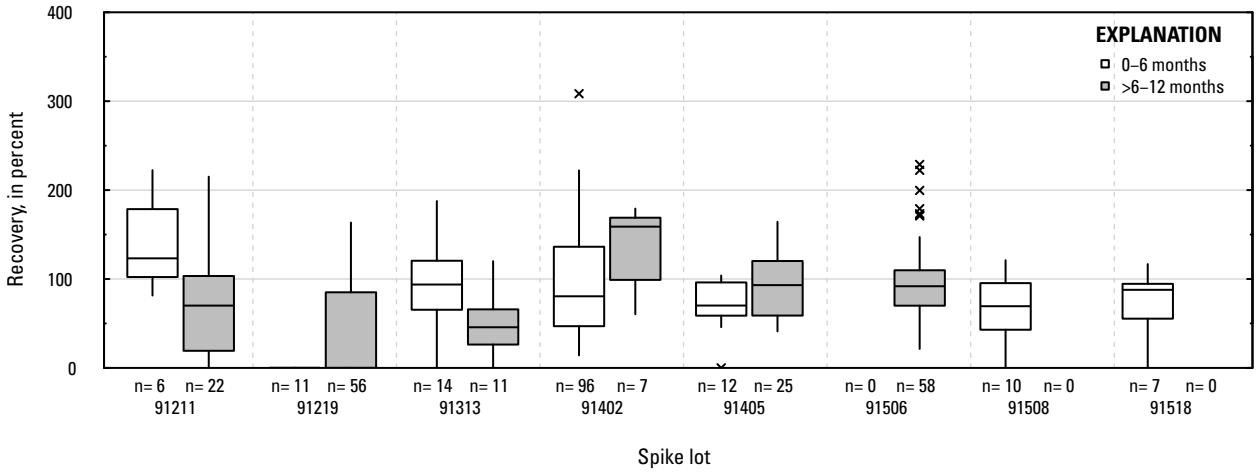
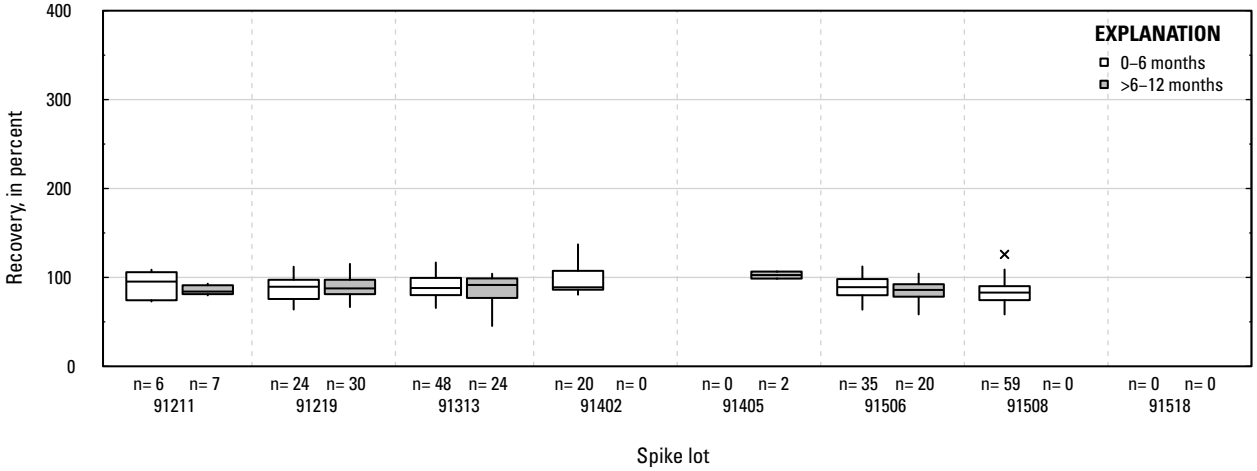
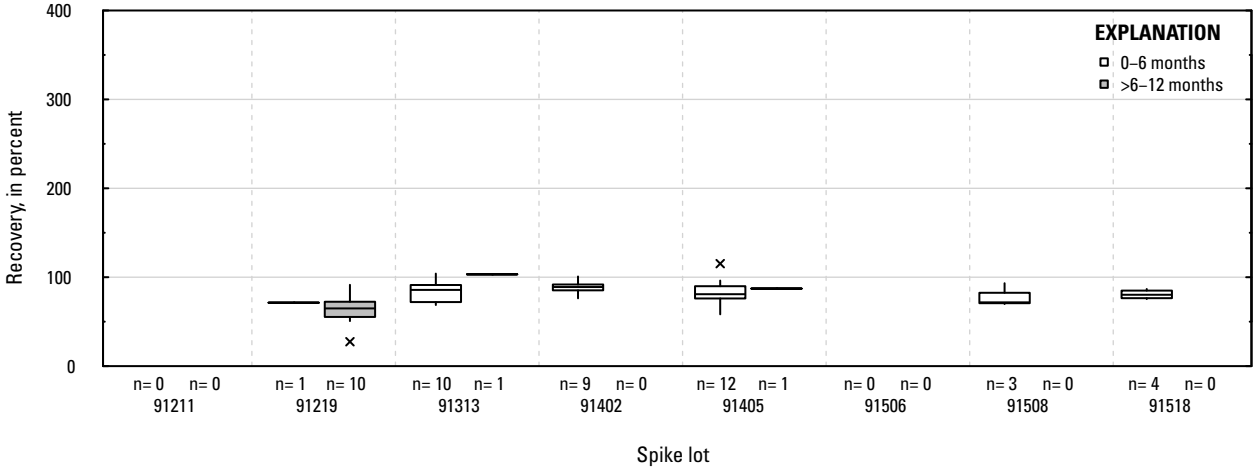


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

EU. **Chlorpyrifos: laboratory reagent spikes**



EV. **Chlorpyrifos: groundwater field matrix spikes**



EW. **Chlorpyrifos: surface water field matrix spikes**

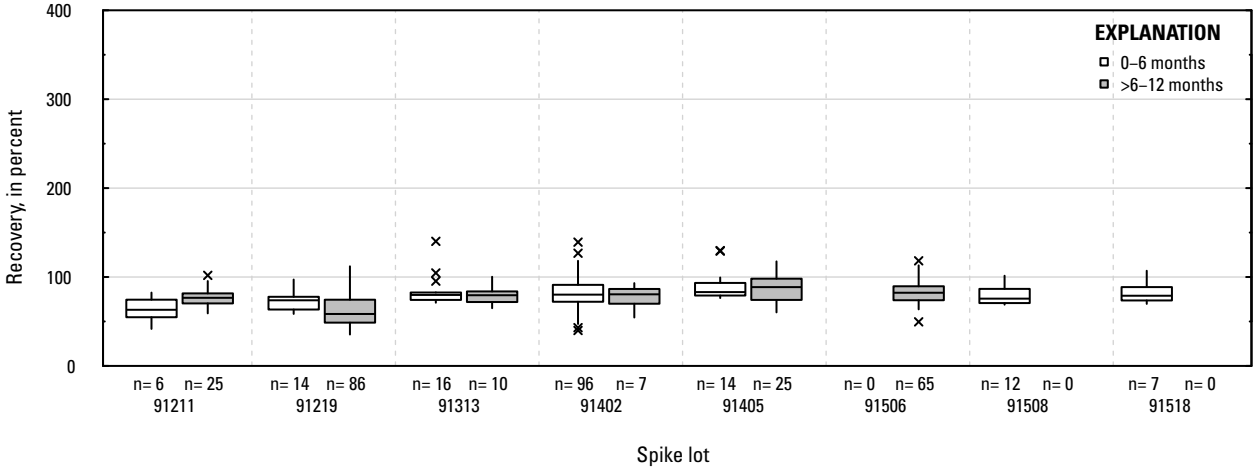
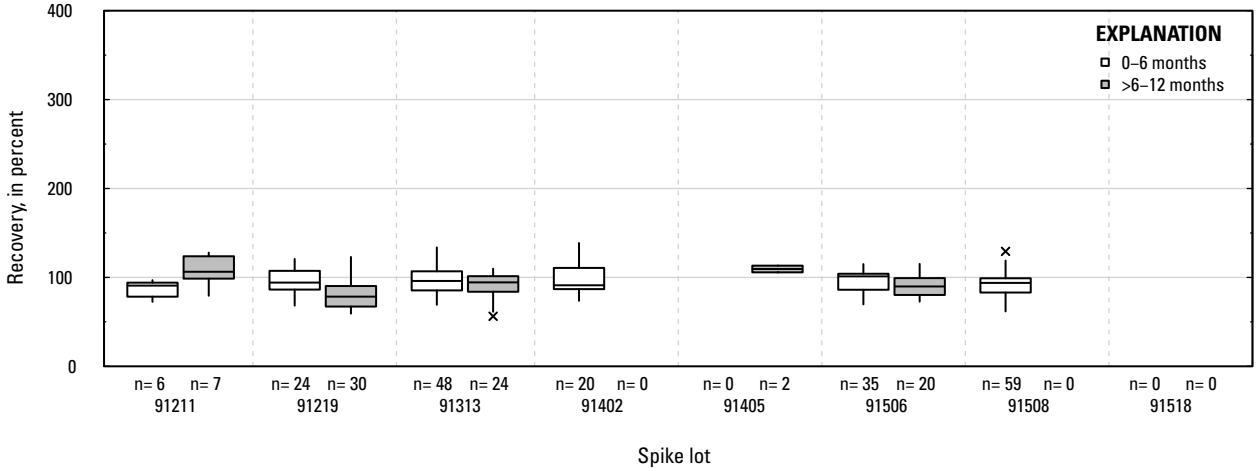
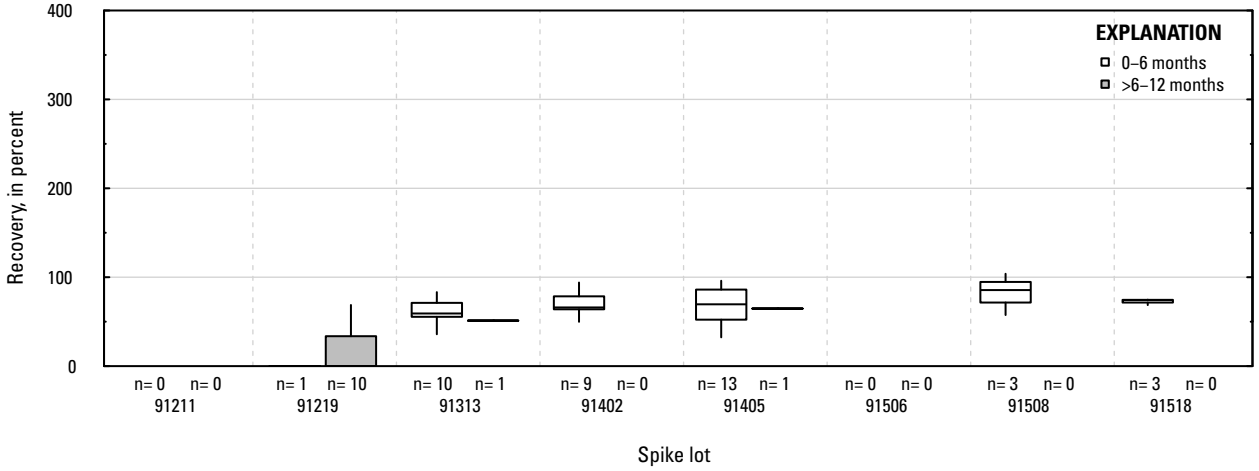


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

EX. **Chlorpyrifos oxon: laboratory reagent spikes**



EY. **Chlorpyrifos oxon: groundwater field matrix spikes**



EZ. **Chlorpyrifos oxon: surface water field matrix spikes**

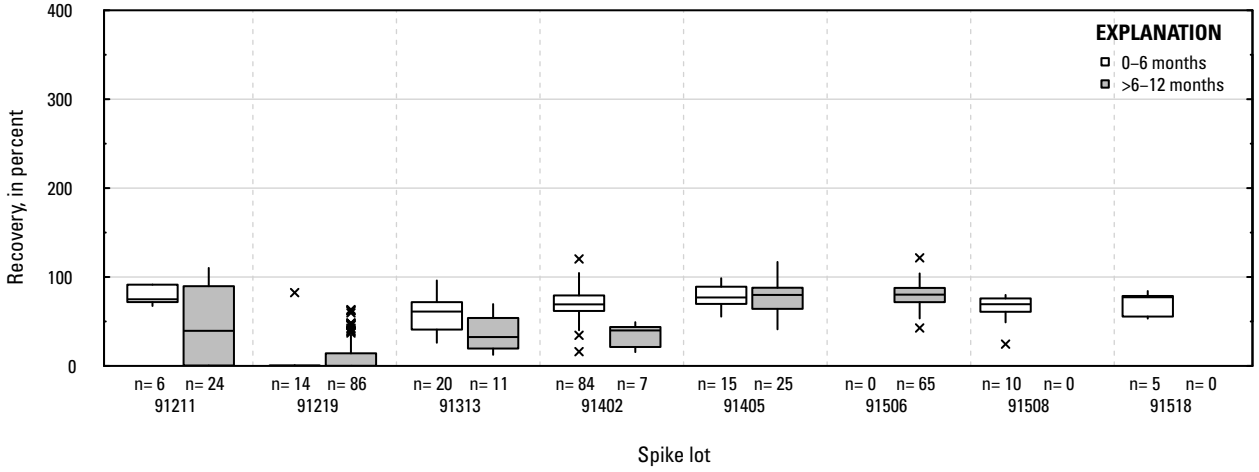
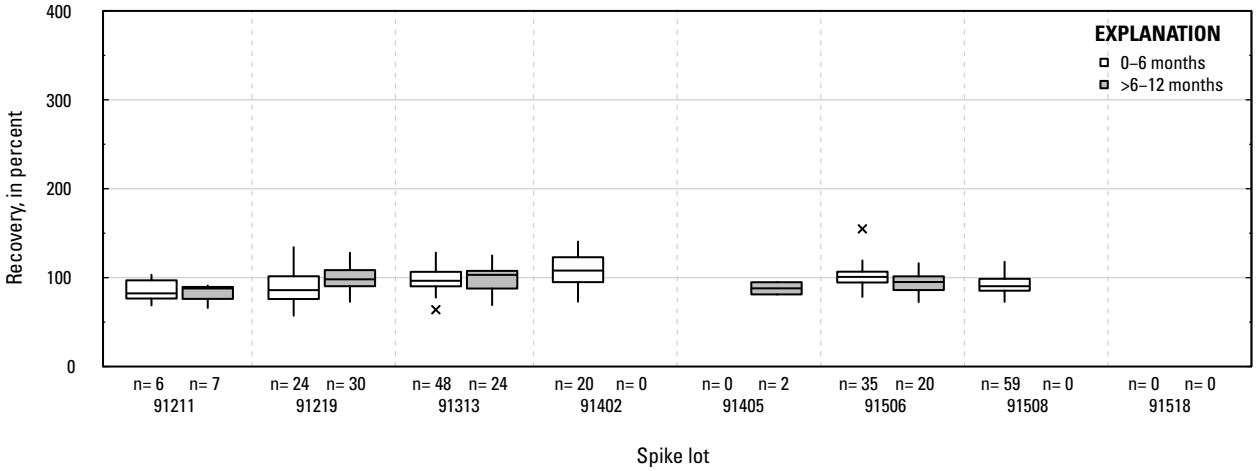
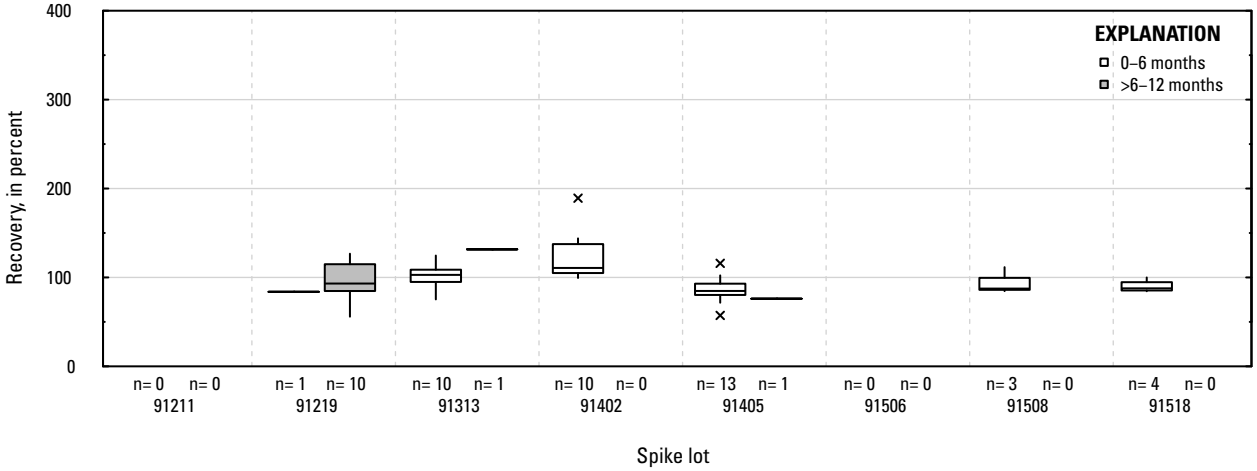


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

FA. **Chlorsulfuron: laboratory reagent spikes**



FB. **Chlorsulfuron: groundwater field matrix spikes**



FC. **Chlorsulfuron: surface water field matrix spikes**

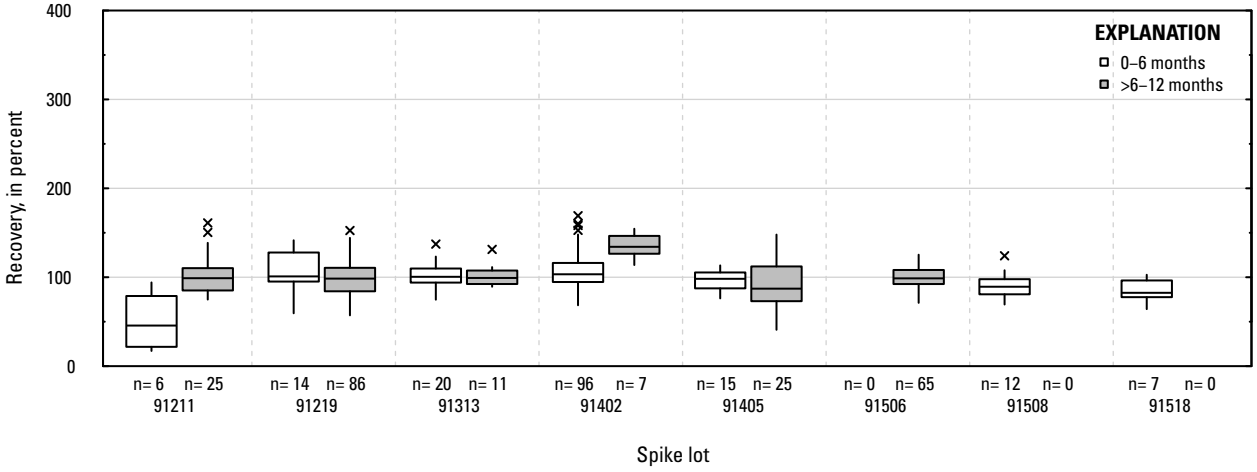
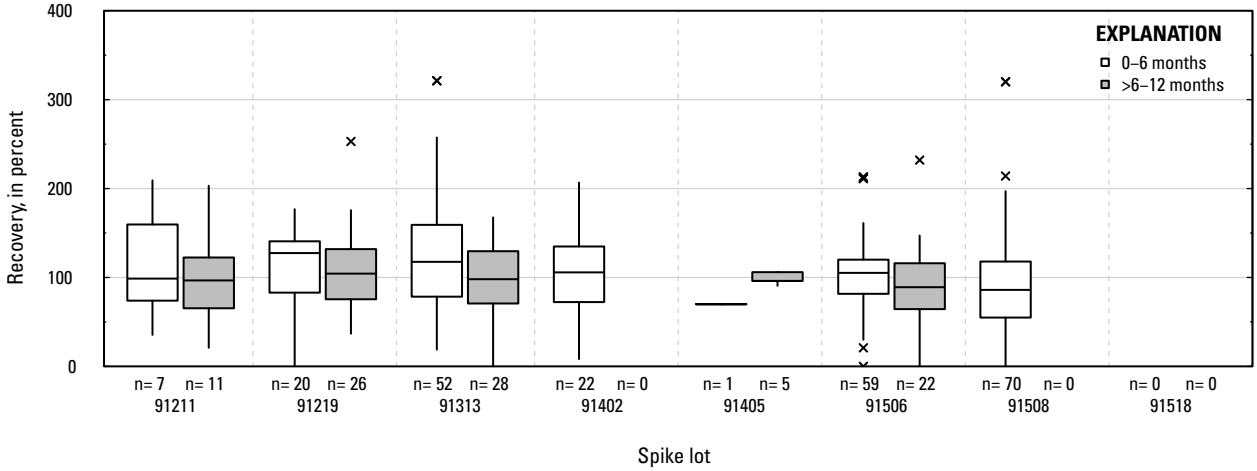
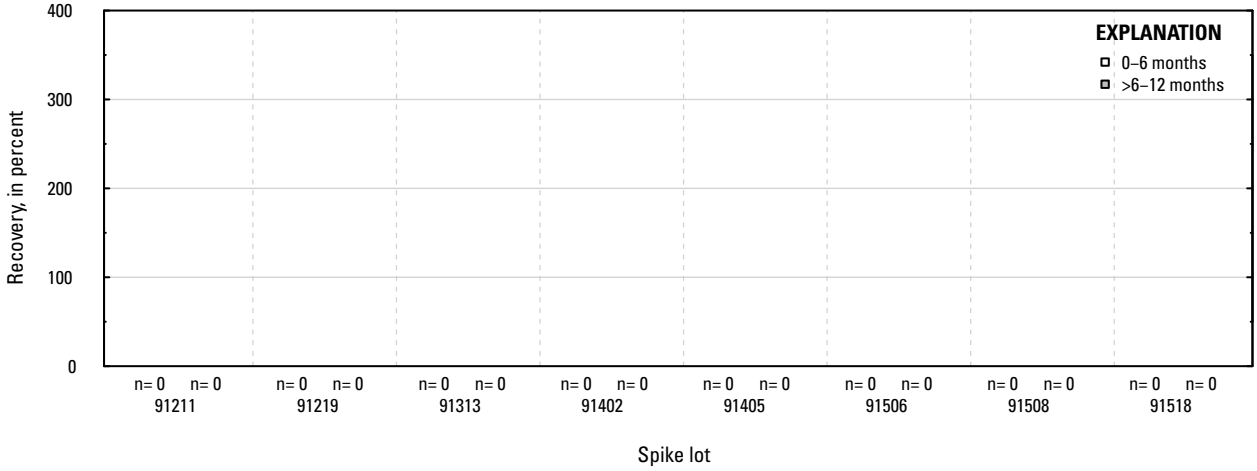


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

FD. **Dacthal monoacid: laboratory reagent spikes**



FE. **Dacthal monoacid: groundwater field matrix spikes**



FF. **Dacthal monoacid: surface water field matrix spikes**

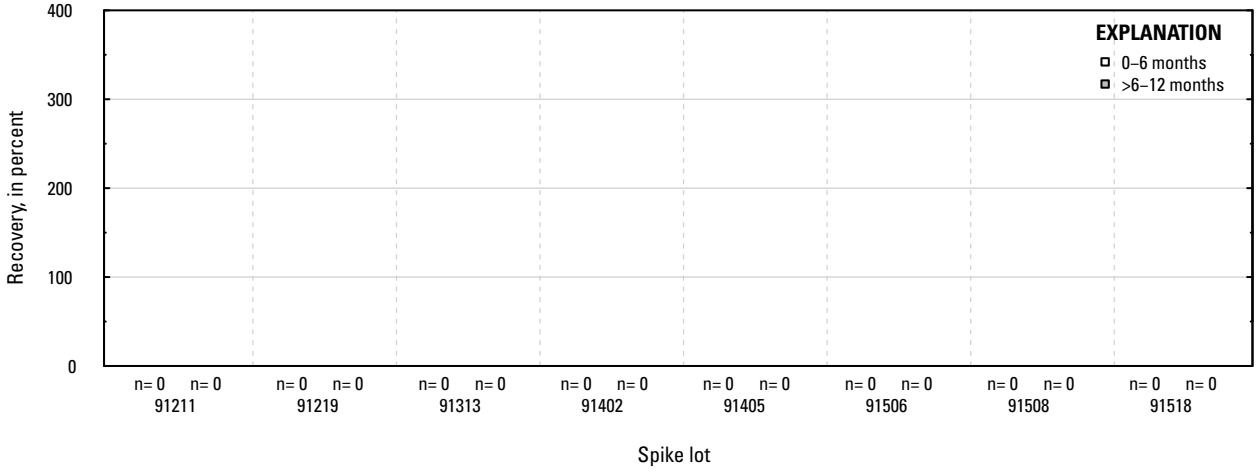
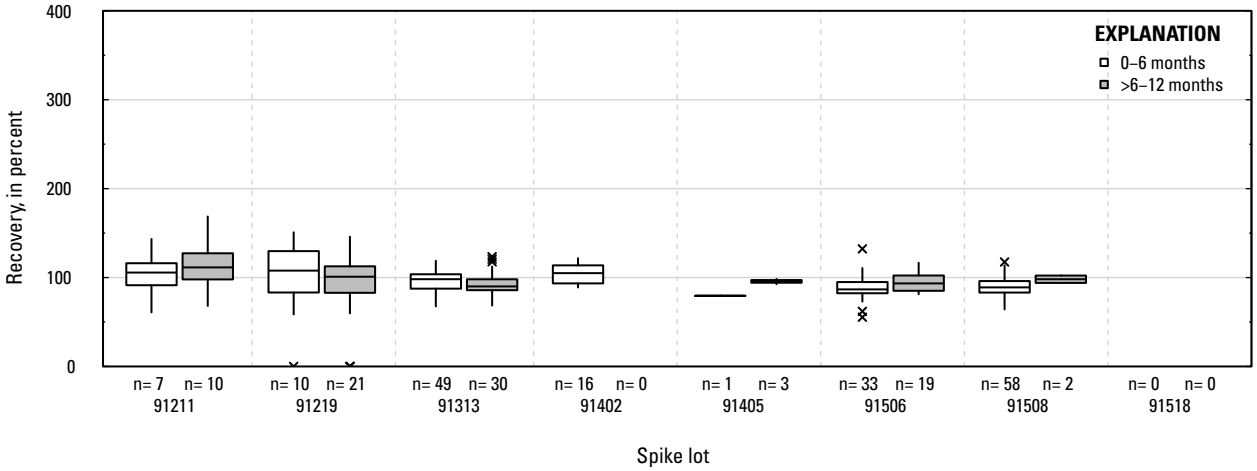
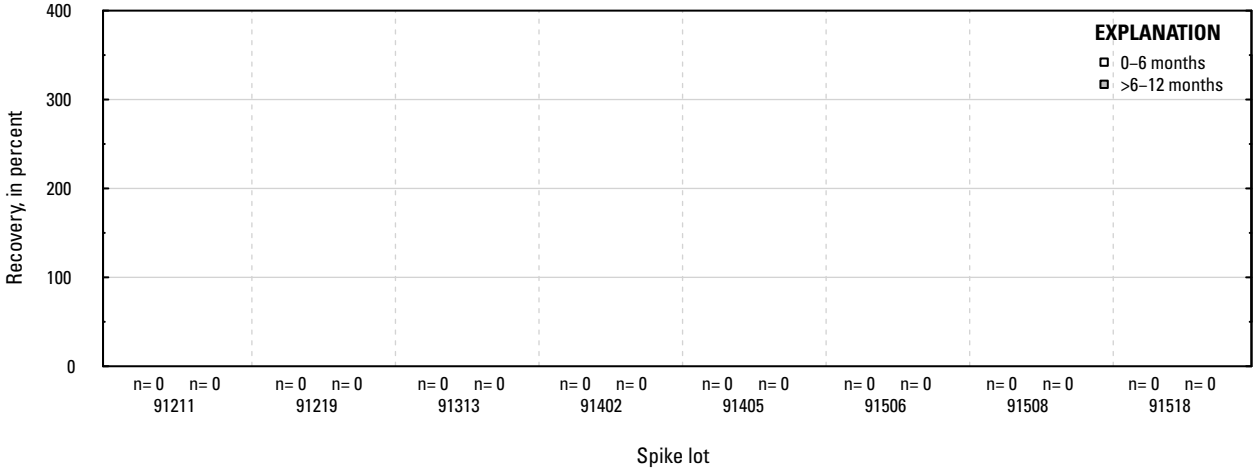


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

FG. **cis–Bifenthrin acid/cis–Cyhalothrin acid/cis–Tefluthrin acid: laboratory reagent spikes**



FH. **cis–Bifenthrin acid/cis–Cyhalothrin acid/cis–Tefluthrin acid: groundwater field matrix spikes**



FI. **cis–Bifenthrin acid/cis–Cyhalothrin acid/cis–Tefluthrin acid: surface water field matrix spikes**

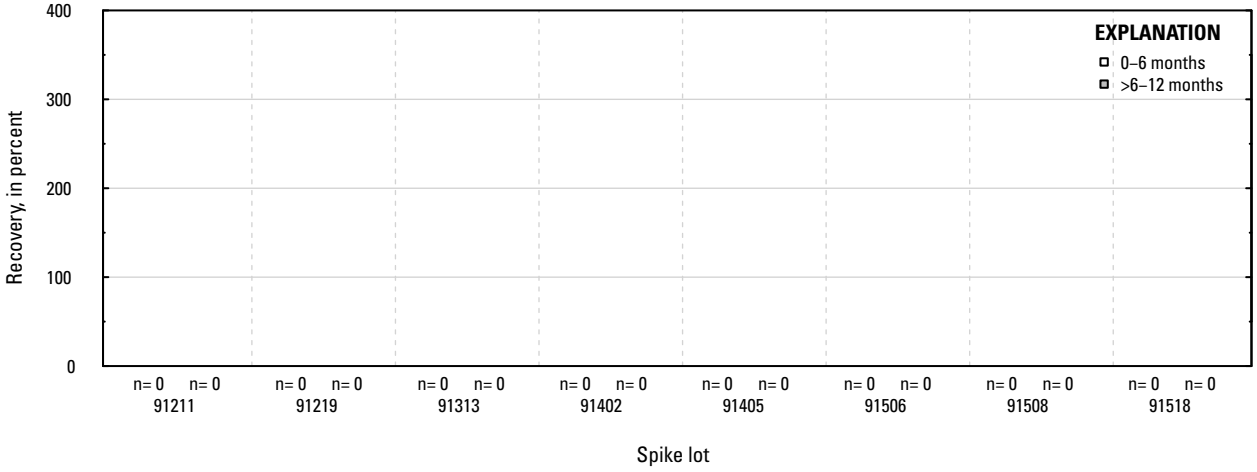
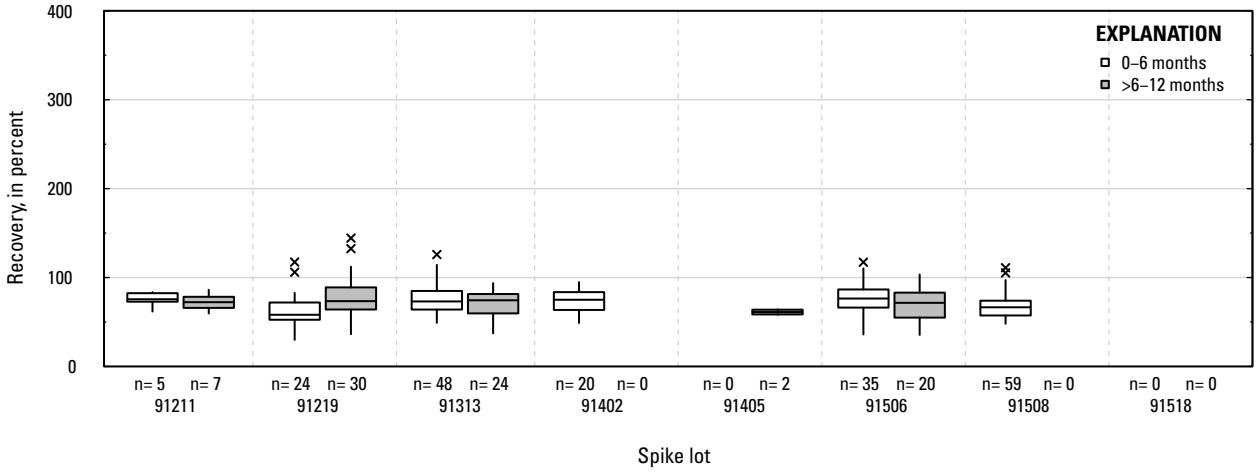
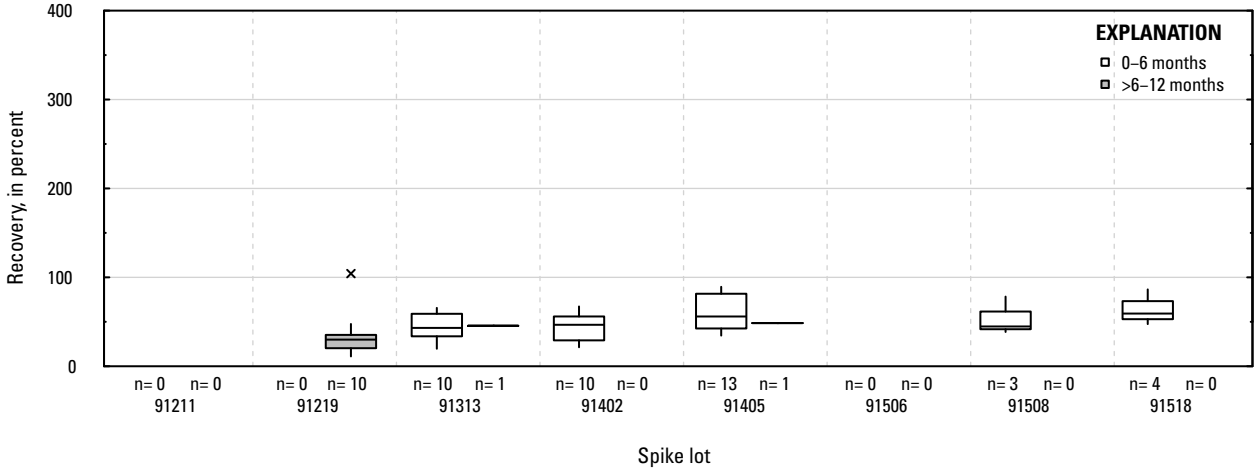


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

FJ. **cis–Permethrin: laboratory reagent spikes**



FK. **cis–Permethrin: groundwater field matrix spikes**



FL. **cis–Permethrin: surface water field matrix spikes**

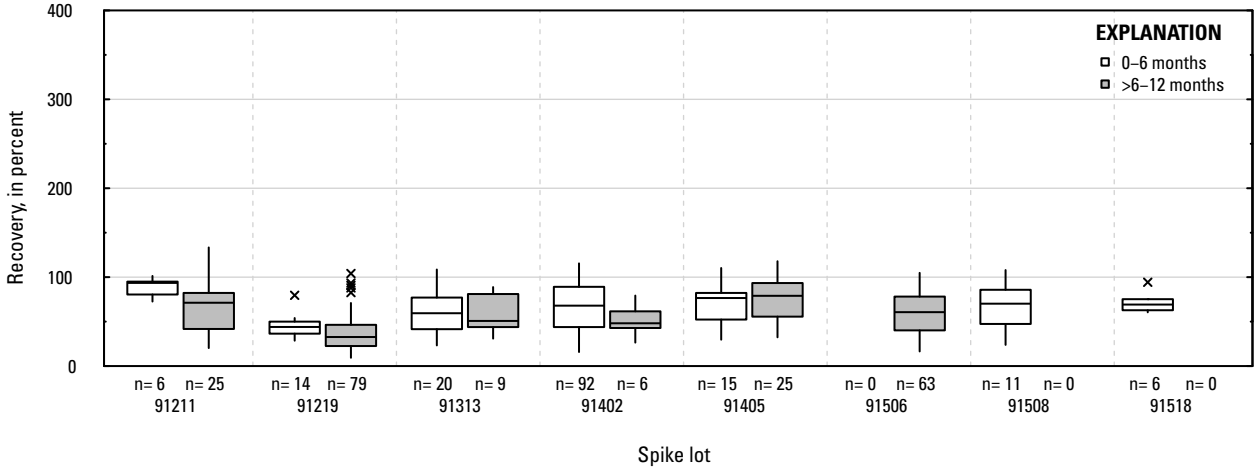
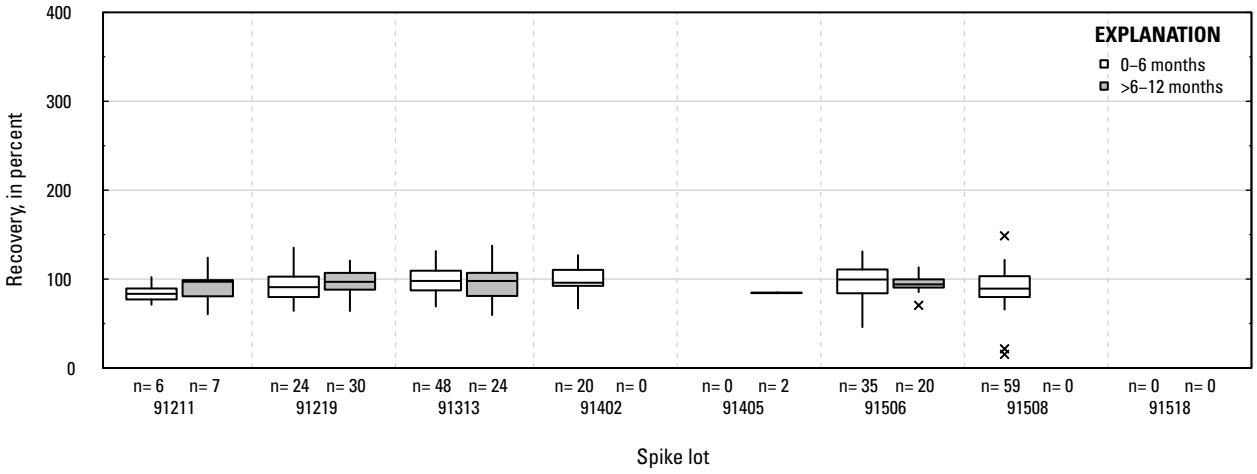
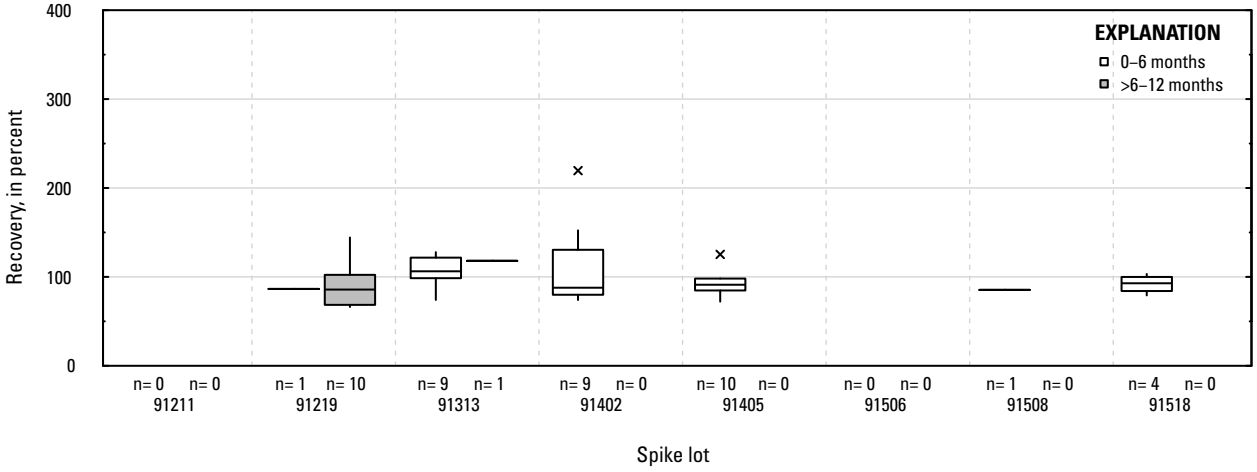


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

FM. **Cyanazine: laboratory reagent spikes**



FN. **Cyanazine: groundwater field matrix spikes**



FO. **Cyanazine: surface water field matrix spikes**

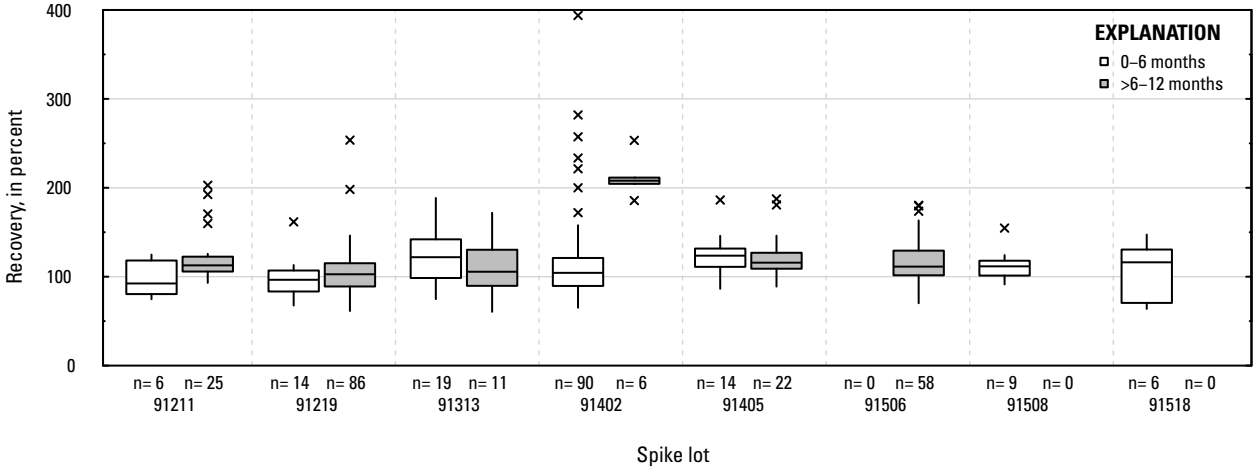
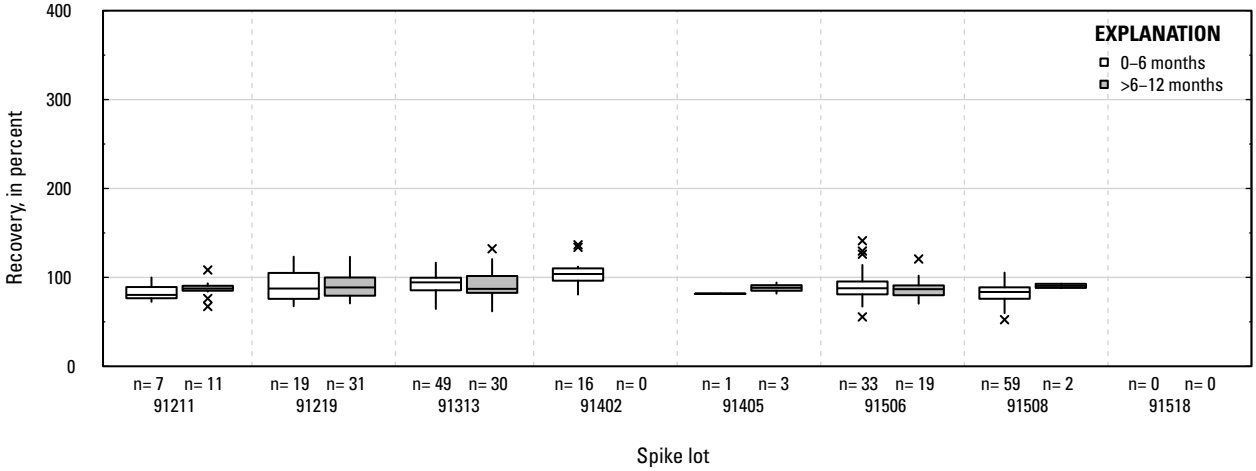
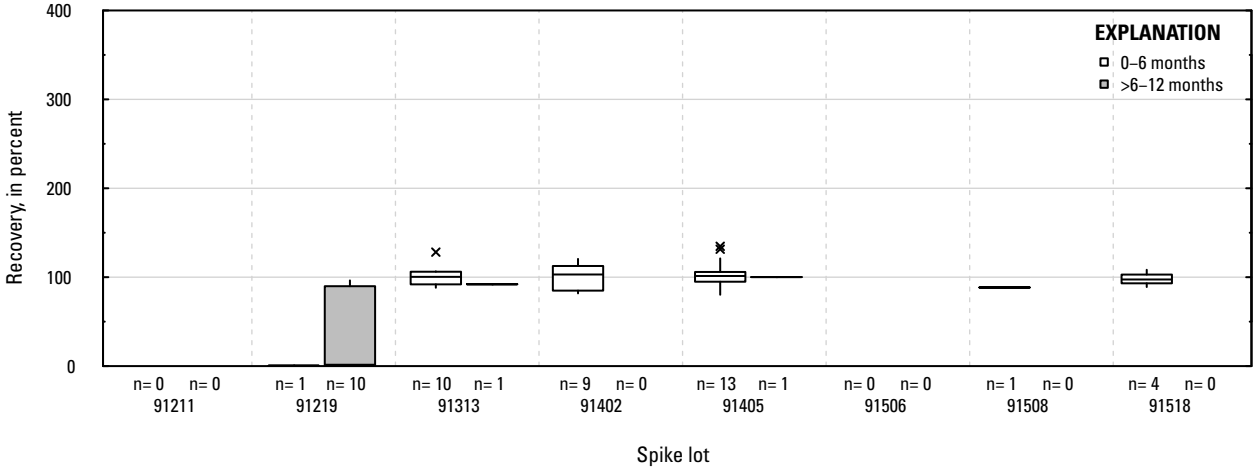


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

FP. **Dechlorofipronil: laboratory reagent spikes**



FQ. **Dechlorofipronil: groundwater field matrix spikes**



FR. **Dechlorofipronil: surface water field matrix spikes**

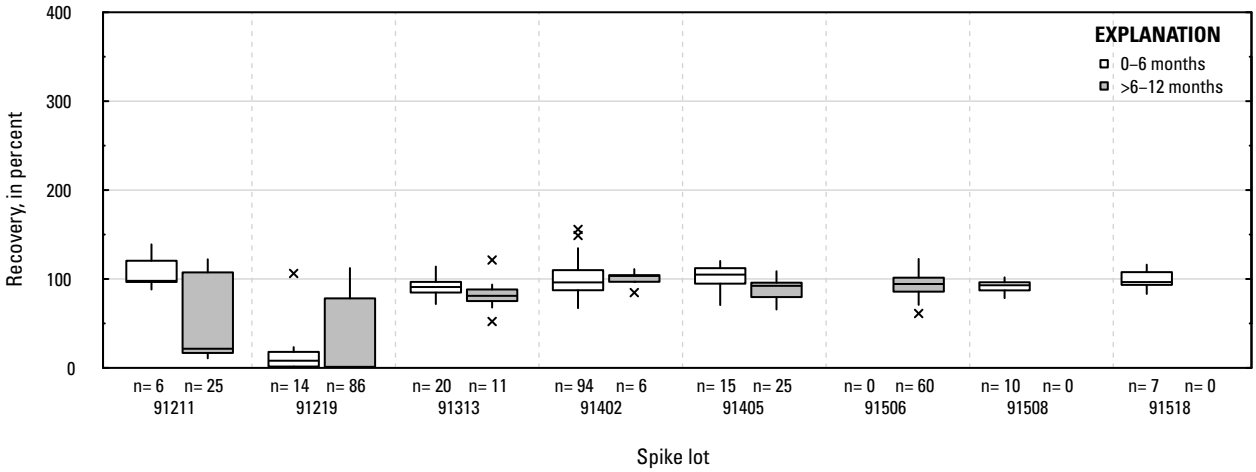
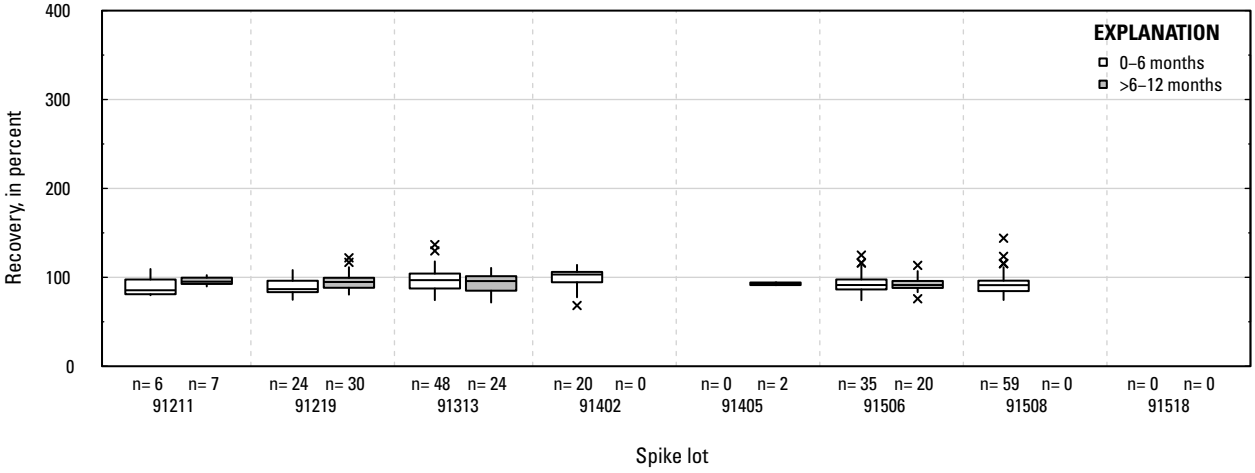
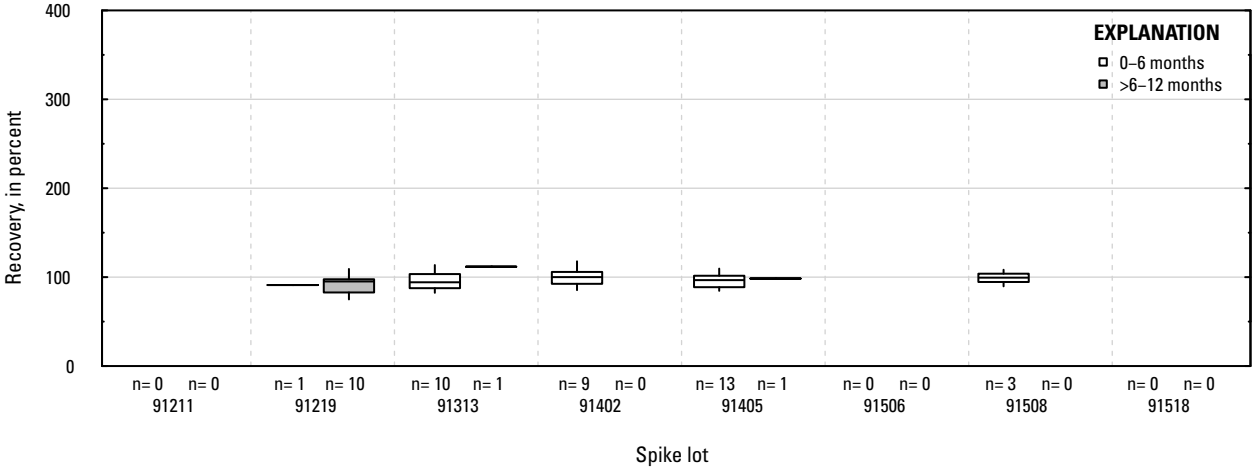


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

FS. **Dechlorometolachlor: laboratory reagent spikes**



FT. **Dechlorometolachlor: groundwater field matrix spikes**



FU. **Dechlorometolachlor: surface water field matrix spikes**

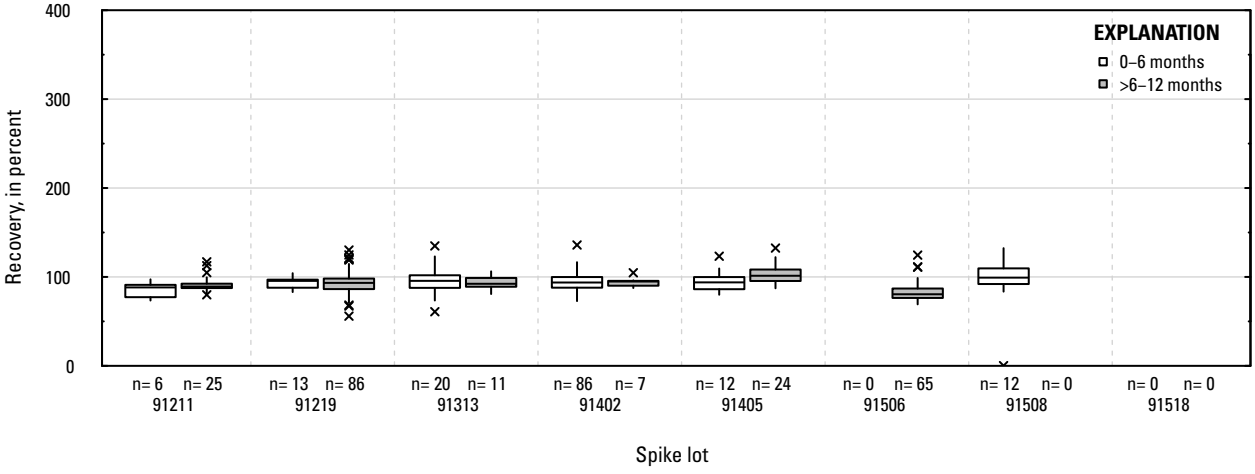
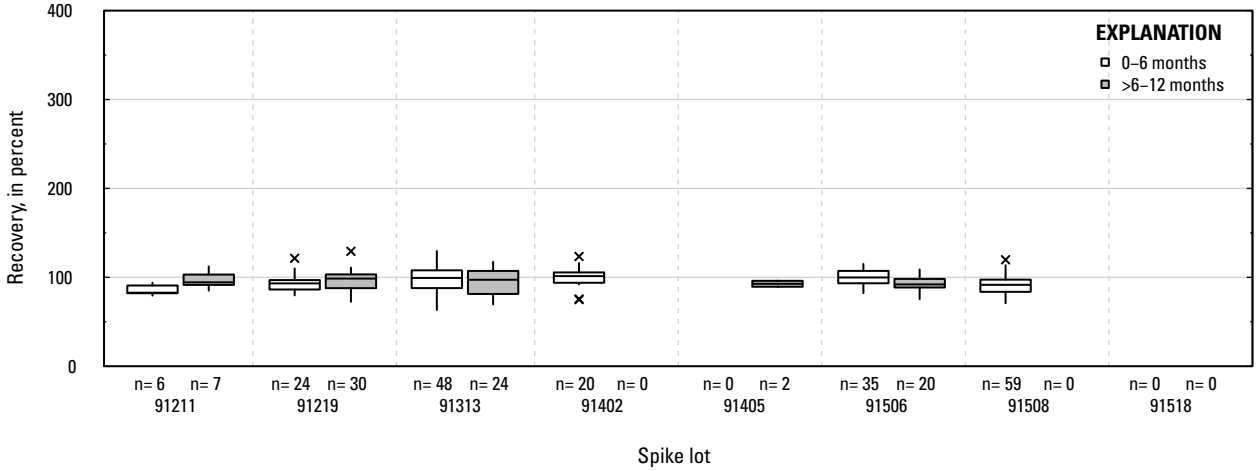
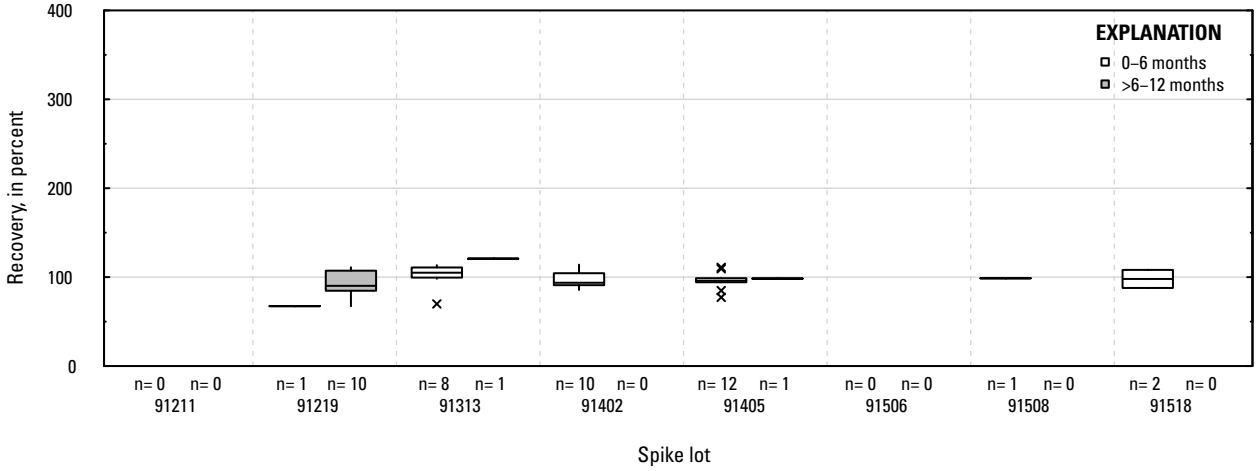


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

FV. **2–Chloro–4–isopropylamino–6–amino–s–triazine: laboratory reagent spikes**



FW. **2–Chloro–4–isopropylamino–6–amino–s–triazine: groundwater field matrix spikes**



FX. **2–Chloro–4–isopropylamino–6–amino–s–triazine: surface water field matrix spikes**

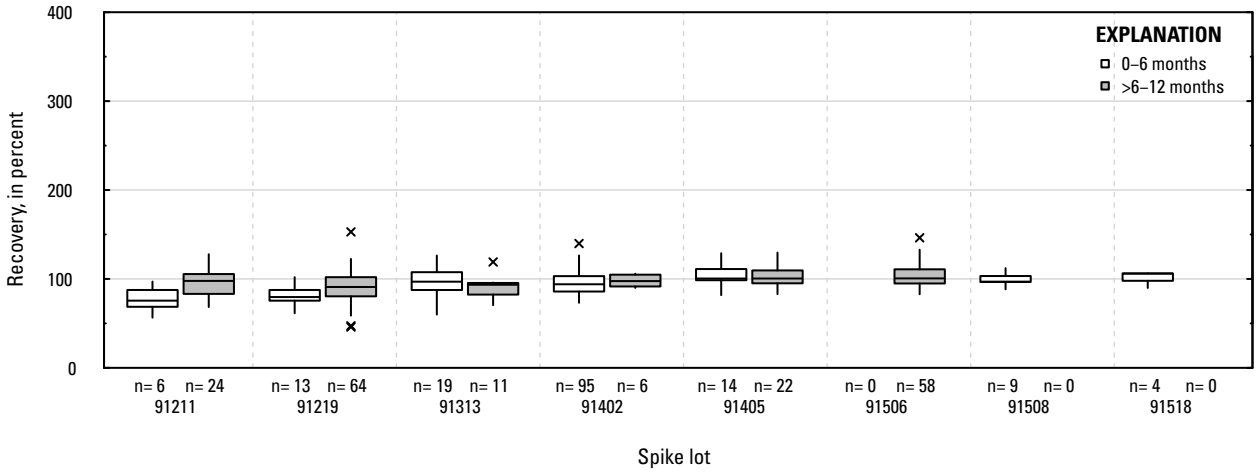
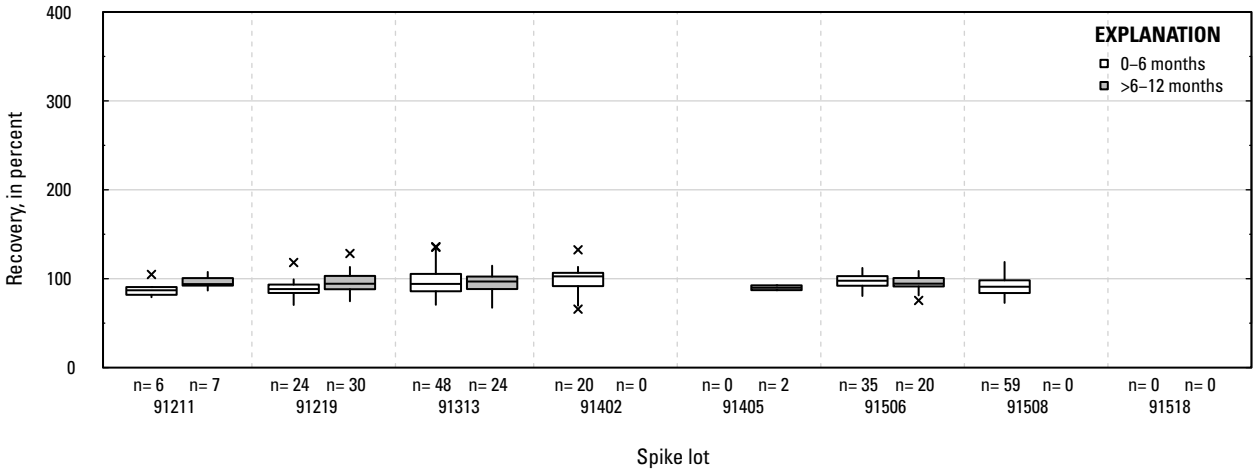
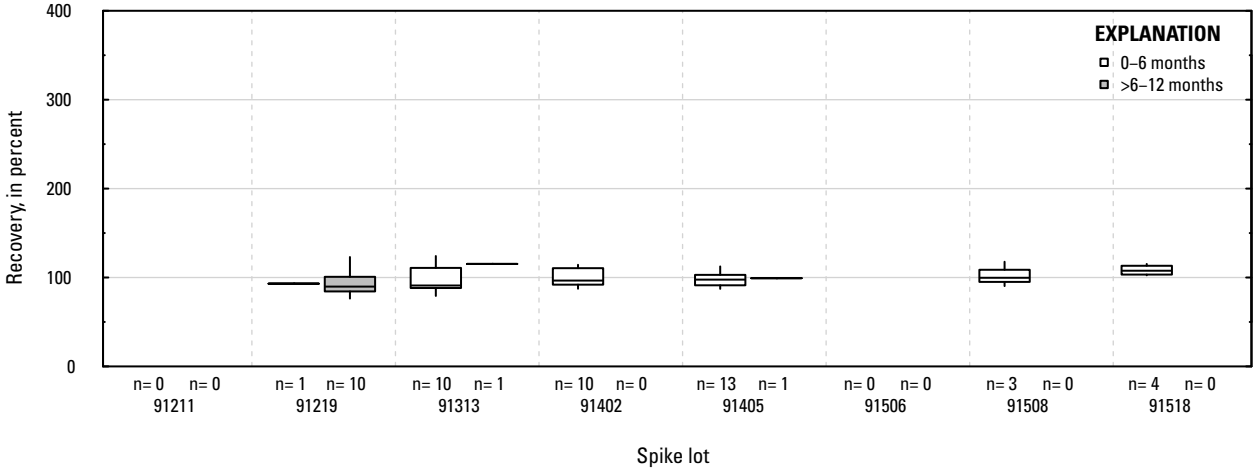


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

FY. **Deisopropyl prometryn: laboratory reagent spikes**



FZ. **Deisopropyl prometryn: groundwater field matrix spikes**



GA. **Deisopropyl prometryn: surface water field matrix spikes**

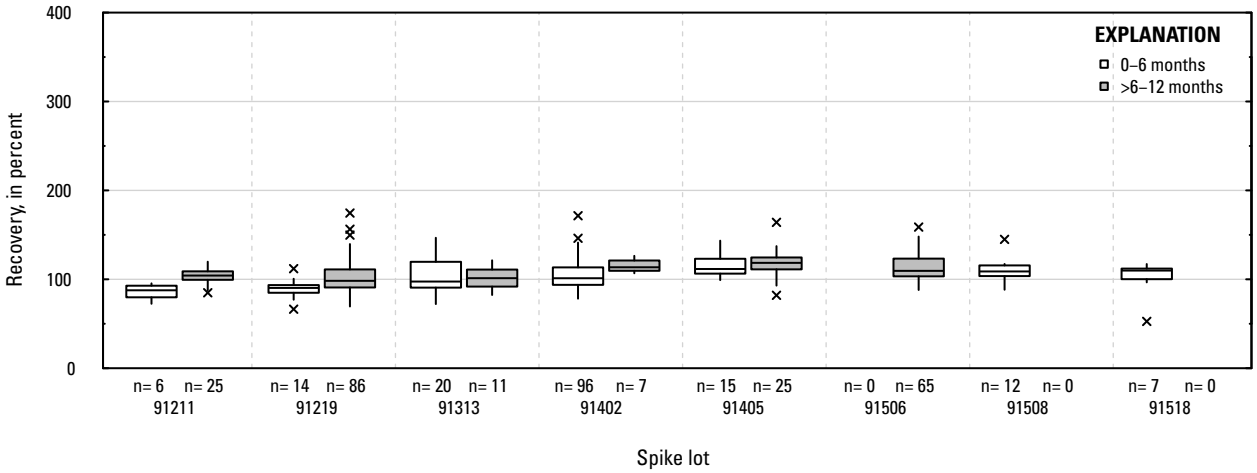
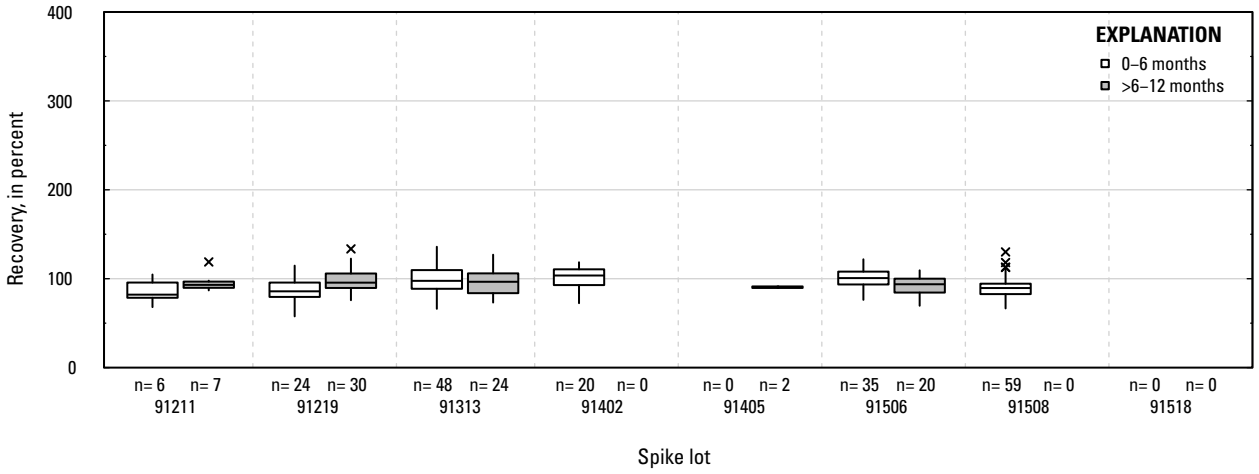
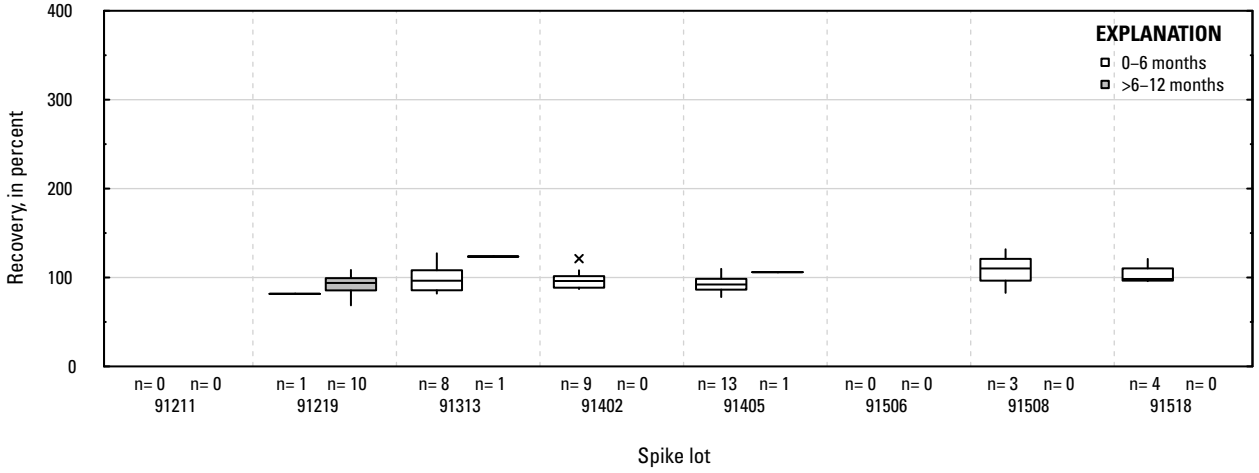


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

GB. **2–Chloro–6–ethylamino–4–amino–s–triazine {CEAT}: laboratory reagent spikes**



GC. **2–Chloro–6–ethylamino–4–amino–s–triazine {CEAT}: groundwater field matrix spikes**



GD. **2–Chloro–6–ethylamino–4–amino–s–triazine {CEAT}: surface water field matrix spikes**

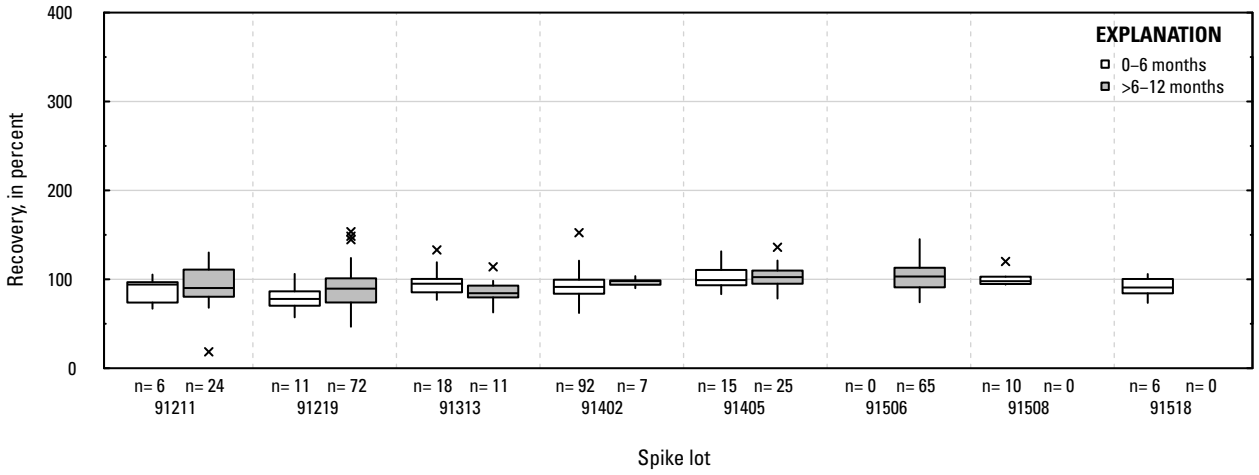
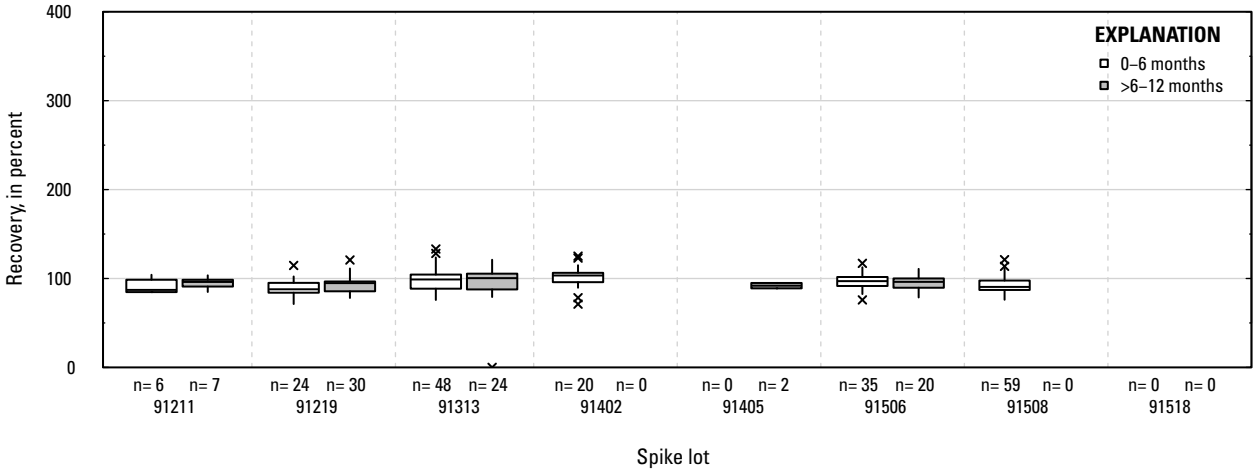
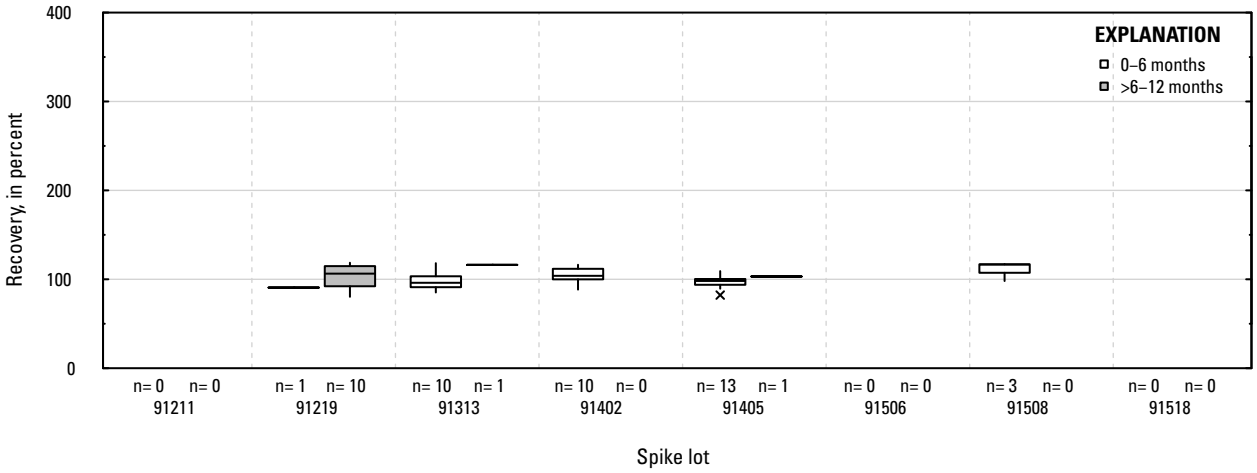


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

GE. **Demethyl fluometuron: laboratory reagent spikes**



GF. **Demethyl fluometuron: groundwater field matrix spikes**



GG. **Demethyl fluometuron: surface water field matrix spikes**

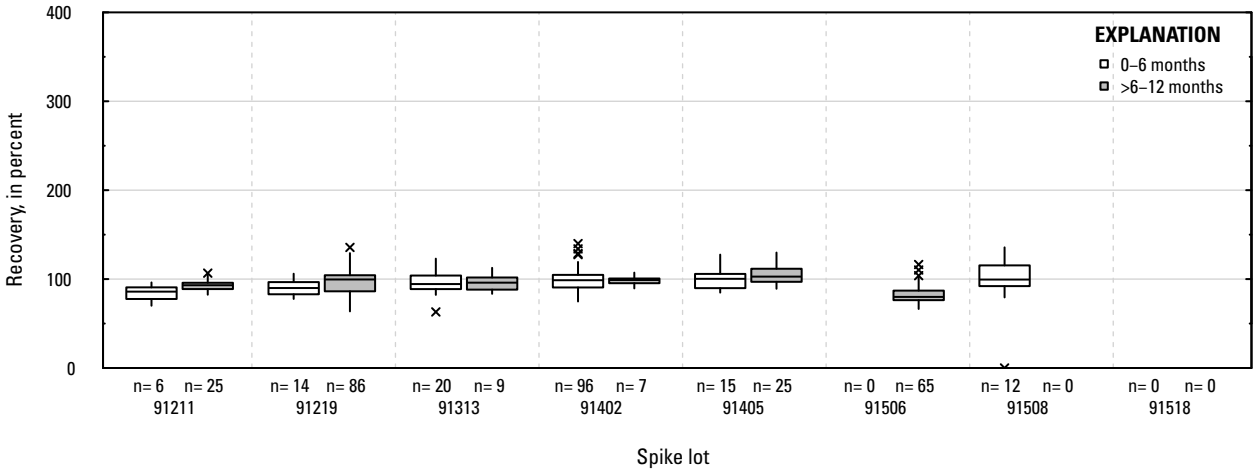
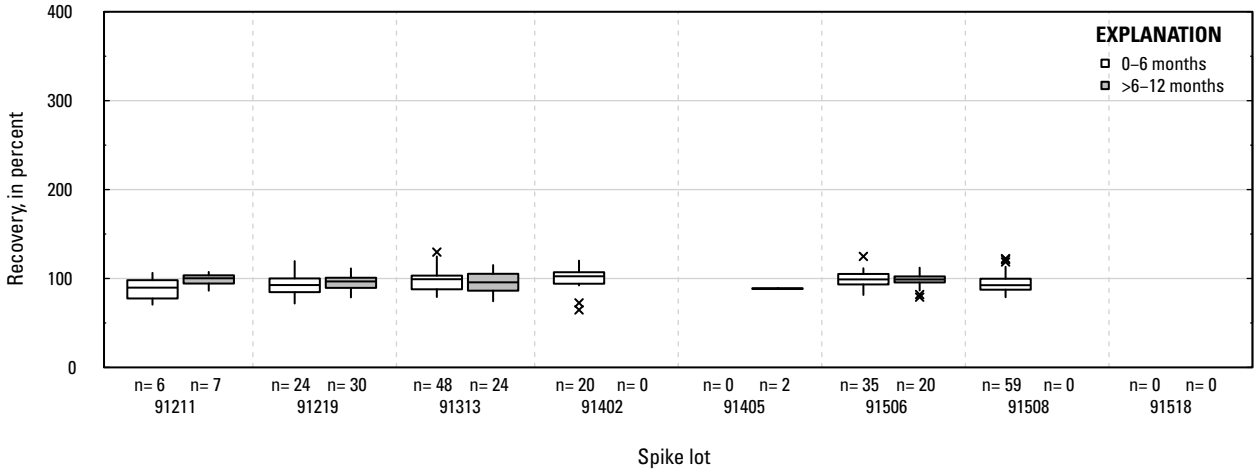
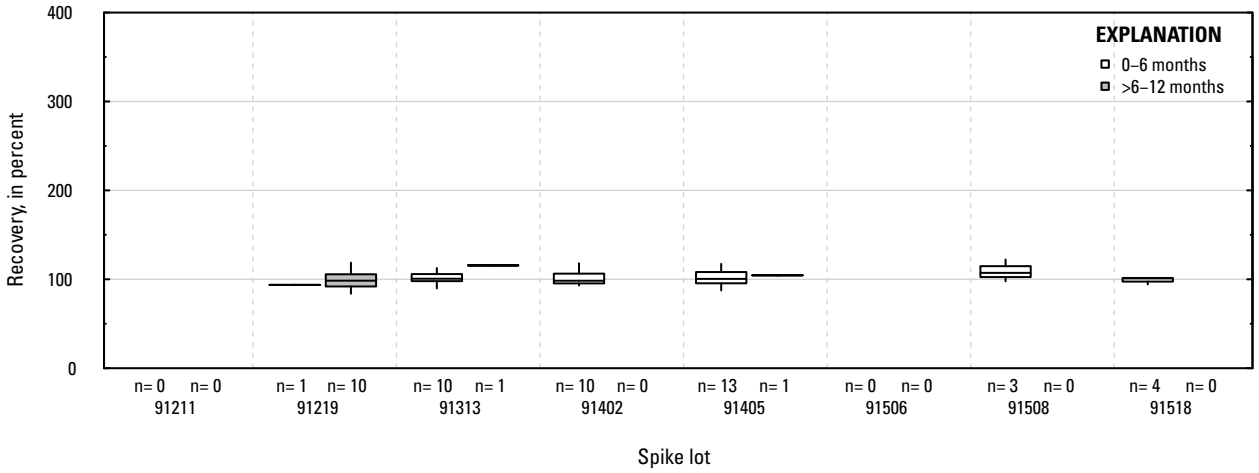


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

GH. **Demethyl hexazinone B: laboratory reagent spikes**



GI. **Demethyl hexazinone B: groundwater field matrix spikes**



GJ. **Demethyl hexazinone B: surface water field matrix spikes**

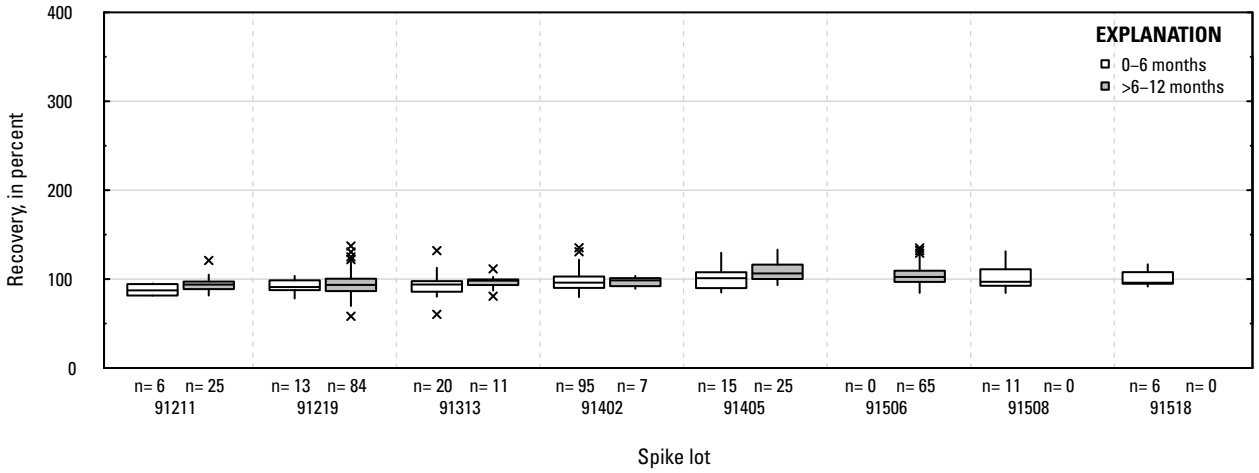
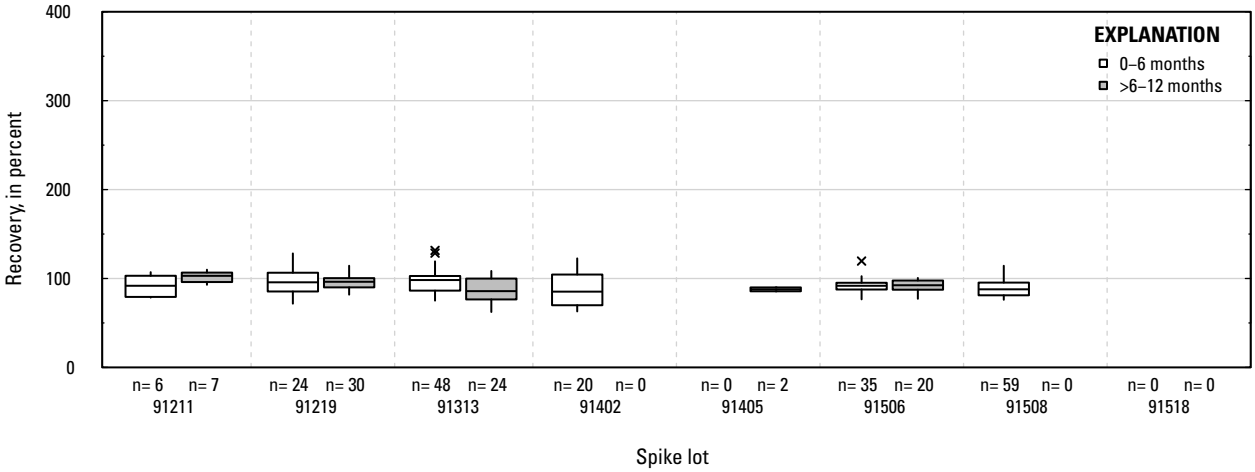
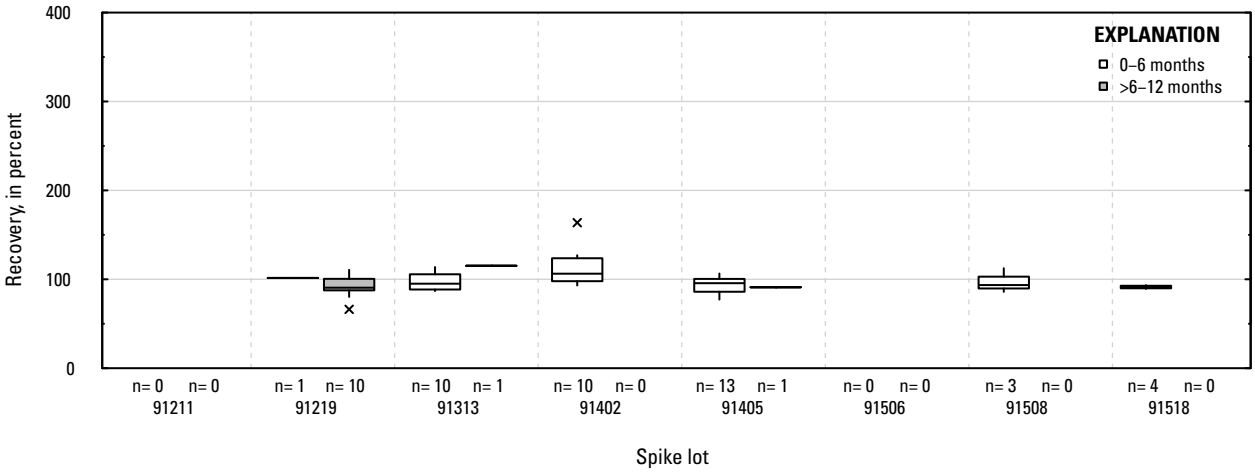


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

GK. **Demethyl norflurazon: laboratory reagent spikes**



GL. **Demethyl norflurazon: groundwater field matrix spikes**



GM. **Demethyl norflurazon: surface water field matrix spikes**

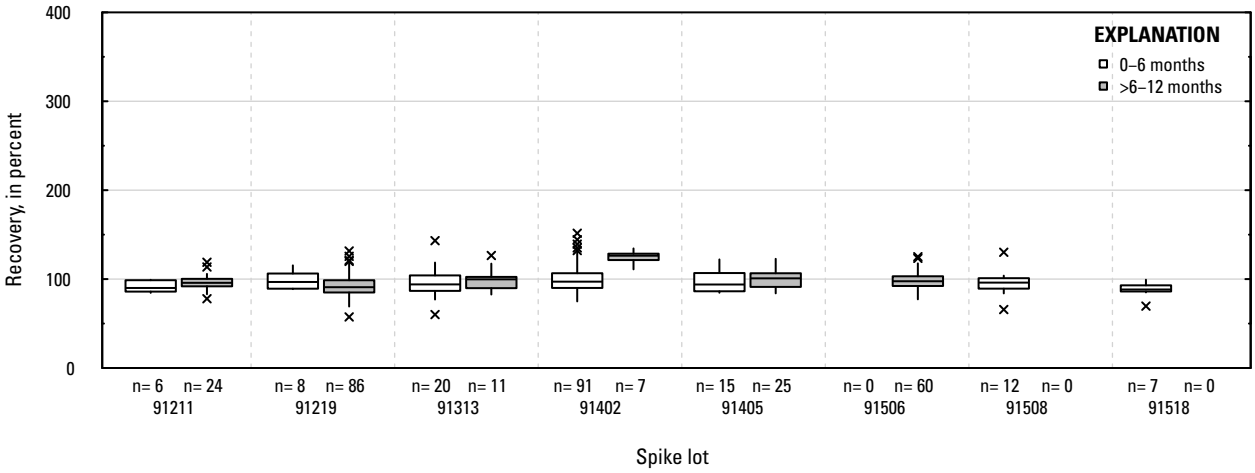
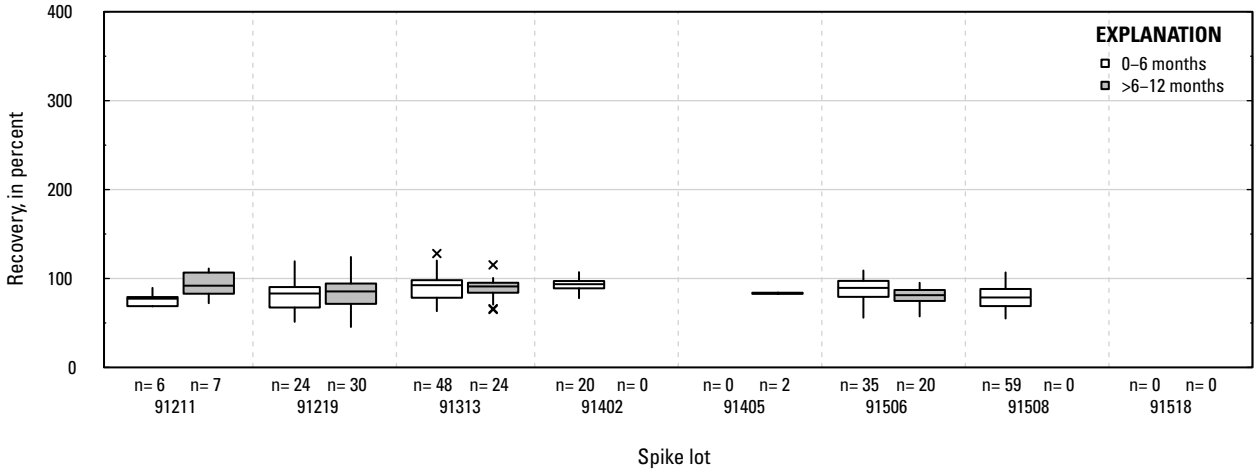
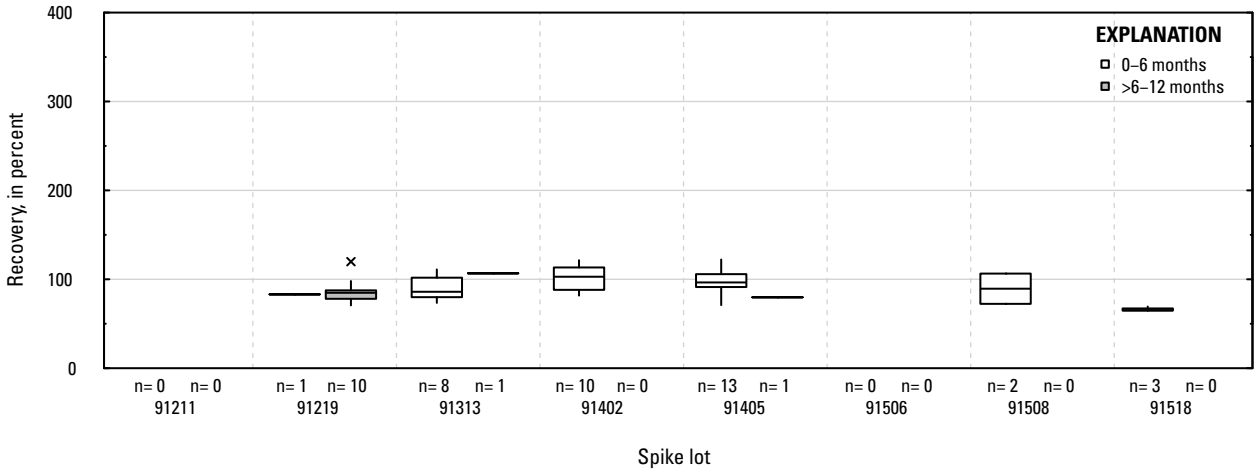


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

GN. **Deiodo flubendiamide: laboratory reagent spikes**



GO. **Deiodo flubendiamide: groundwater field matrix spikes**



GP. **Deiodo flubendiamide: surface water field matrix spikes**

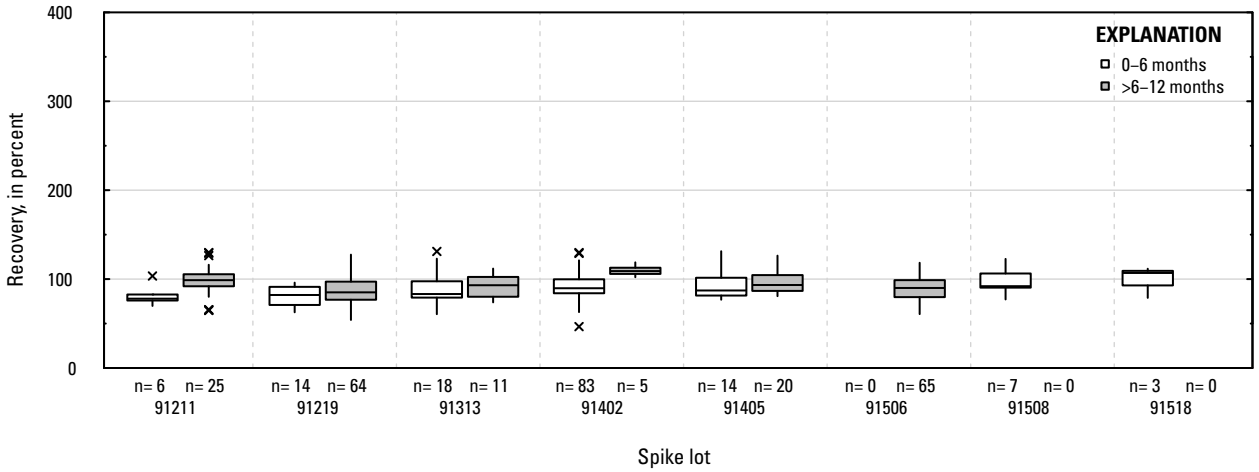
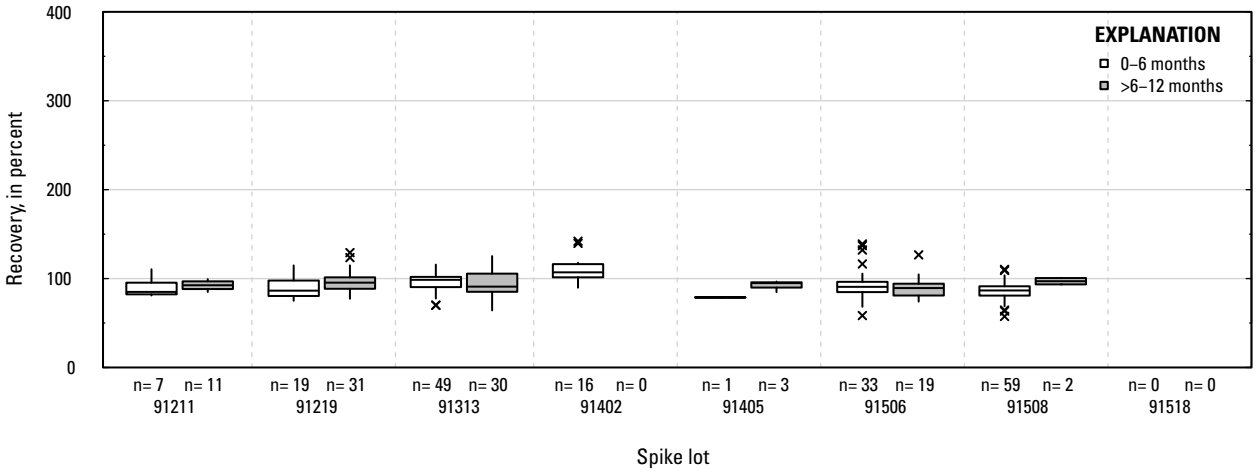
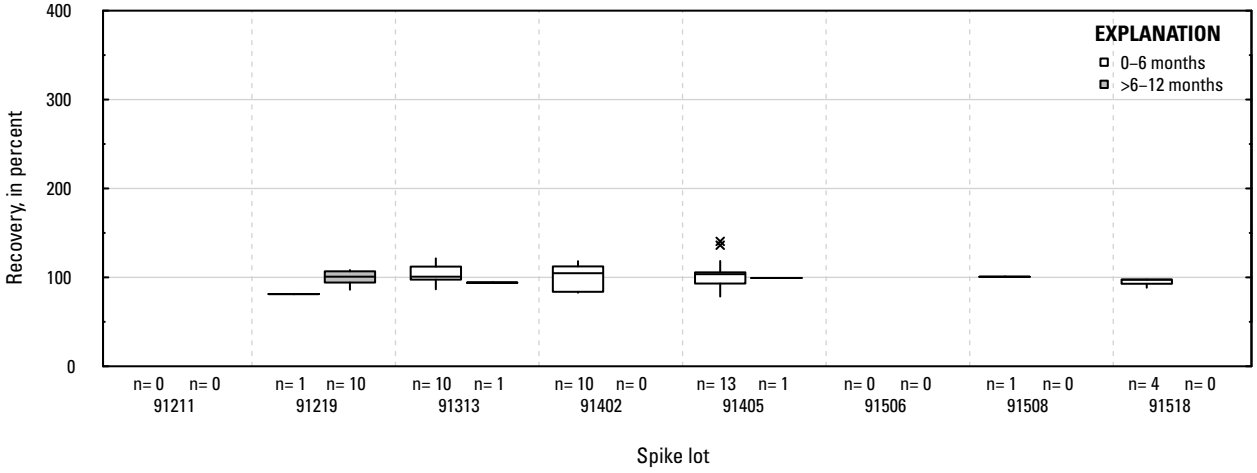


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

GQ. **Desulfinylfipronil: laboratory reagent spikes**



GR. **Desulfinylfipronil: groundwater field matrix spikes**



GS. **Desulfinylfipronil: surface water field matrix spikes**

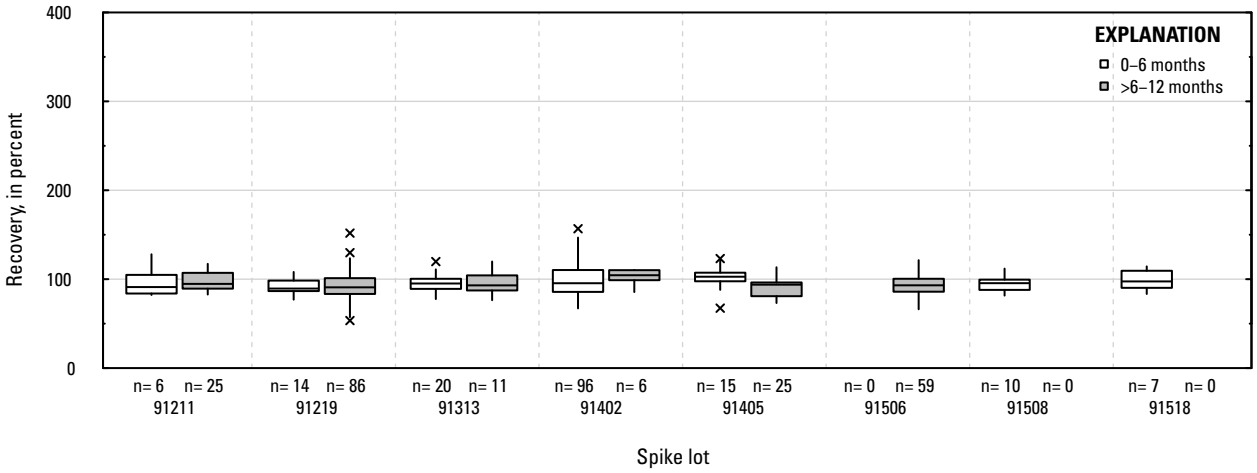
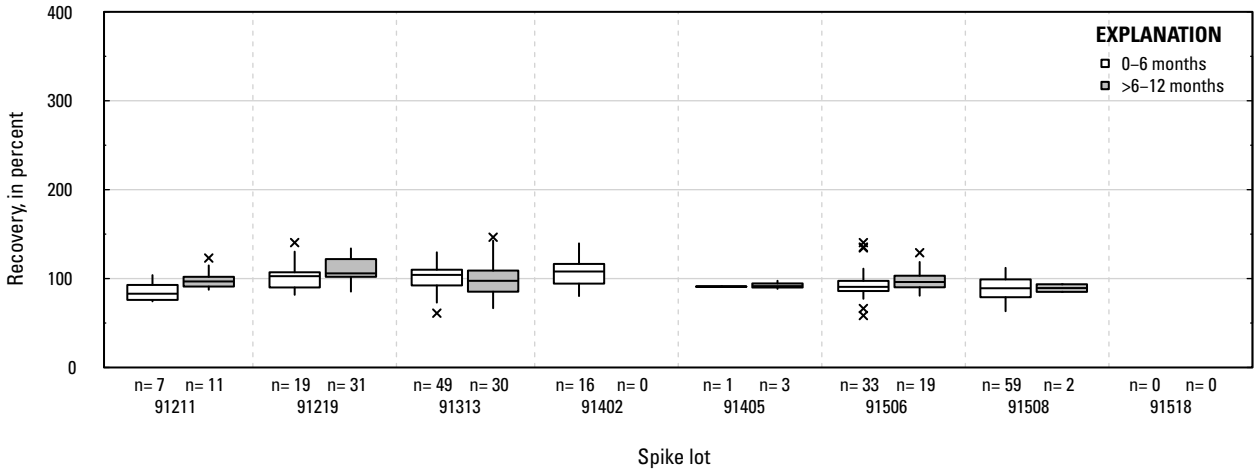
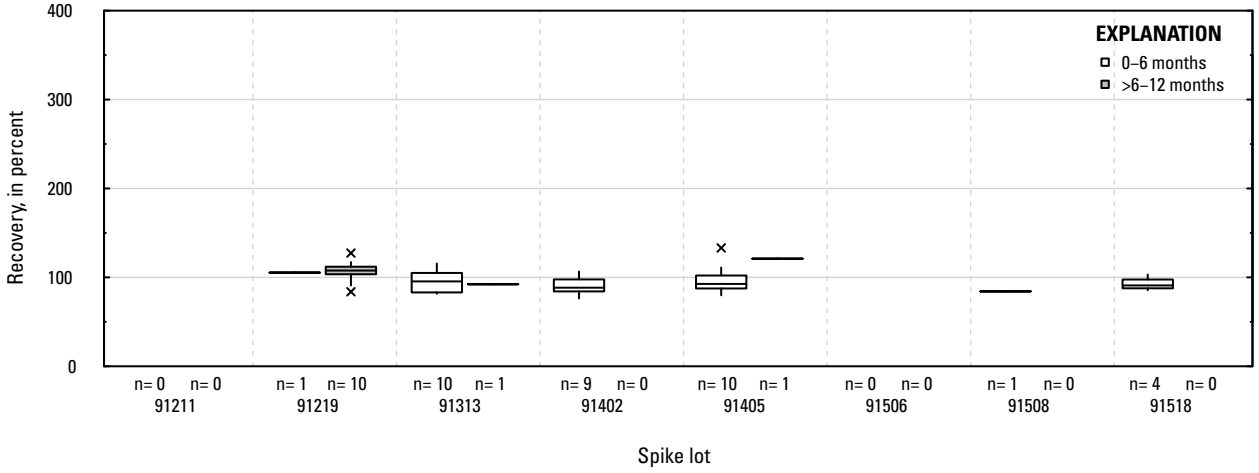


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

GT. **Desulfinylfipronil amide: laboratory reagent spikes**



GU. **Desulfinylfipronil amide: groundwater field matrix spikes**



GV. **Desulfinylfipronil amide: surface water field matrix spikes**

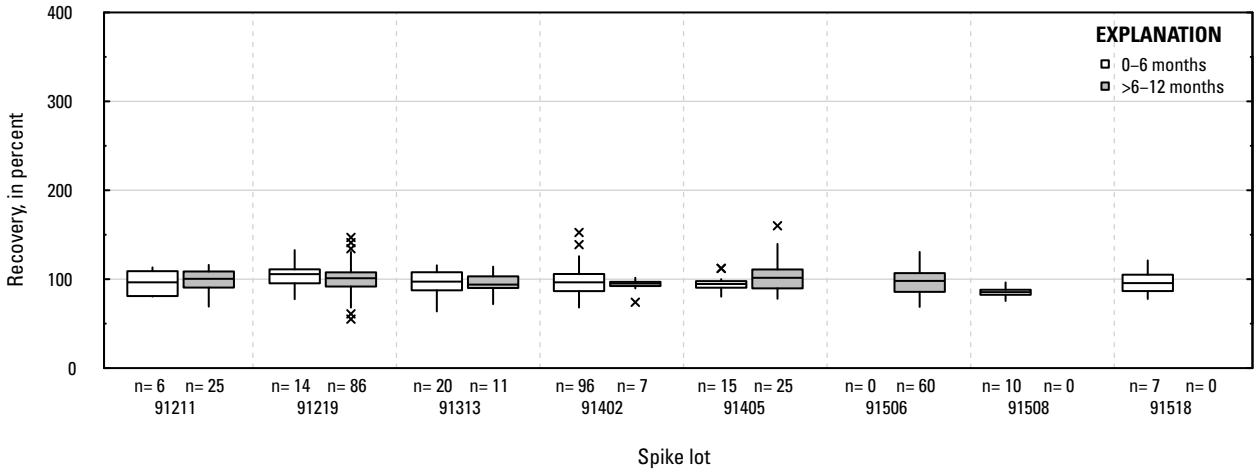
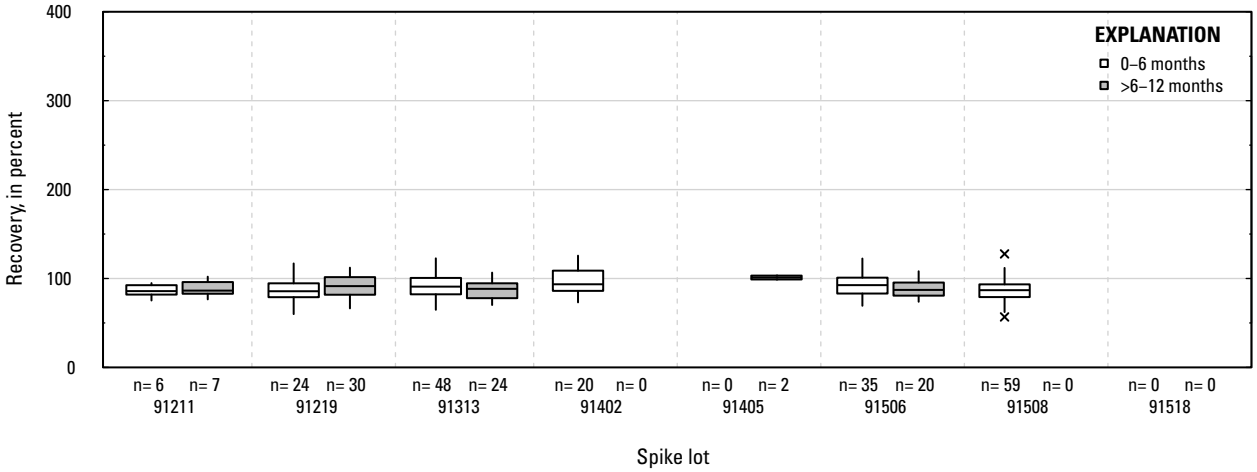
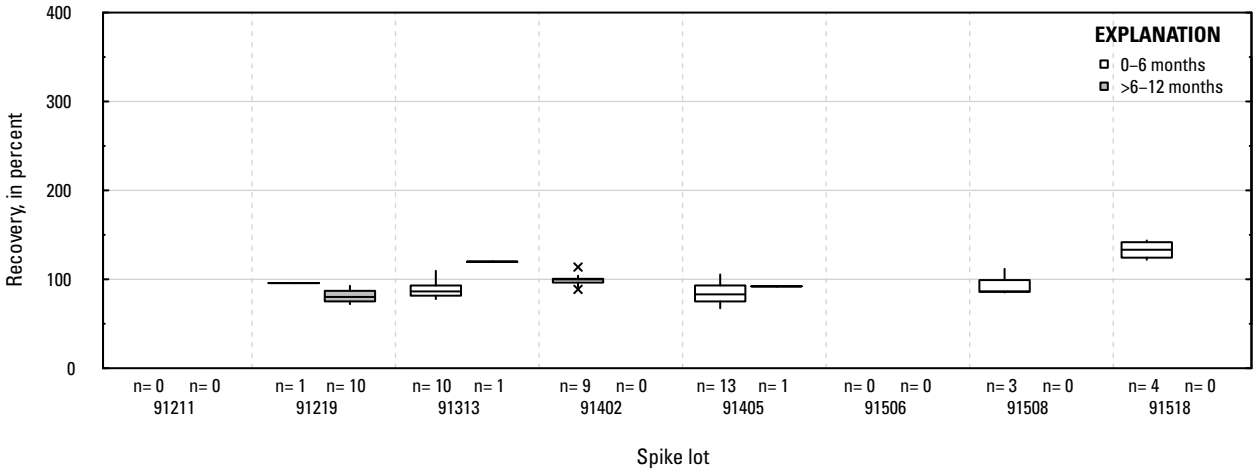


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

GW. **Diazinon: laboratory reagent spikes**



GX. **Diazinon: groundwater field matrix spikes**



GY. **Diazinon: surface water field matrix spikes**

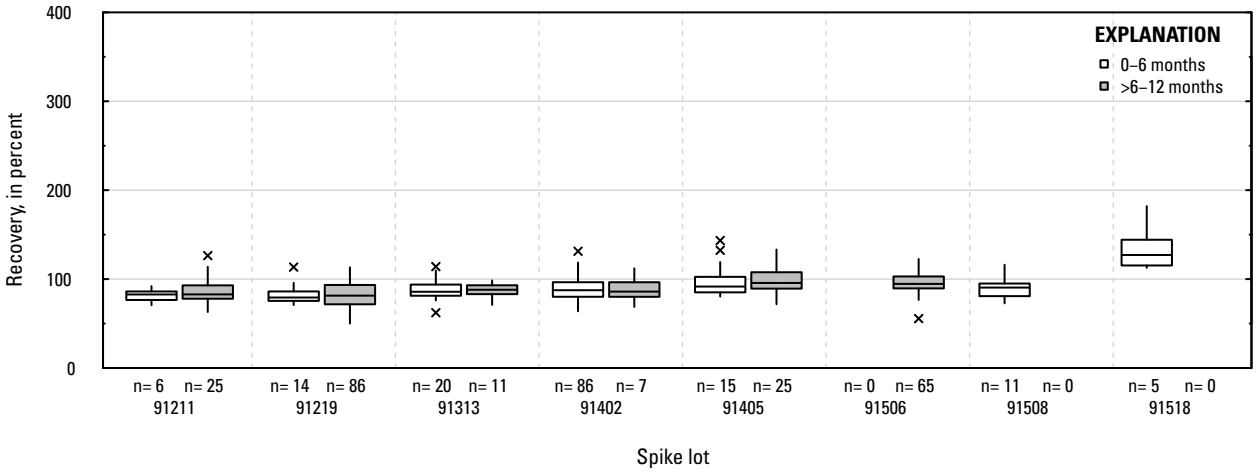
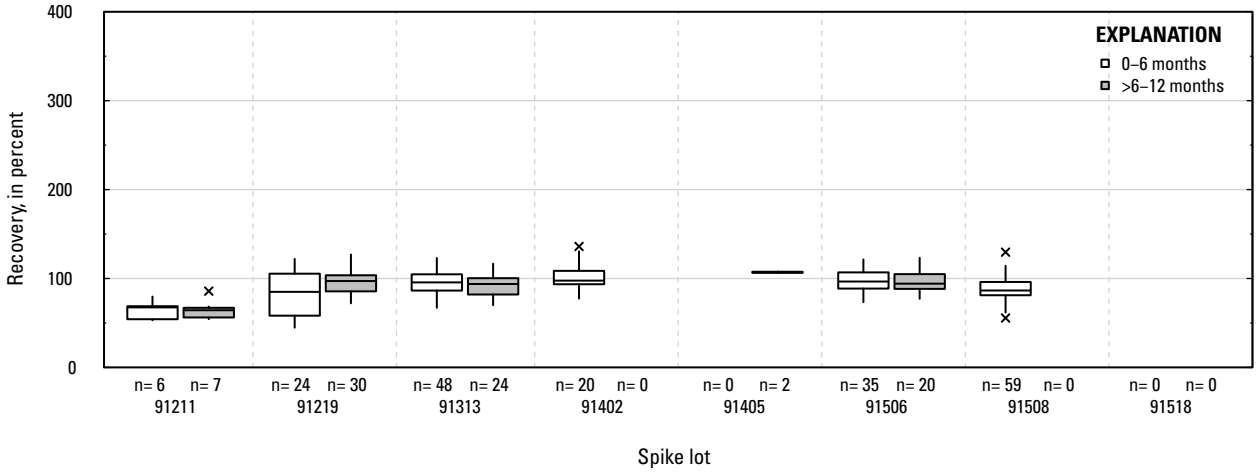
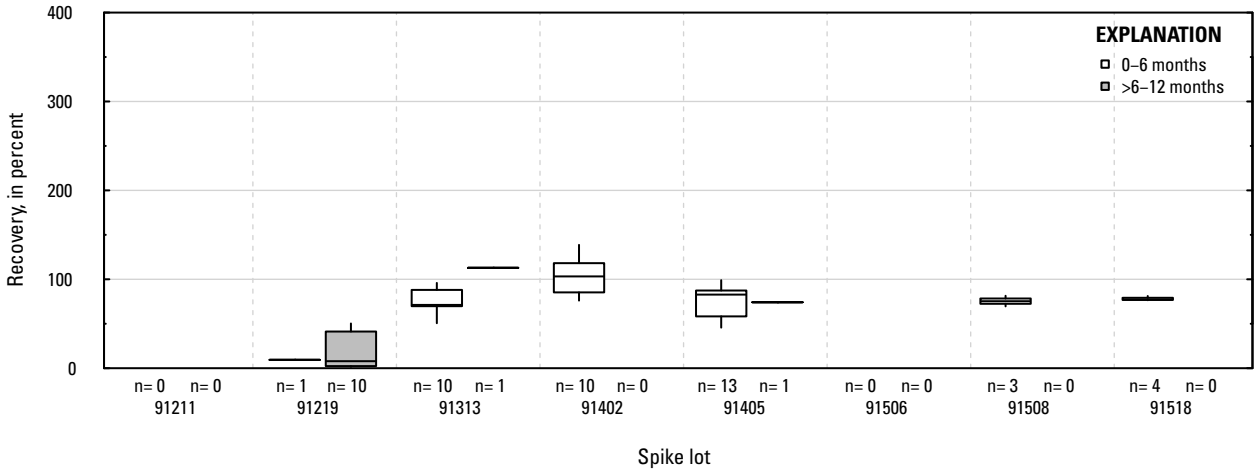


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

GZ. **Diazinon oxon: laboratory reagent spikes**



HA. **Diazinon oxon: groundwater field matrix spikes**



HB. **Diazinon oxon: surface water field matrix spikes**

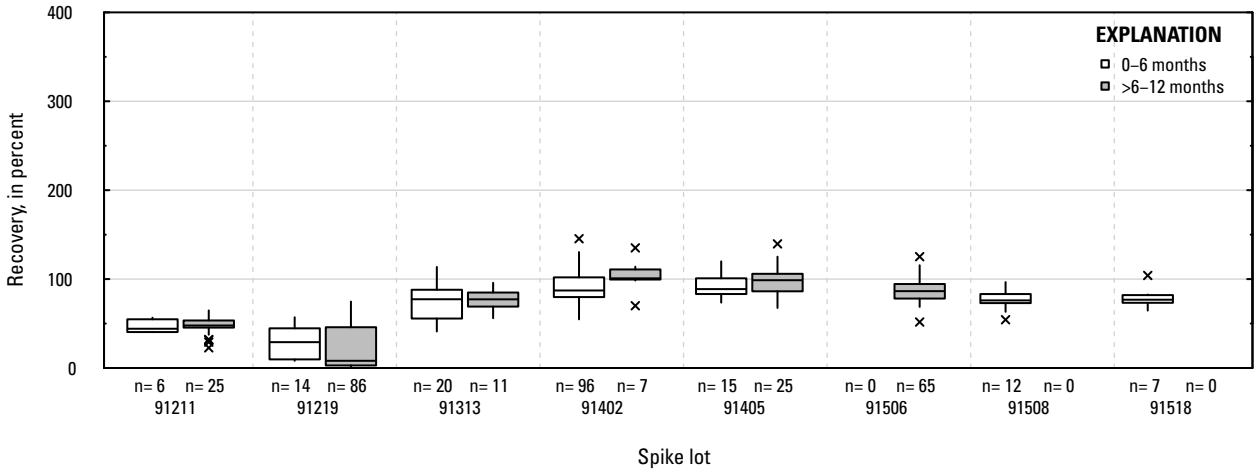
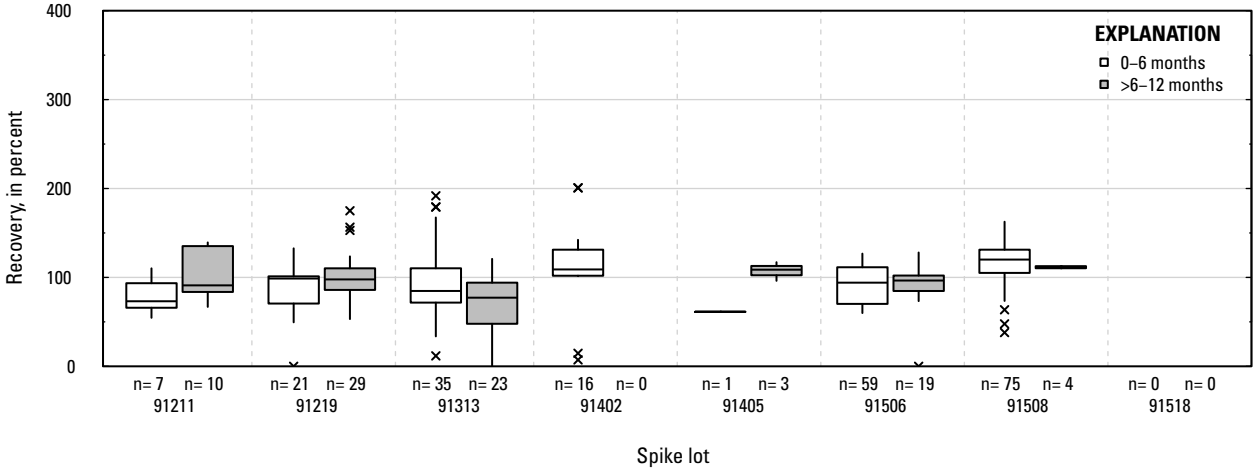
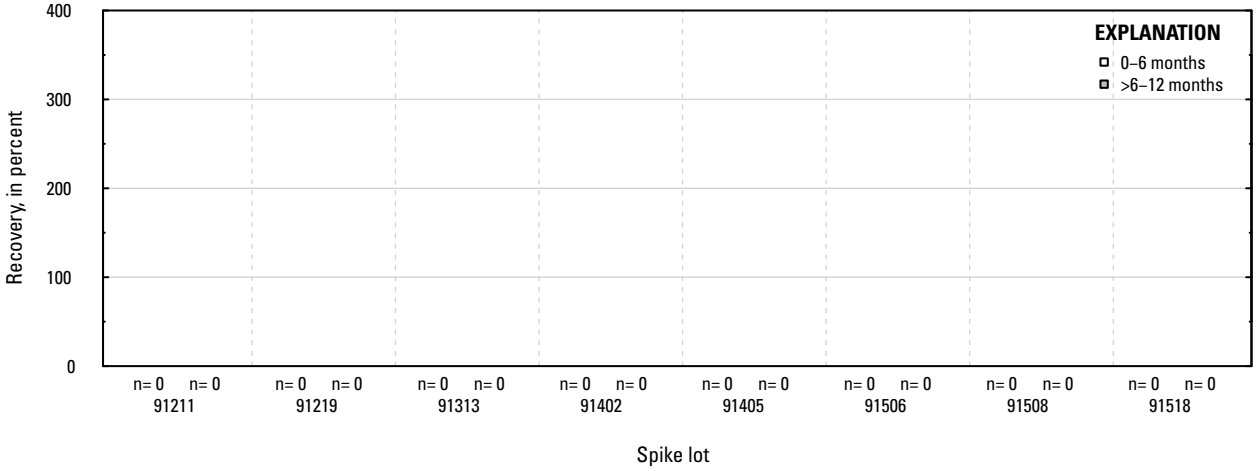


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

HC. **Dicamba: laboratory reagent spikes**



HD. **Dicamba: groundwater field matrix spikes**



HE. **Dicamba: surface water field matrix spikes**

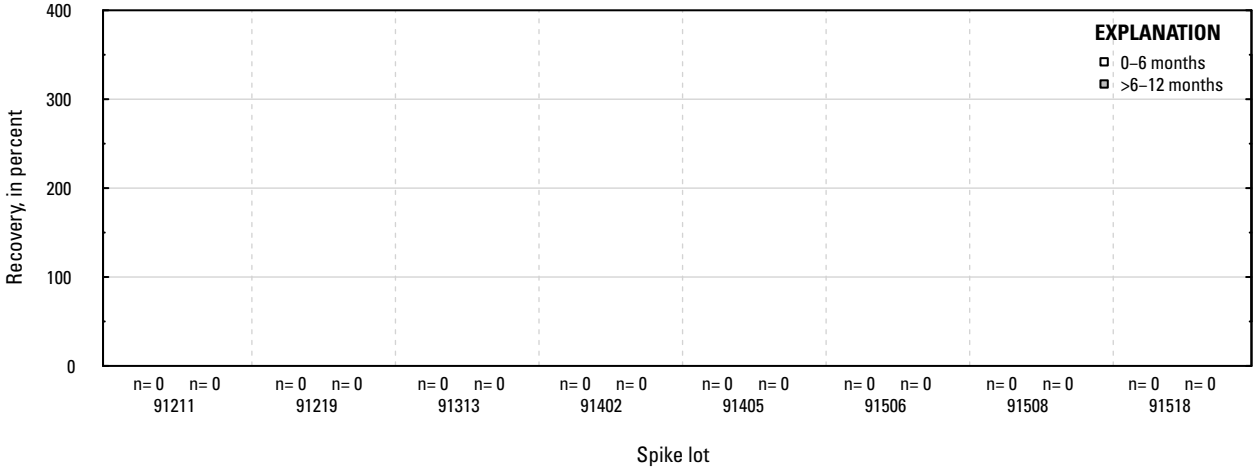
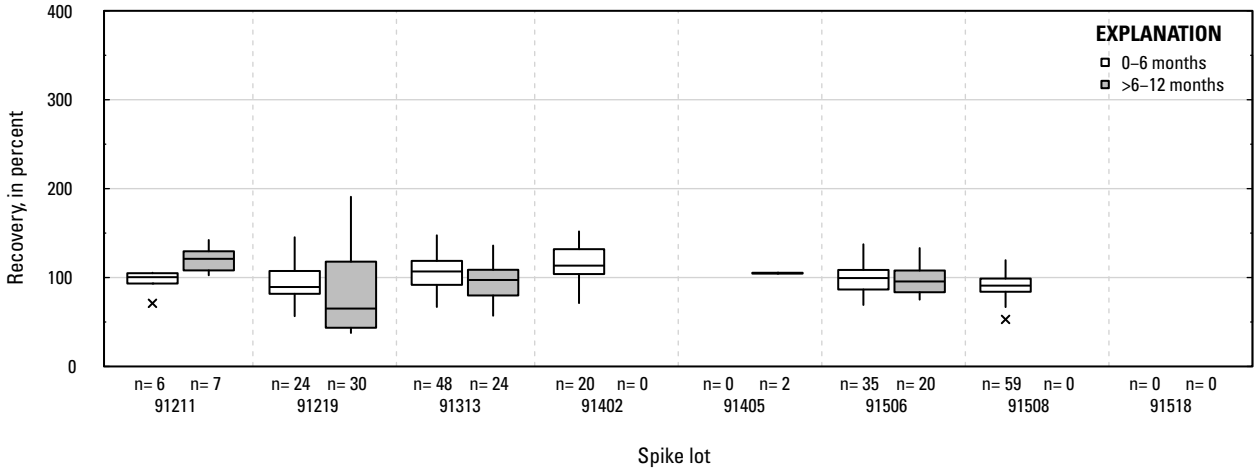
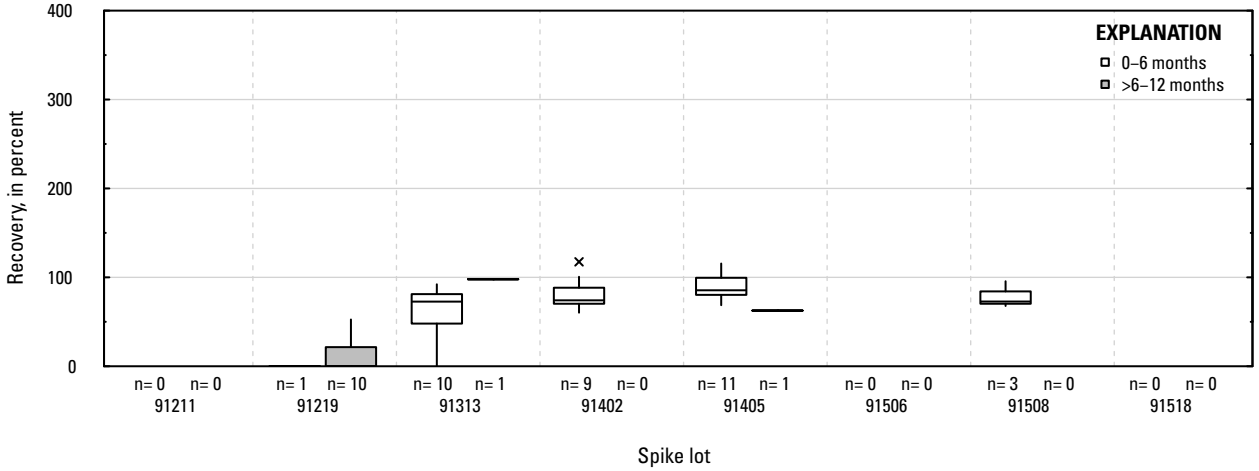


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

HF. **Dichlorvos: laboratory reagent spikes**



HG. **Dichlorvos: groundwater field matrix spikes**



HH. **Dichlorvos: surface water field matrix spikes**

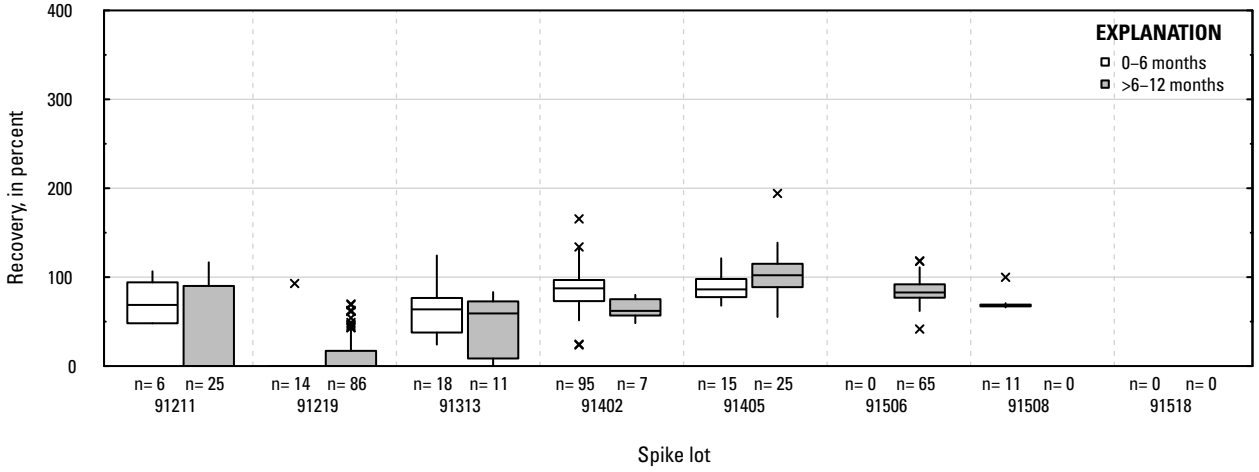
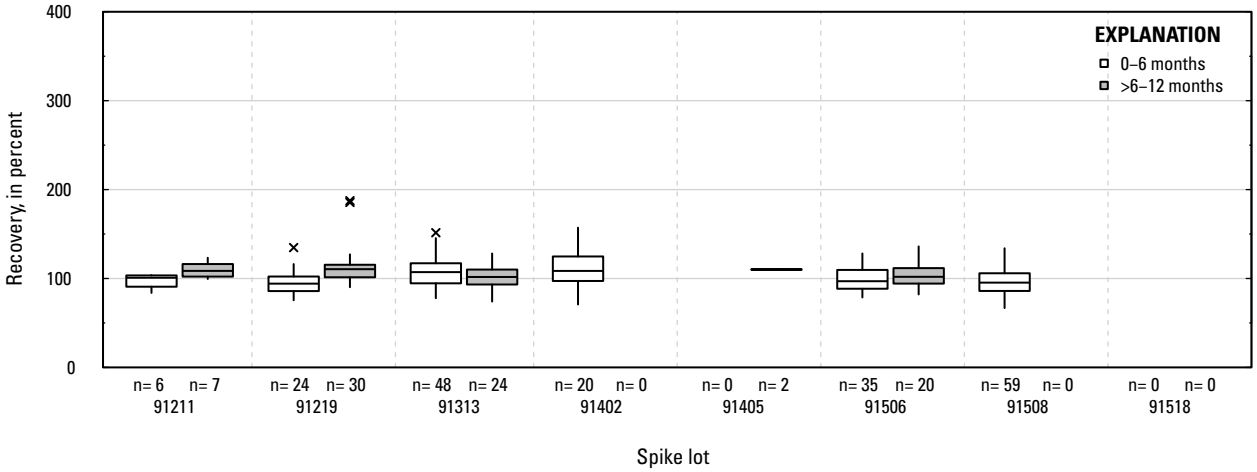
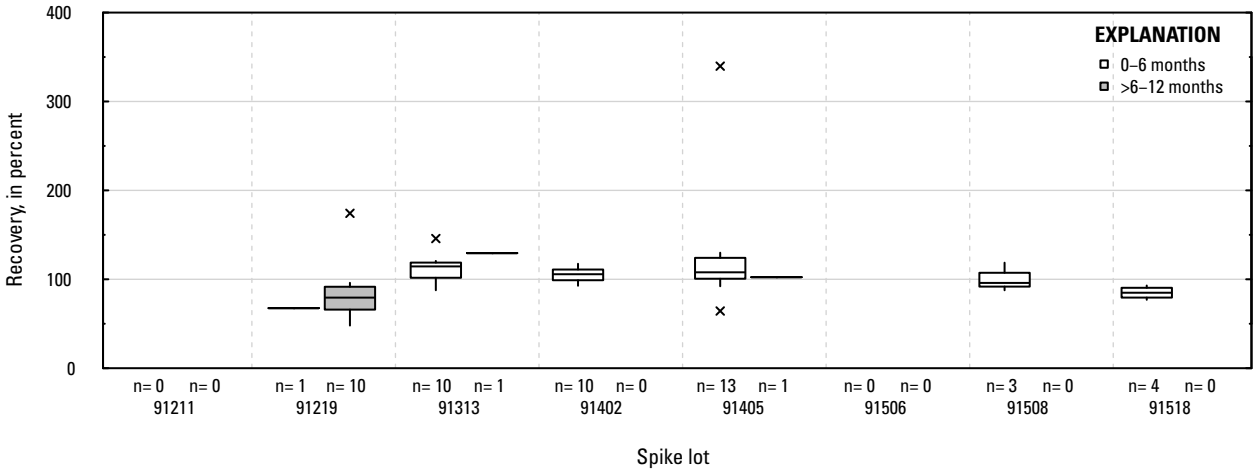


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

HI. **Dicrotophos: laboratory reagent spikes**



HJ. **Dicrotophos: groundwater field matrix spikes**



HK. **Dicrotophos: surface water field matrix spikes**

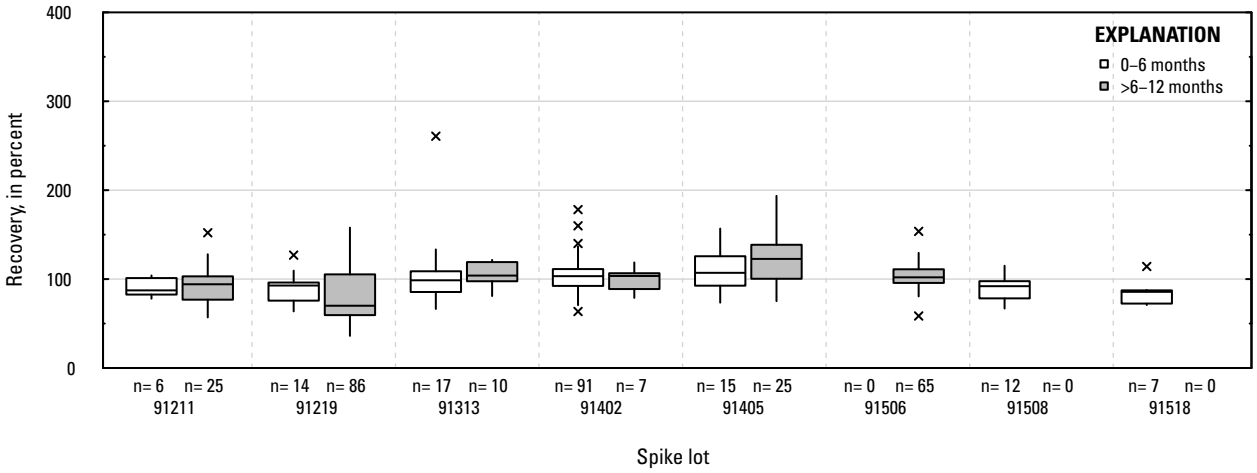
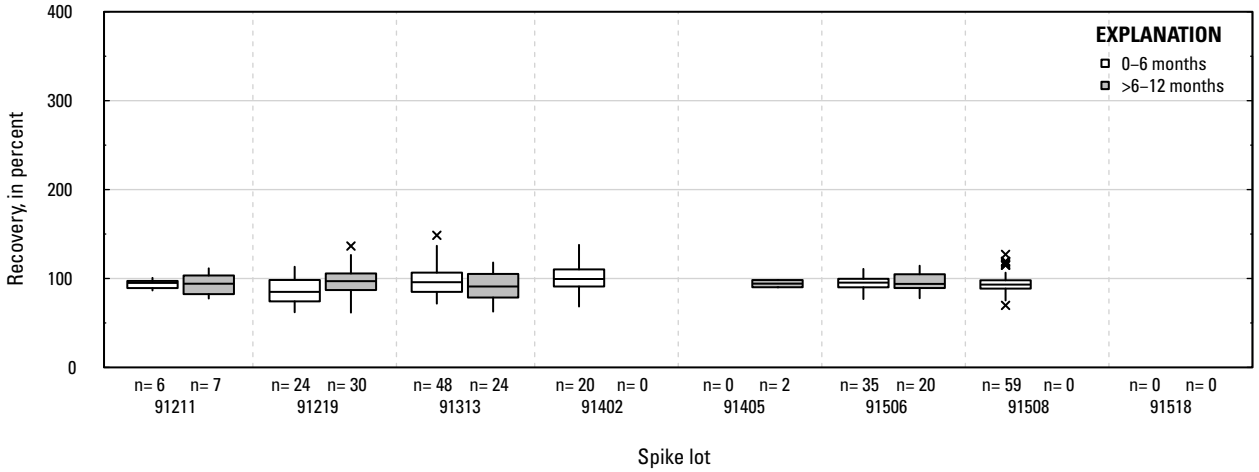
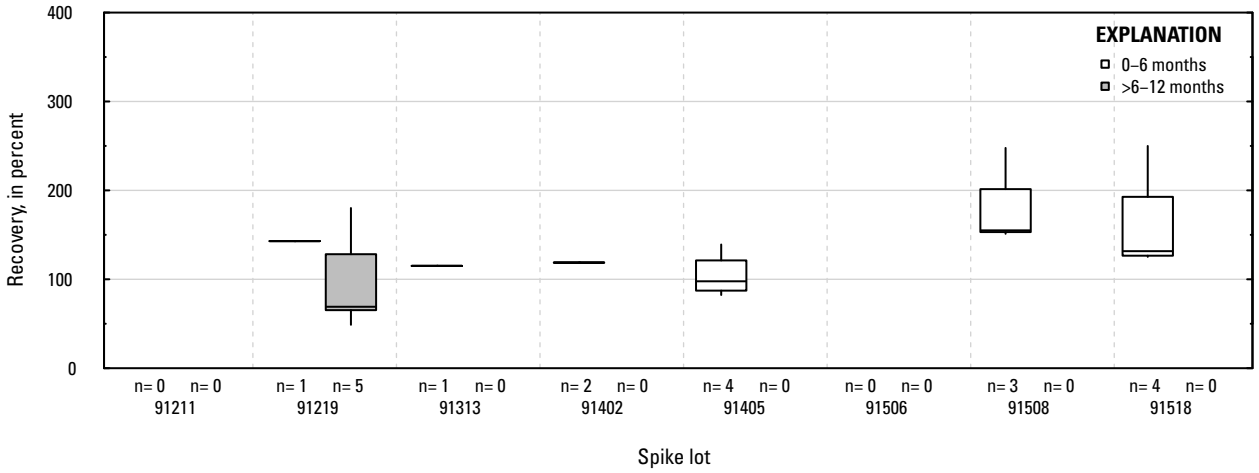


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

HL. **2–Chloro–4,6–diamino–s–triazine {CAAT} (Didealkylatrazine): laboratory reagent spikes**



HM. **2–Chloro–4,6–diamino–s–triazine {CAAT} (Didealkylatrazine): groundwater field matrix spikes**



HN. **2–Chloro–4,6–diamino–s–triazine {CAAT} (Didealkylatrazine): surface water field matrix spikes**

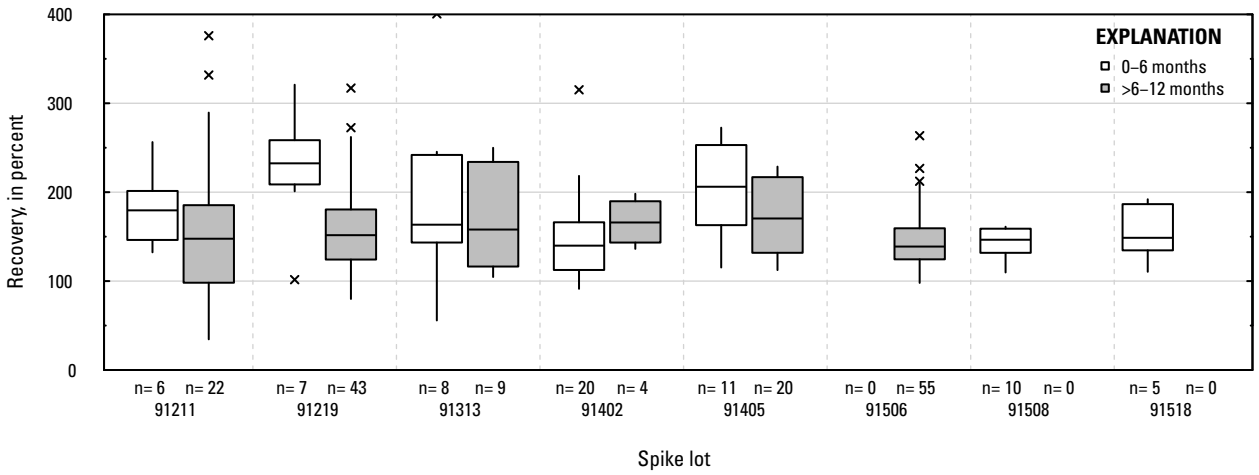
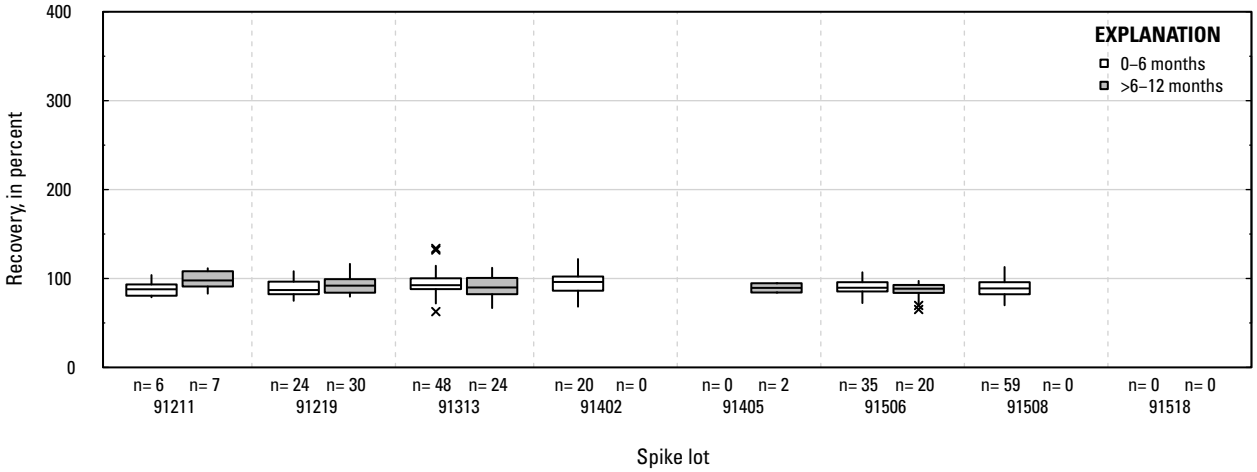
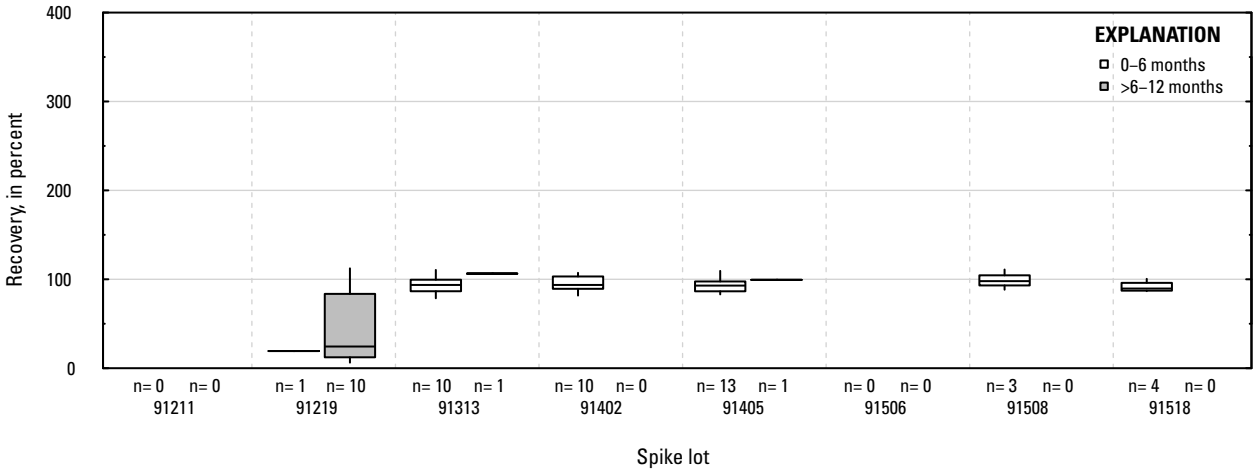


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

HO. **Diflubenzuron: laboratory reagent spikes**



HP. **Diflubenzuron: groundwater field matrix spikes**



HQ. **Diflubenzuron: surface water field matrix spikes**

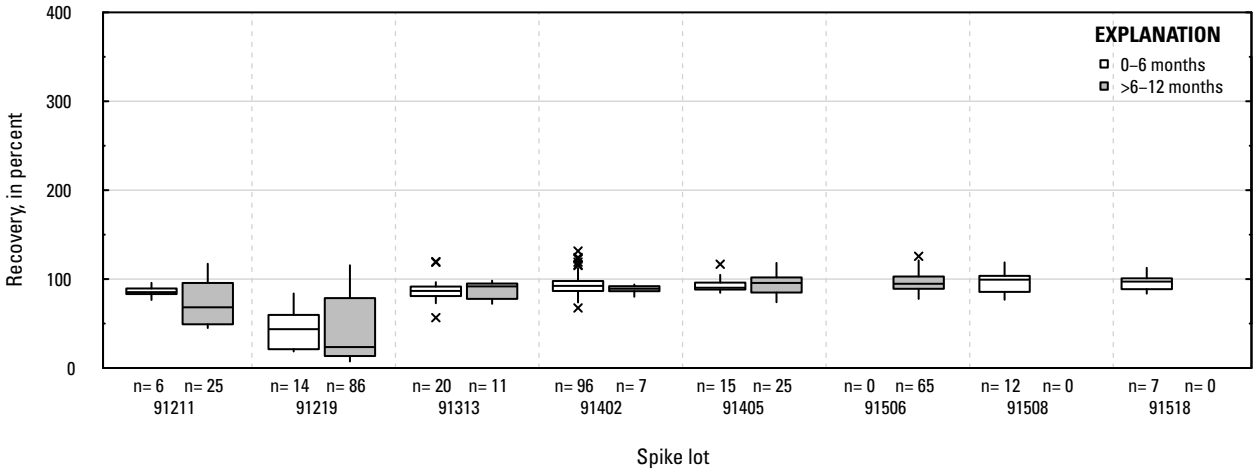
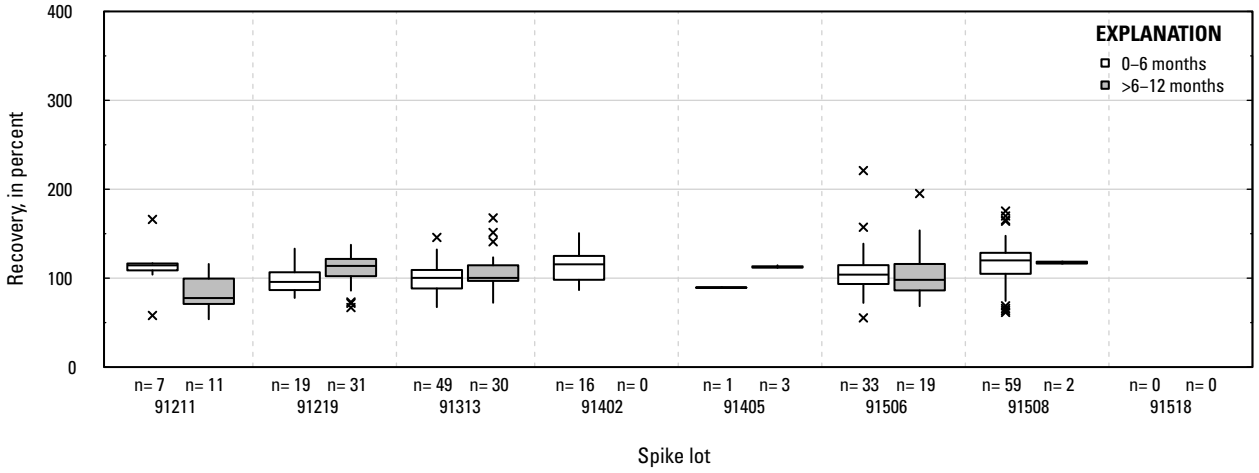
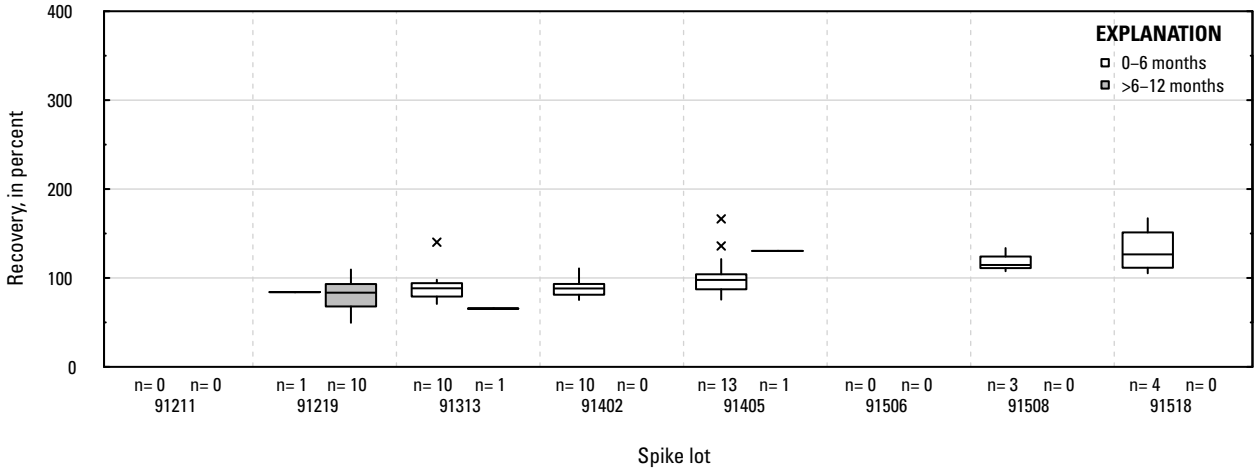


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

HR. **Diflufenzopyr: laboratory reagent spikes**



HS. **Diflufenzopyr: groundwater field matrix spikes**



HT. **Diflufenzopyr: surface water field matrix spikes**

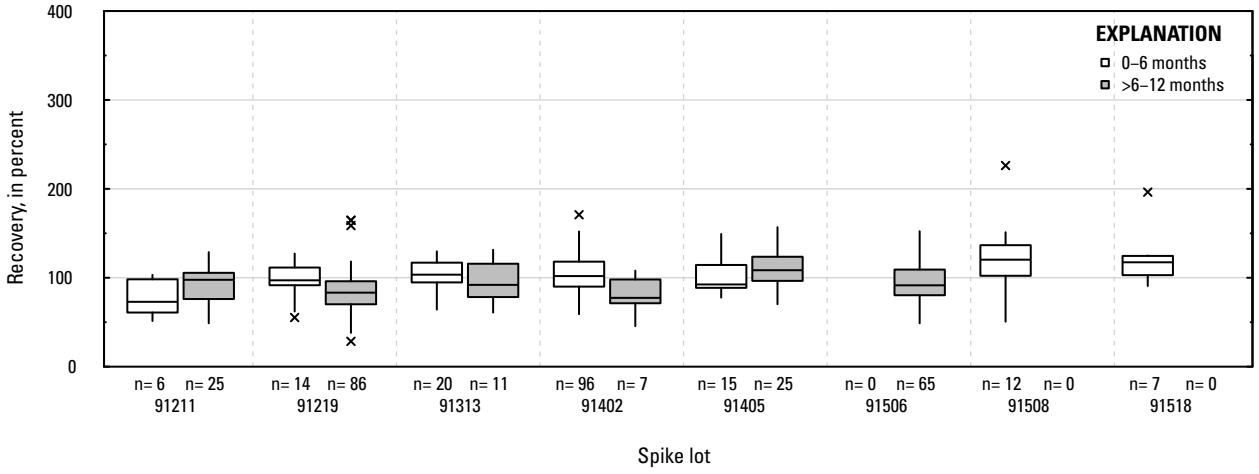
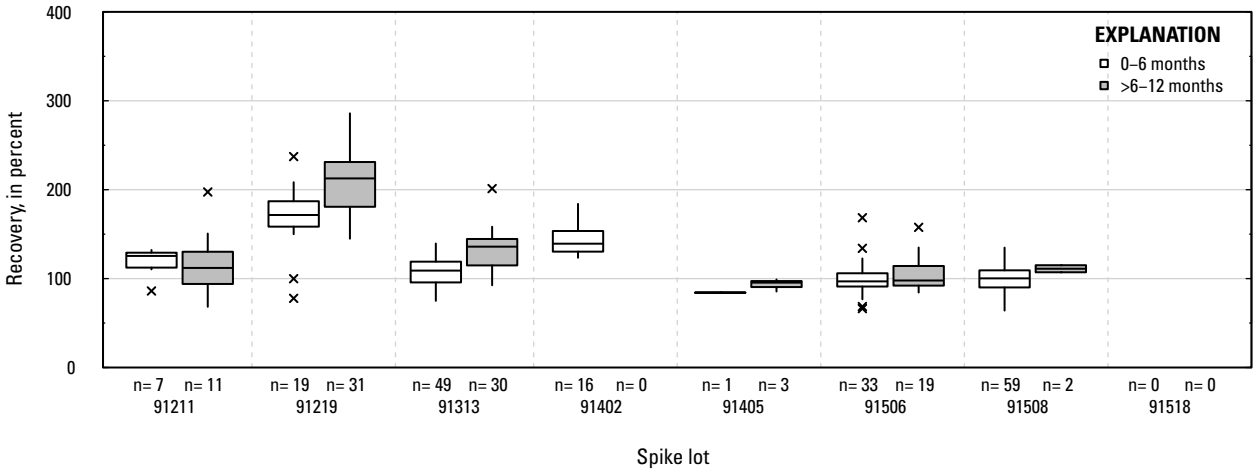
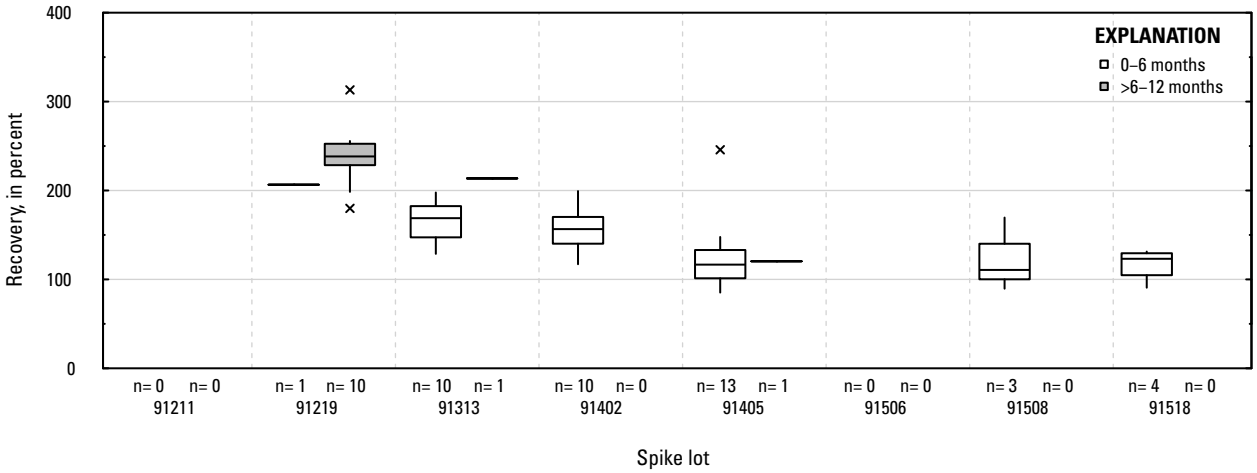


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

HU. **Diketonitrile–isoxaflutole: laboratory reagent spikes**



HV. **Diketonitrile–isoxaflutole: groundwater field matrix spikes**



HW. **Diketonitrile–isoxaflutole: surface water field matrix spikes**

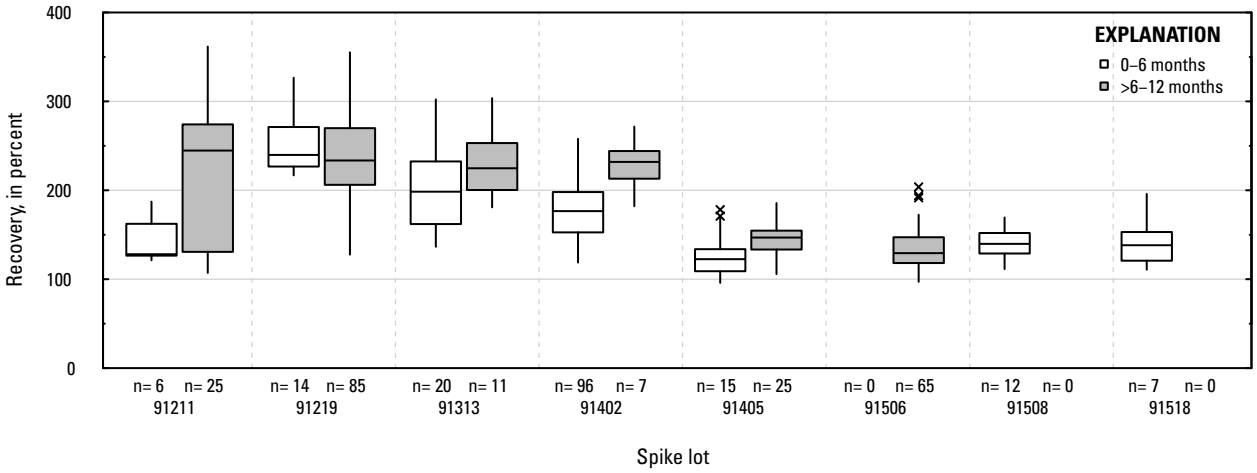
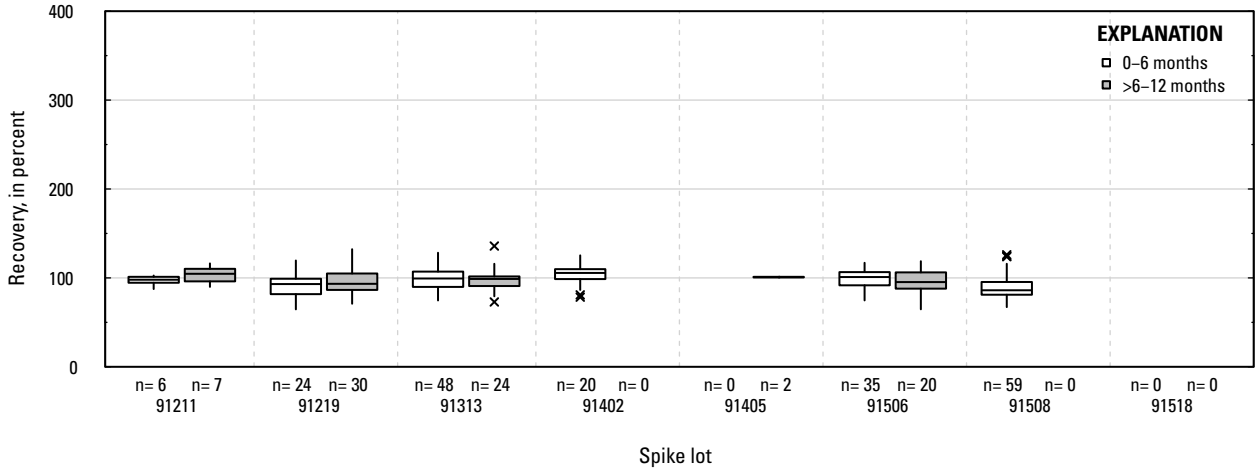
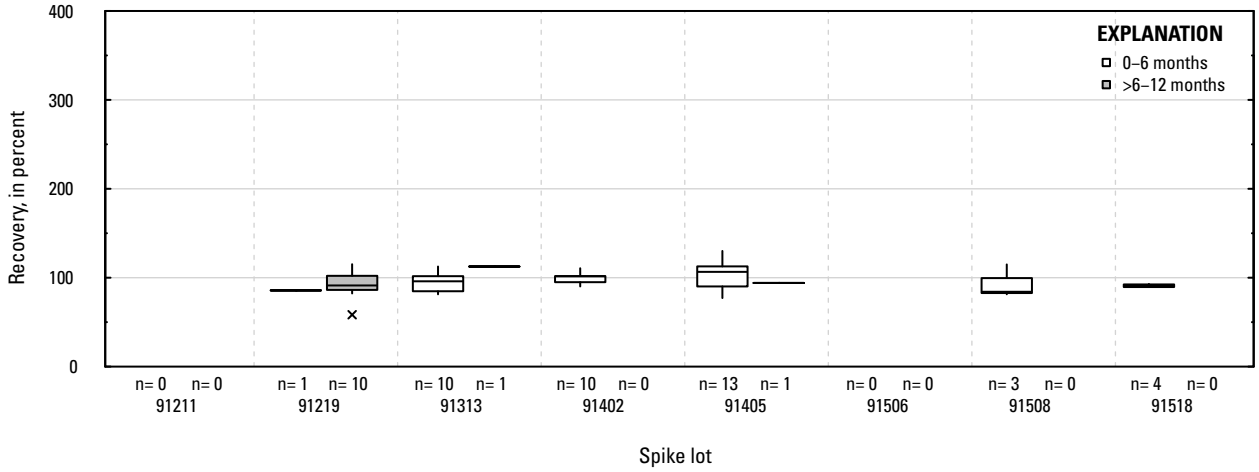


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

HX. **Dimethenamid: laboratory reagent spikes**



HY. **Dimethenamid: groundwater field matrix spikes**



HZ. **Dimethenamid: surface water field matrix spikes**

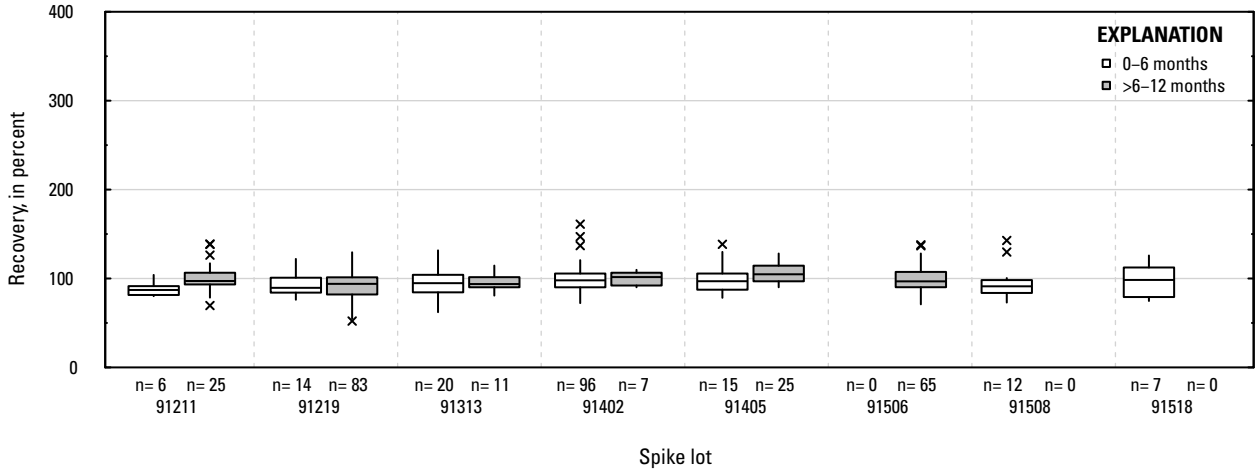
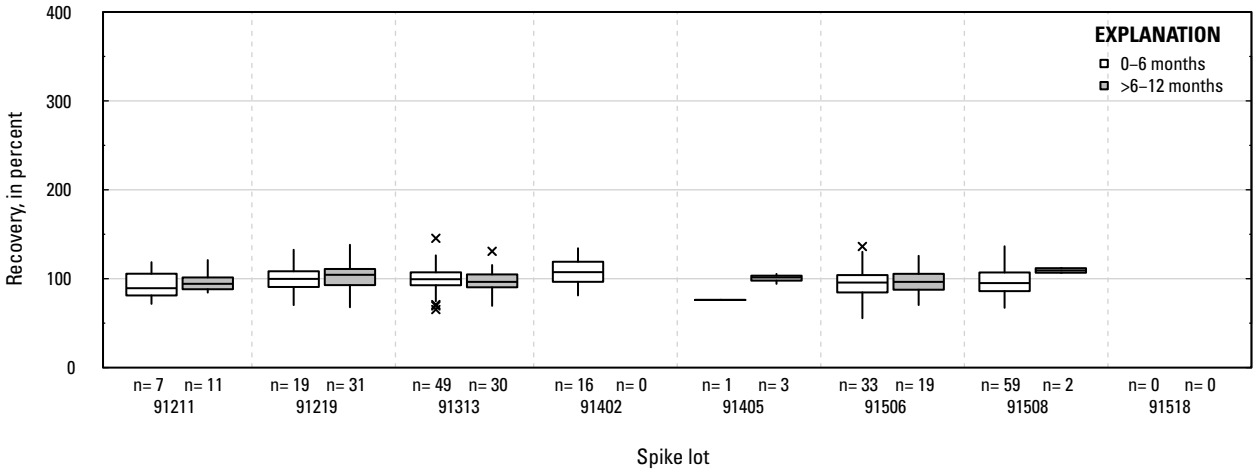
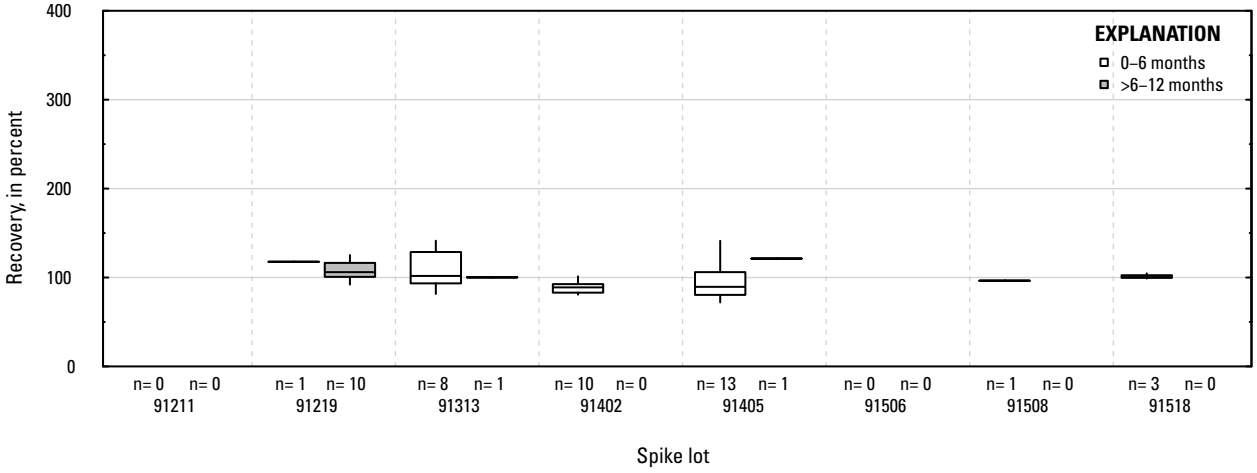


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

IA. **Dimethenamid oxanilic acid: laboratory reagent spikes**



IB. **Dimethenamid oxanilic acid: groundwater field matrix spikes**



IC. **Dimethenamid oxanilic acid: surface water field matrix spikes**

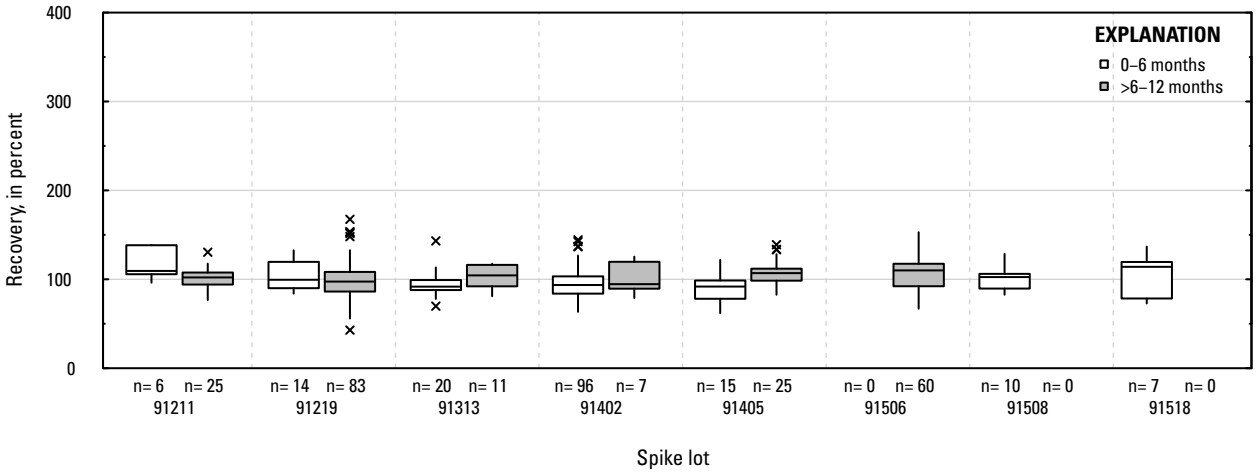
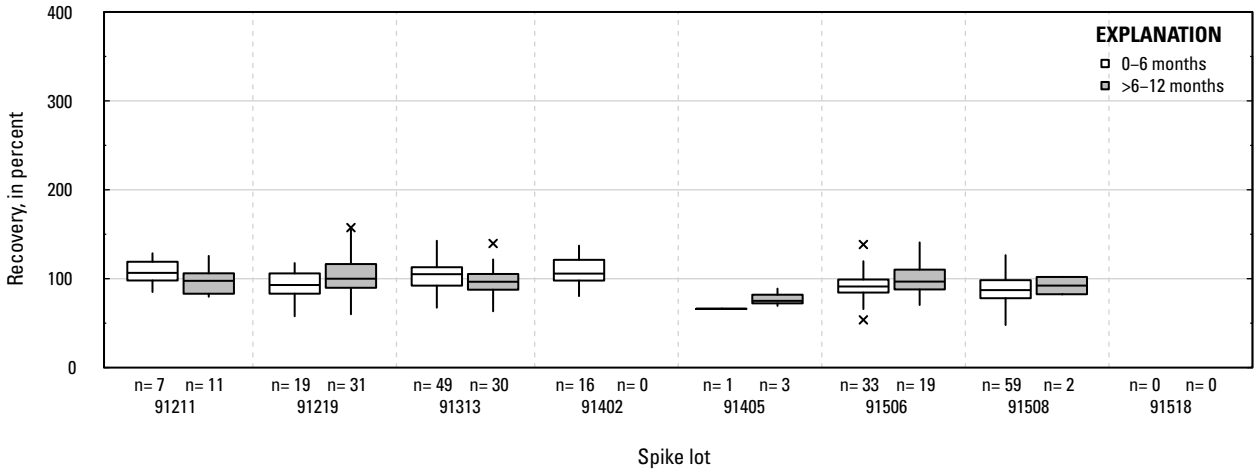
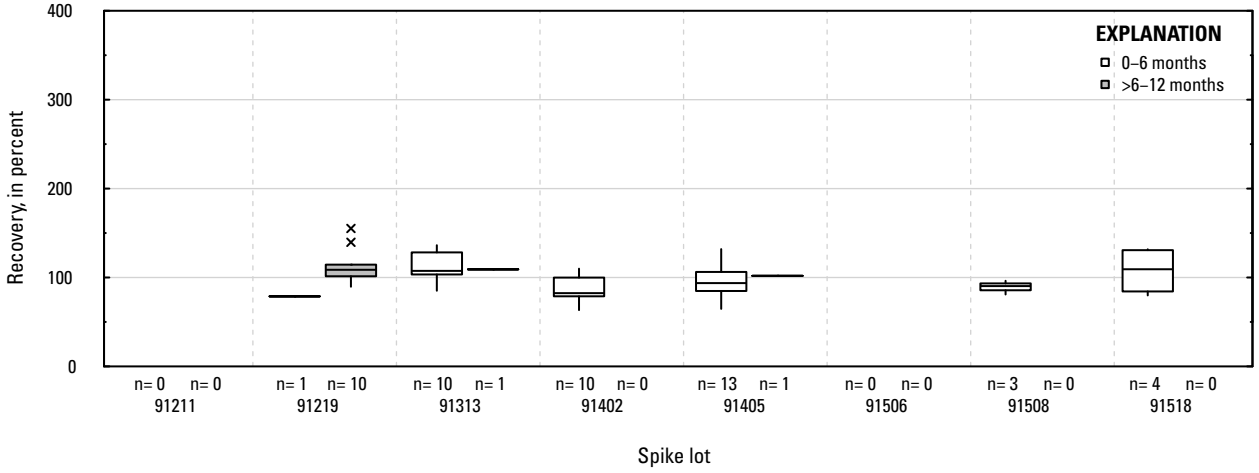


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

ID. **Dimethenamid sulfonic acid: laboratory reagent spikes**



IE. **Dimethenamid sulfonic acid: groundwater field matrix spikes**



IF. **Dimethenamid sulfonic acid: surface water field matrix spikes**

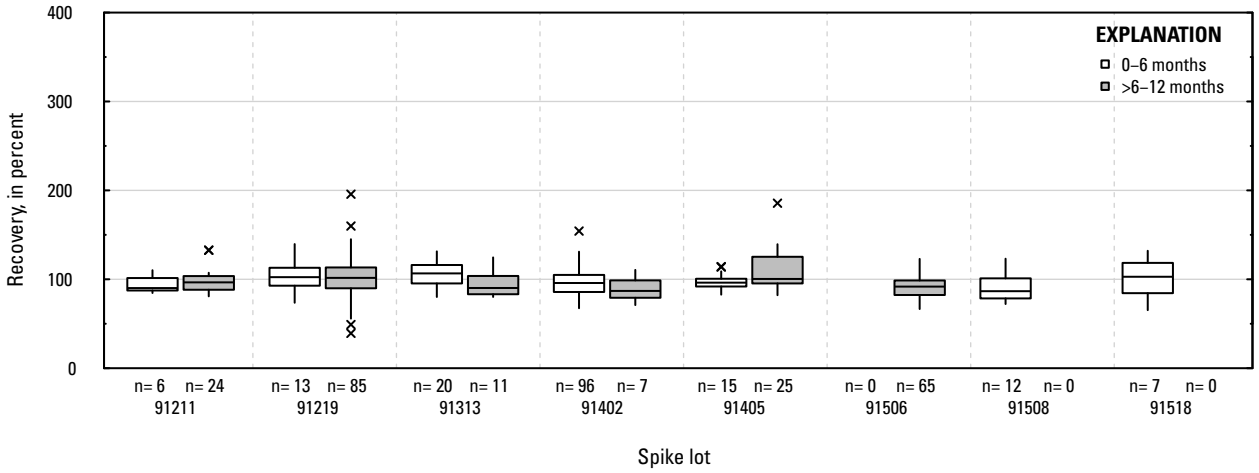
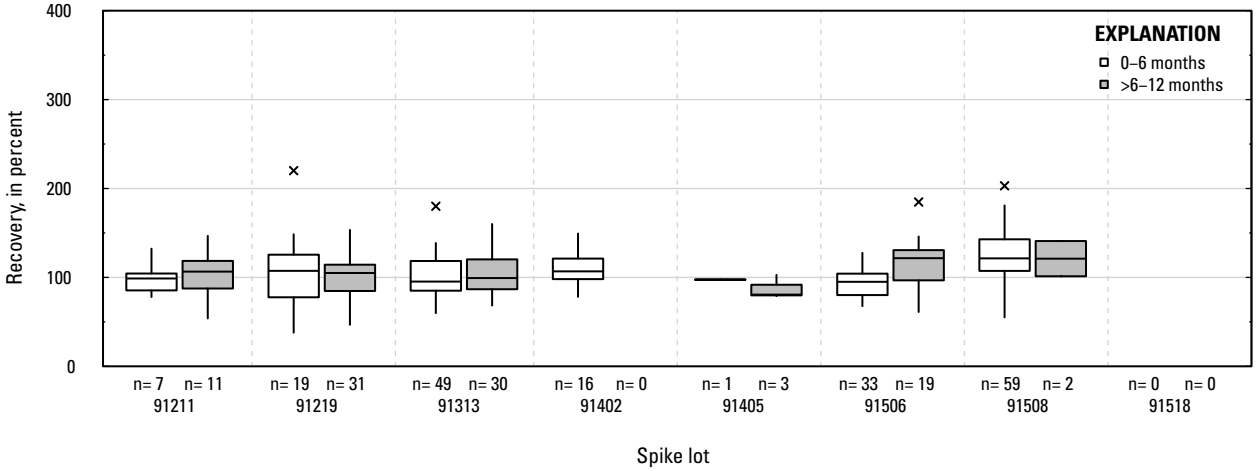
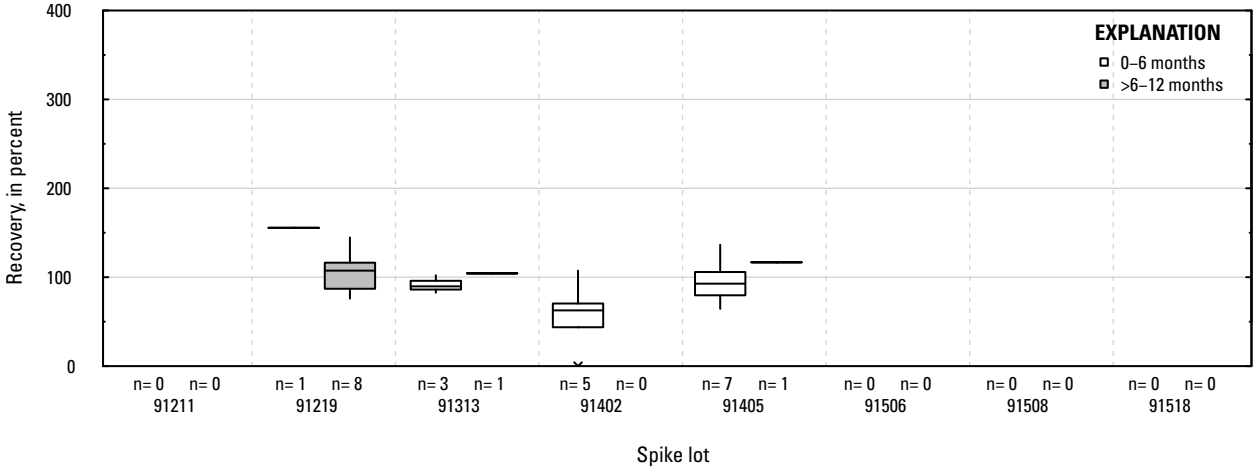


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

IG. **Dimethenamid SAA: laboratory reagent spikes**



IH. **Dimethenamid SAA: groundwater field matrix spikes**



II. **Dimethenamid SAA: surface water field matrix spikes**

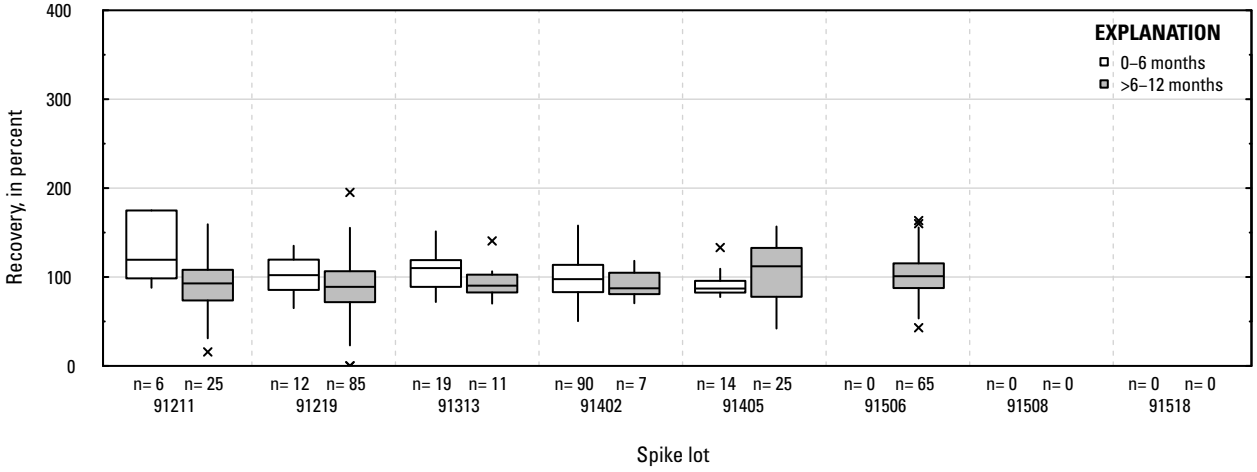
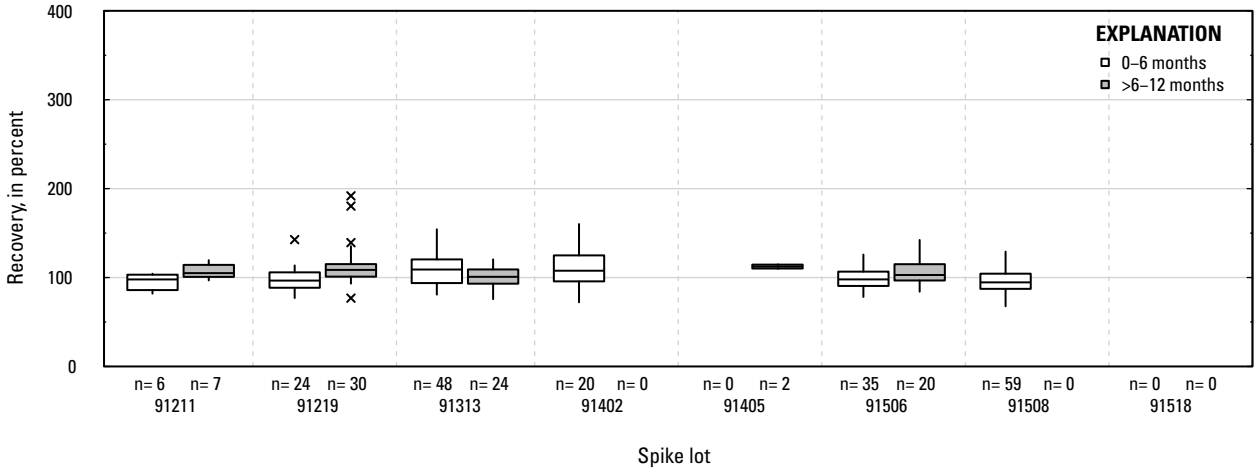
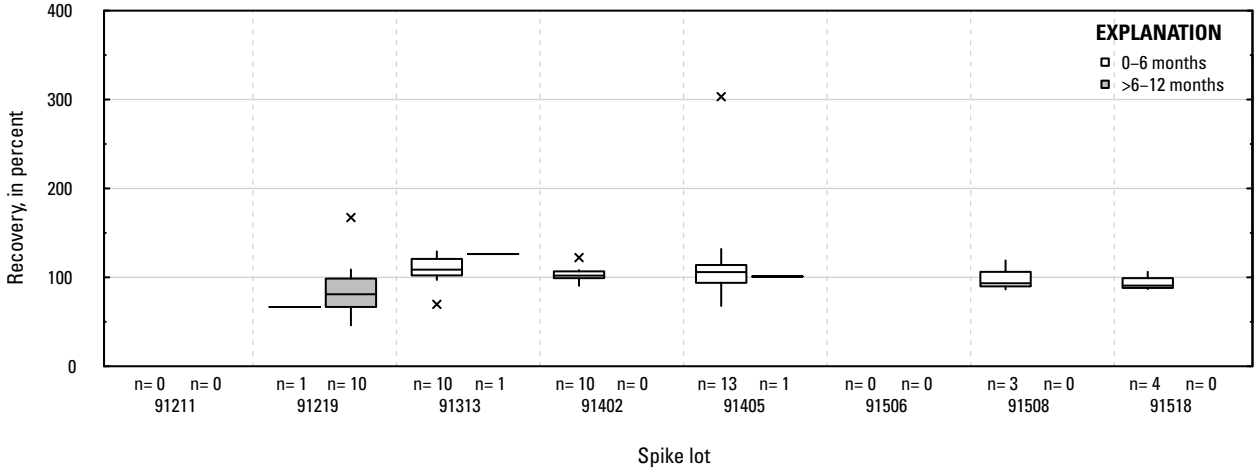


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

IJ. **Dimethoate: laboratory reagent spikes**



IK. **Dimethoate: groundwater field matrix spikes**



IL. **Dimethoate: surface water field matrix spikes**

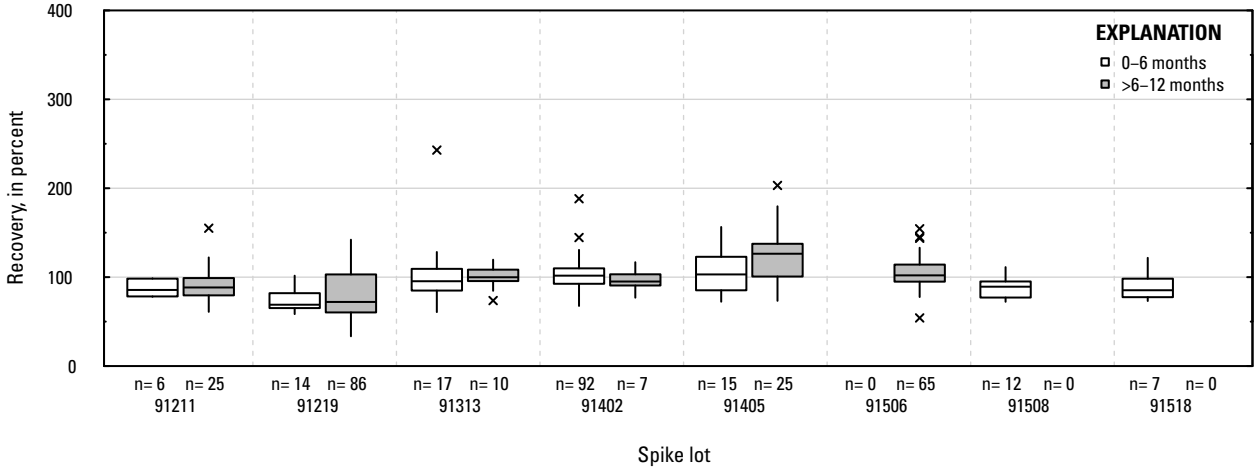
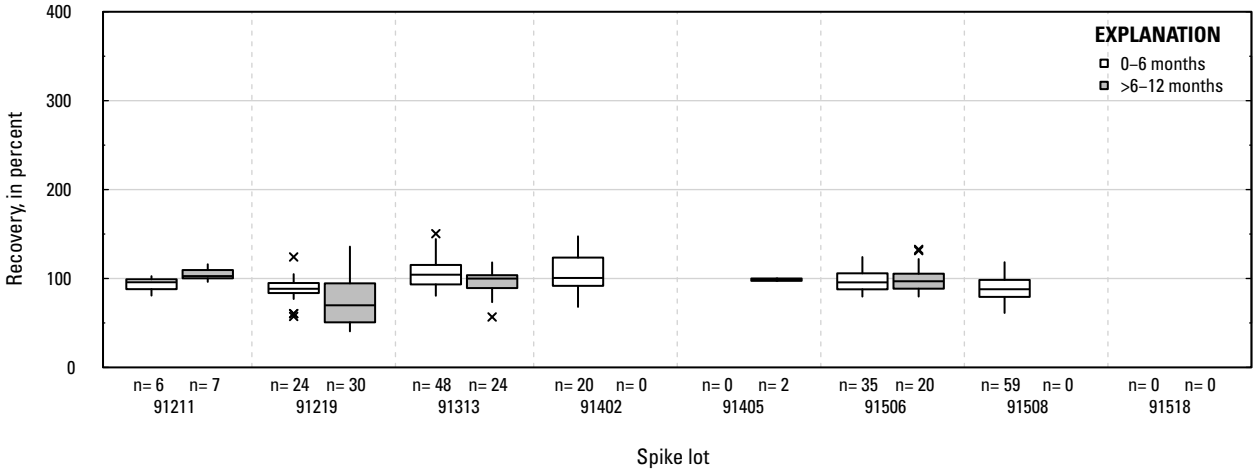
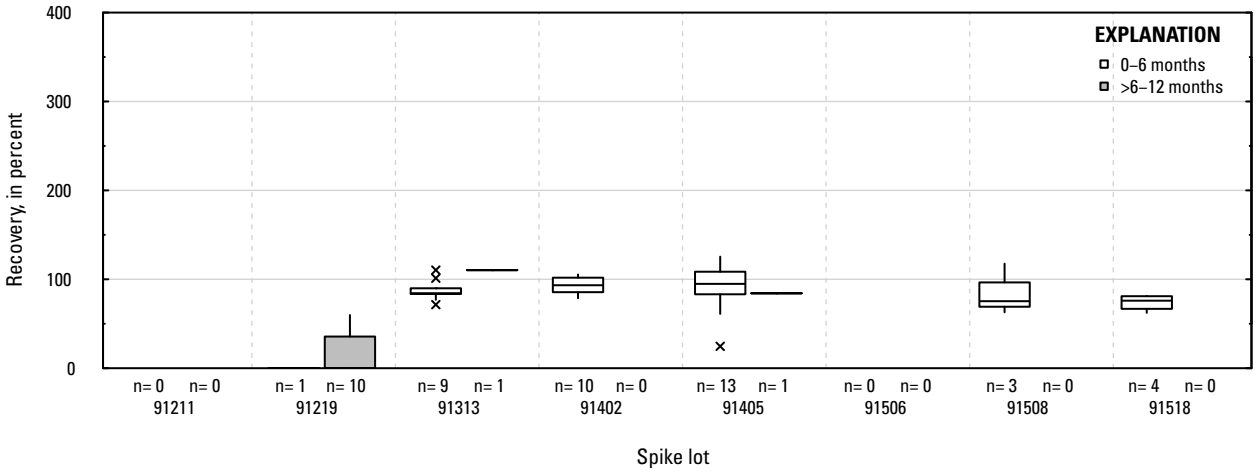


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

IM. **Omethoate (Dimethoate oxon): laboratory reagent spikes**



IN. **Omethoate (Dimethoate oxon): groundwater field matrix spikes**



IO. **Omethoate (Dimethoate oxon): surface water field matrix spikes**

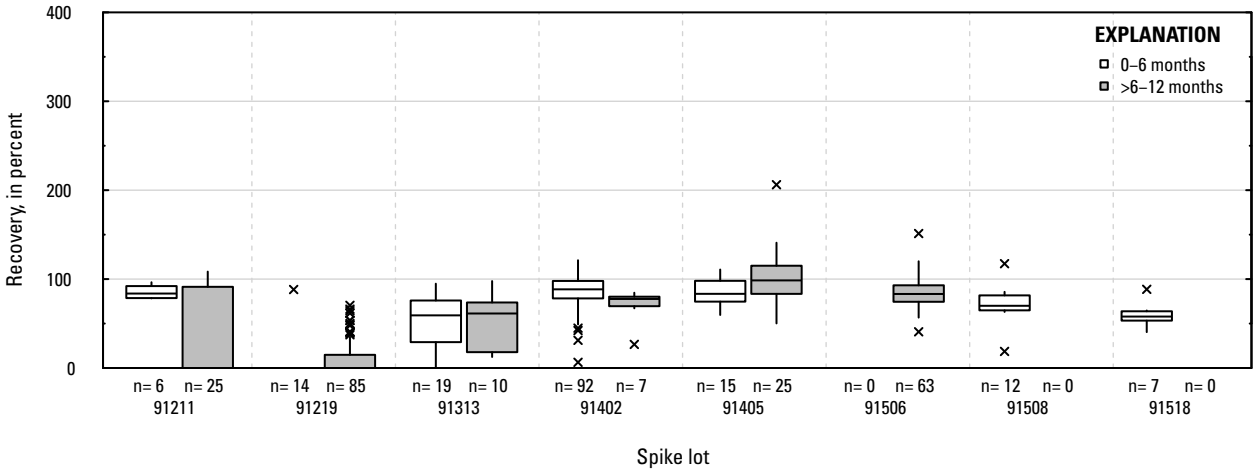
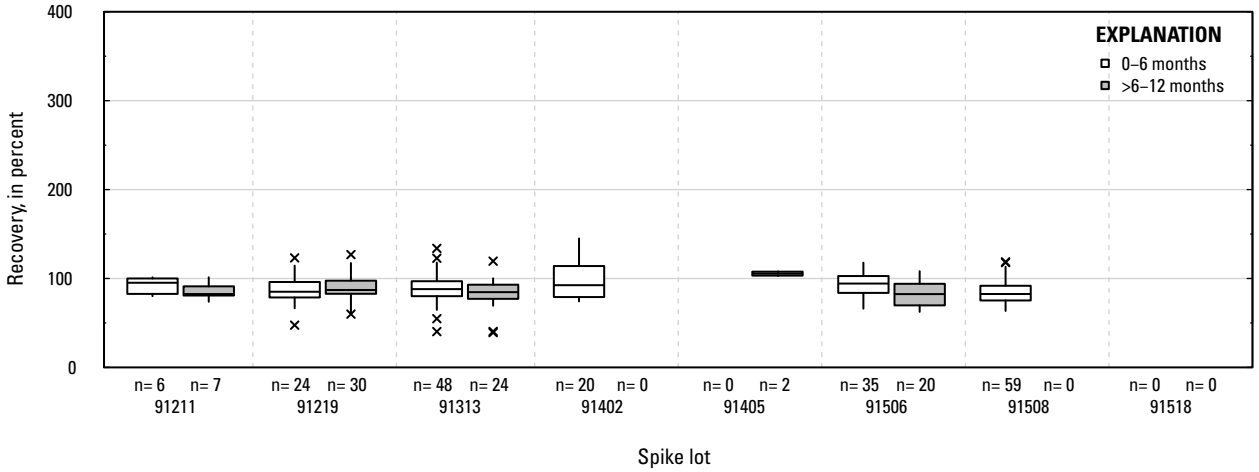
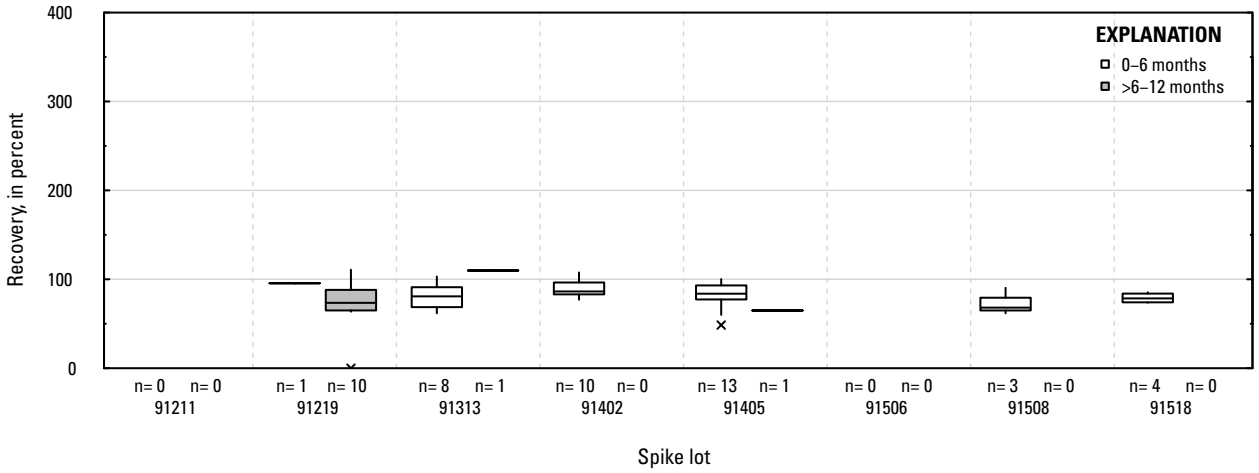


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

IP. **Disulfoton: laboratory reagent spikes**



IQ. **Disulfoton: groundwater field matrix spikes**



IR. **Disulfoton: surface water field matrix spikes**

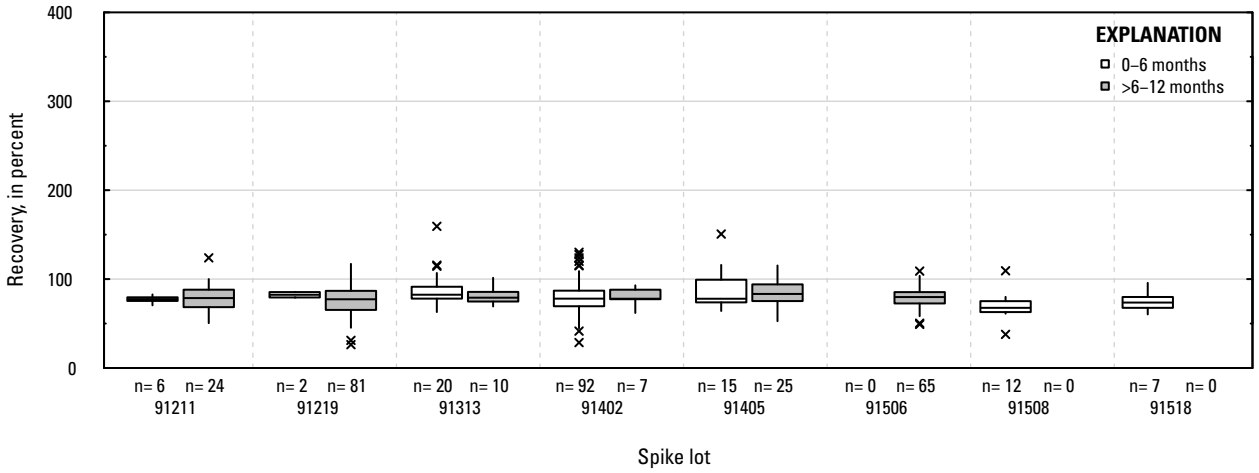
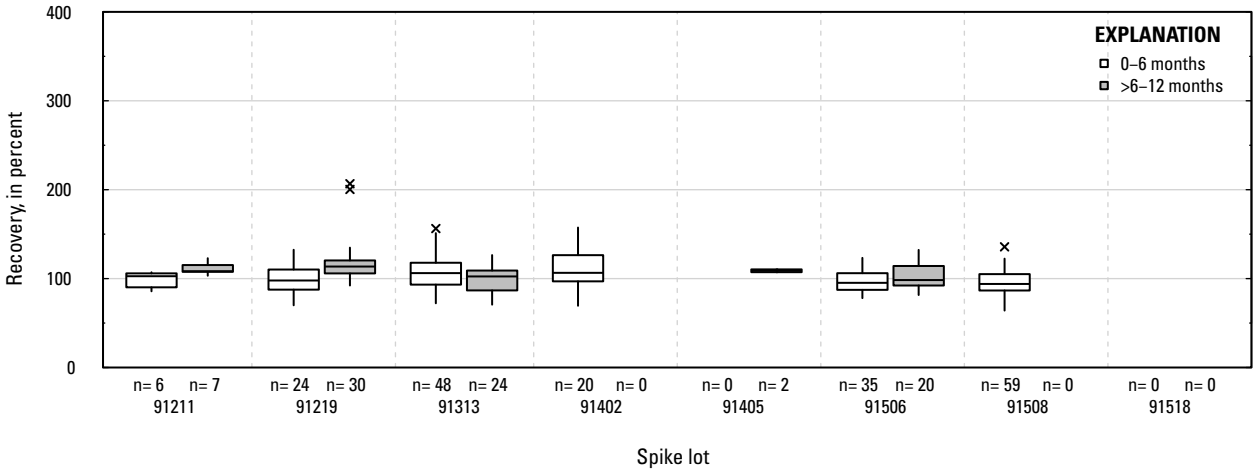
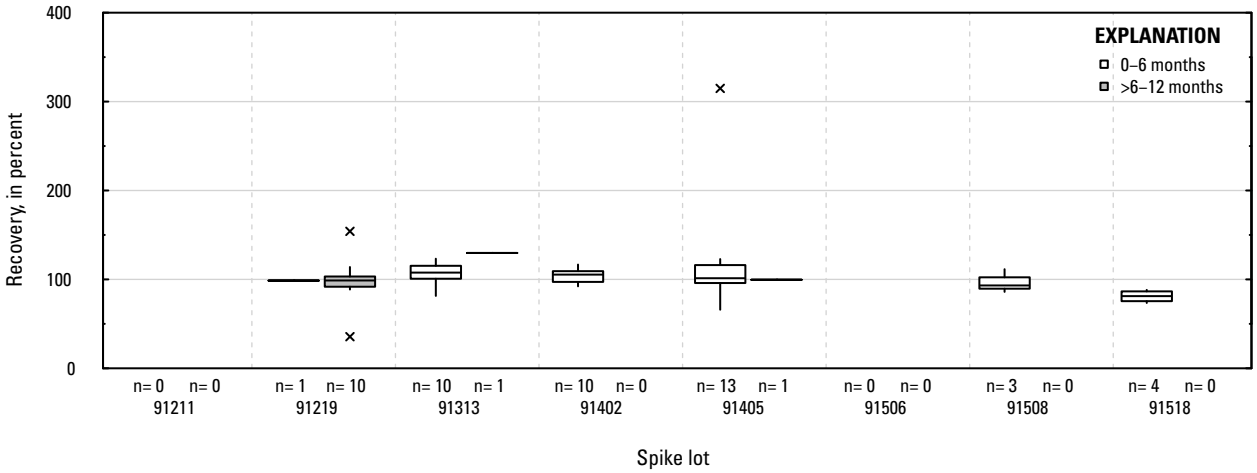


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

IS. **Disulfoton oxon: laboratory reagent spikes**



IT. **Disulfoton oxon: groundwater field matrix spikes**



IU. **Disulfoton oxon: surface water field matrix spikes**

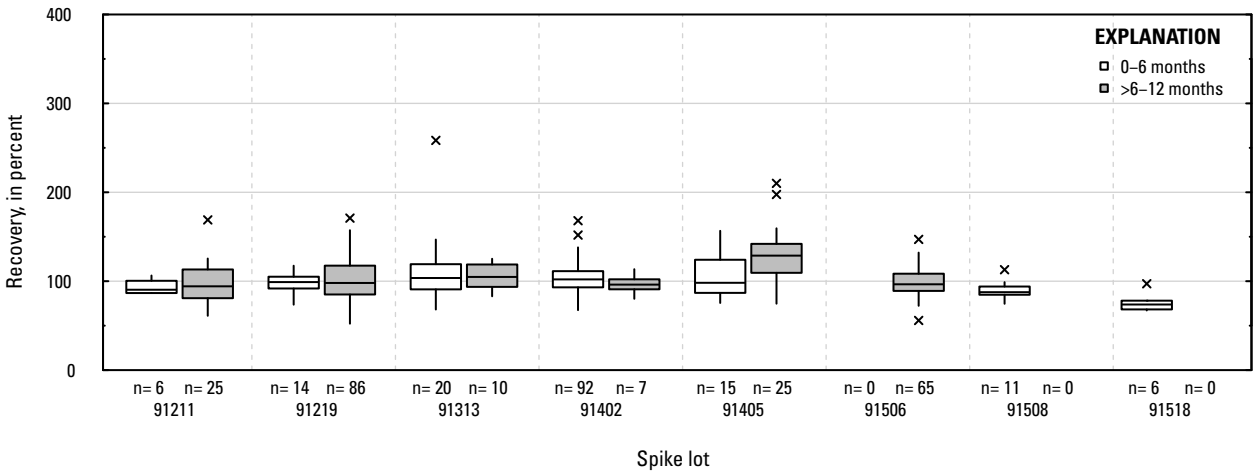
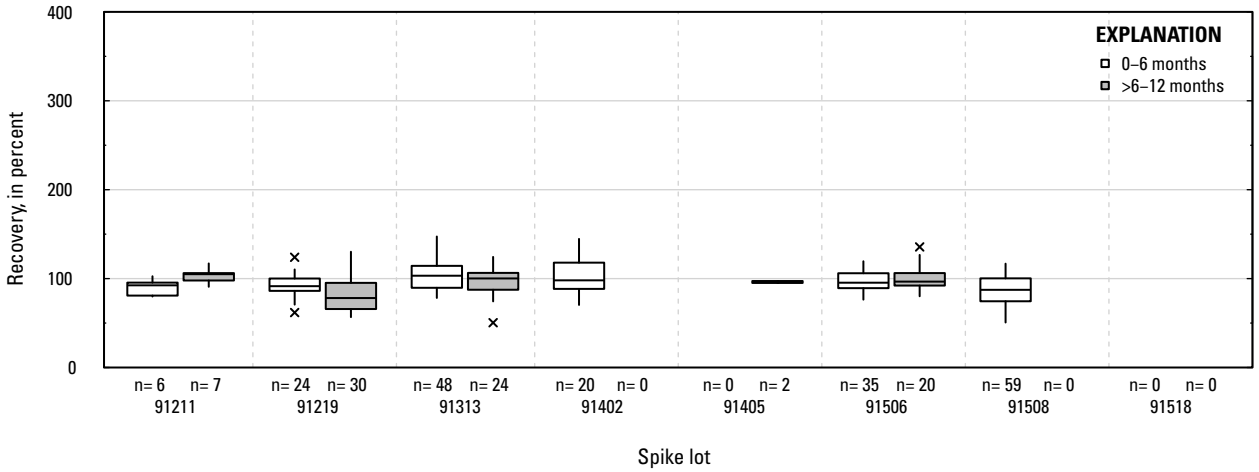
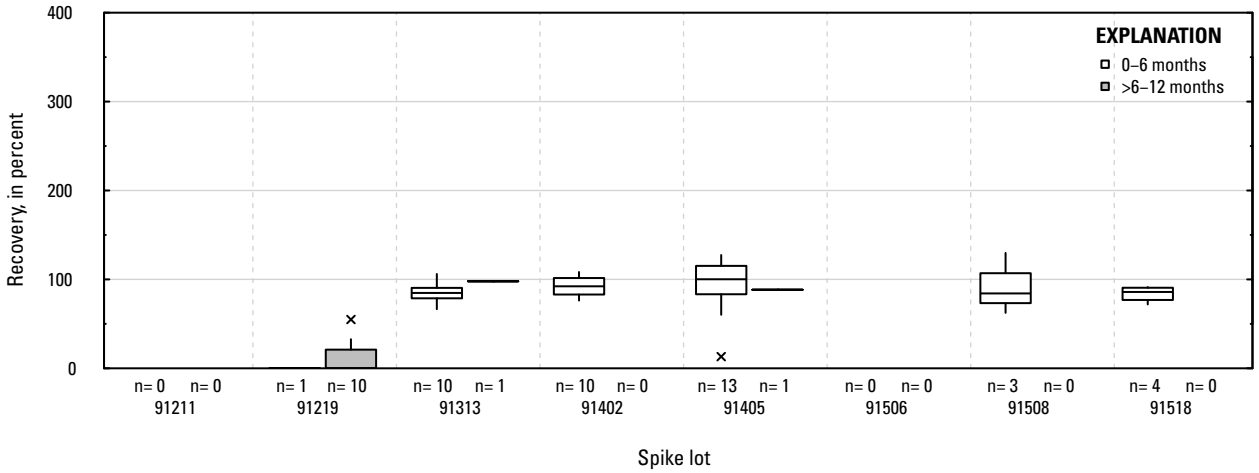


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

IV. **Disulfoton oxon sulfone: laboratory reagent spikes**



IW. **Disulfoton oxon sulfone: groundwater field matrix spikes**



IX. **Disulfoton oxon sulfone: surface water field matrix spikes**

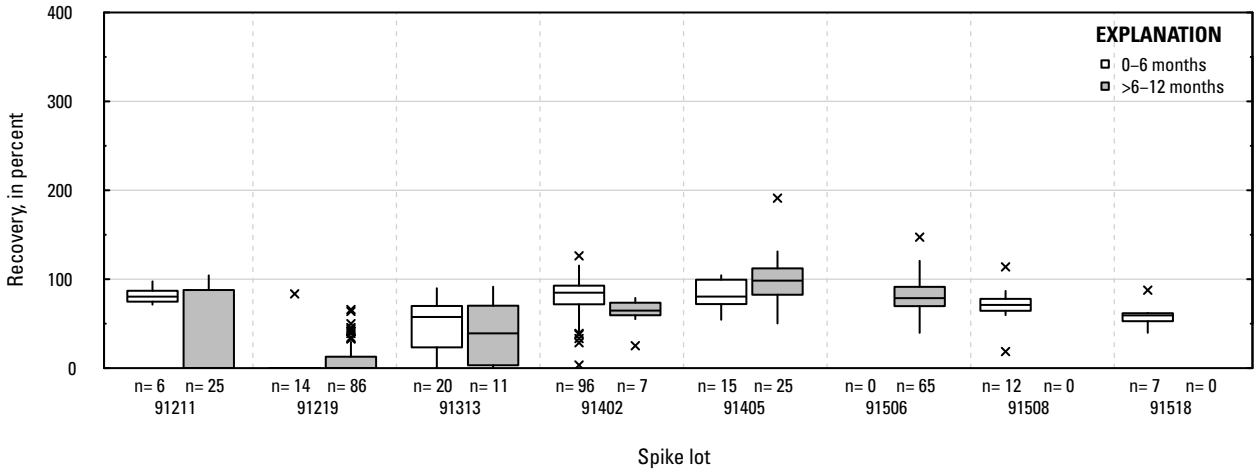
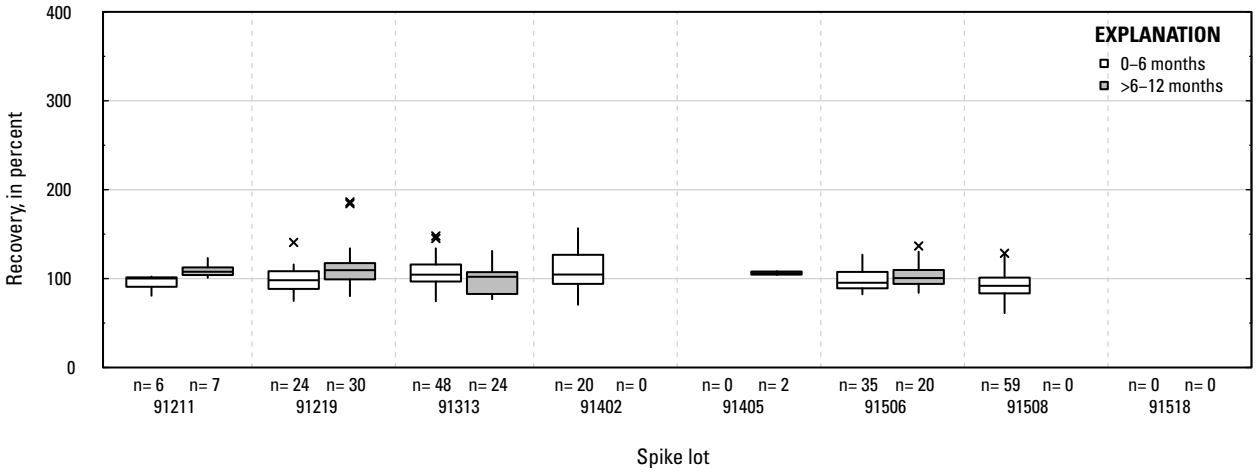
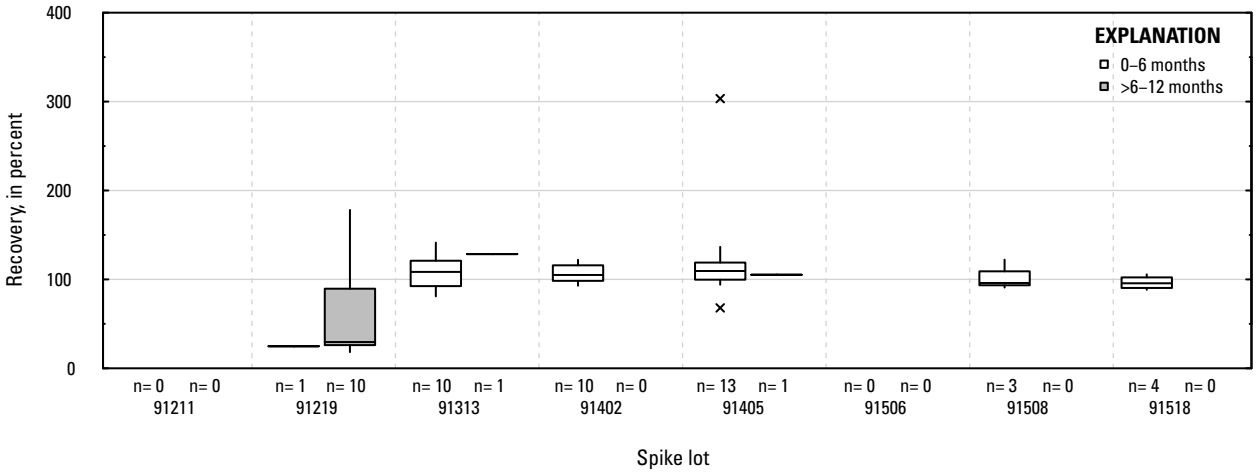


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

IY. **Disulfoton oxon sulfoxide: laboratory reagent spikes**



IZ. **Disulfoton oxon sulfoxide: groundwater field matrix spikes**



JA. **Disulfoton oxon sulfoxide: surface water field matrix spikes**

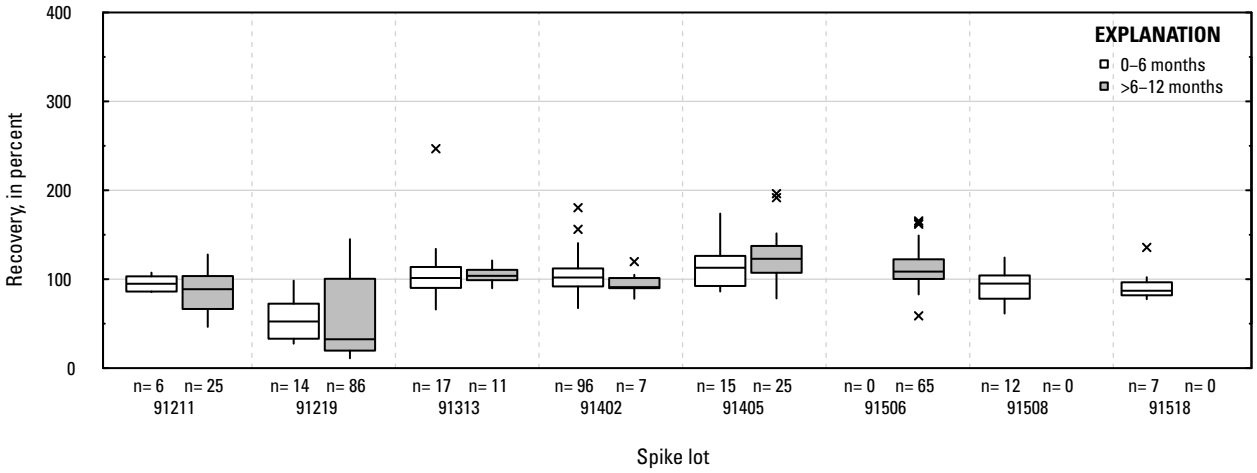
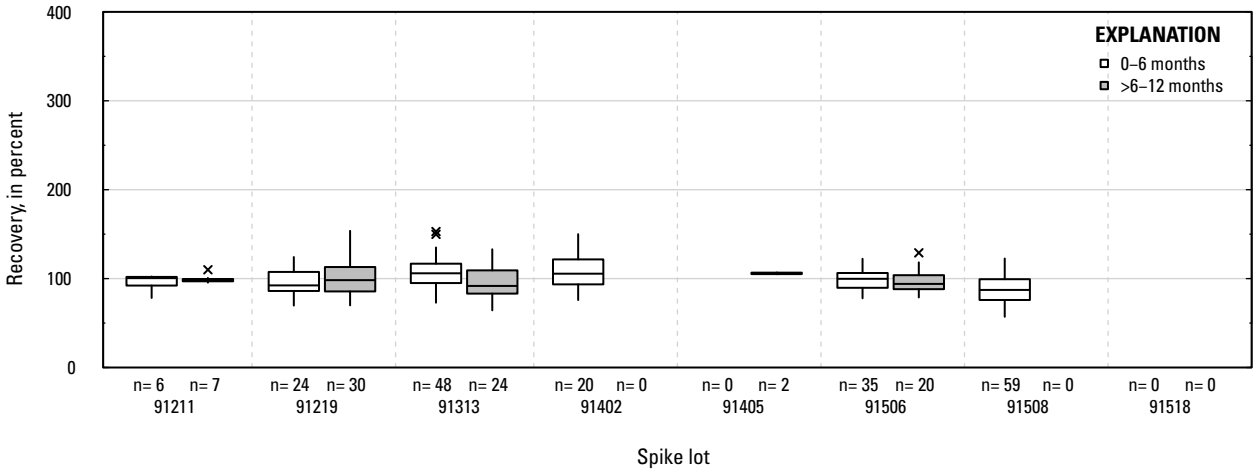
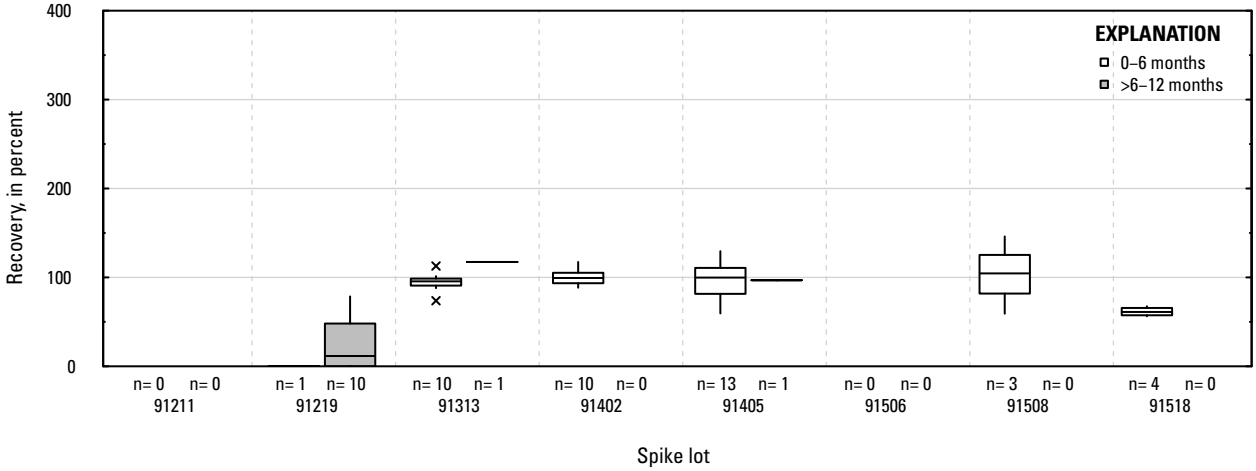


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

JB. **Disulfoton sulfone: laboratory reagent spikes**



JC. **Disulfoton sulfone: groundwater field matrix spikes**



JD. **Disulfoton sulfone: surface water field matrix spikes**

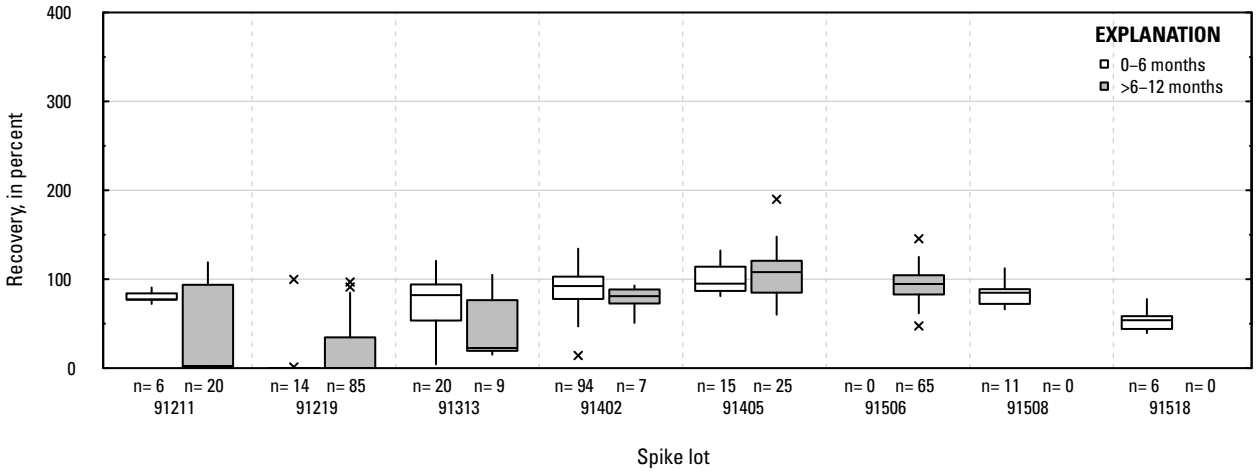
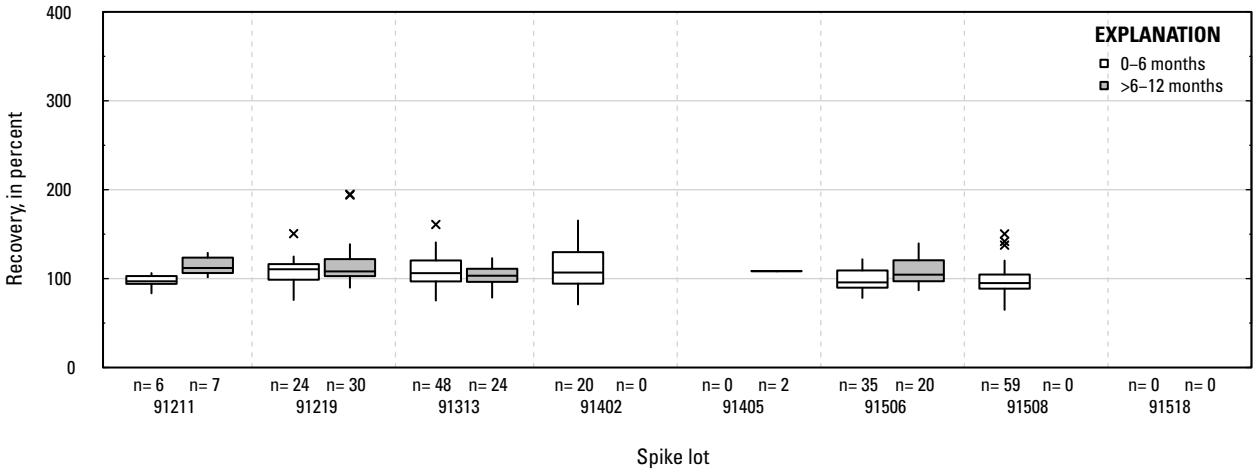
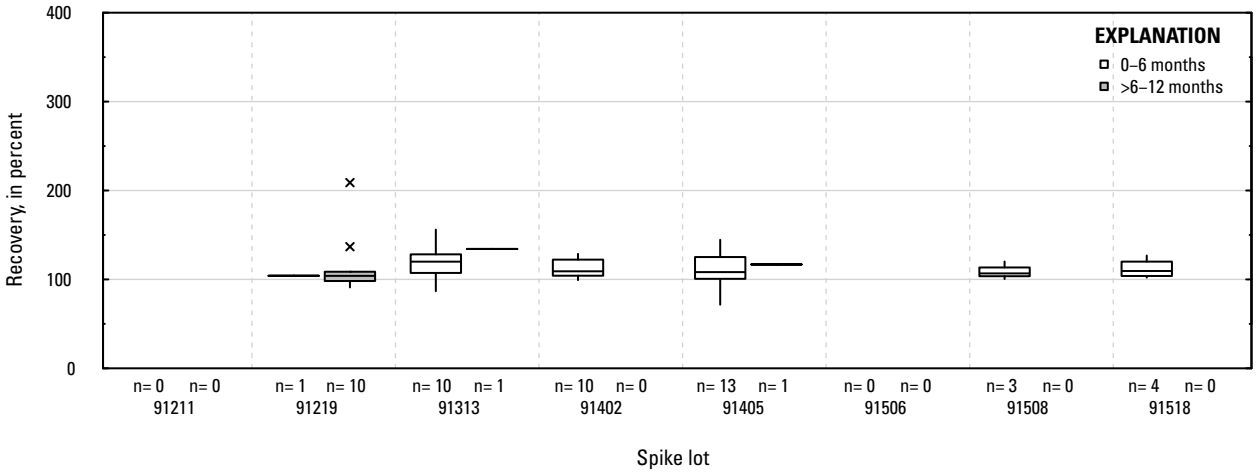


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

JE. **Disulfoton sulfoxide: laboratory reagent spikes**



JF. **Disulfoton sulfoxide: groundwater field matrix spikes**



JG. **Disulfoton sulfoxide: surface water field matrix spikes**

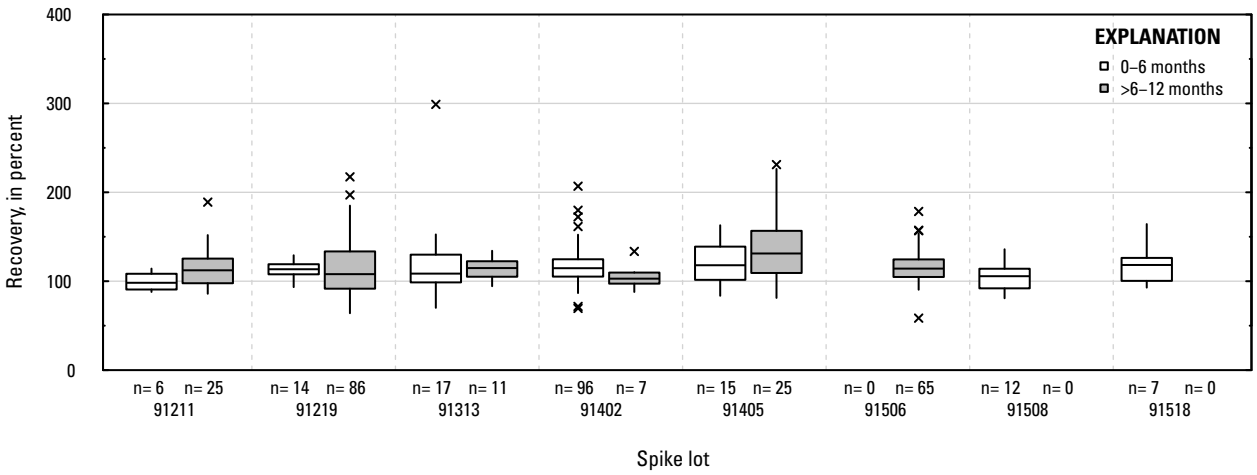
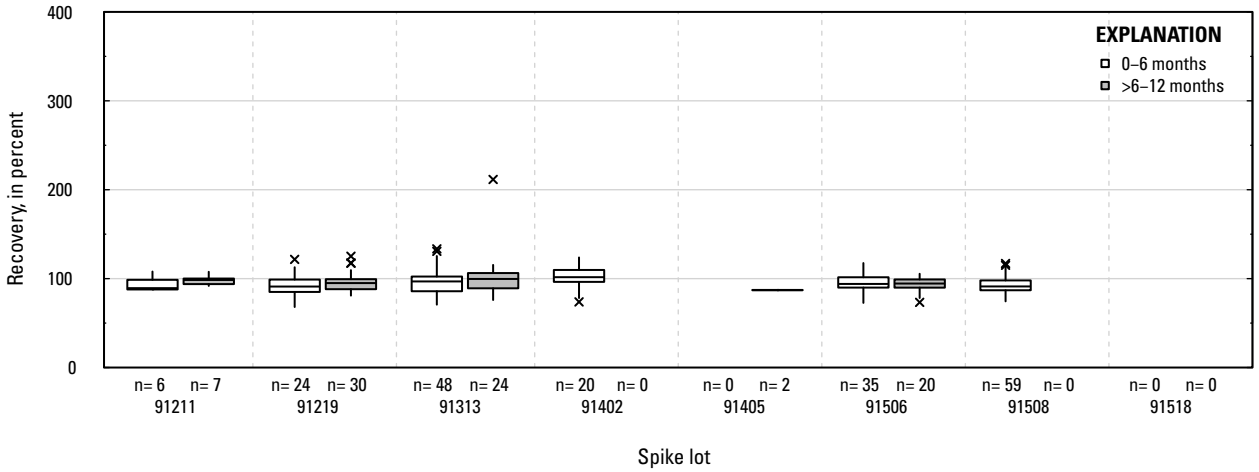
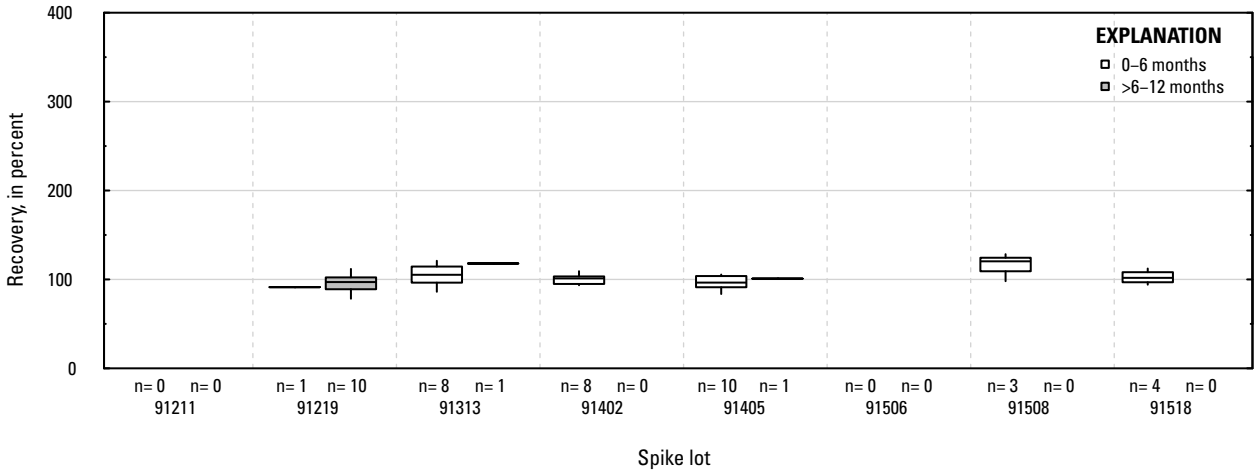


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

JH. **Diuron: laboratory reagent spikes**



JI. **Diuron: groundwater field matrix spikes**



JJ. **Diuron: surface water field matrix spikes**

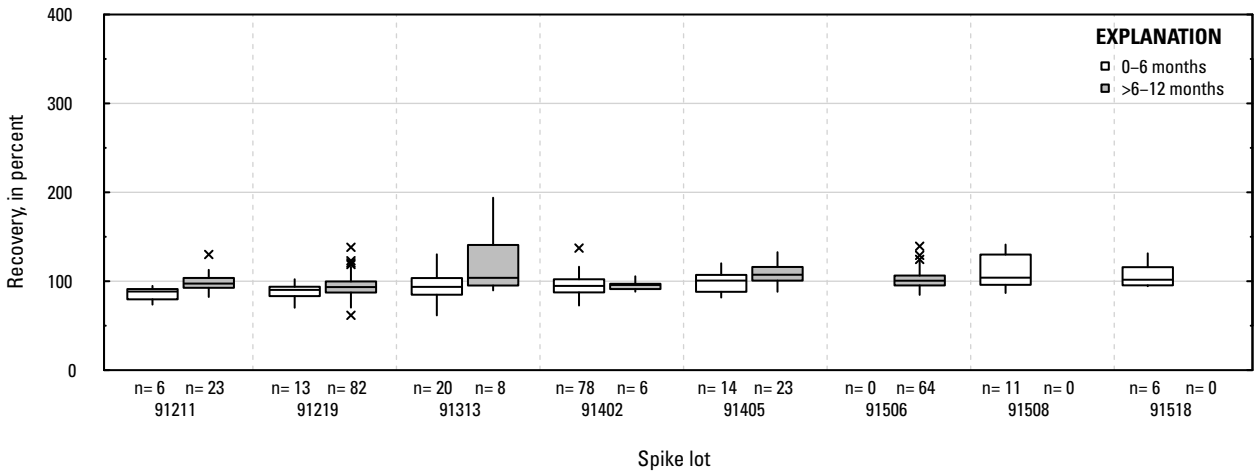
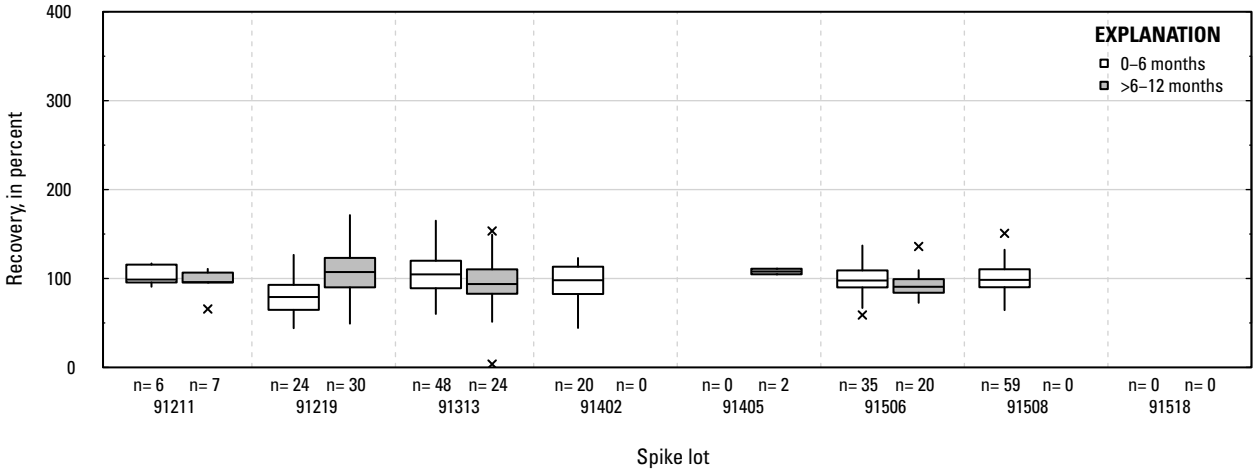
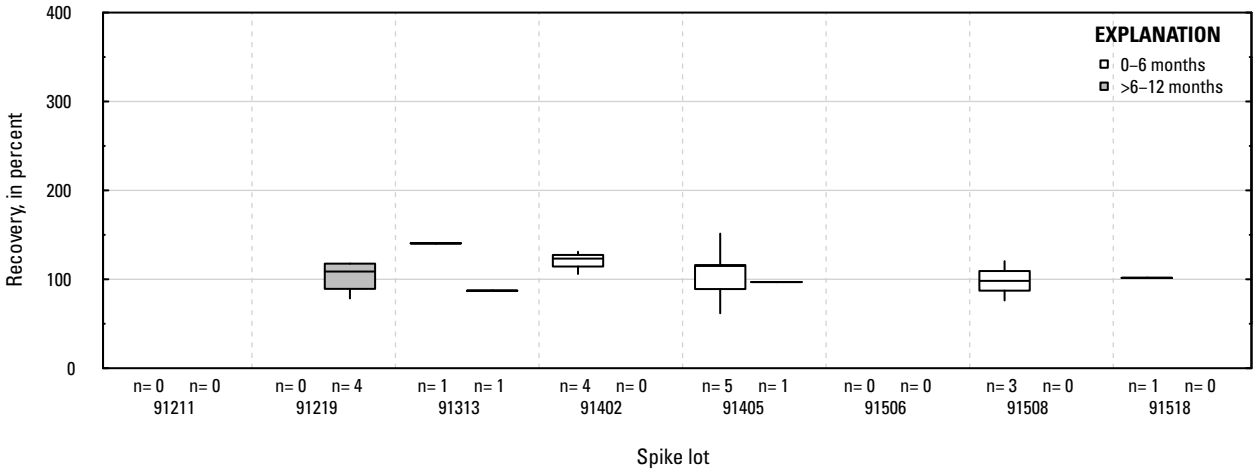


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

JK. **EPTC: laboratory reagent spikes**



JL. **EPTC: groundwater field matrix spikes**



JM. **EPTC: surface water field matrix spikes**

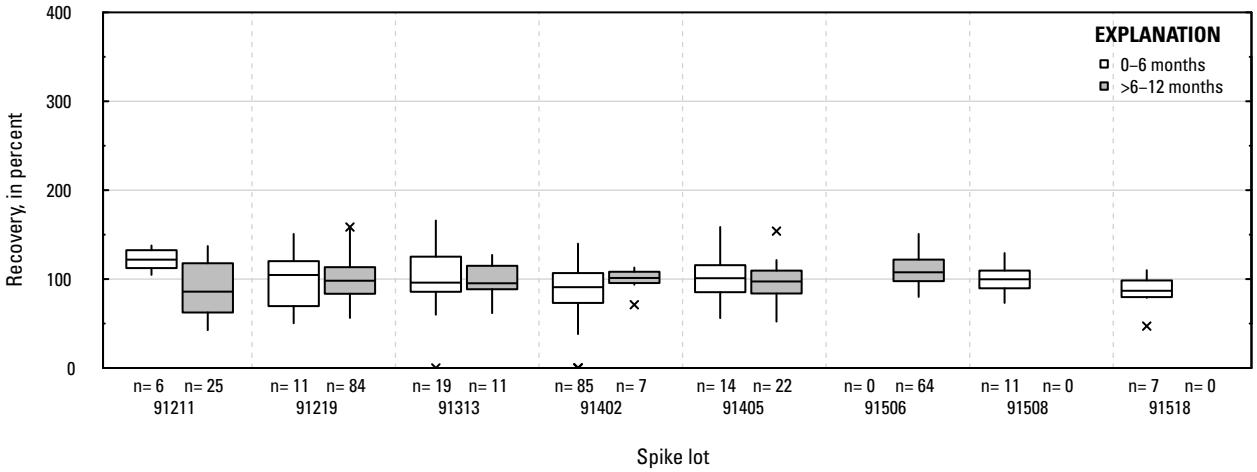
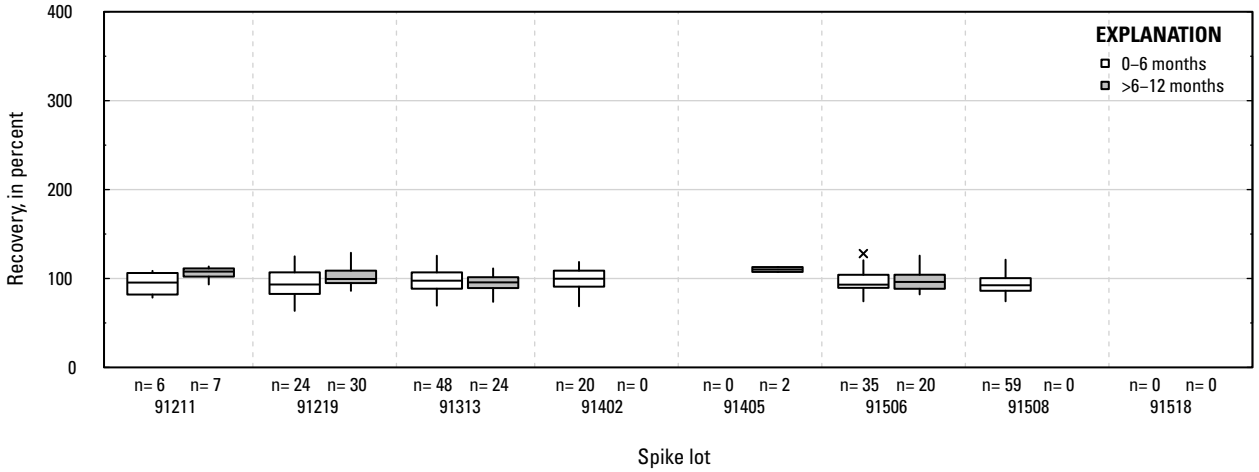
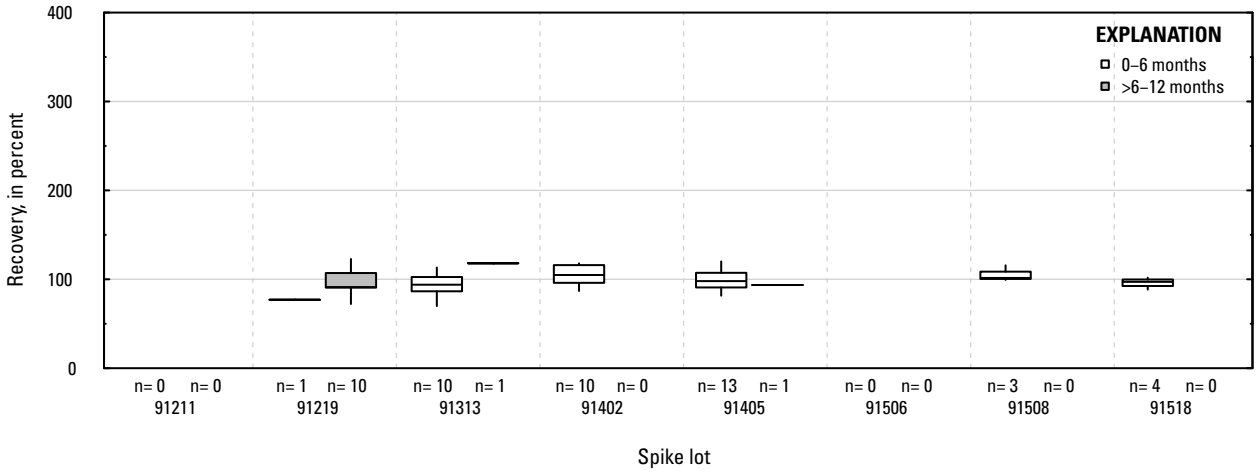


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

JN. **EPTC degradate R248722: laboratory reagent spikes**



JO. **EPTC degradate R248722: groundwater field matrix spikes**



JP. **EPTC degradate R248722: surface water field matrix spikes**

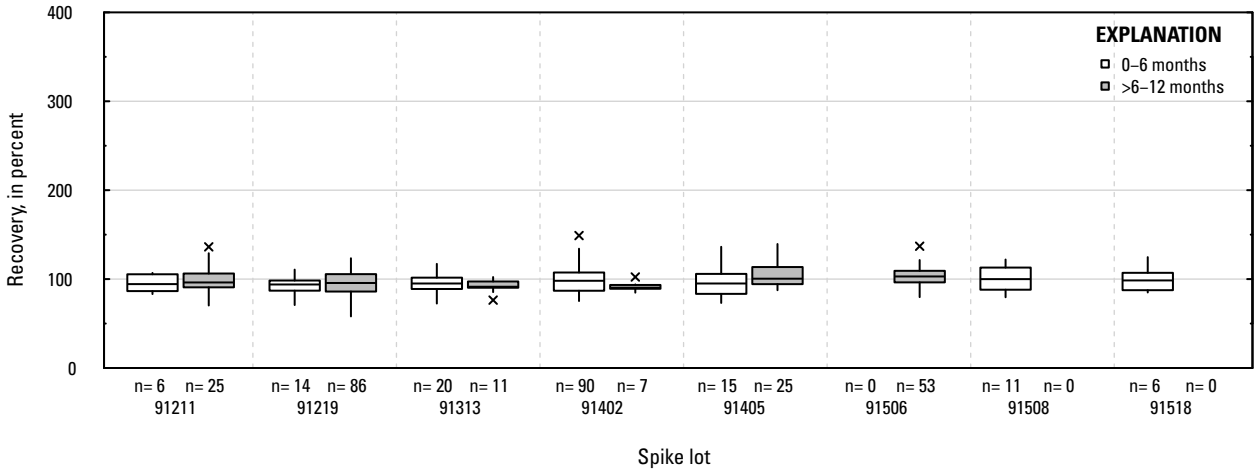
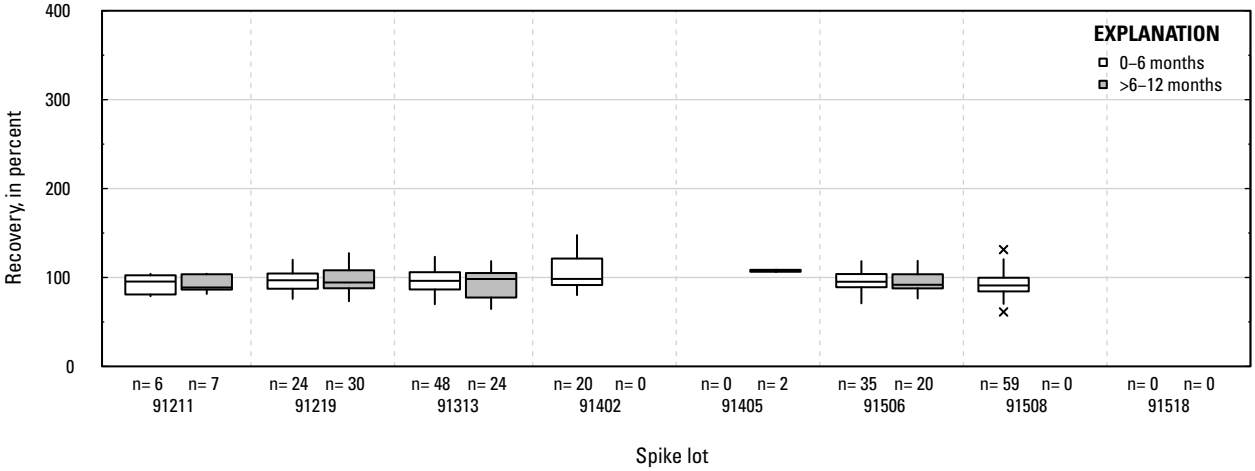
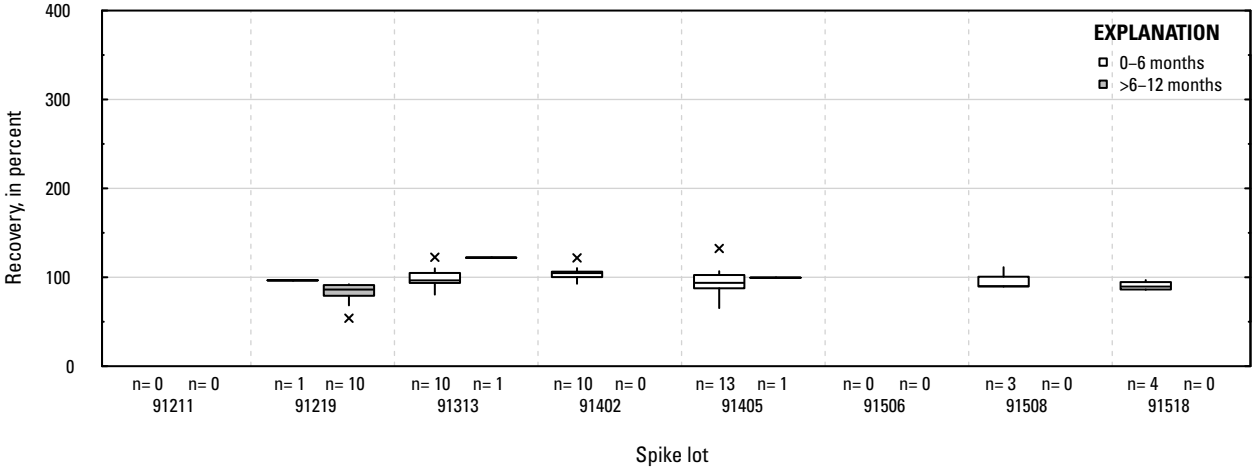


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

JQ. **Ethoprophos: laboratory reagent spikes**



JR. **Ethoprophos: groundwater field matrix spikes**



JS. **Ethoprophos: surface water field matrix spikes**

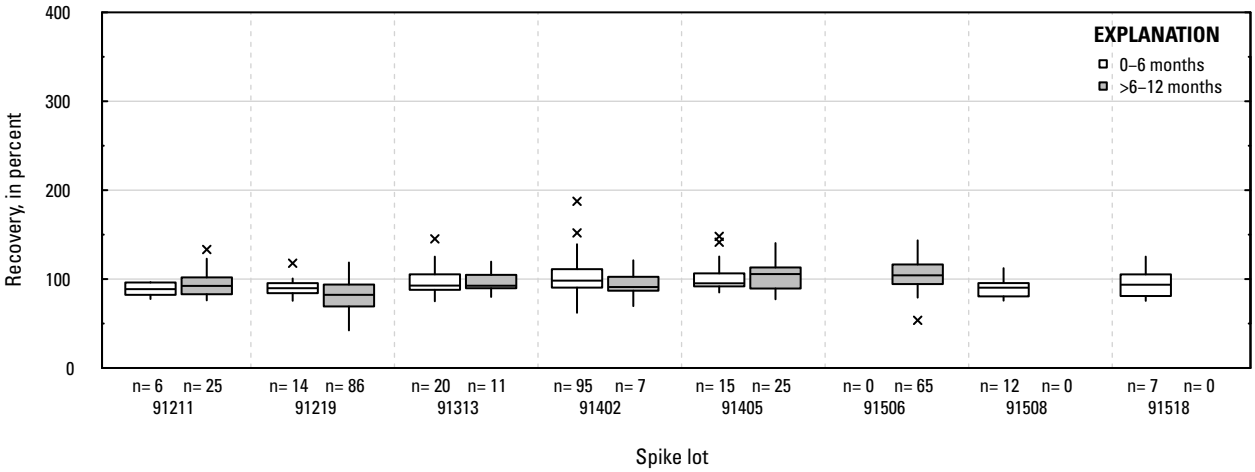
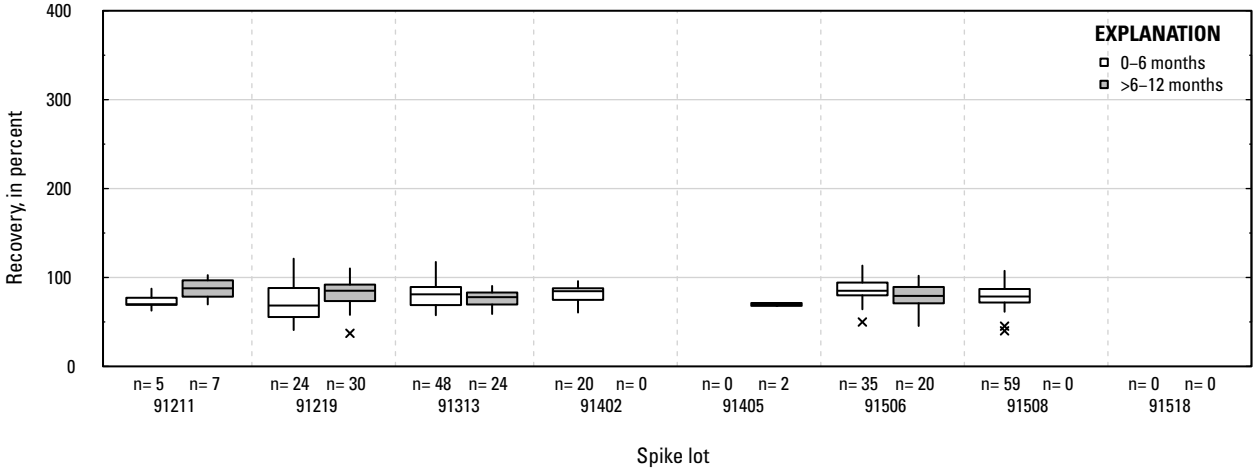
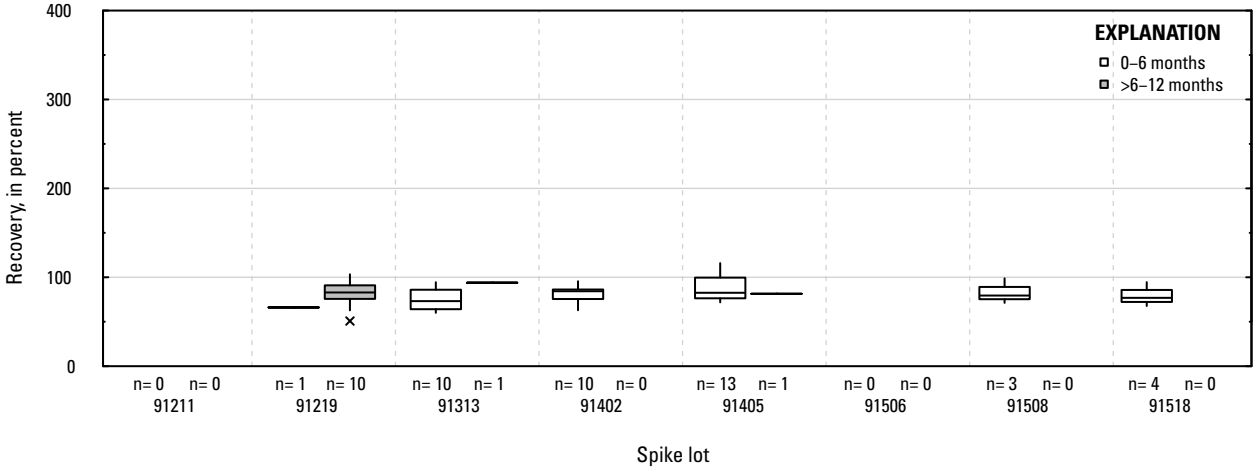


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

JT. **Etoxazole: laboratory reagent spikes**



JU. **Etoxazole: groundwater field matrix spikes**



JV. **Etoxazole: surface water field matrix spikes**

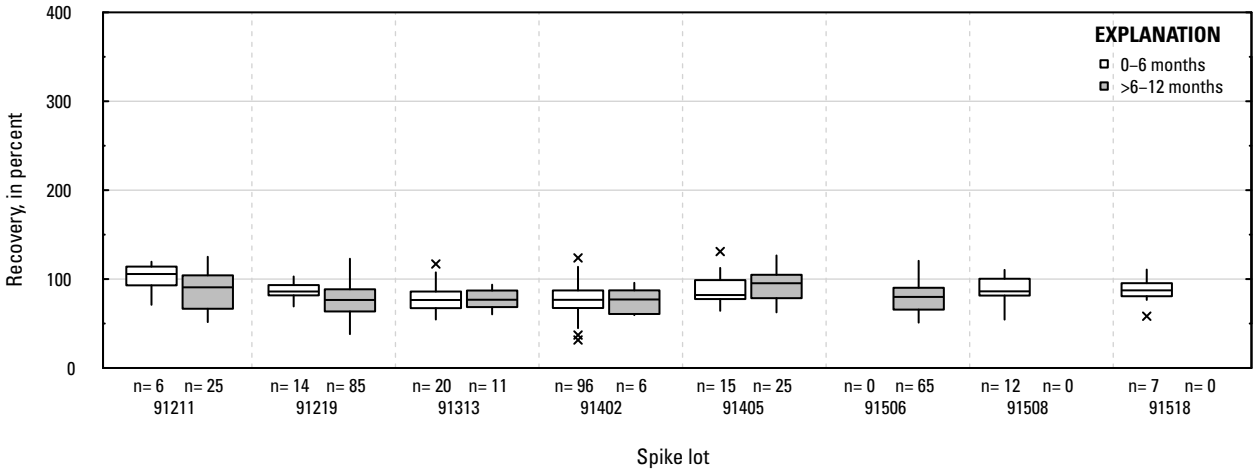
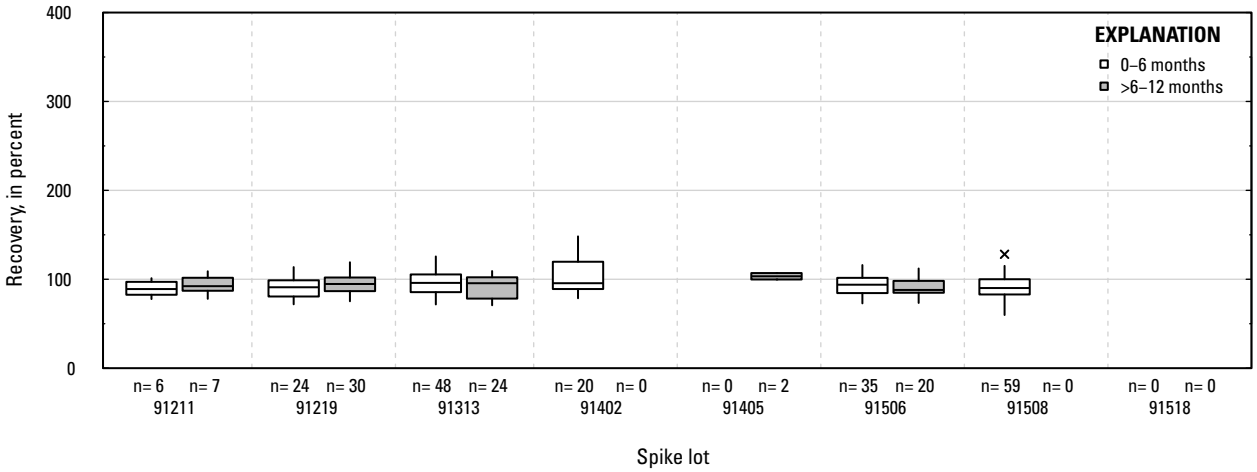
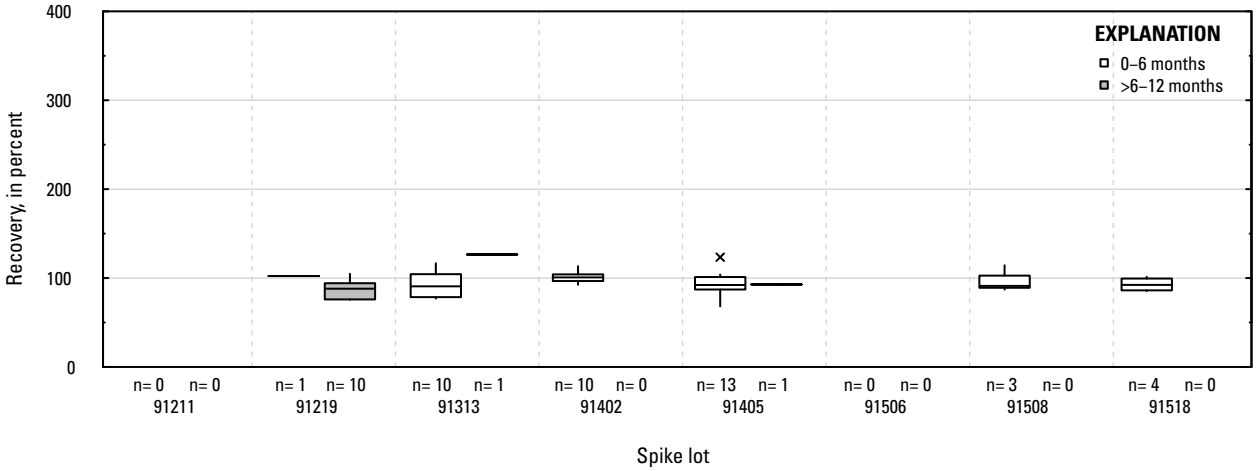


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

JW. **Fenamiphos: laboratory reagent spikes**



JX. **Fenamiphos: groundwater field matrix spikes**



JY. **Fenamiphos: surface water field matrix spikes**

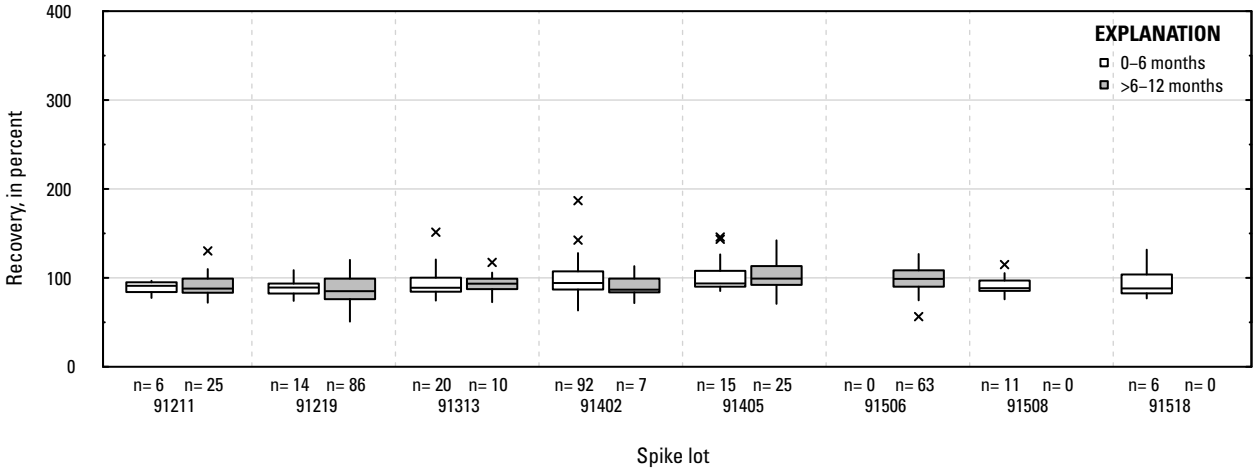
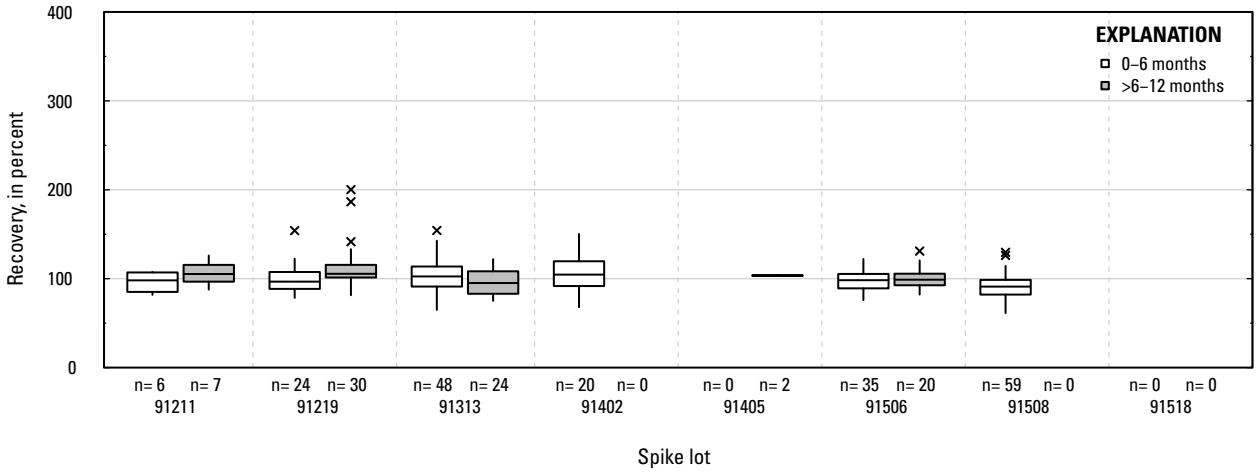
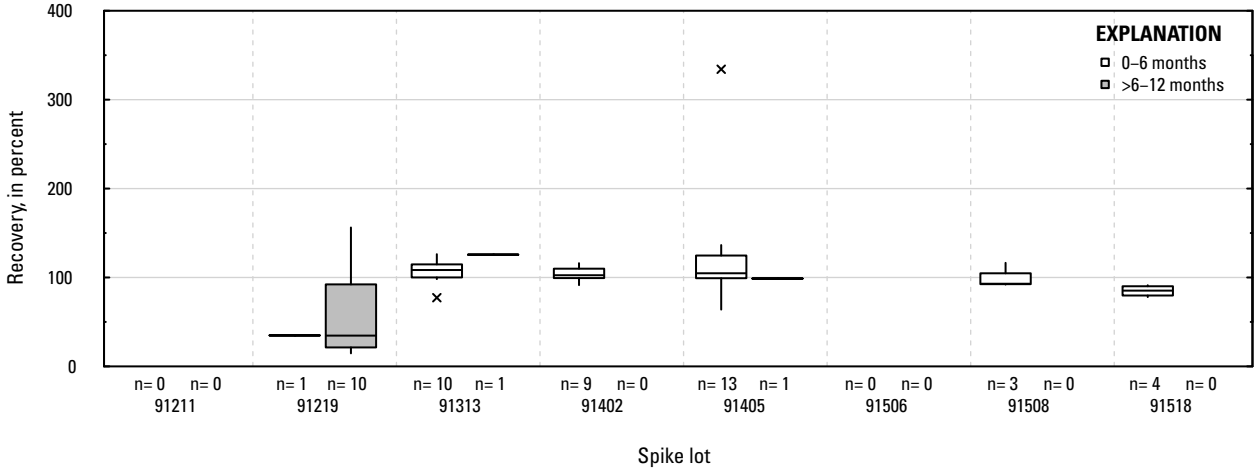


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

JZ. **Fenamiphos sulfone: laboratory reagent spikes**



KA. **Fenamiphos sulfone: groundwater field matrix spikes**



KB. **Fenamiphos sulfone: surface water field matrix spikes**

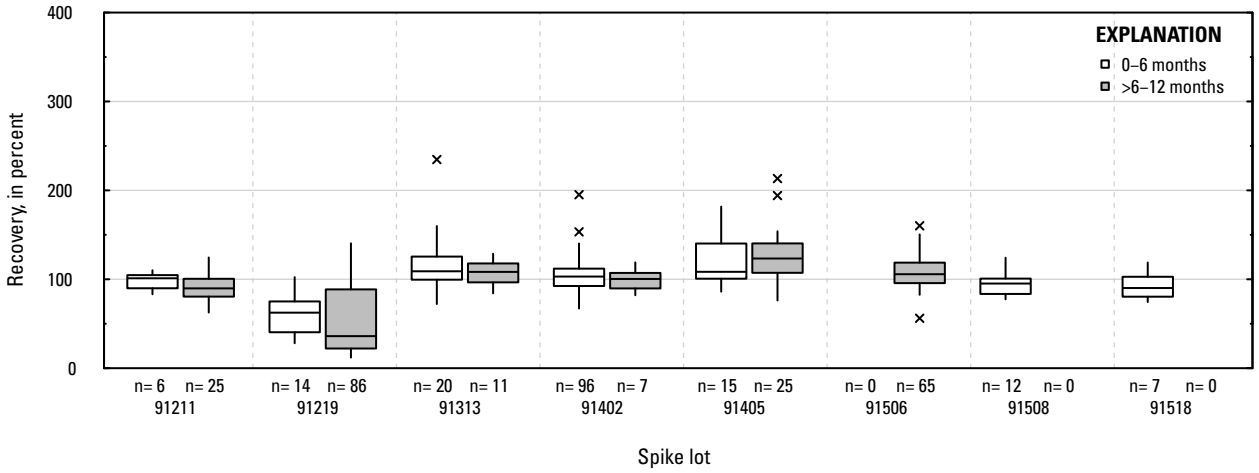
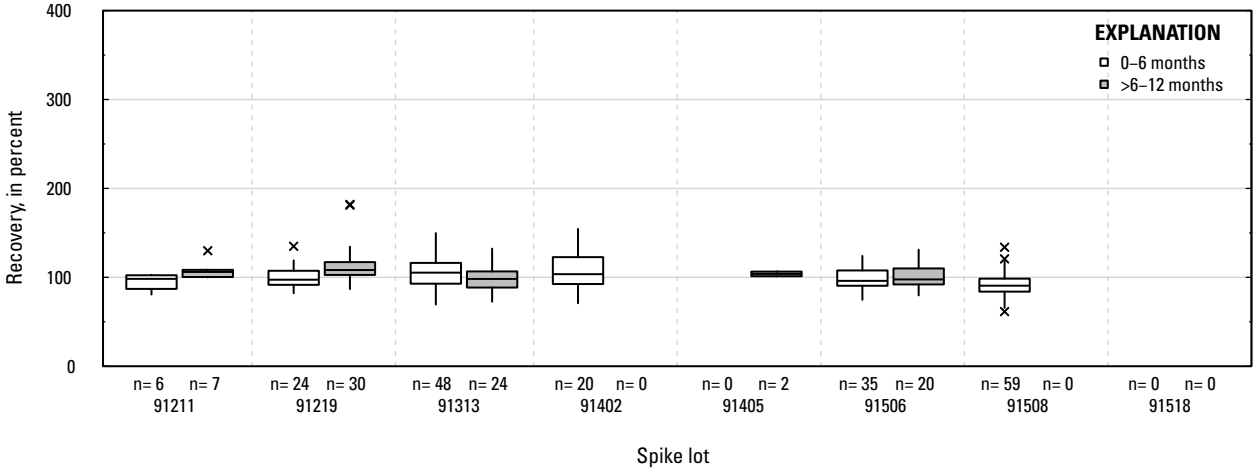
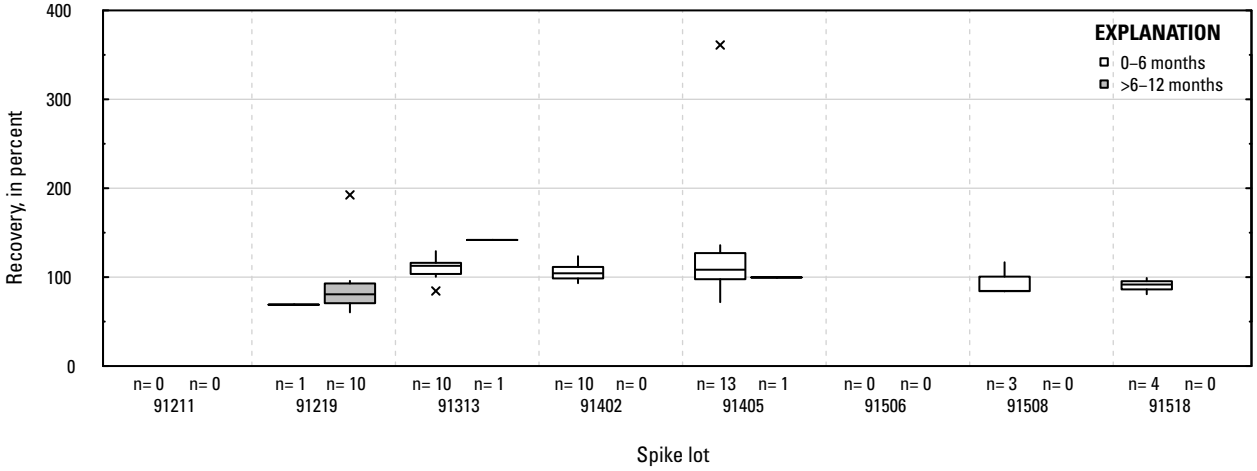


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

KC. **Fenamiphos sulfoxide: laboratory reagent spikes**



KD. **Fenamiphos sulfoxide: groundwater field matrix spikes**



KE. **Fenamiphos sulfoxide: surface water field matrix spikes**

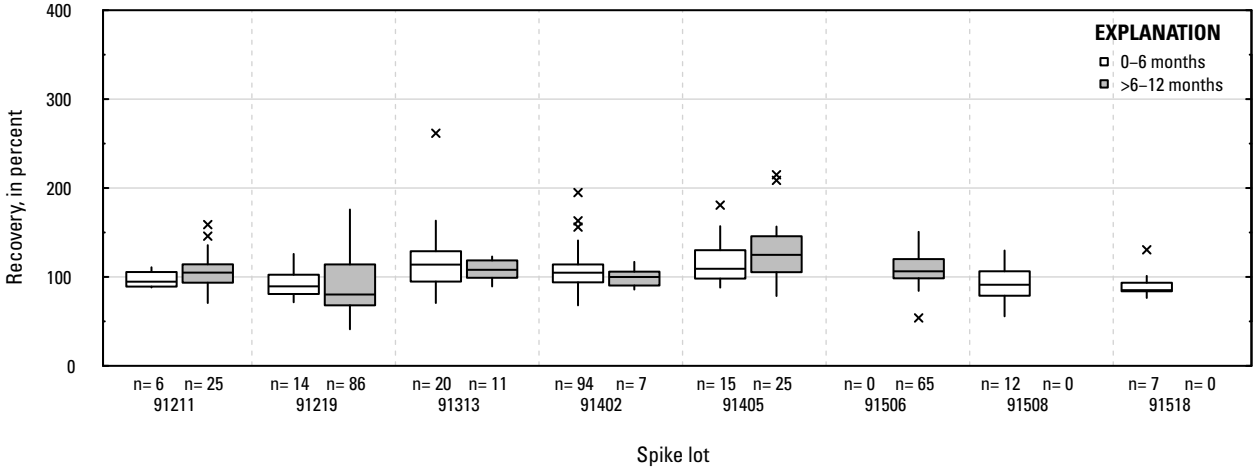
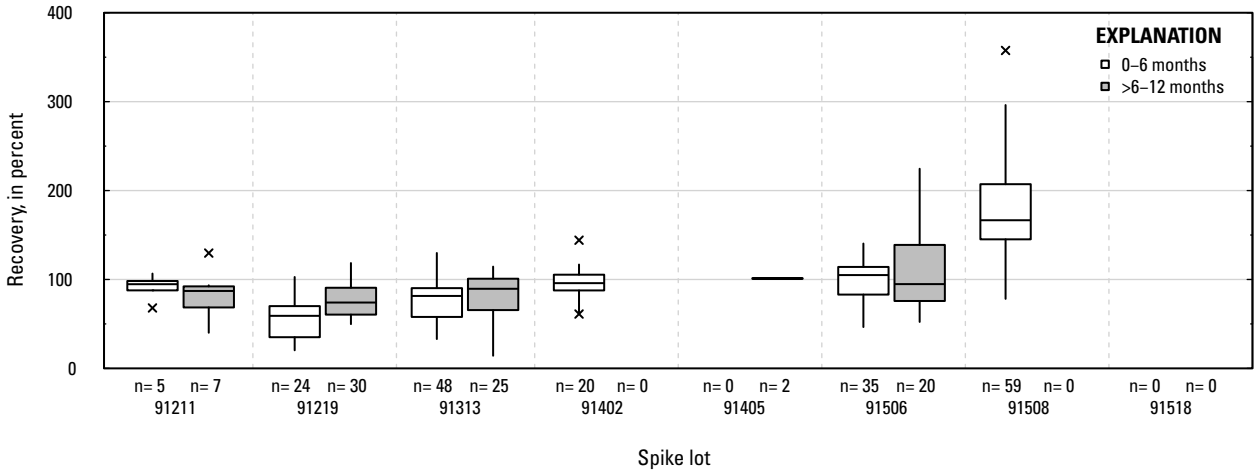
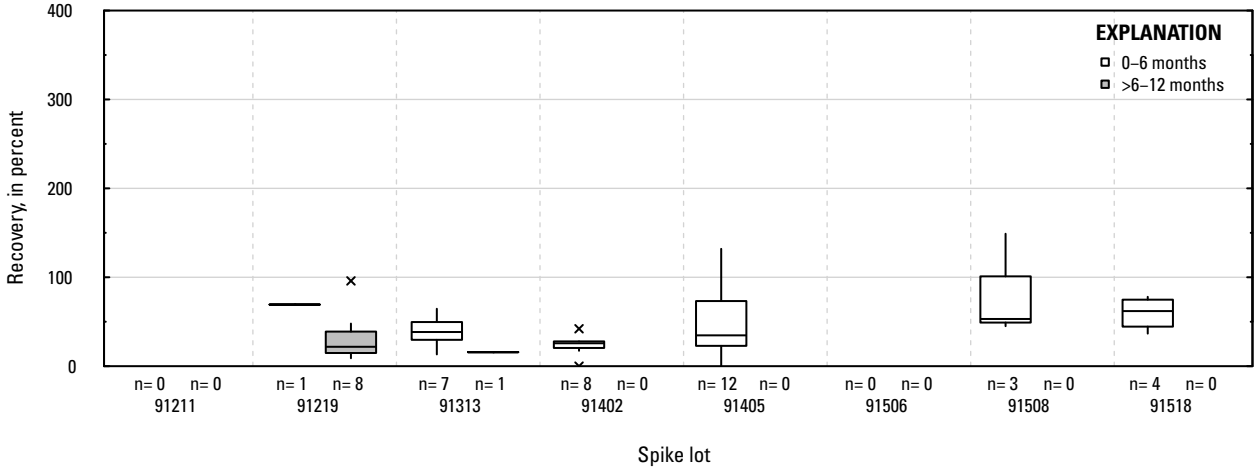


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

KF. **Fenbutatin oxide: laboratory reagent spikes**



KG. **Fenbutatin oxide: groundwater field matrix spikes**



KH. **Fenbutatin oxide: surface water field matrix spikes**

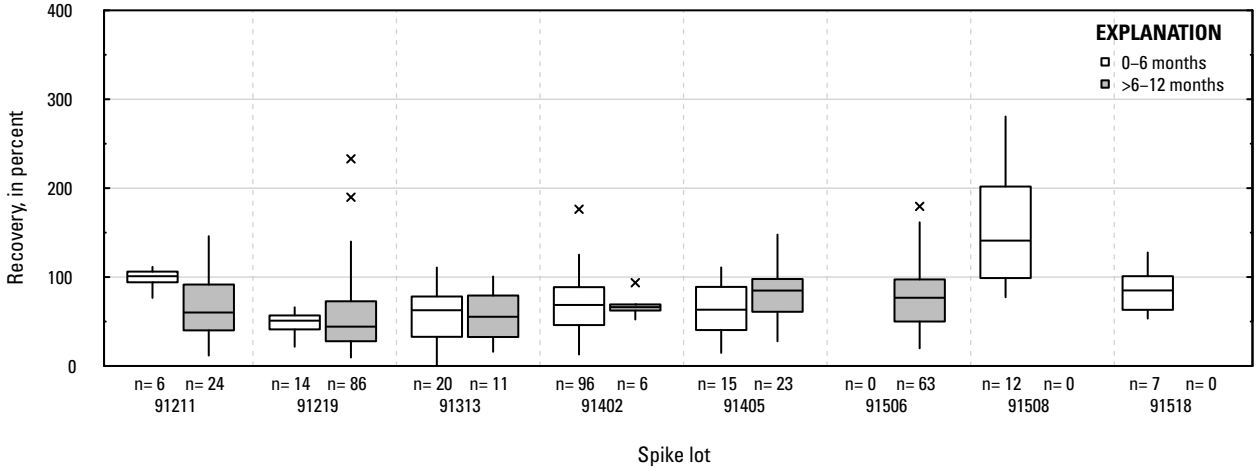
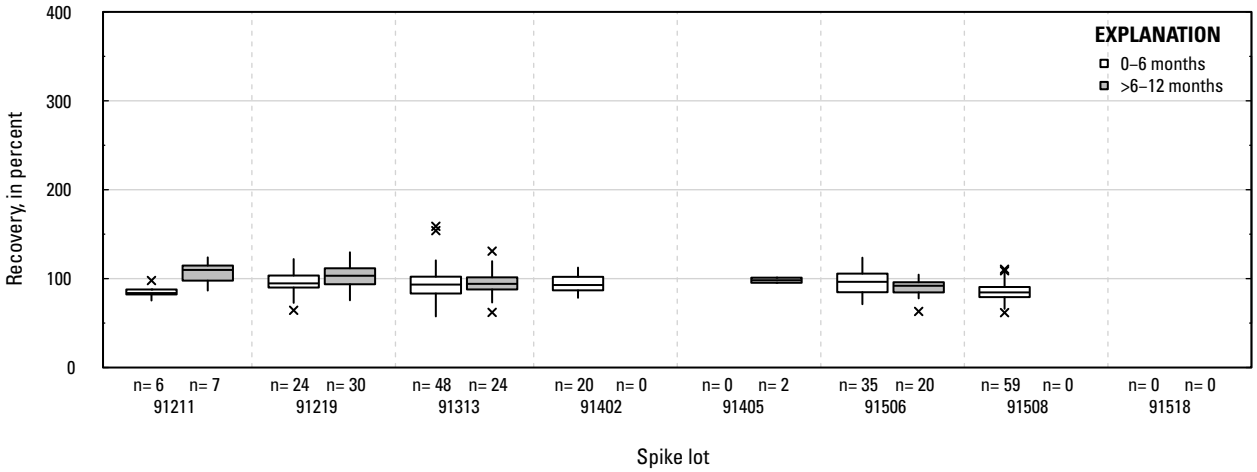
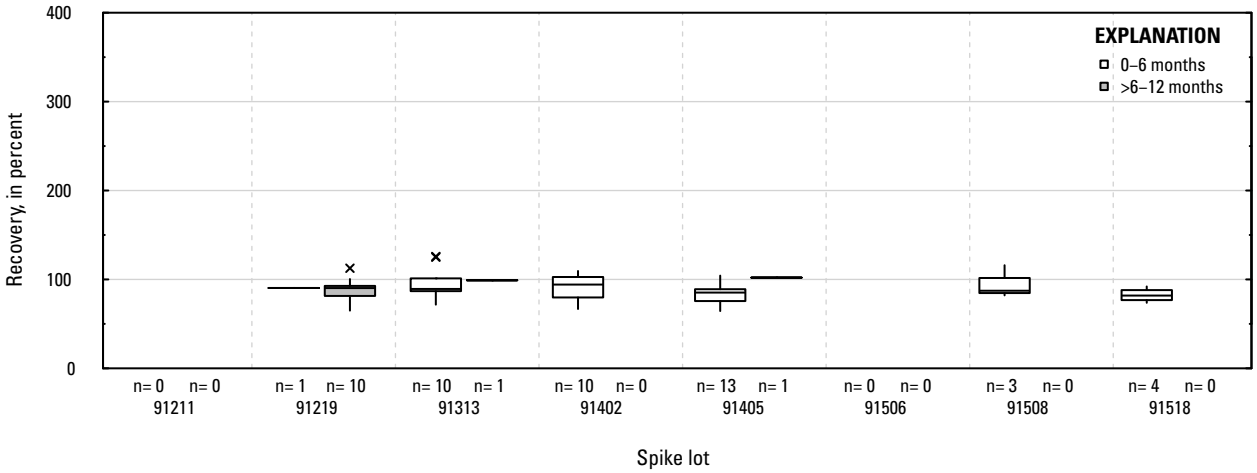


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

KI. **Fentin: laboratory reagent spikes**



KJ. **Fentin: groundwater field matrix spikes**



KK. **Fentin: surface water field matrix spikes**

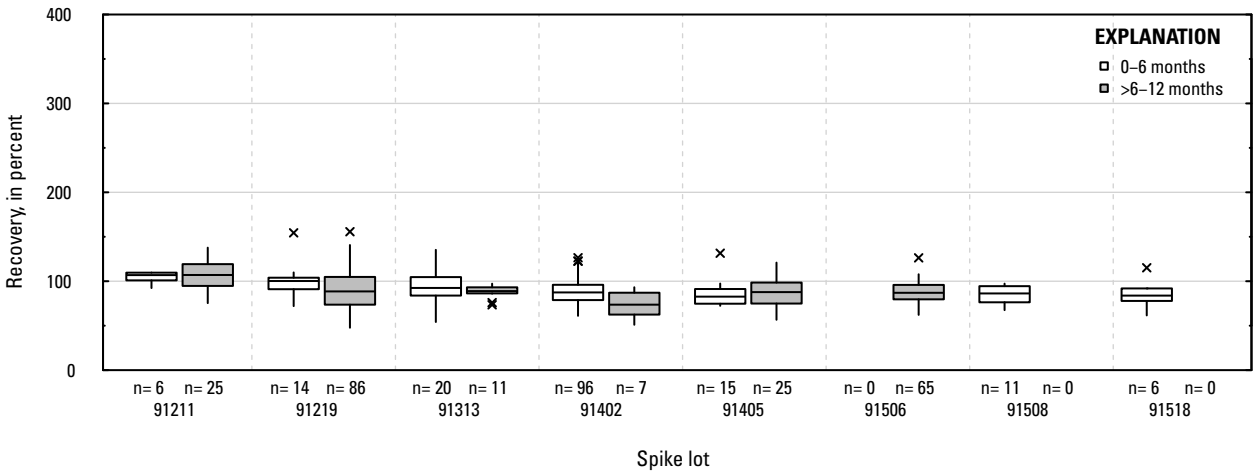
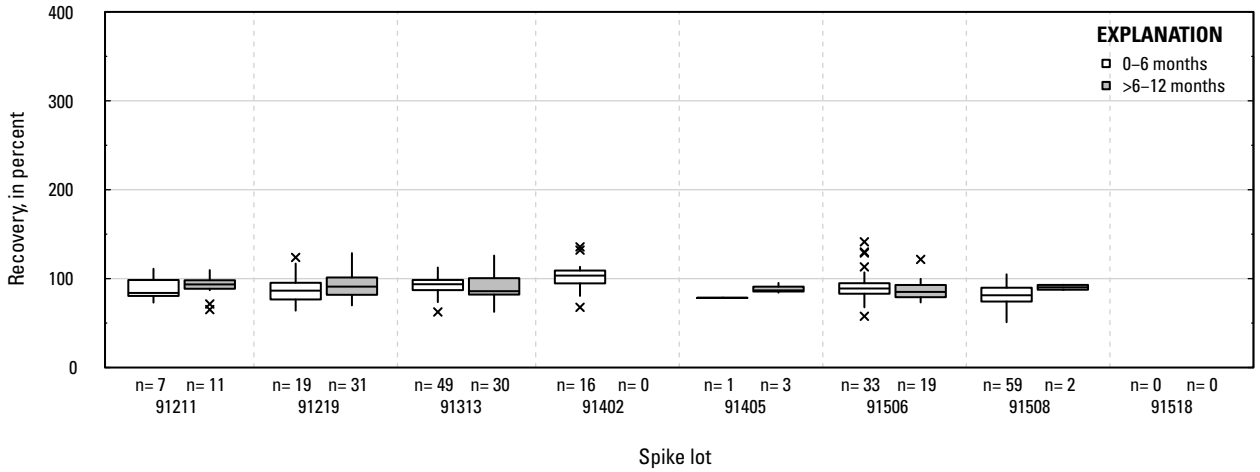
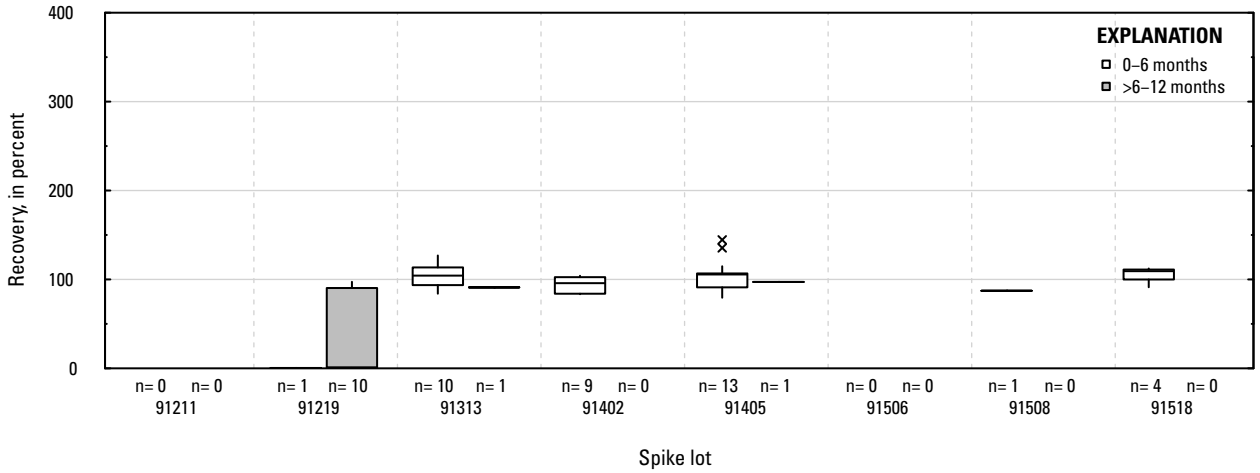


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

KL. **Fipronil: laboratory reagent spikes**



KM. **Fipronil: groundwater field matrix spikes**



KN. **Fipronil: surface water field matrix spikes**

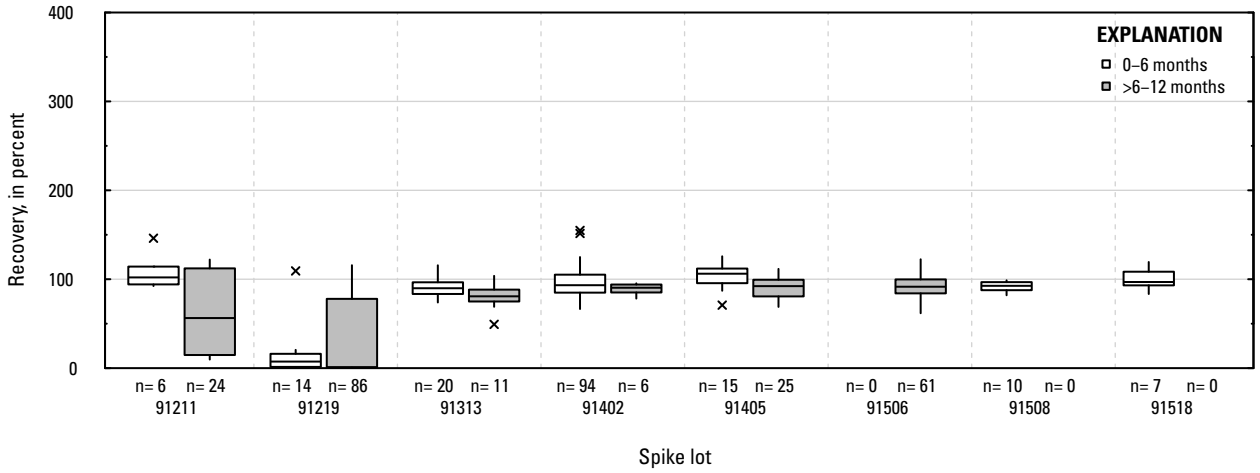
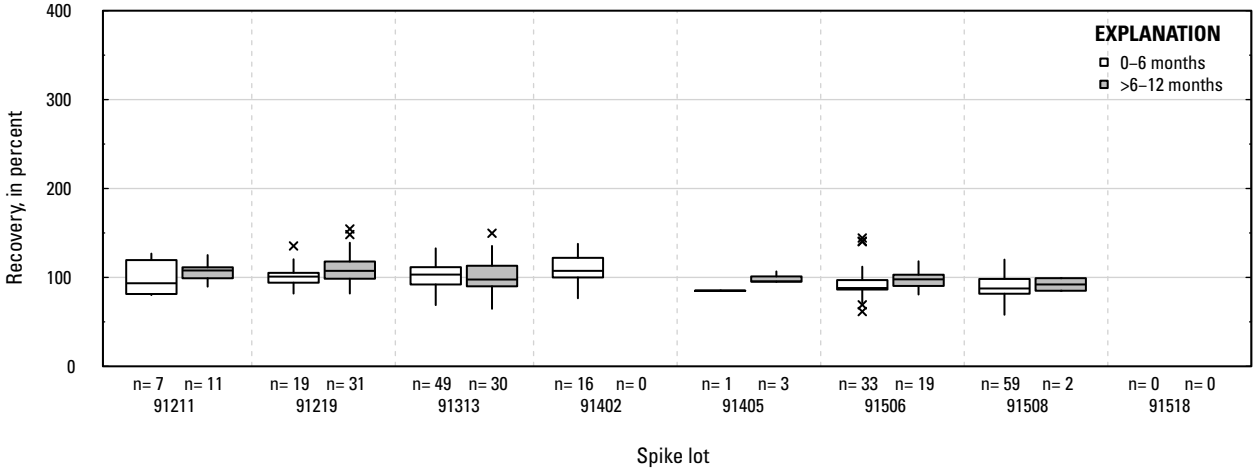
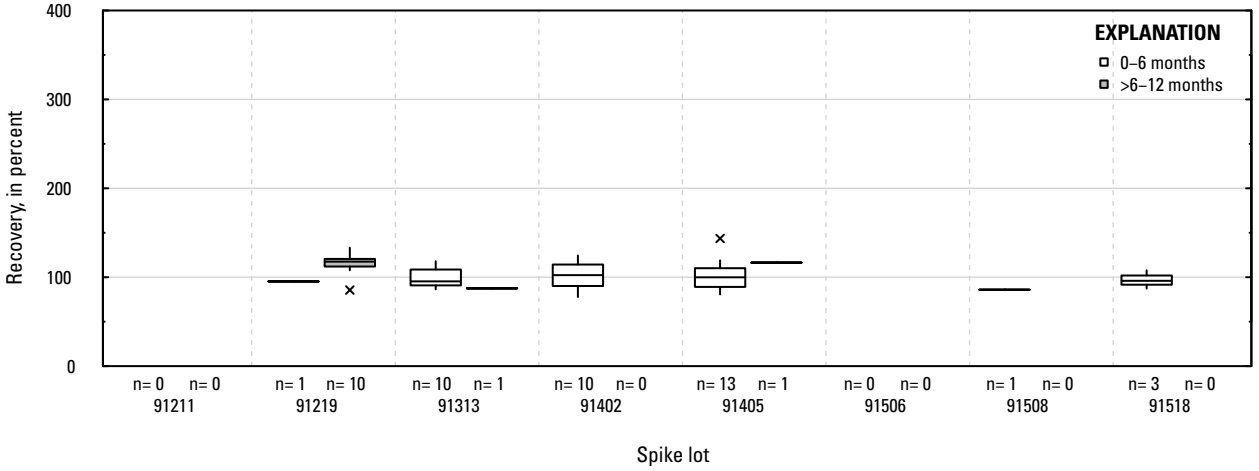


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

KO. **Fipronil amide: laboratory reagent spikes**



KP. **Fipronil amide: groundwater field matrix spikes**



KQ. **Fipronil amide: surface water field matrix spikes**

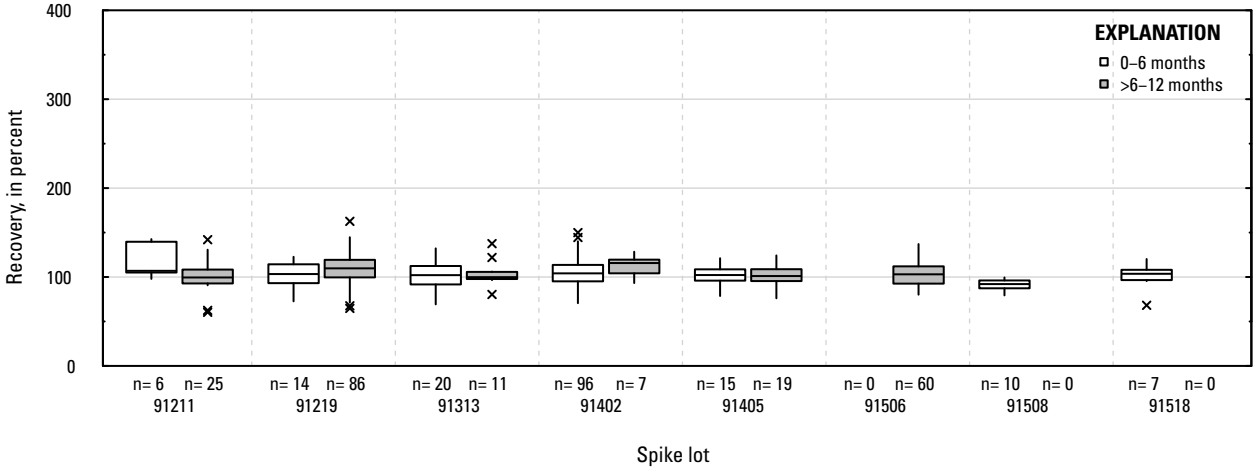
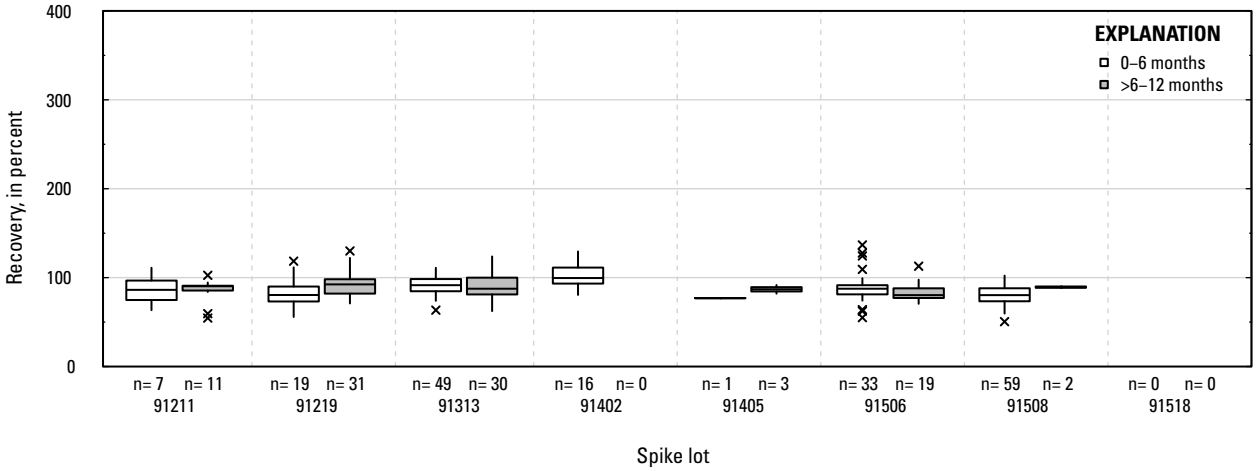
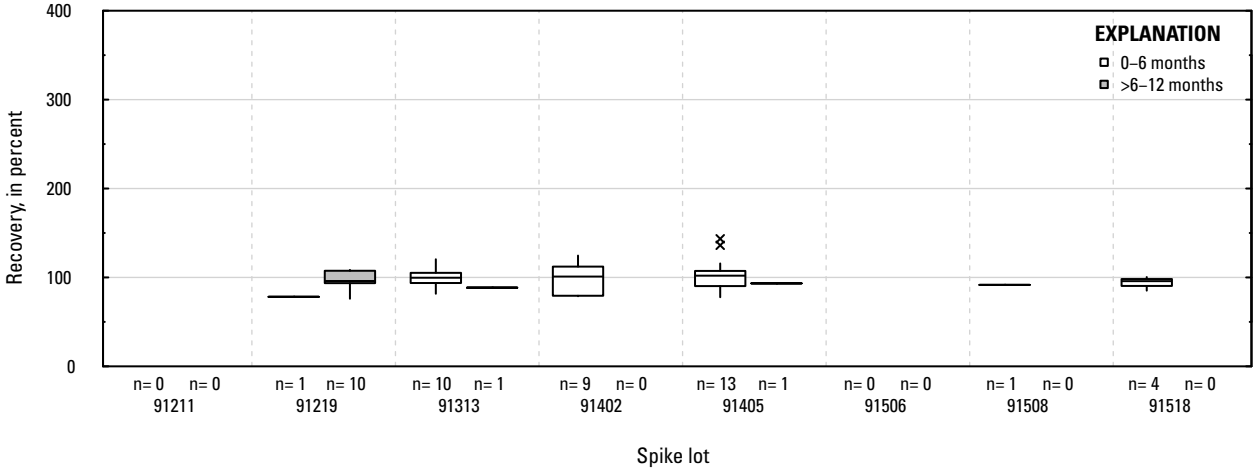


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

KR. **Fipronil sulfide: laboratory reagent spikes**



KS. **Fipronil sulfide: groundwater field matrix spikes**



KT. **Fipronil sulfide: surface water field matrix spikes**

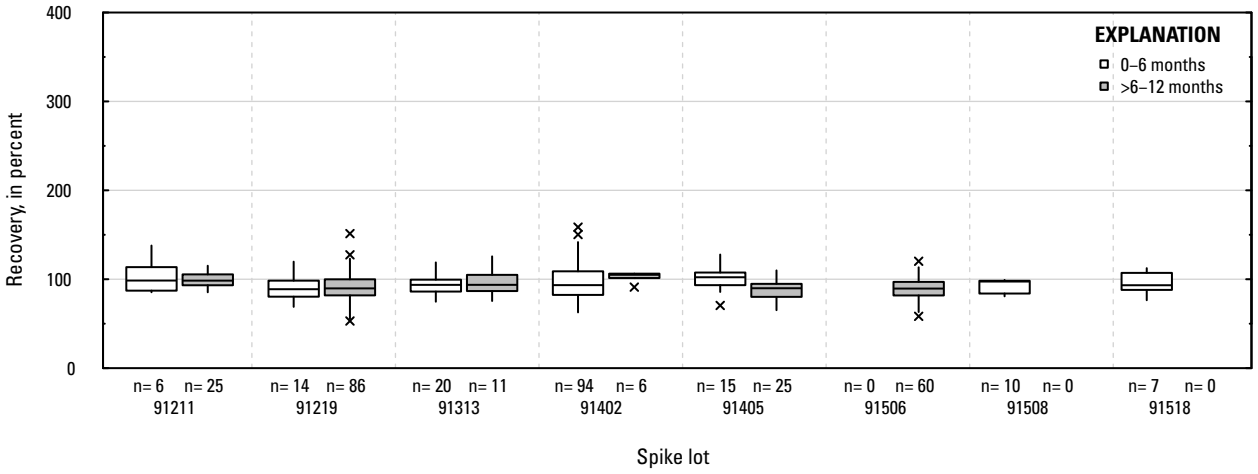
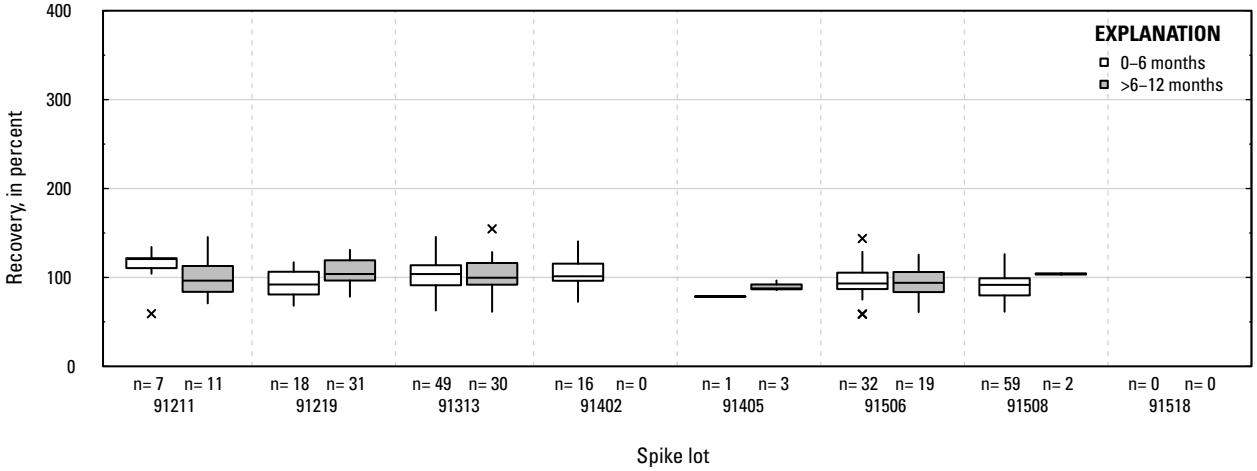
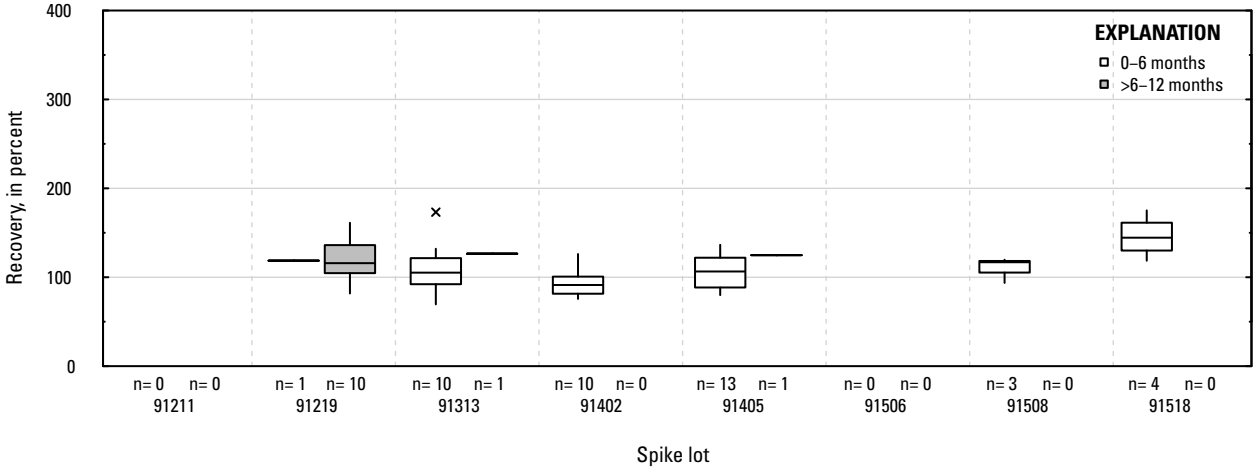


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

KU. **Fipronil sulfonate: laboratory reagent spikes**



KV. **Fipronil sulfonate: groundwater field matrix spikes**



KW. **Fipronil sulfonate: surface water field matrix spikes**

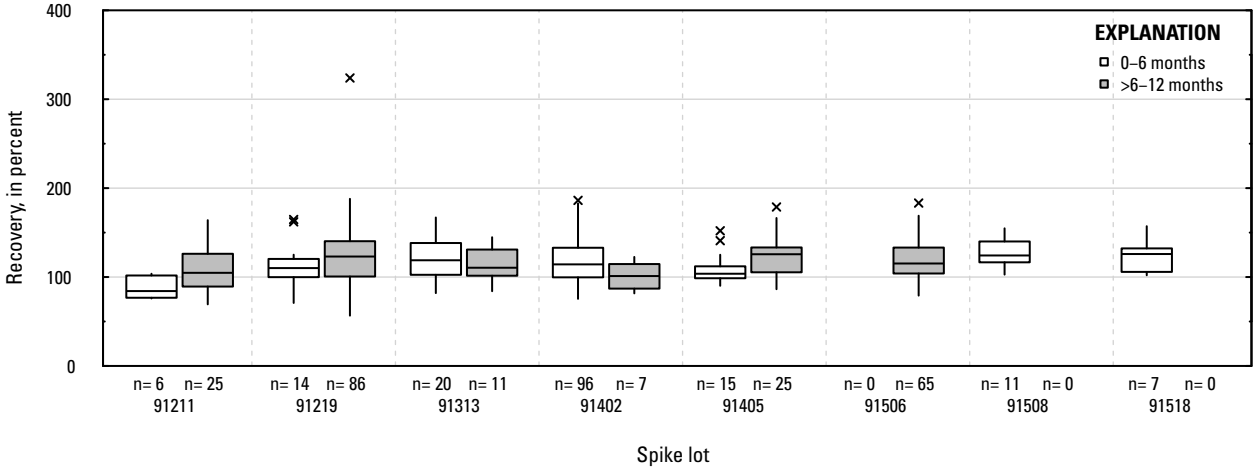
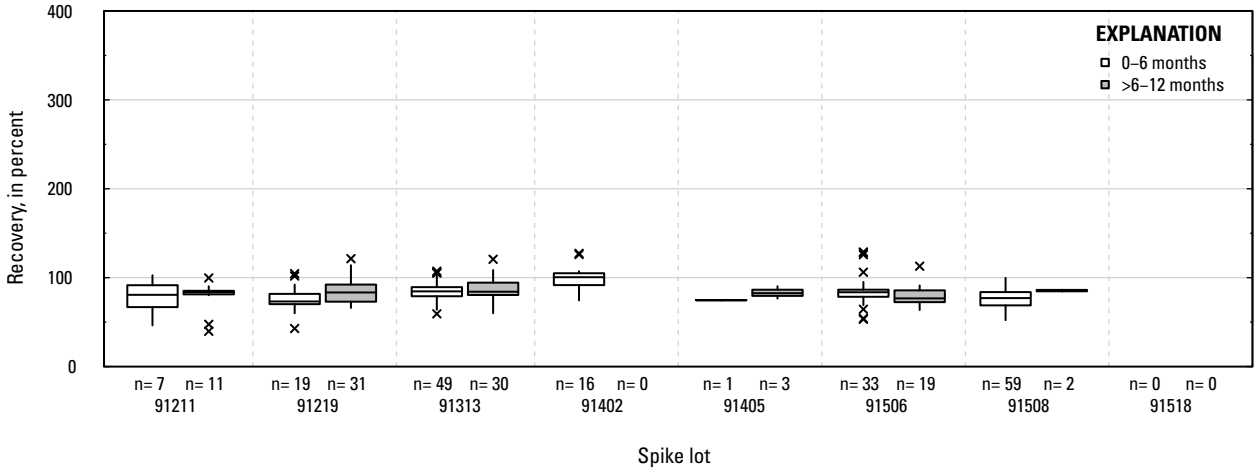
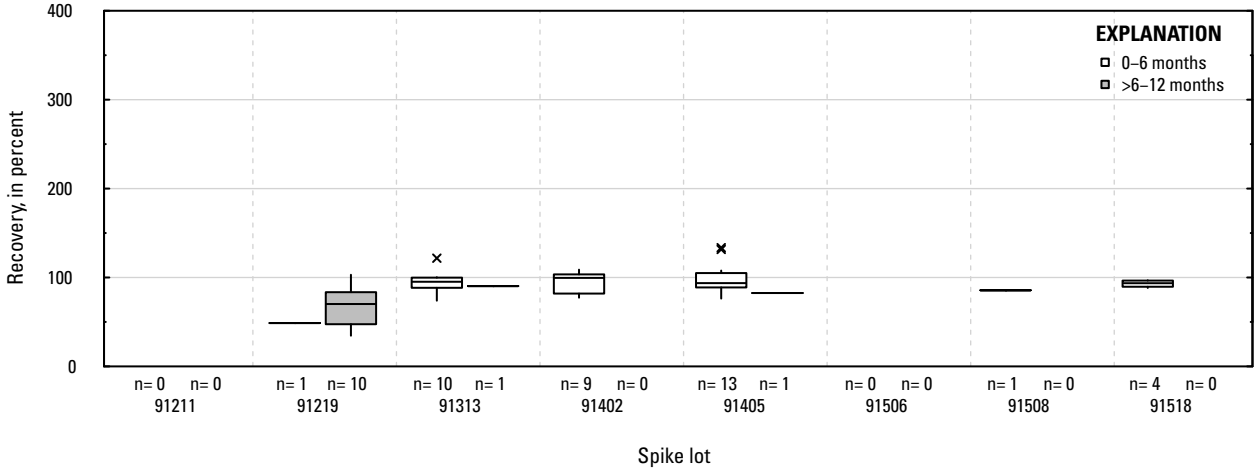


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

KX. **Fipronil sulfone: laboratory reagent spikes**



KY. **Fipronil sulfone: groundwater field matrix spikes**



KZ. **Fipronil sulfone: surface water field matrix spikes**

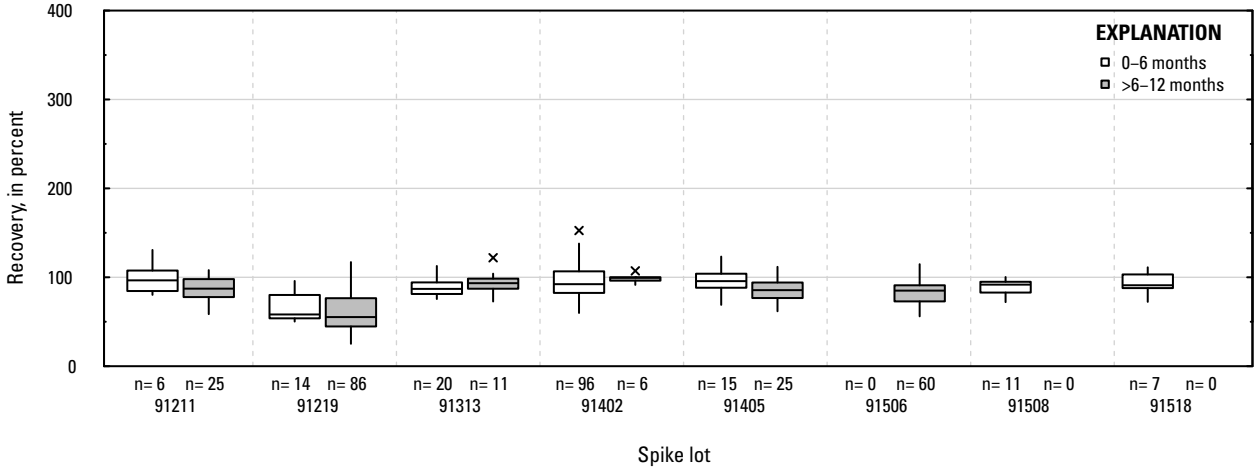
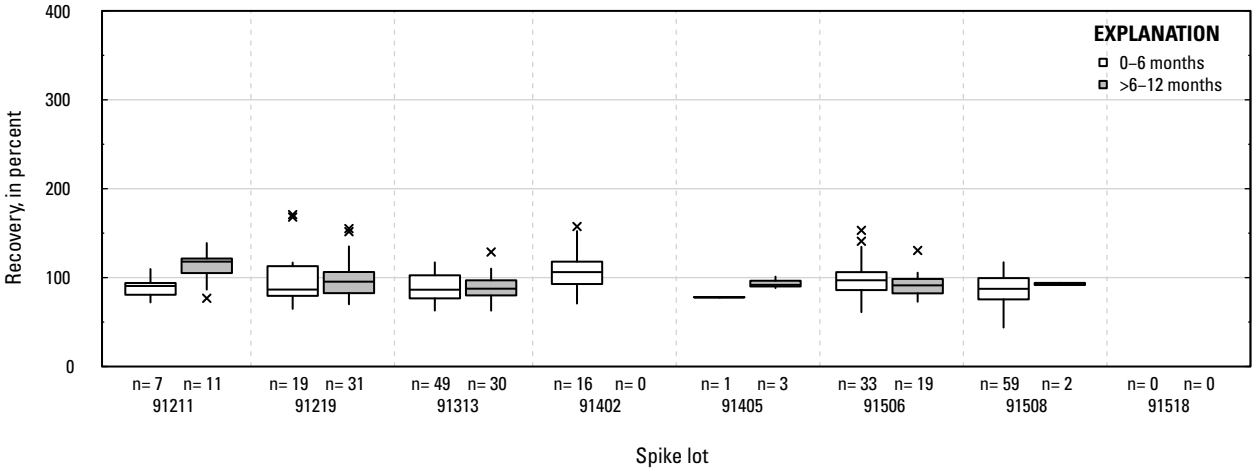
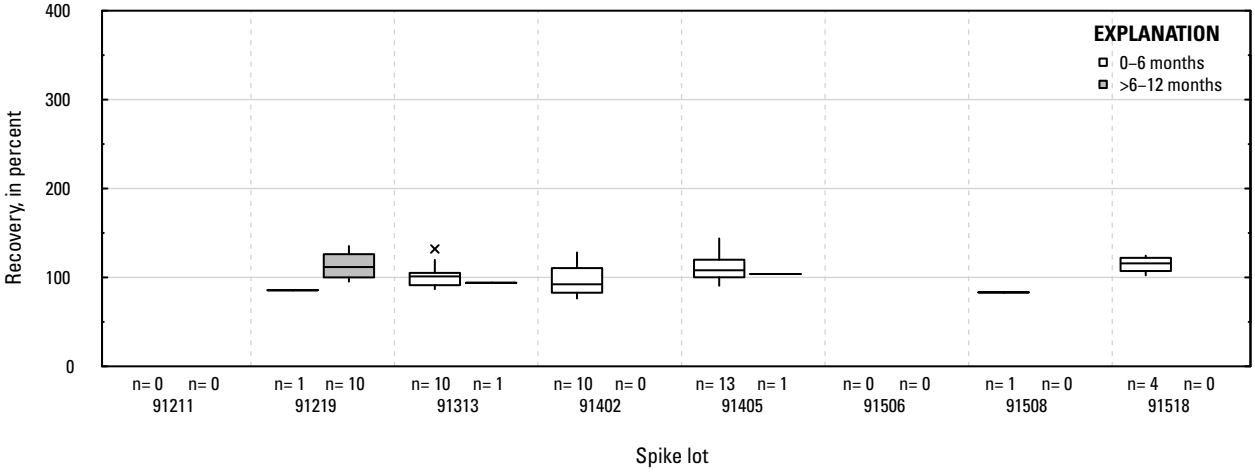


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

LA. **Flubendiamide: laboratory reagent spikes**



LB. **Flubendiamide: groundwater field matrix spikes**



LC. **Flubendiamide: surface water field matrix spikes**

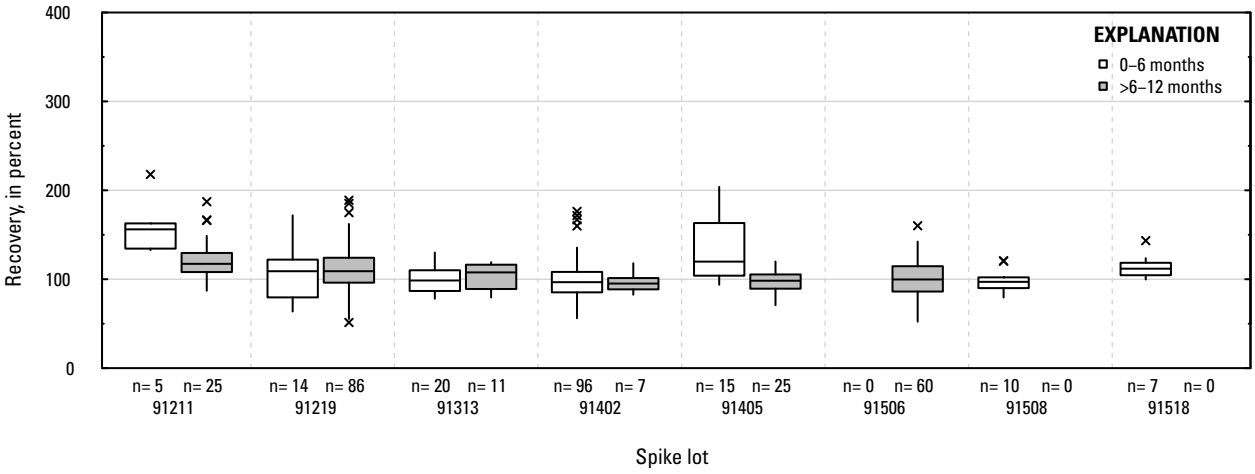
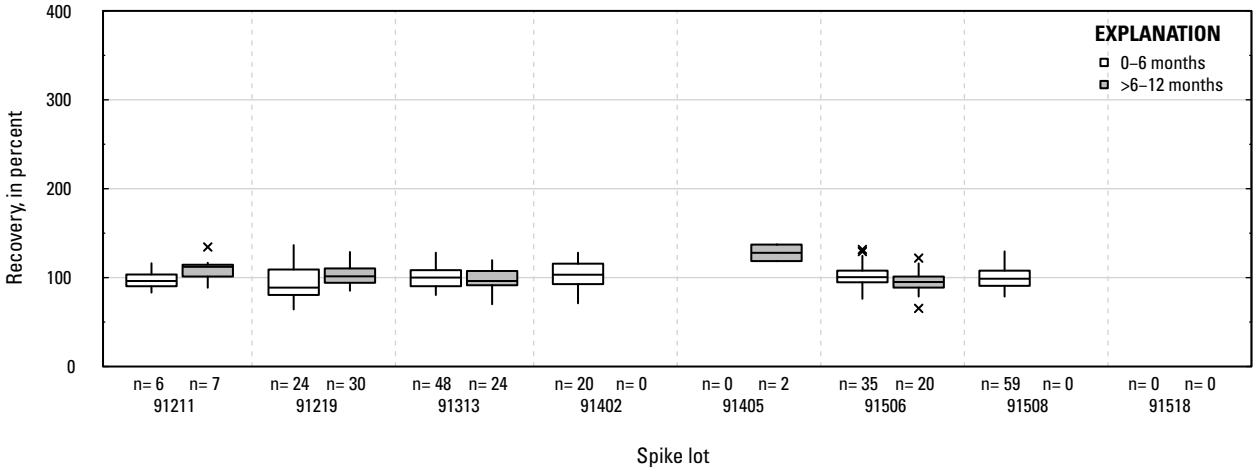
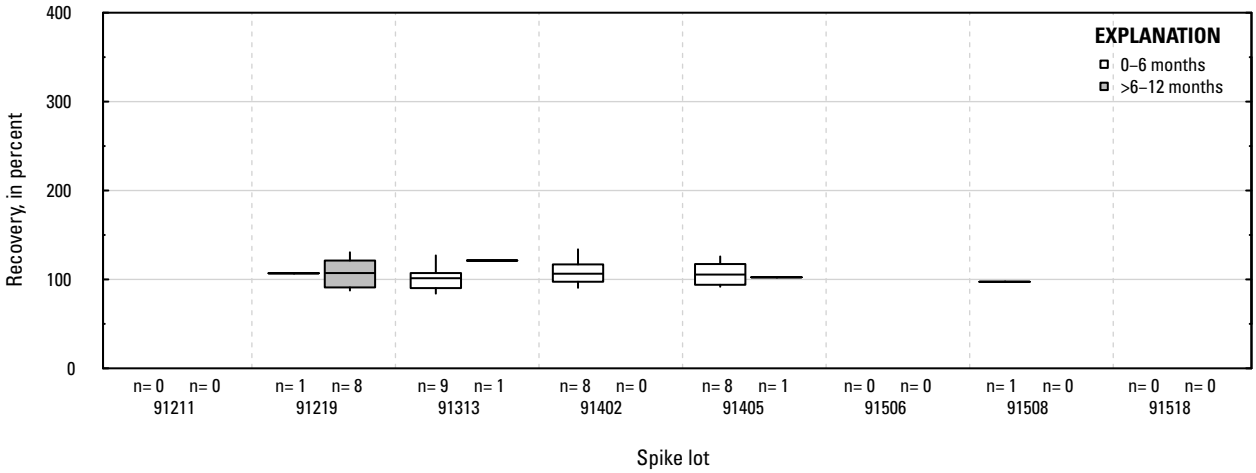


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

LD. **Flumetsulam: laboratory reagent spikes**



LE. **Flumetsulam: groundwater field matrix spikes**



LF. **Flumetsulam: surface water field matrix spikes**

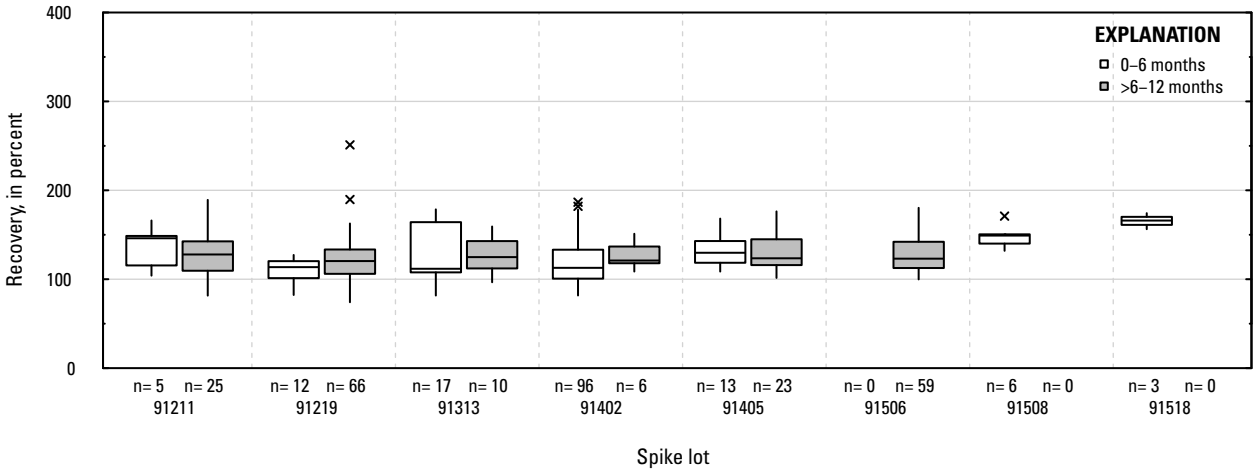
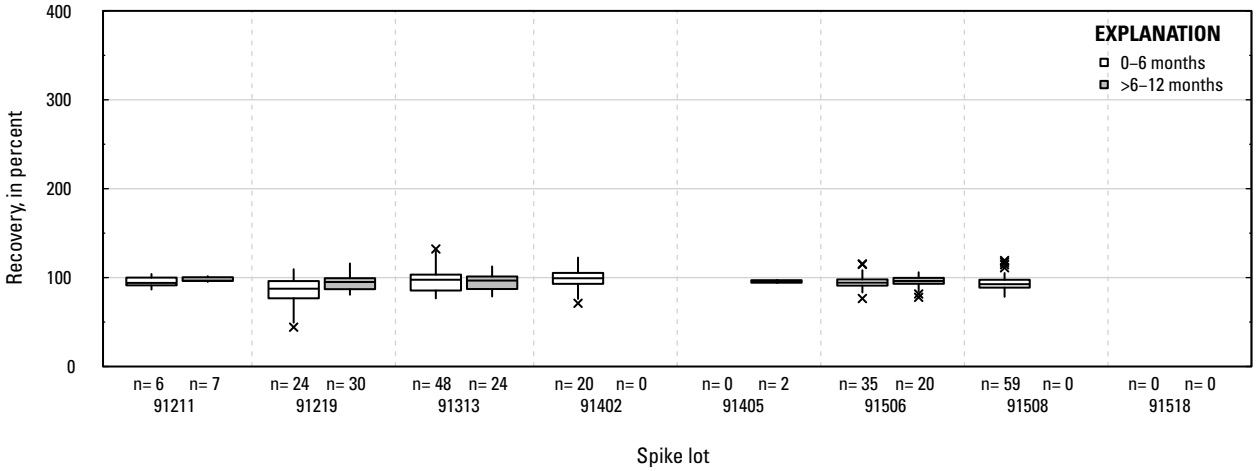
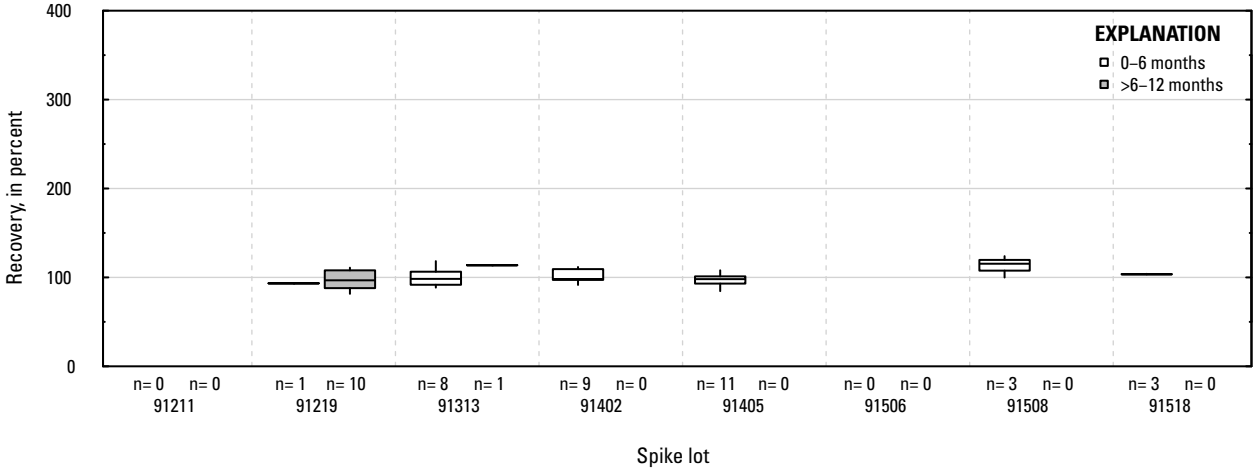


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

LG. **Fluometuron: laboratory reagent spikes**



LH. **Fluometuron: groundwater field matrix spikes**



LI. **Fluometuron: surface water field matrix spikes**

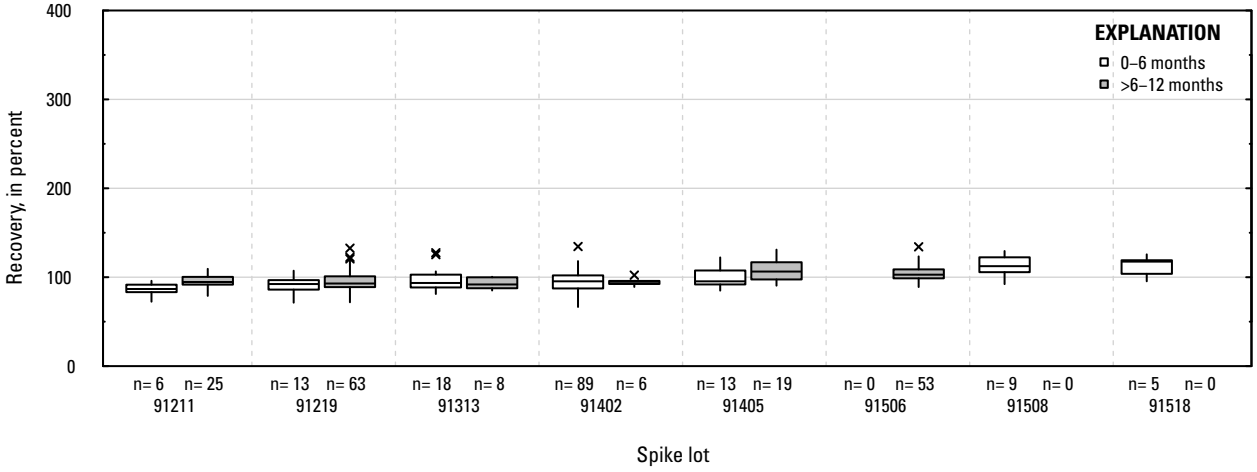
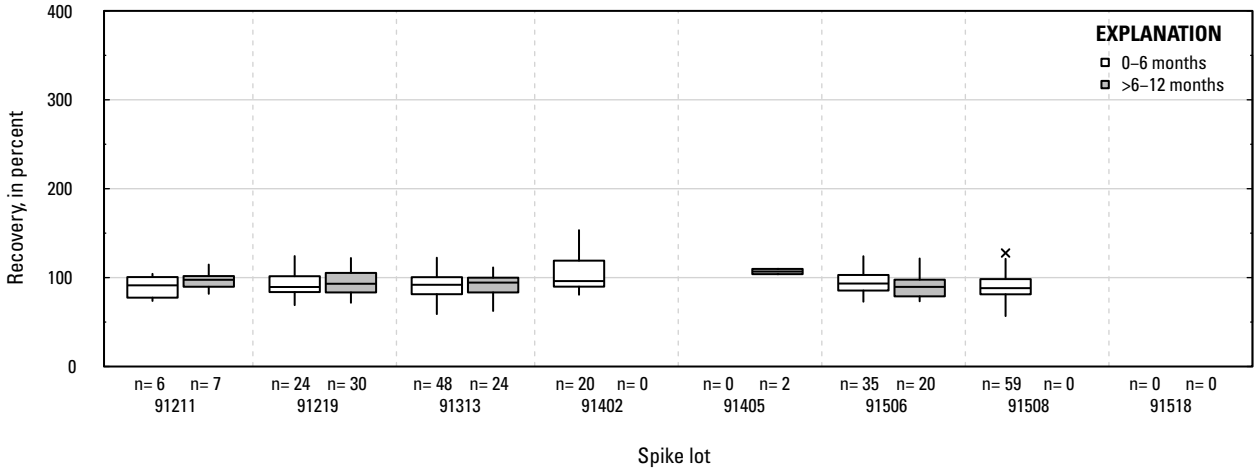
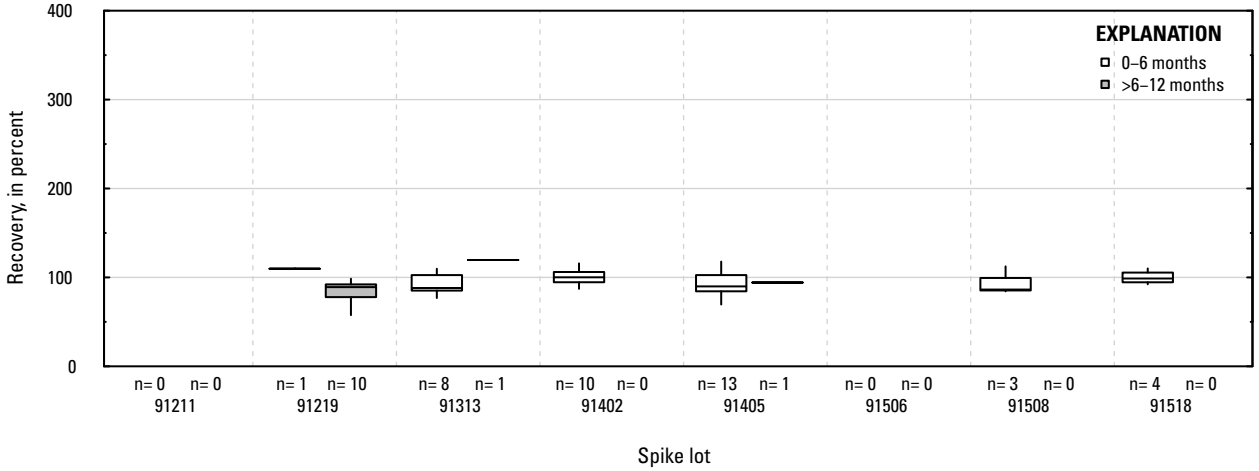


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

LJ. **Fonofos: laboratory reagent spikes**



LK. **Fonofos: groundwater field matrix spikes**



LL. **Fonofos: surface water field matrix spikes**

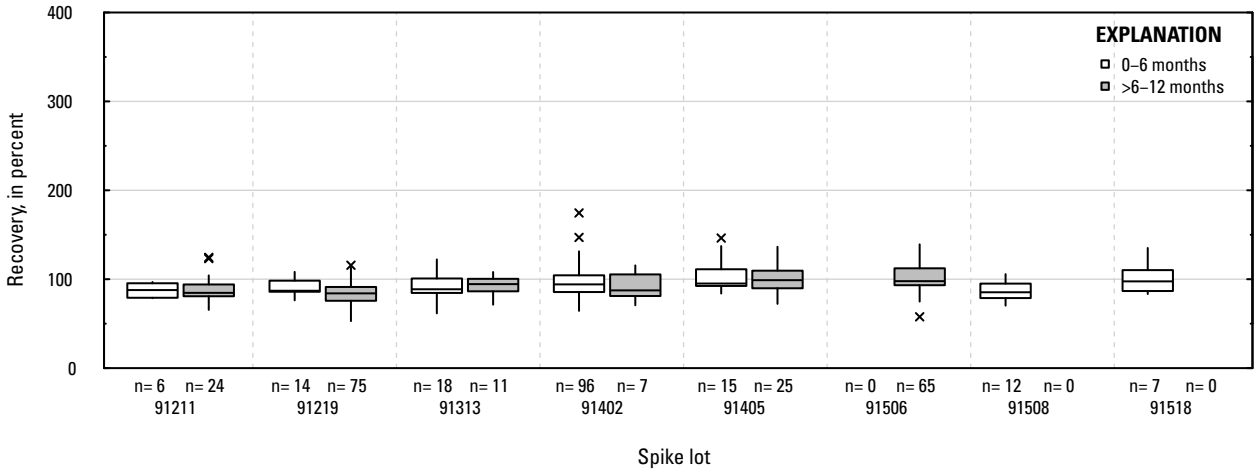
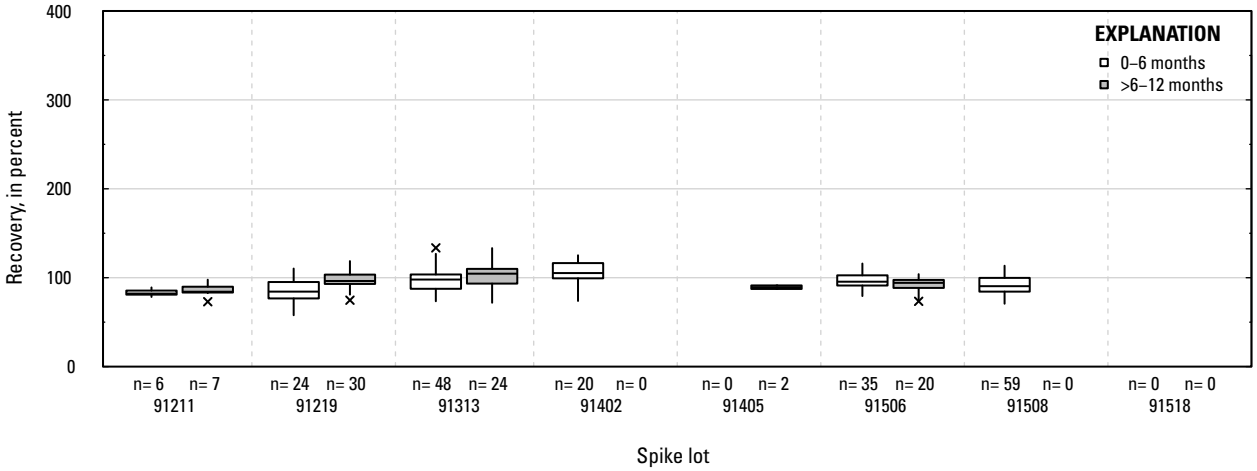
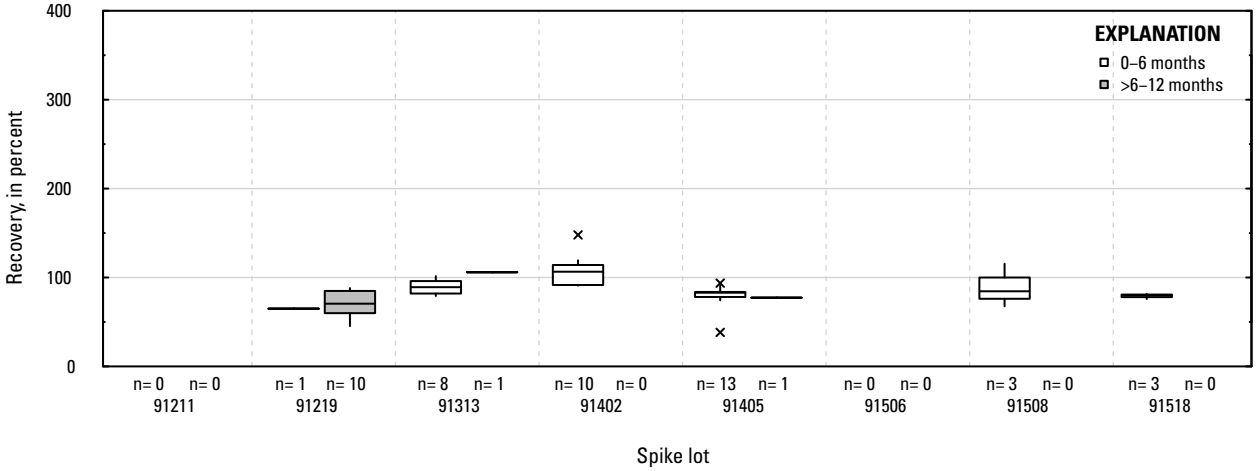


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

LM. **Halosulfuron–methyl: laboratory reagent spikes**



LN. **Halosulfuron–methyl: groundwater field matrix spikes**



LO. **Halosulfuron–methyl: surface water field matrix spikes**

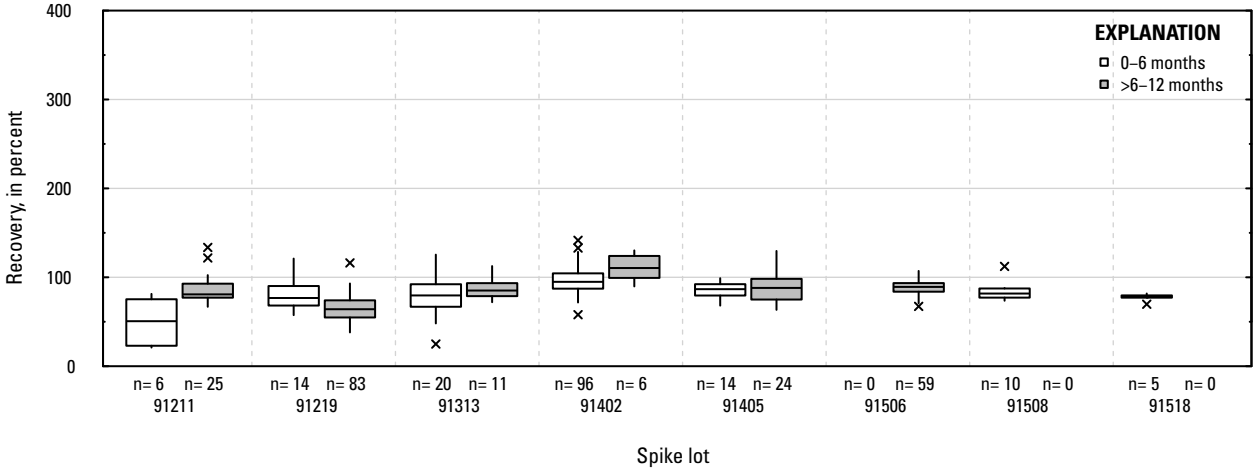
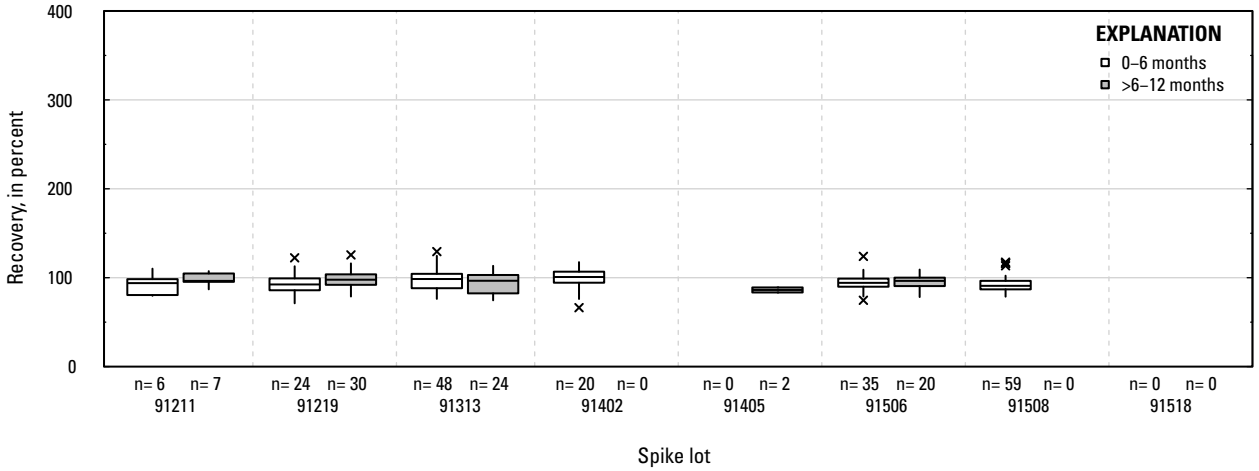
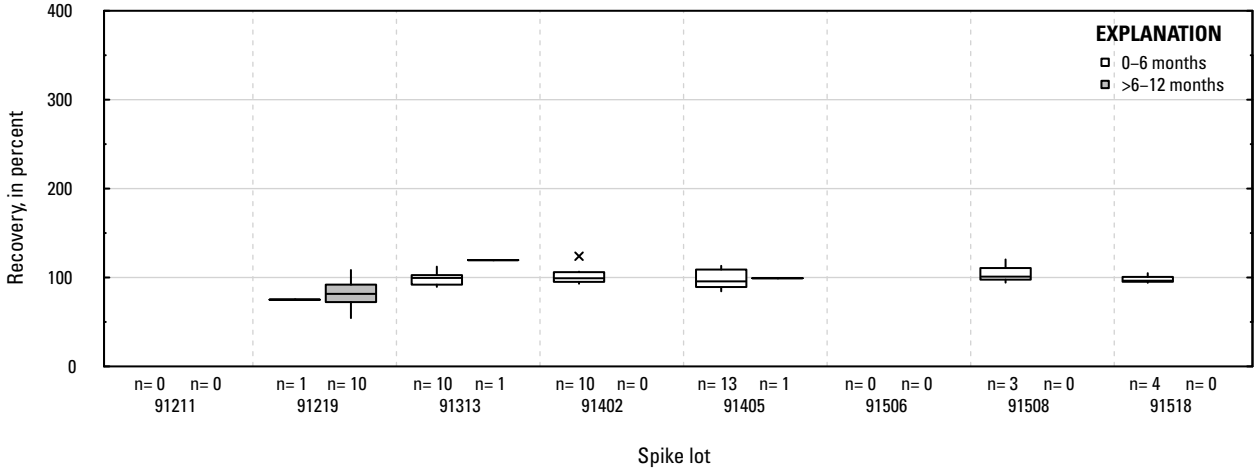


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

LP. **Hexazinone: laboratory reagent spikes**



LQ. **Hexazinone: groundwater field matrix spikes**



LR. **Hexazinone: surface water field matrix spikes**

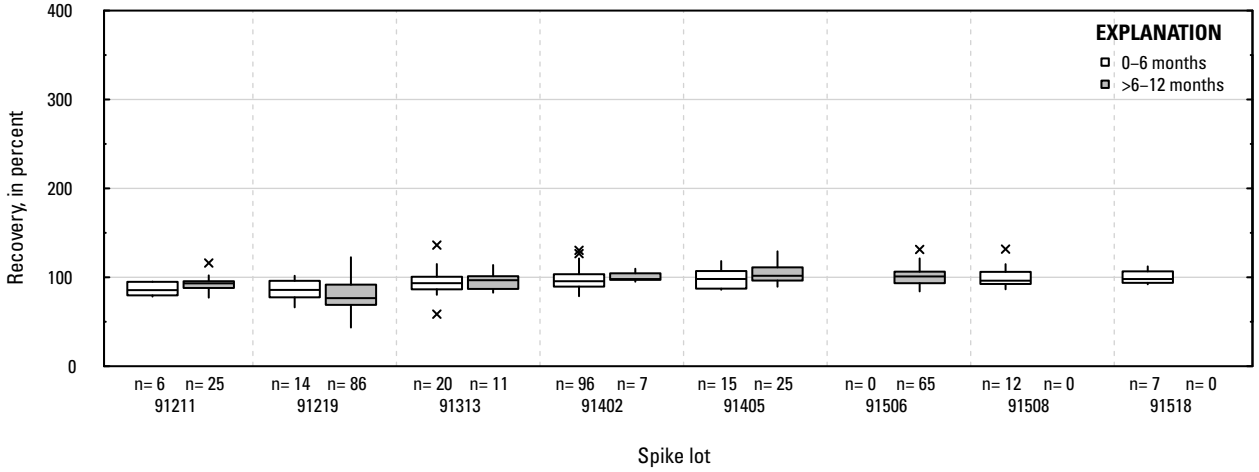
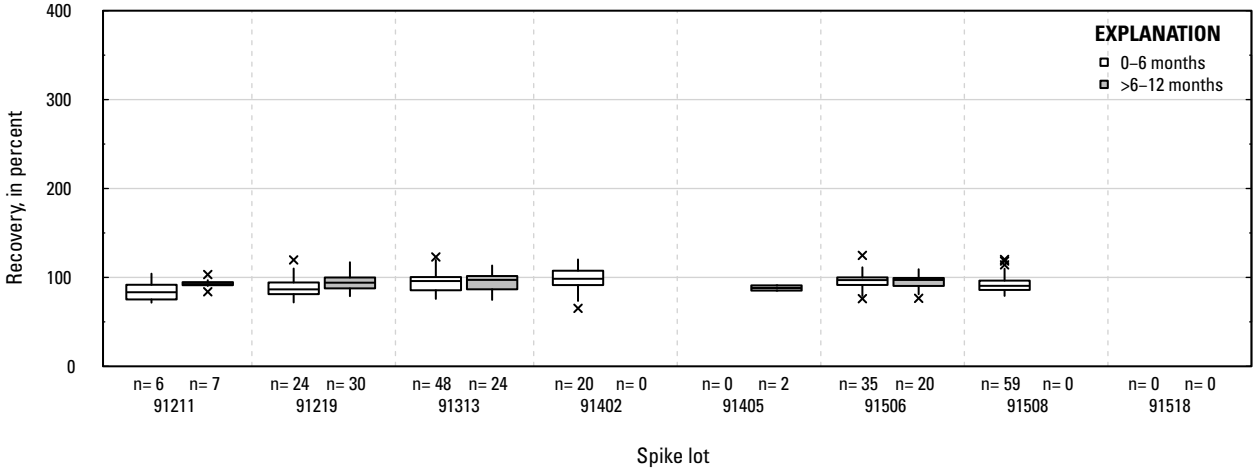
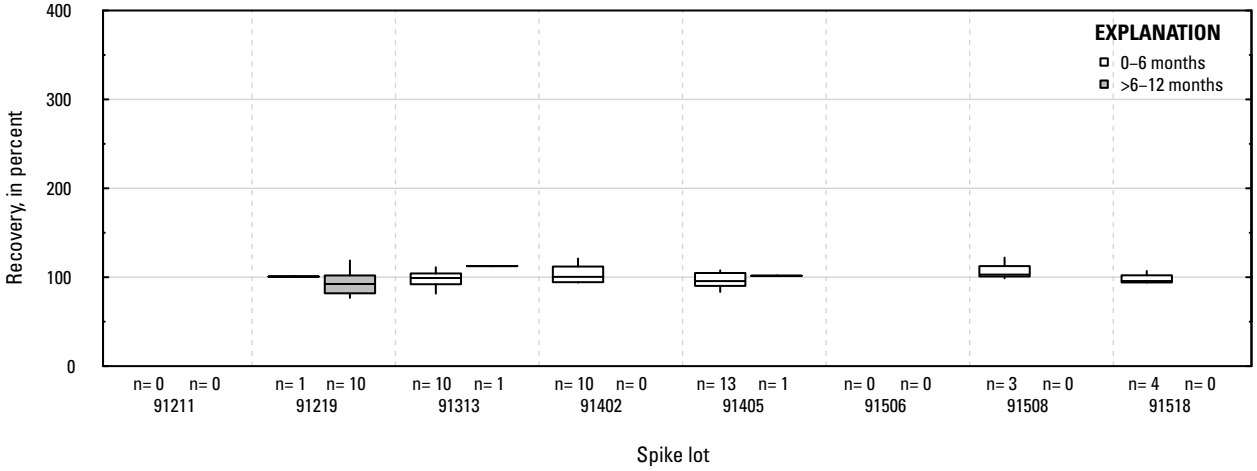


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

LS. **Hexazinone Transformation Product C: laboratory reagent spikes**



LT. **Hexazinone Transformation Product C: groundwater field matrix spikes**



LU. **Hexazinone Transformation Product C: surface water field matrix spikes**

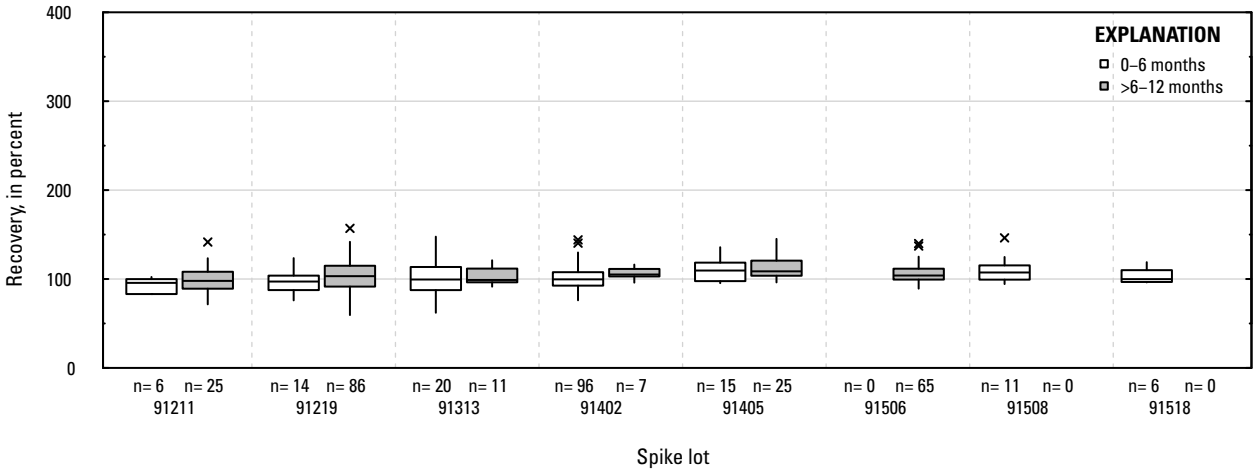
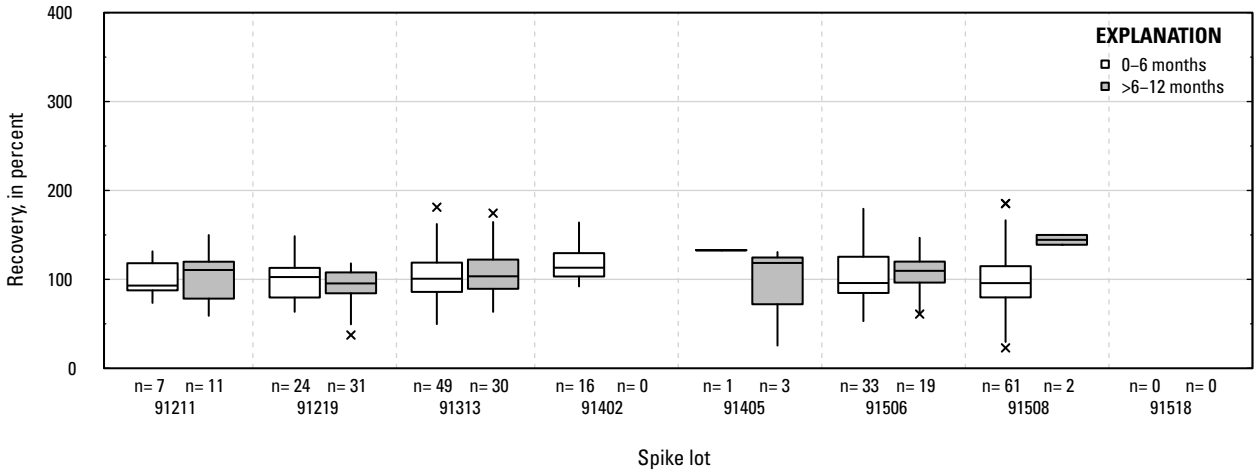
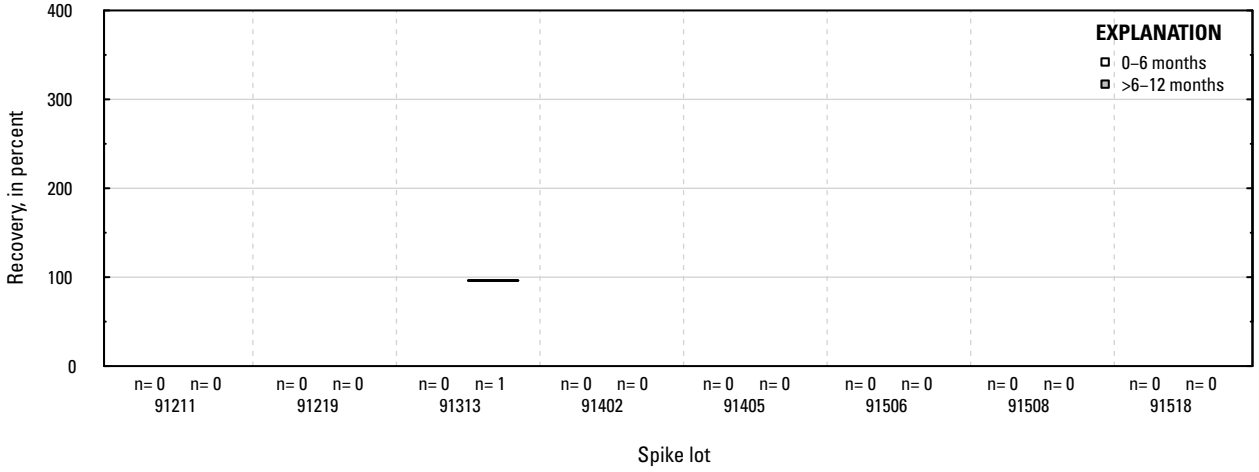


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

LV. **Hexazinone Transformation Product D: laboratory reagent spikes**



LW. **Hexazinone Transformation Product D: groundwater field matrix spikes**



LX. **Hexazinone Transformation Product D: surface water field matrix spikes**

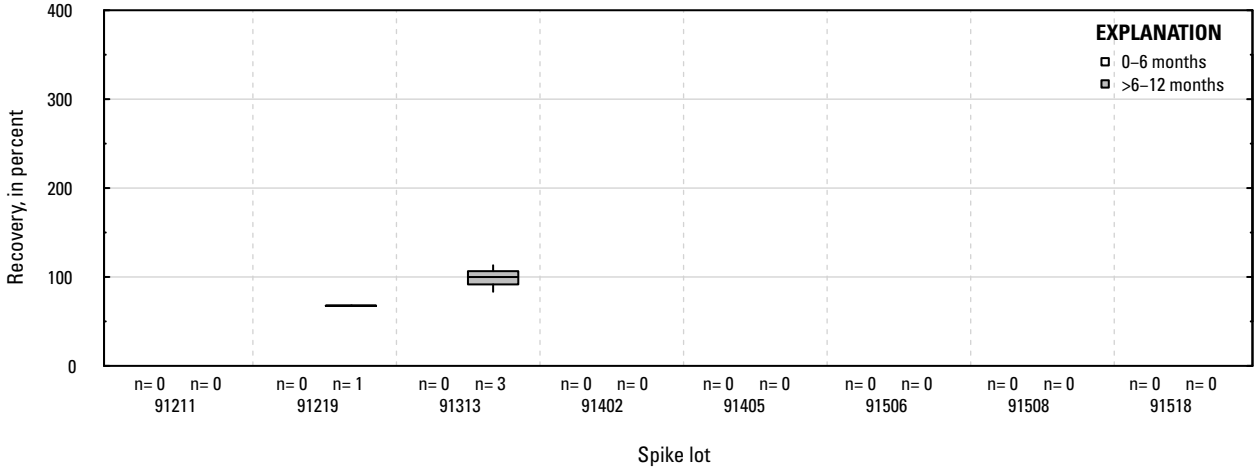
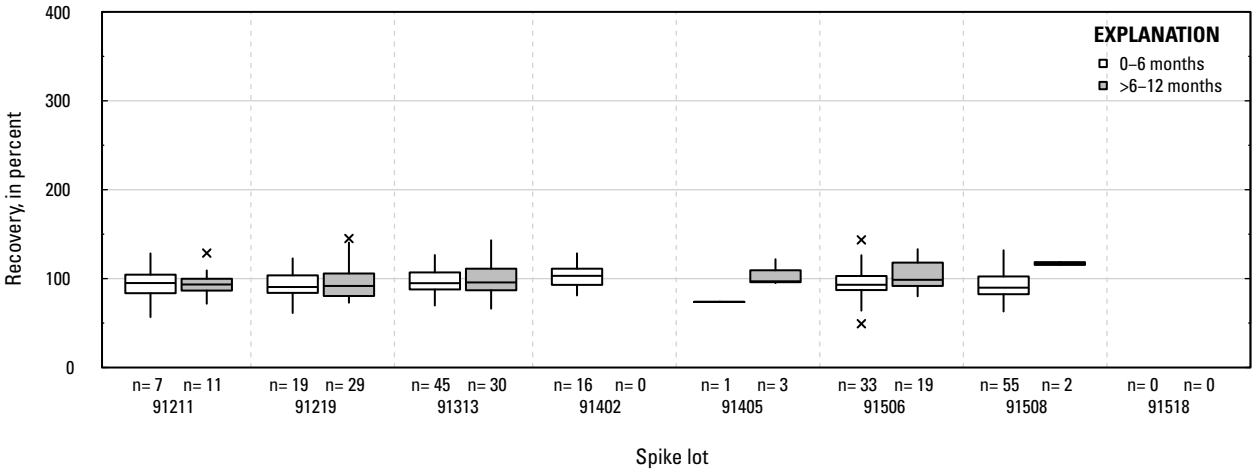
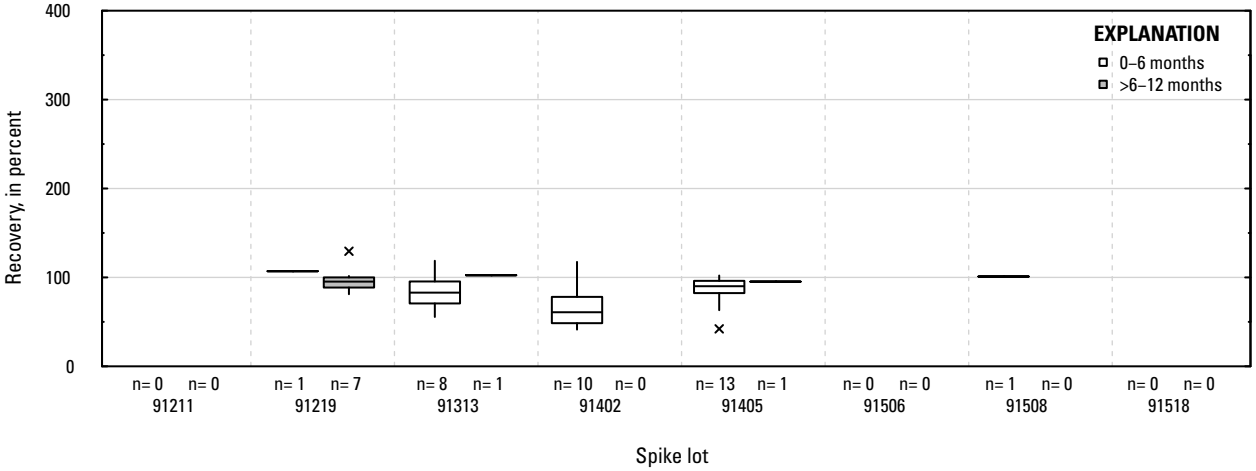


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

LY. **Hexazinone Transformation Product E: laboratory reagent spikes**



LZ. **Hexazinone Transformation Product E: groundwater field matrix spikes**



MA. **Hexazinone Transformation Product E: surface water field matrix spikes**

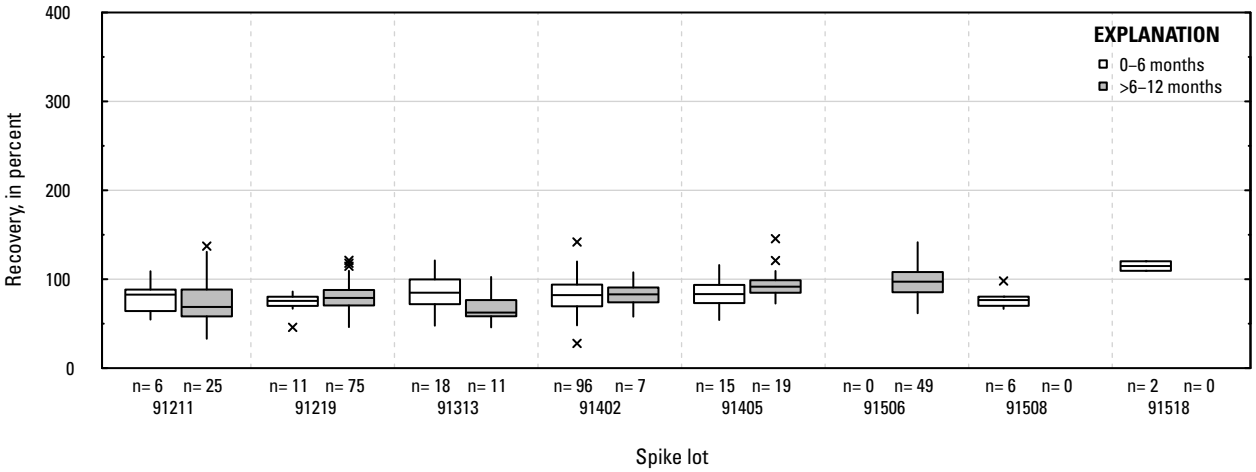
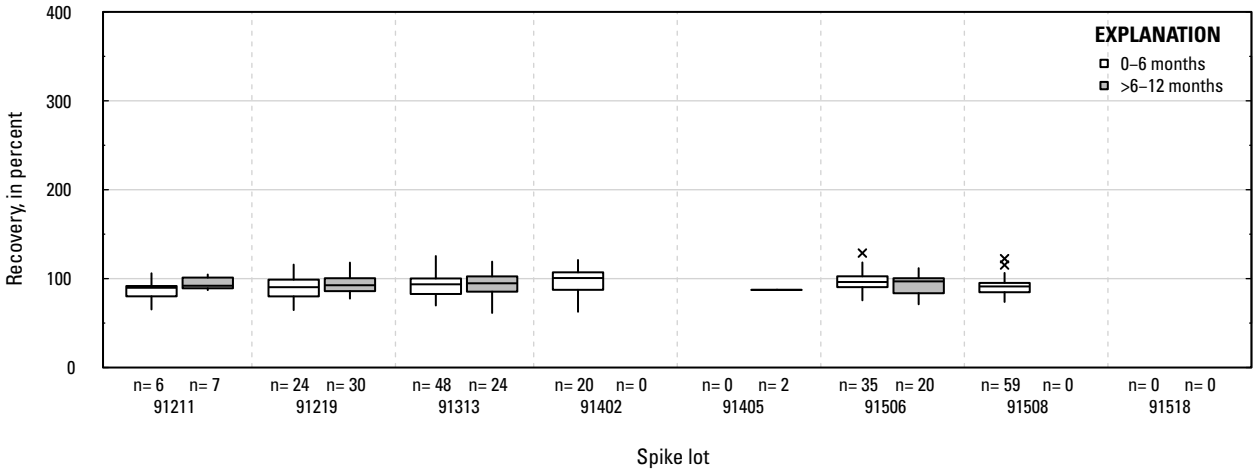
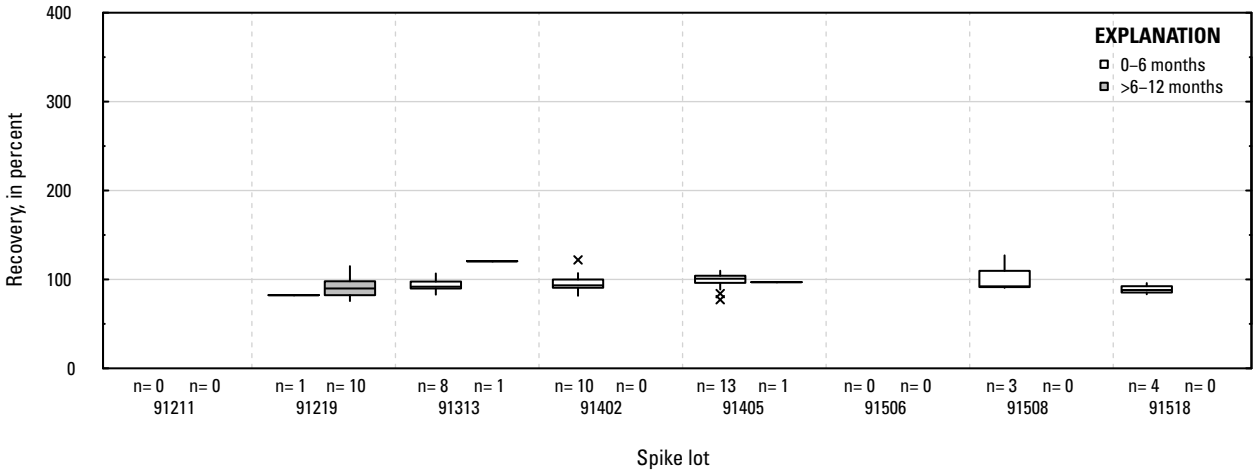


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

MB. **Didemethyl hexazinone F: laboratory reagent spikes**



MC. **Didemethyl hexazinone F: groundwater field matrix spikes**



MD. **Didemethyl hexazinone F: surface water field matrix spikes**

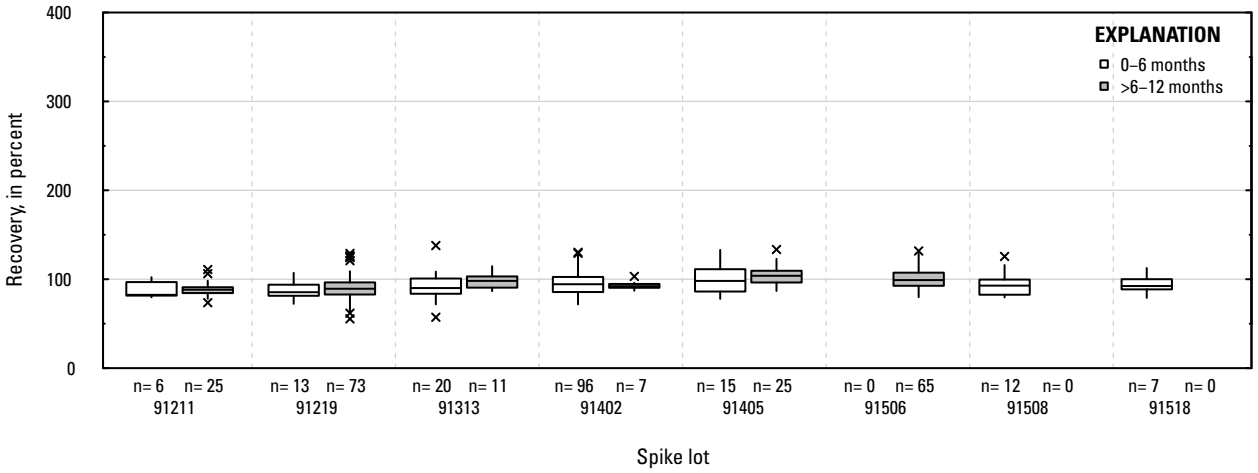
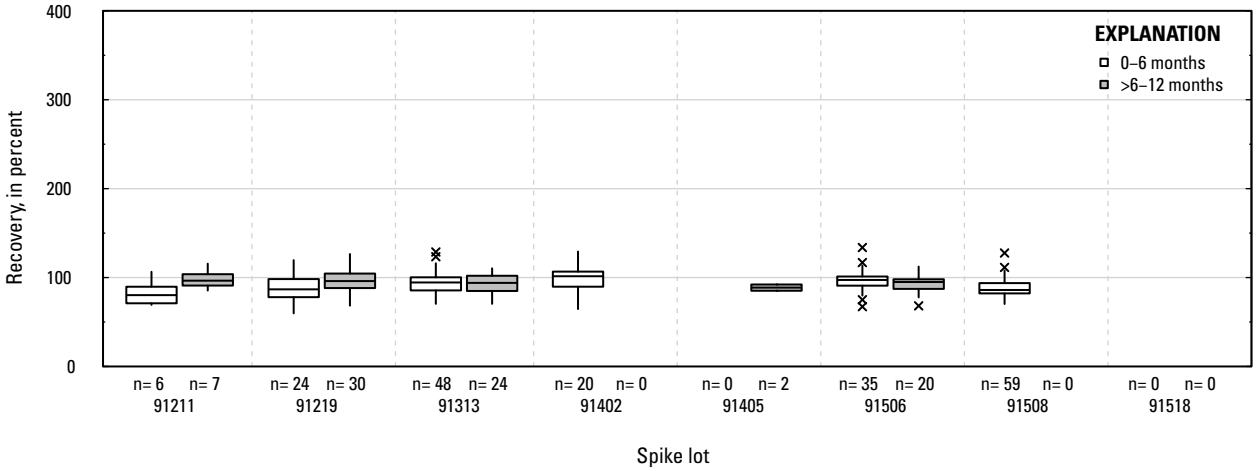
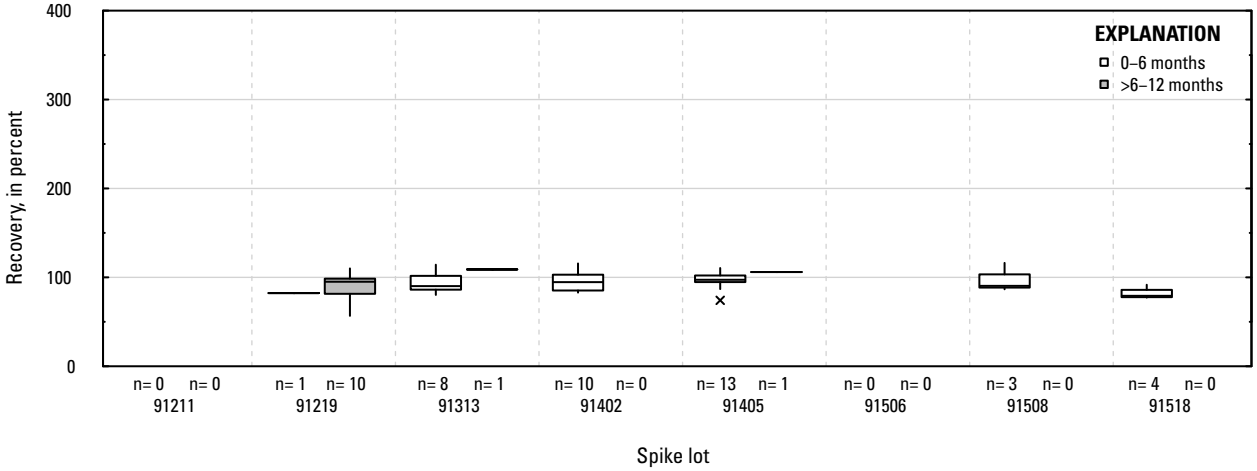


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

ME. **Hexazinone Transformation Product G: laboratory reagent spikes**



MF. **Hexazinone Transformation Product G: groundwater field matrix spikes**



MG. **Hexazinone Transformation Product G: surface water field matrix spikes**

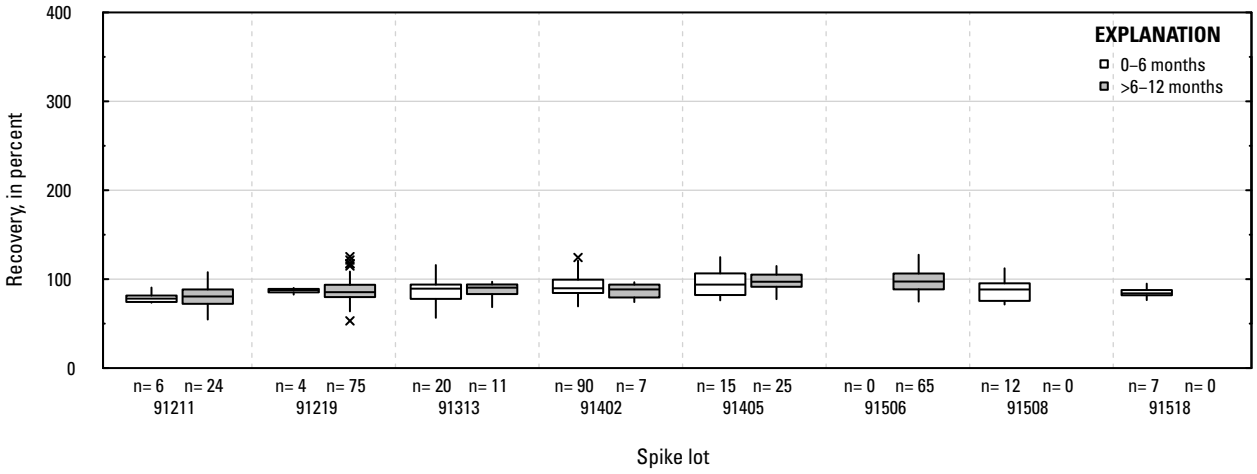
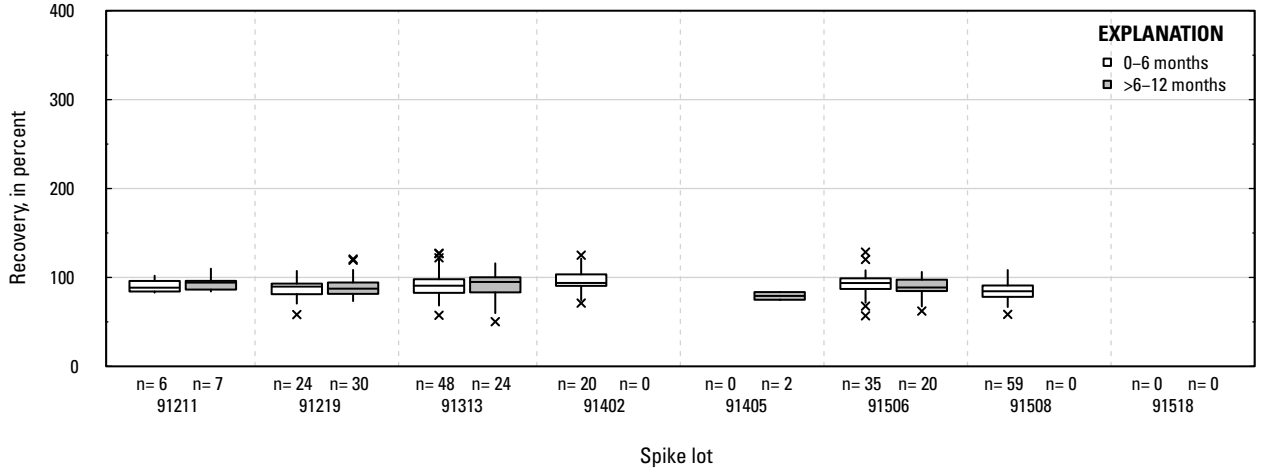
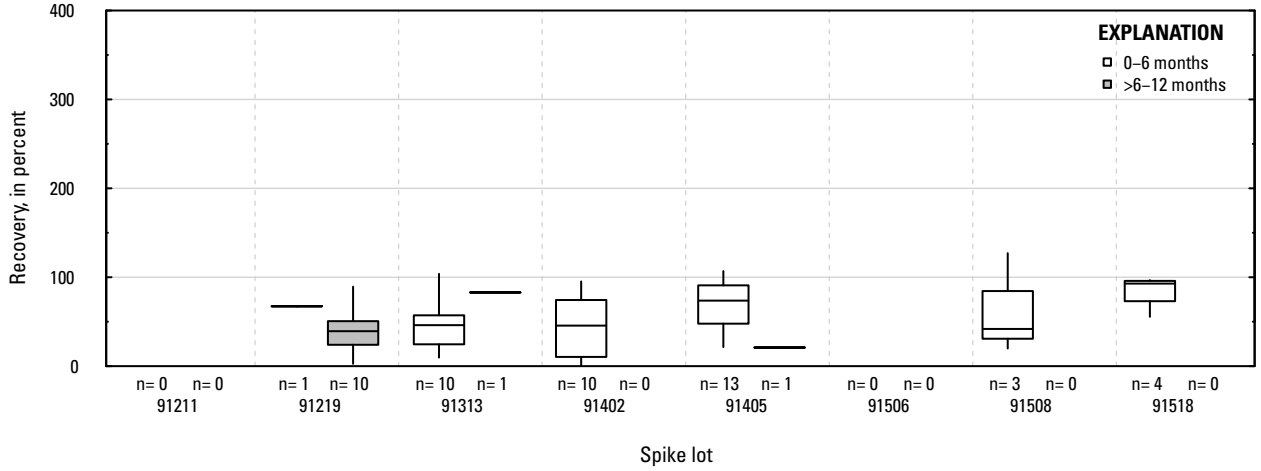


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

MH. **Hydroxy monodemethyl fluometuron: laboratory reagent spikes**



MI. **Hydroxy monodemethyl fluometuron: groundwater field matrix spikes**



MJ. **Hydroxy monodemethyl fluometuron: surface water field matrix spikes**

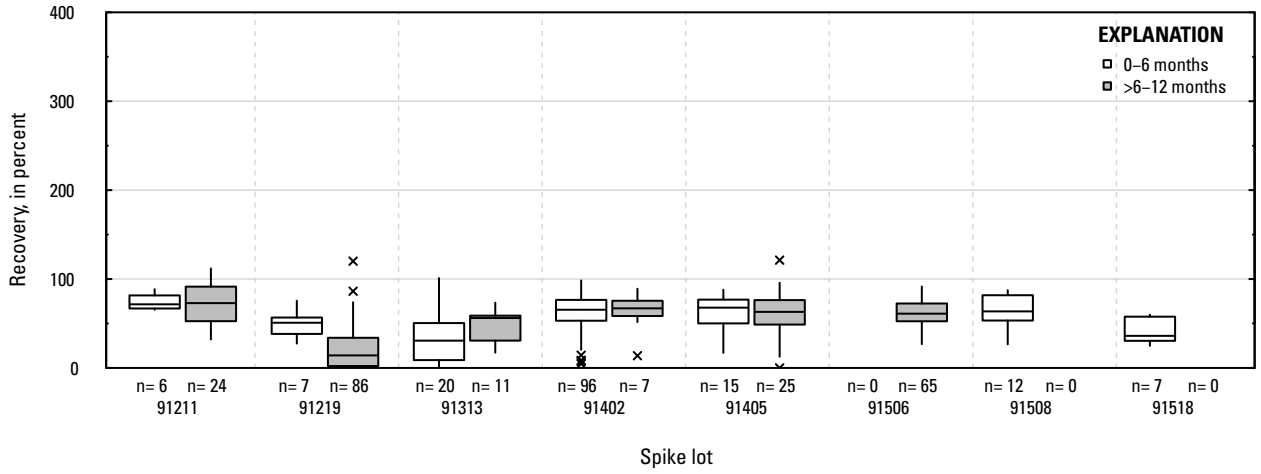
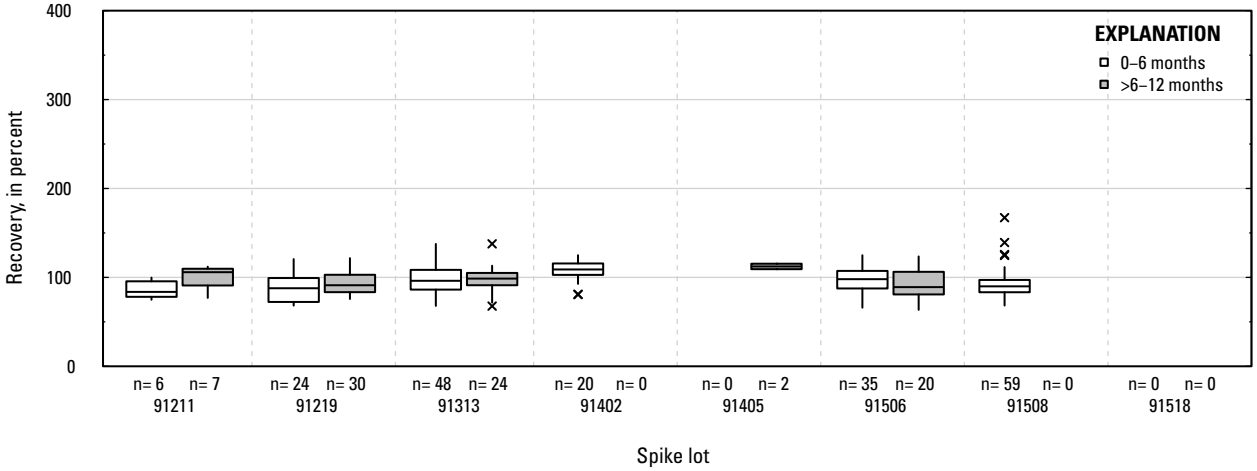
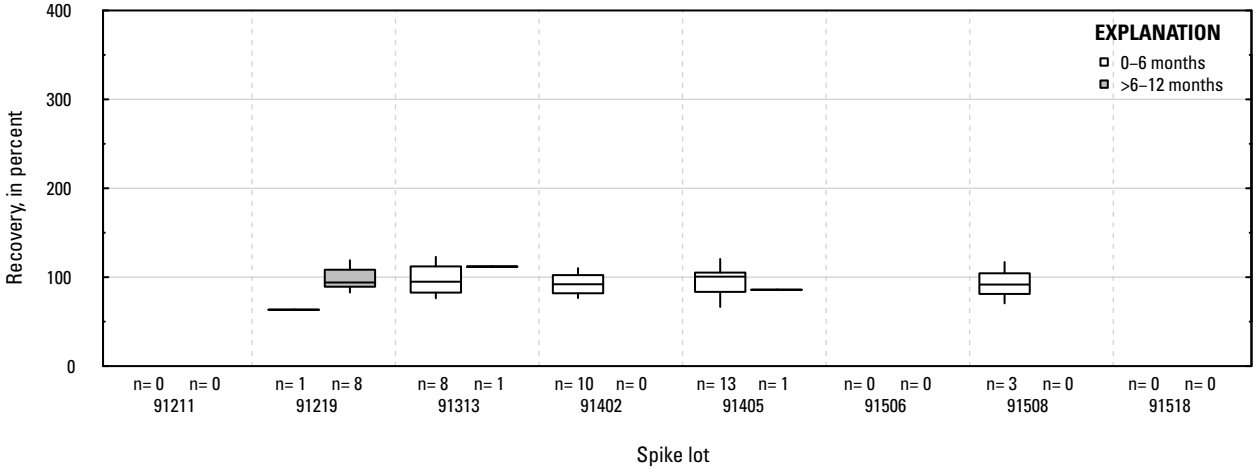


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

MK. **Hydroxyacetochlor: laboratory reagent spikes**



ML. **Hydroxyacetochlor: groundwater field matrix spikes**



MM. **Hydroxyacetochlor: surface water field matrix spikes**

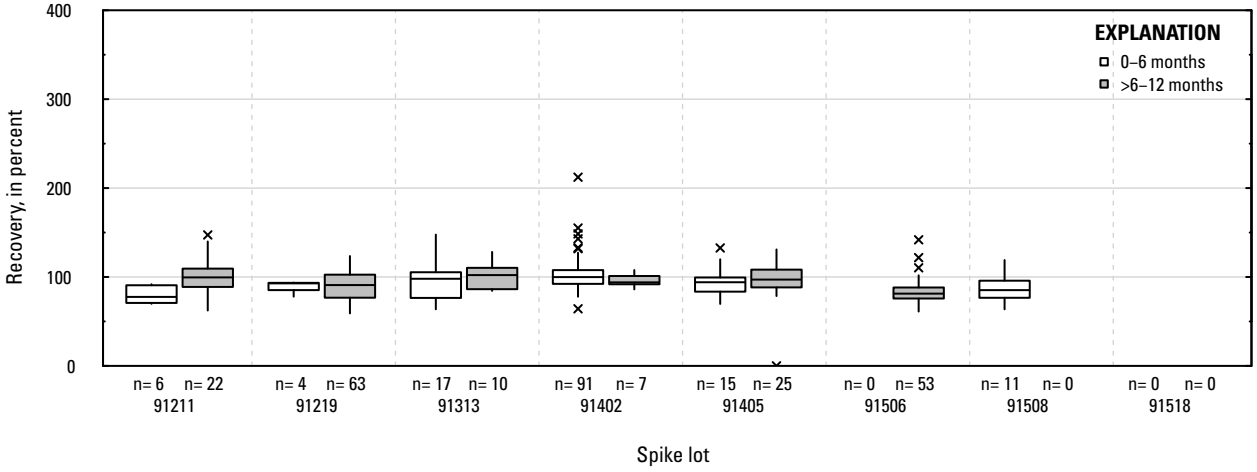
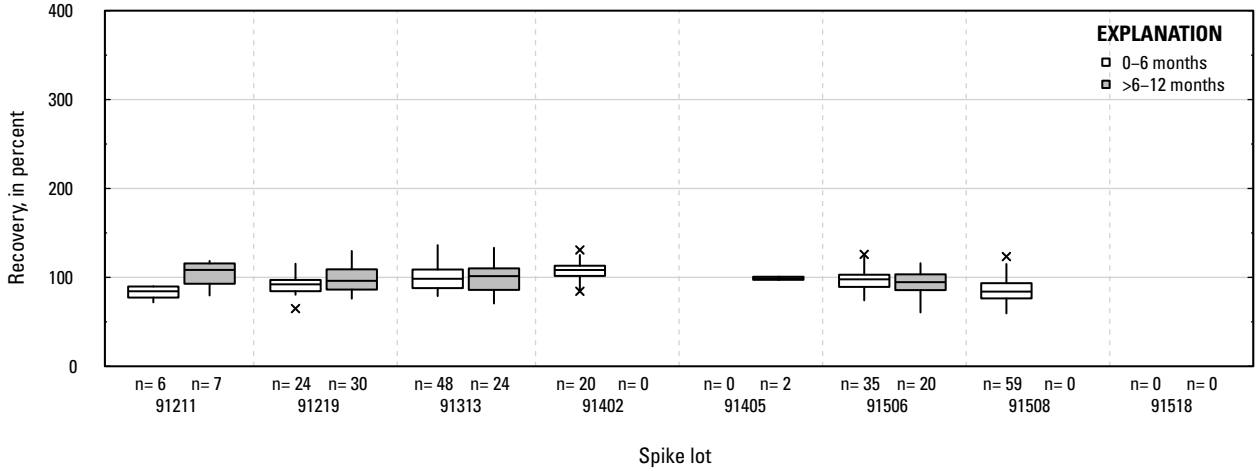
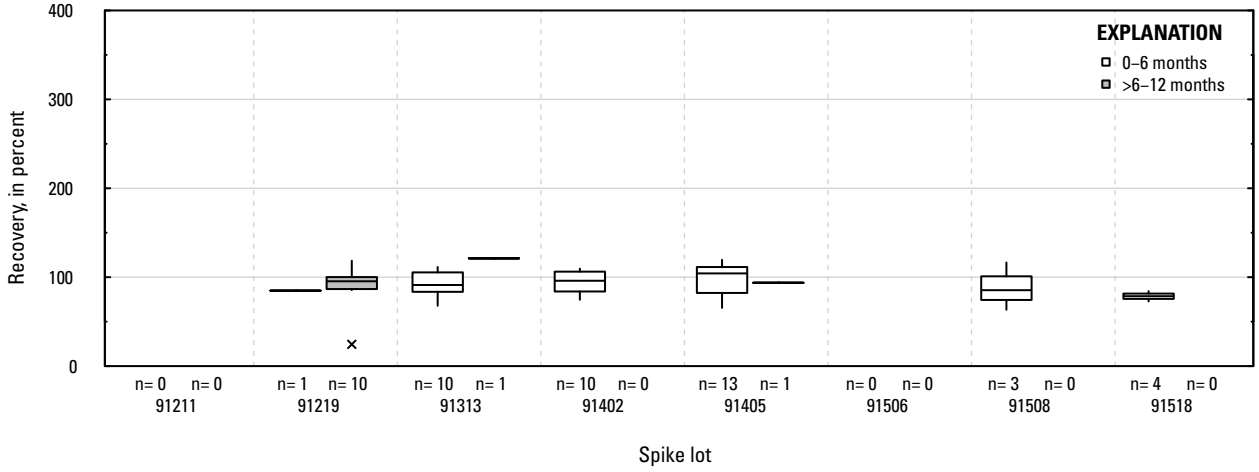


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

MN. **Hydroxyalachlor: laboratory reagent spikes**



MO. **Hydroxyalachlor: groundwater field matrix spikes**



MP. **Hydroxyalachlor: surface water field matrix spikes**

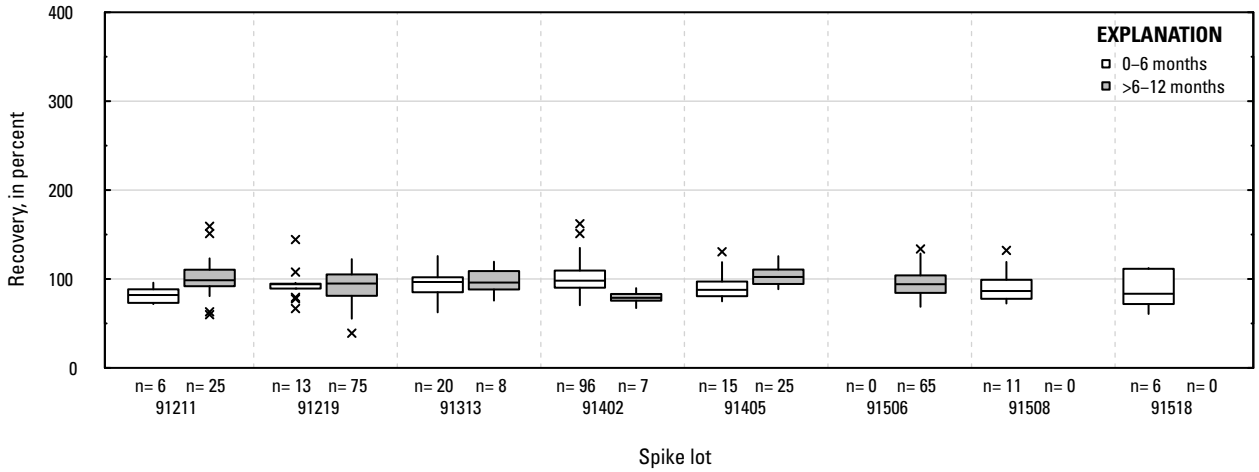
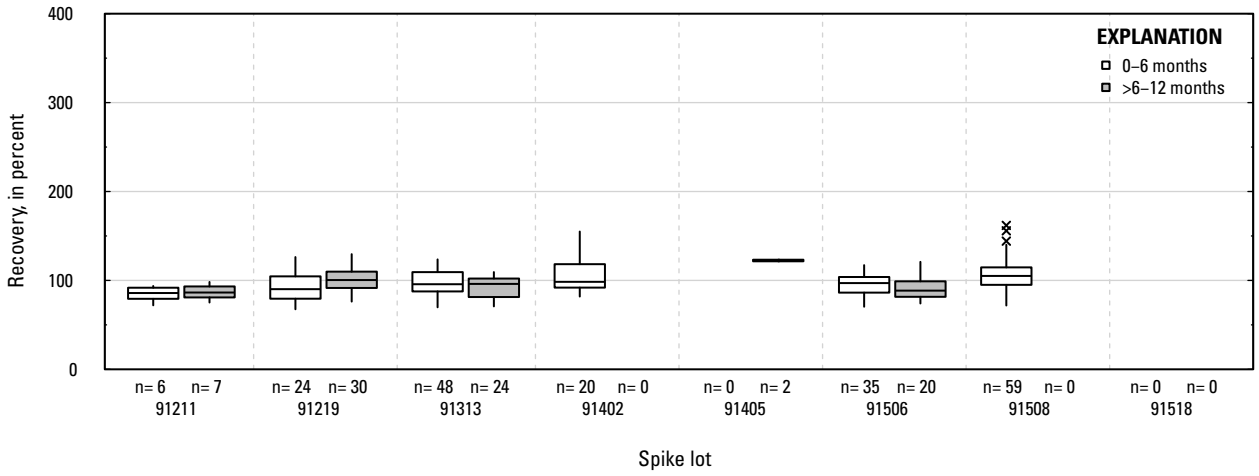
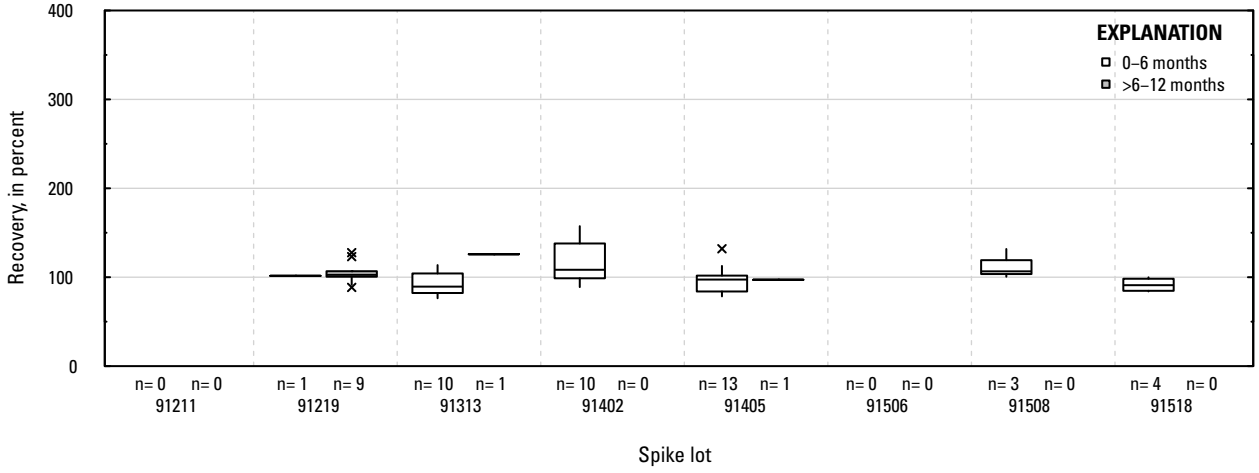


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

MQ. **Hydroxydiazinon: laboratory reagent spikes**



MR. **Hydroxydiazinon: groundwater field matrix spikes**



MS. **Hydroxydiazinon: surface water field matrix spikes**

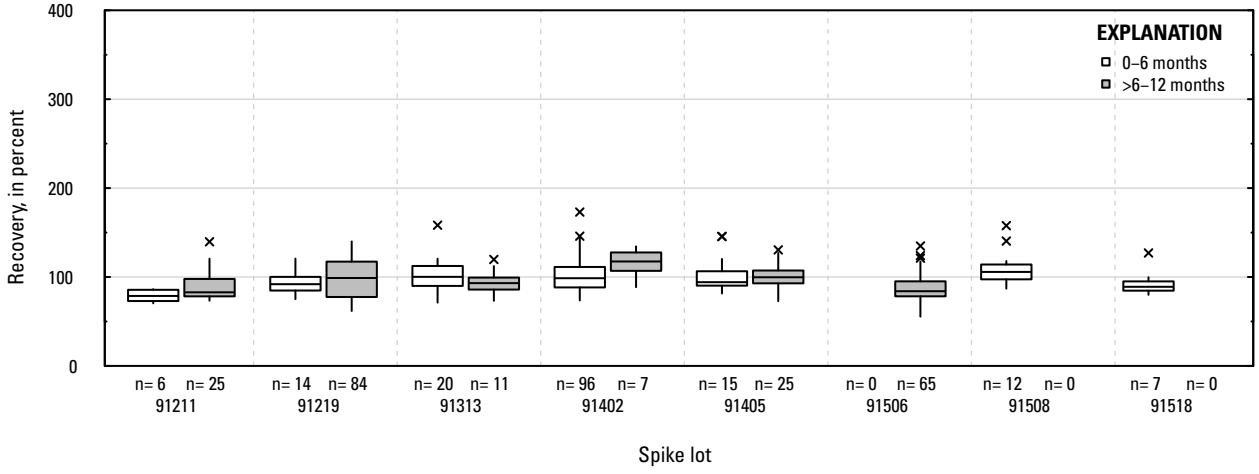
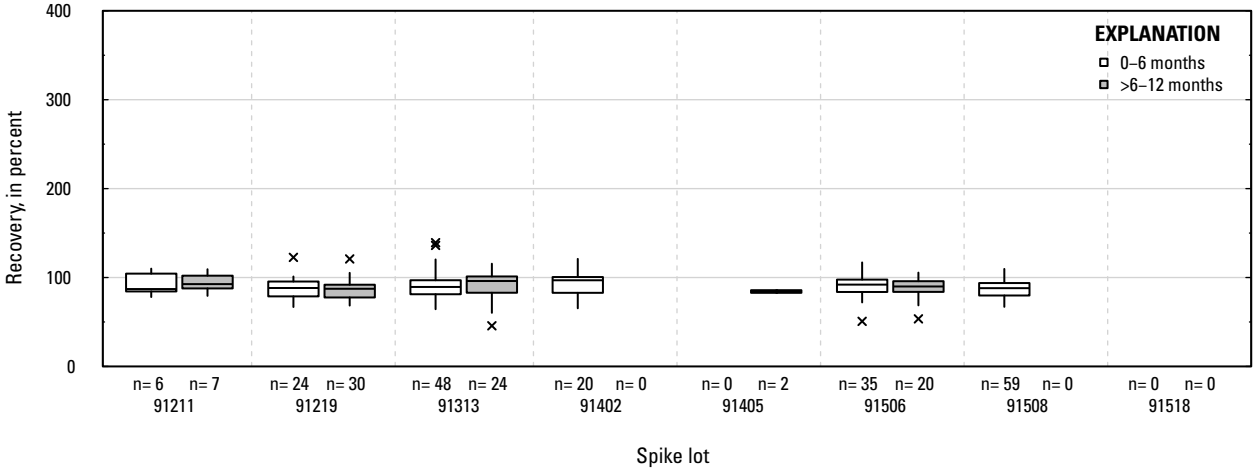
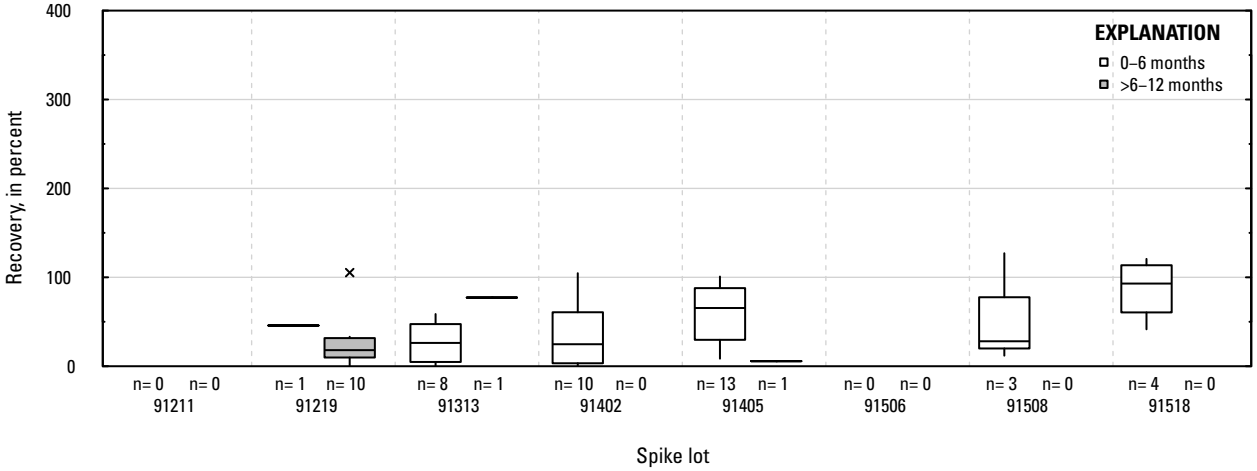


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

MT. **Hydroxyfluometuron: laboratory reagent spikes**



MU. **Hydroxyfluometuron: groundwater field matrix spikes**



MV. **Hydroxyfluometuron: surface water field matrix spikes**

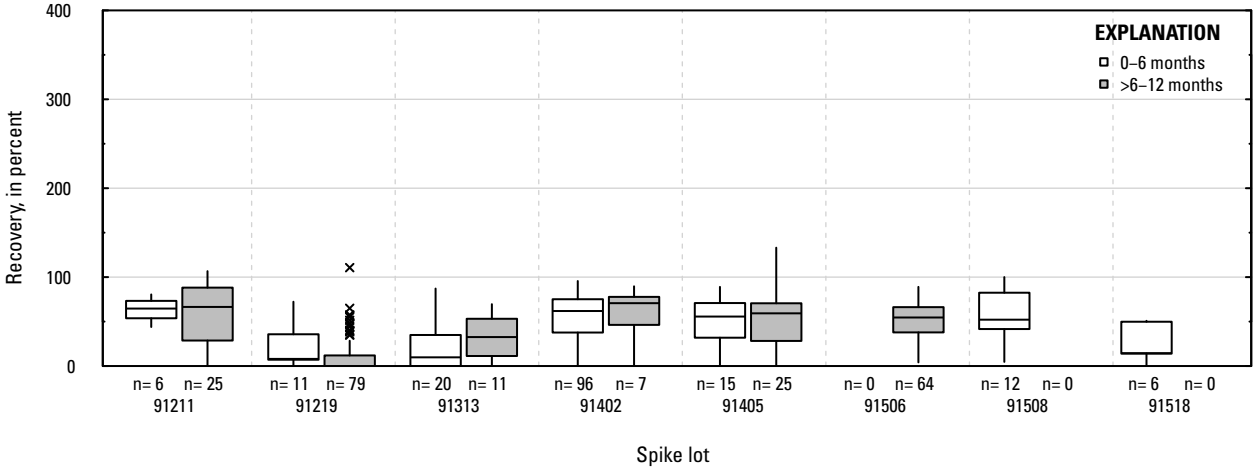
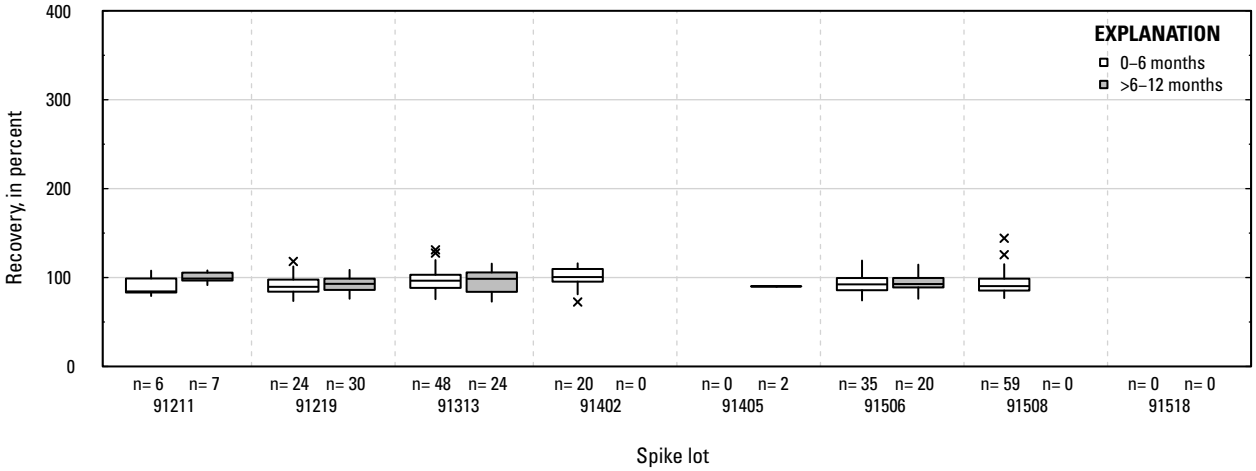
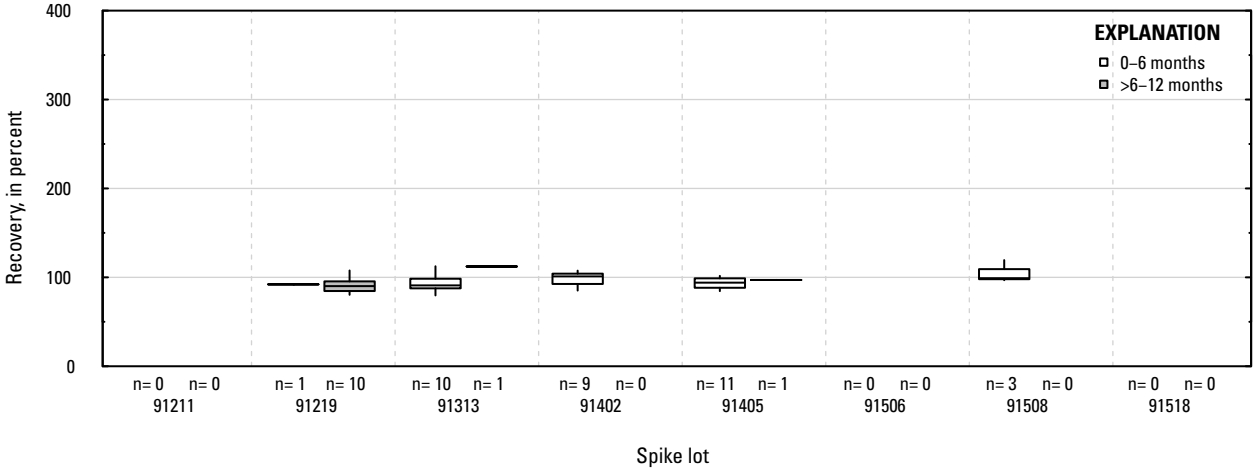


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

MW. **Hydroxymetolachlor: laboratory reagent spikes**



MX. **Hydroxymetolachlor: groundwater field matrix spikes**



MY. **Hydroxymetolachlor: surface water field matrix spikes**

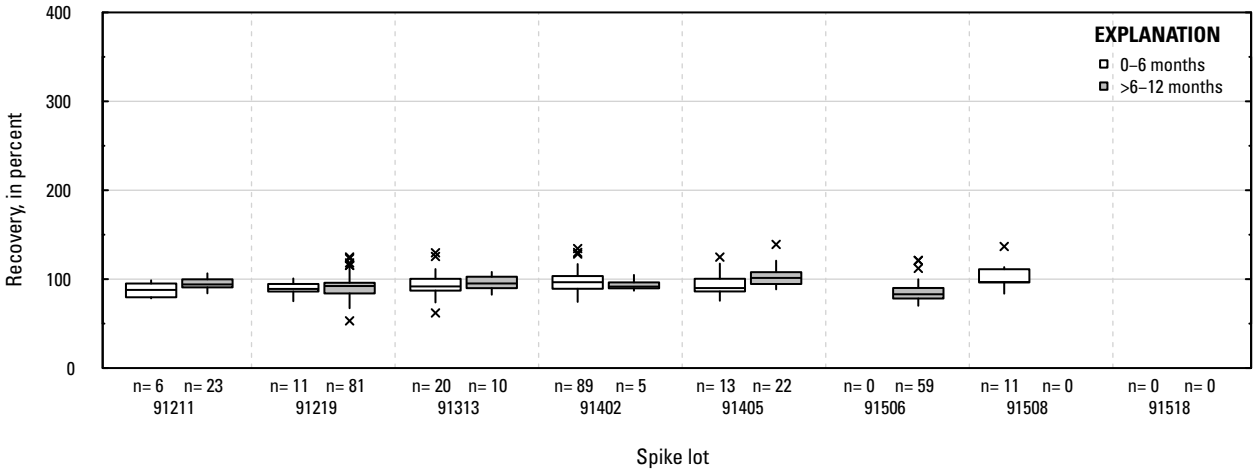
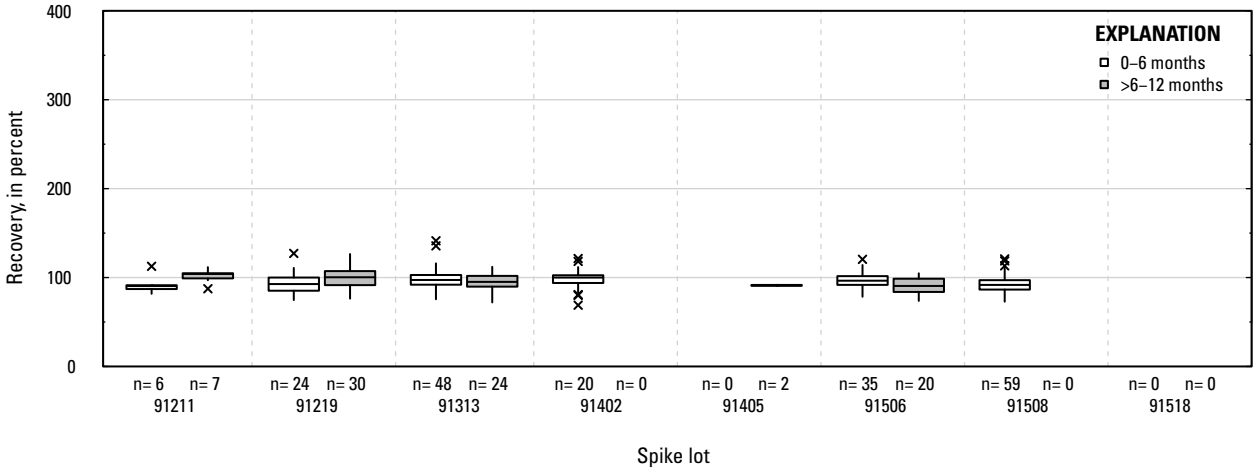
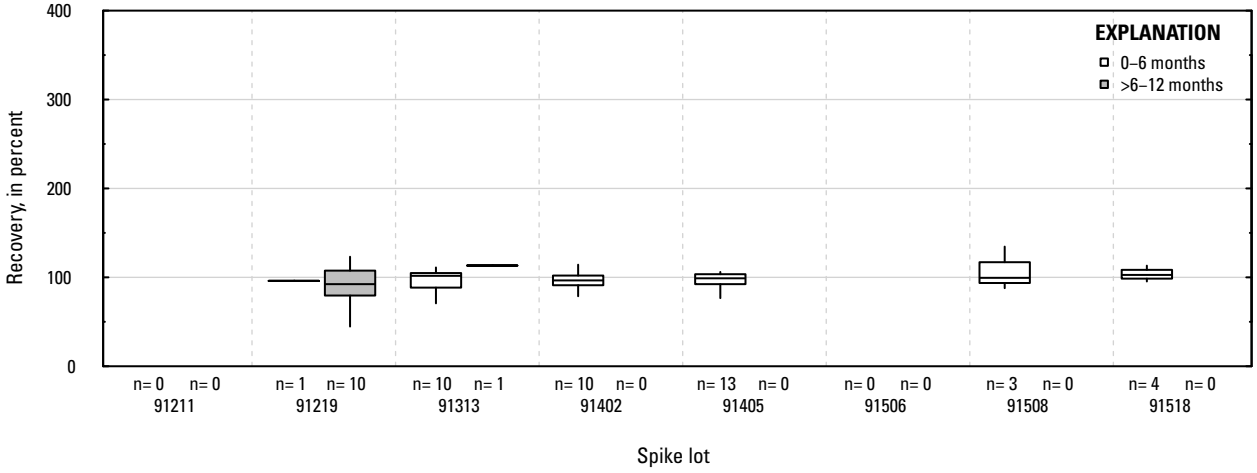


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

MZ. **Hydroxyphthalazinone: laboratory reagent spikes**



NA. **Hydroxyphthalazinone: groundwater field matrix spikes**



NB. **Hydroxyphthalazinone: surface water field matrix spikes**

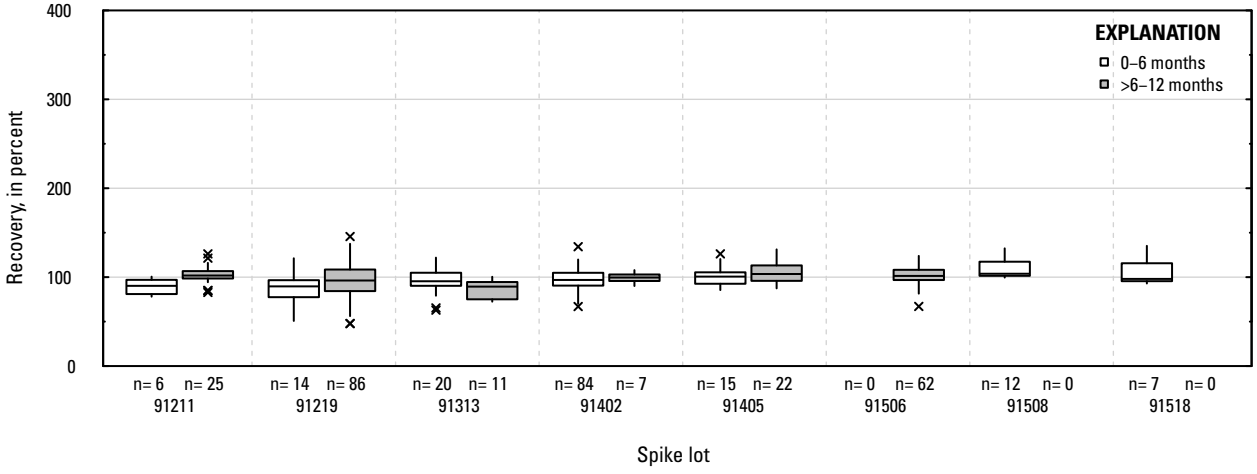
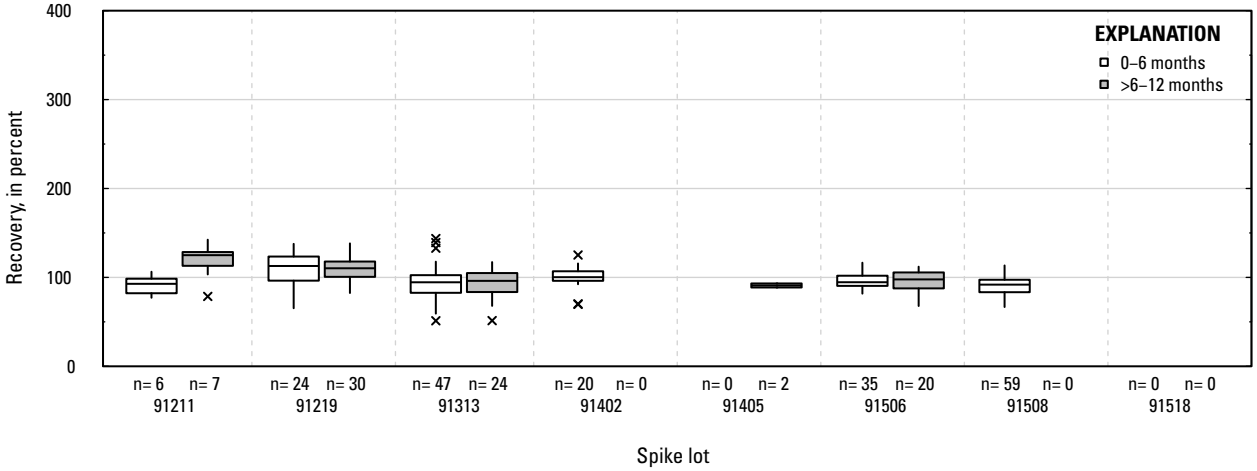
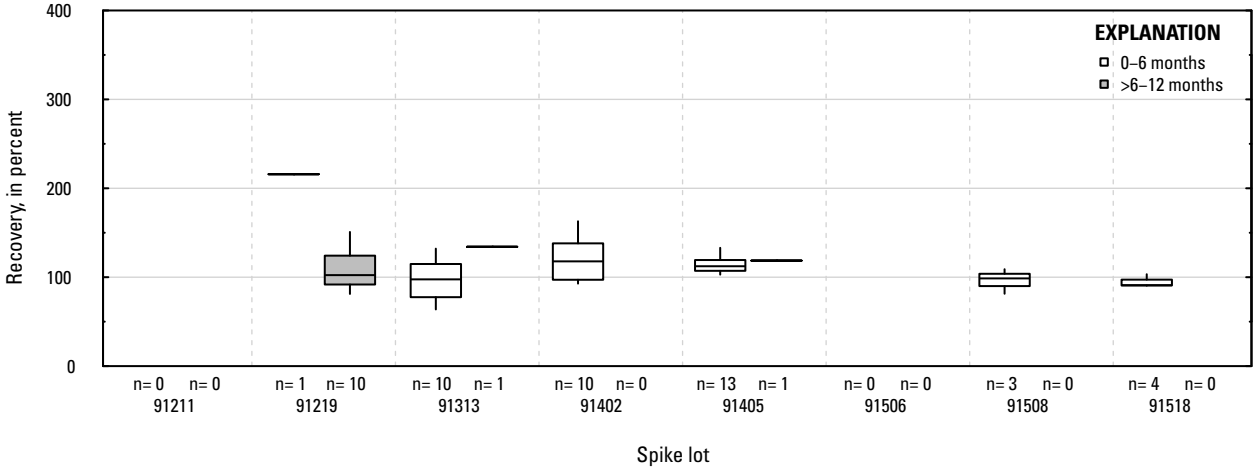


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

NC. **Hydroxysimazine: laboratory reagent spikes**



ND. **Hydroxysimazine: groundwater field matrix spikes**



NE. **Hydroxysimazine: surface water field matrix spikes**

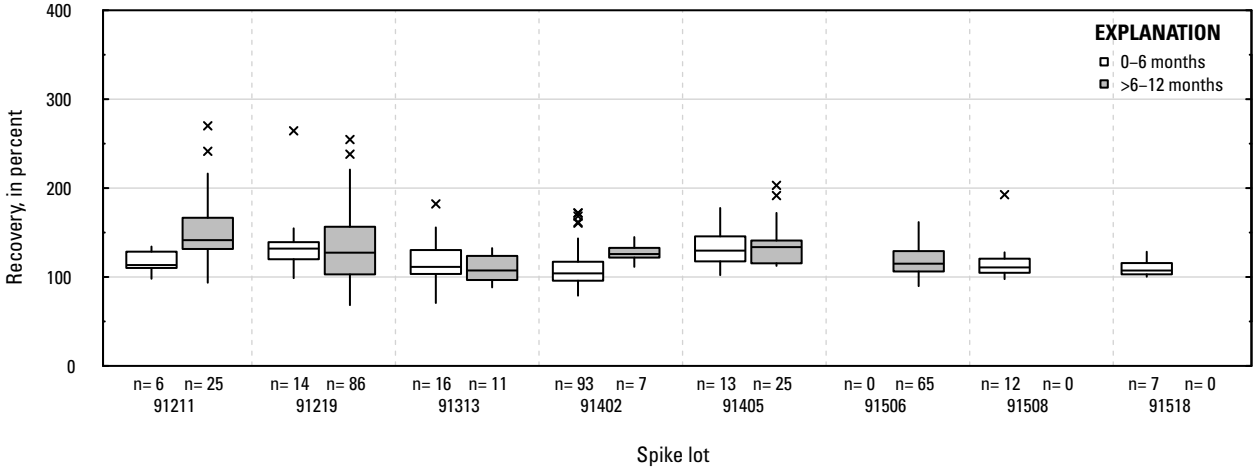
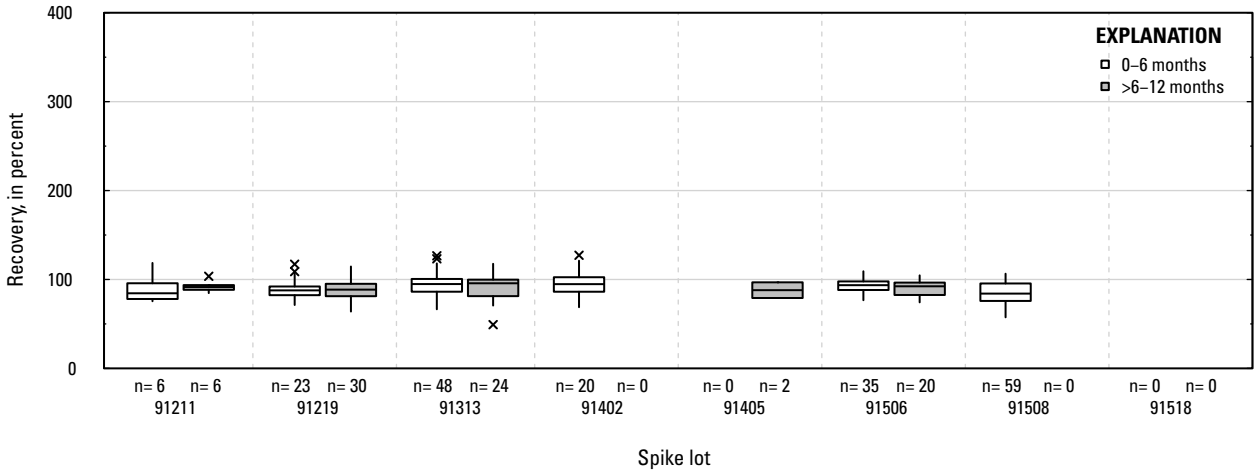
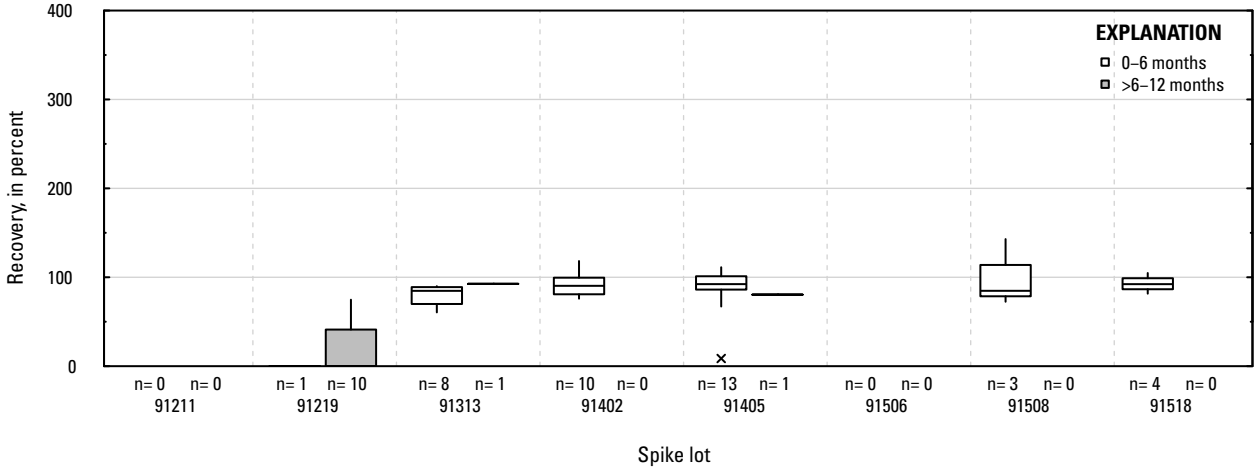


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

NF. **Tebuthiuron TP 109: laboratory reagent spikes**



NG. **Tebuthiuron TP 109: groundwater field matrix spikes**



NH. **Tebuthiuron TP 109: surface water field matrix spikes**

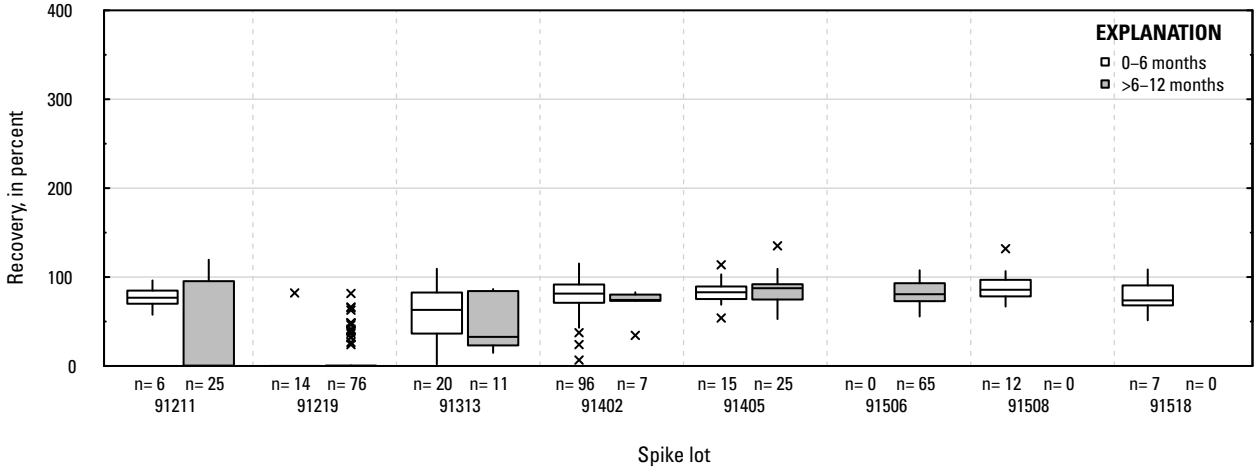
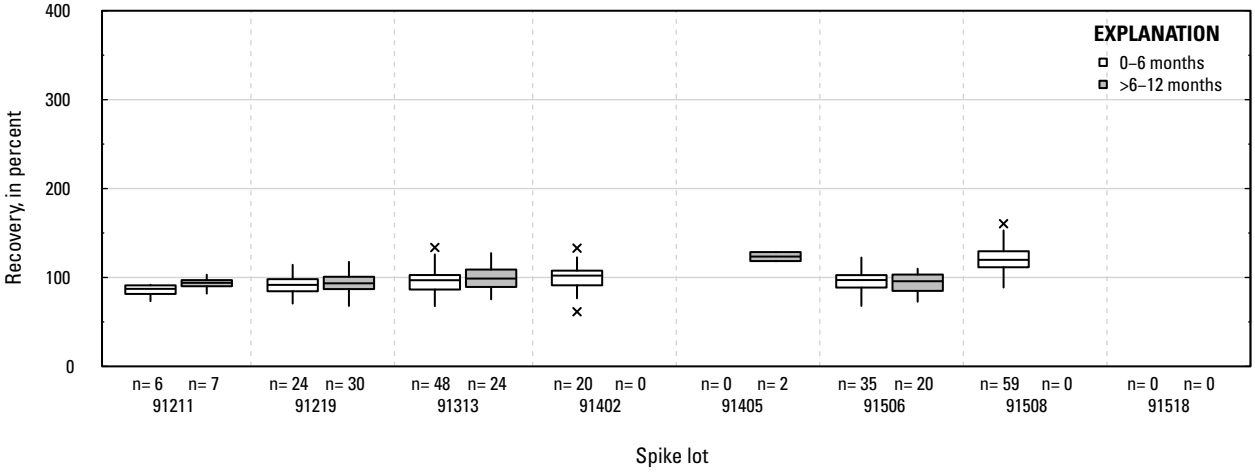
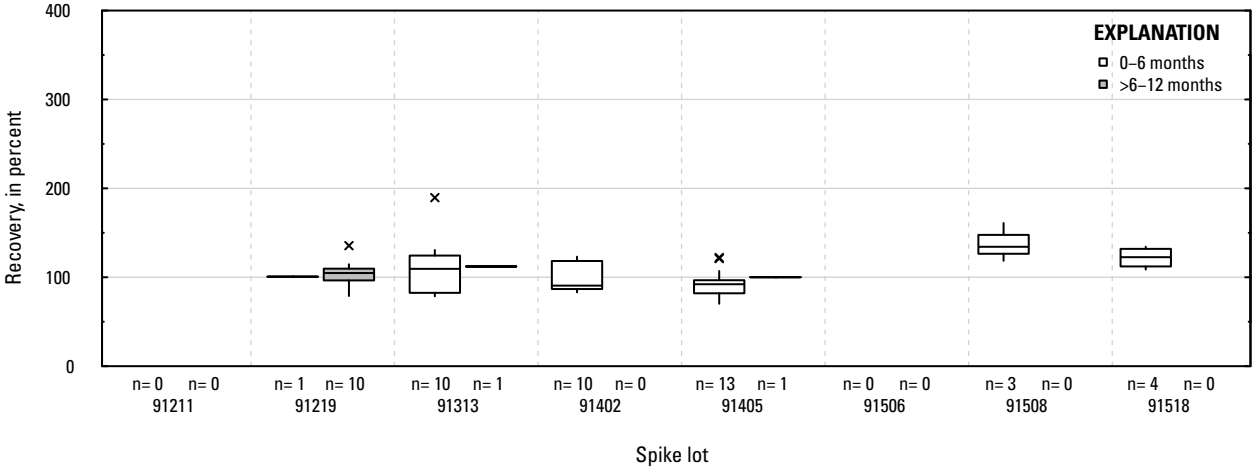


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

NI. **Imazamox: laboratory reagent spikes**



NJ. **Imazamox: groundwater field matrix spikes**



NK. **Imazamox: surface water field matrix spikes**

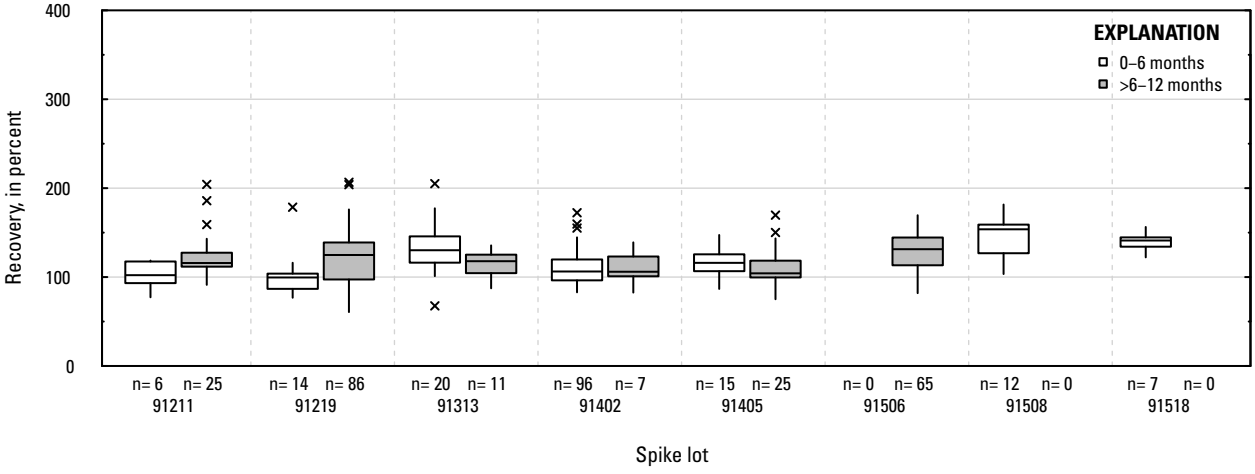
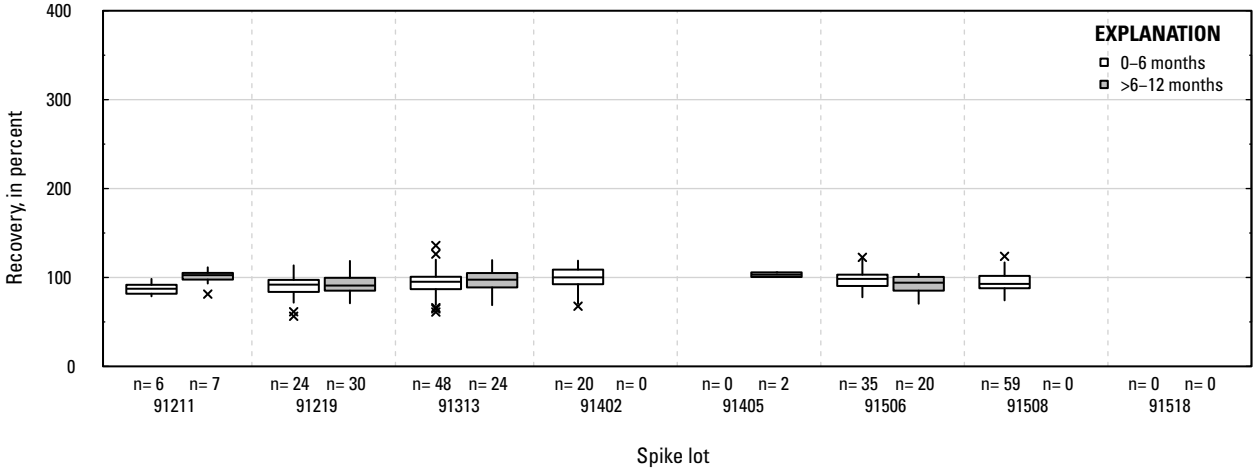
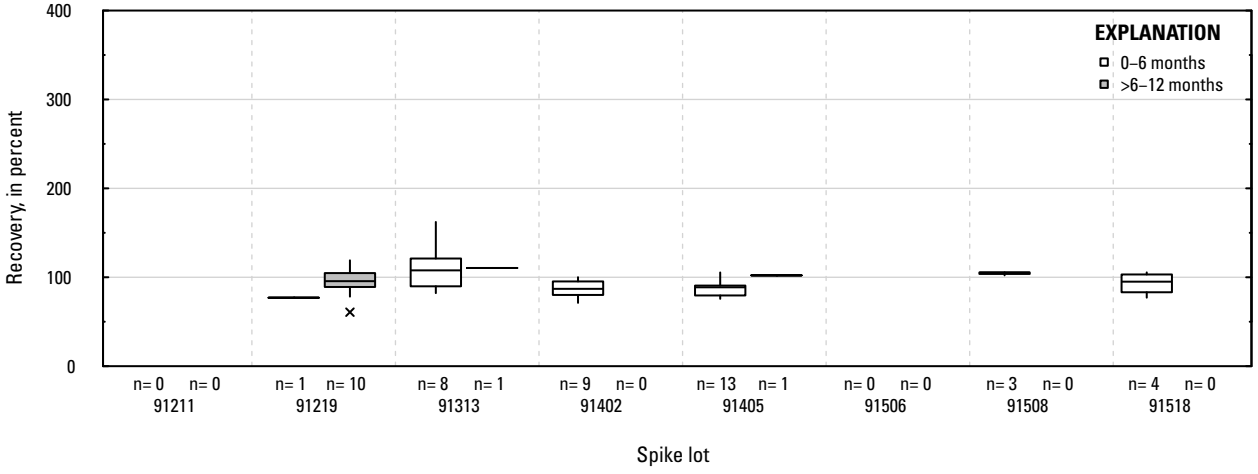


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

NL. **Imazaquin: laboratory reagent spikes**



NM. **Imazaquin: groundwater field matrix spikes**



NN. **Imazaquin: surface water field matrix spikes**

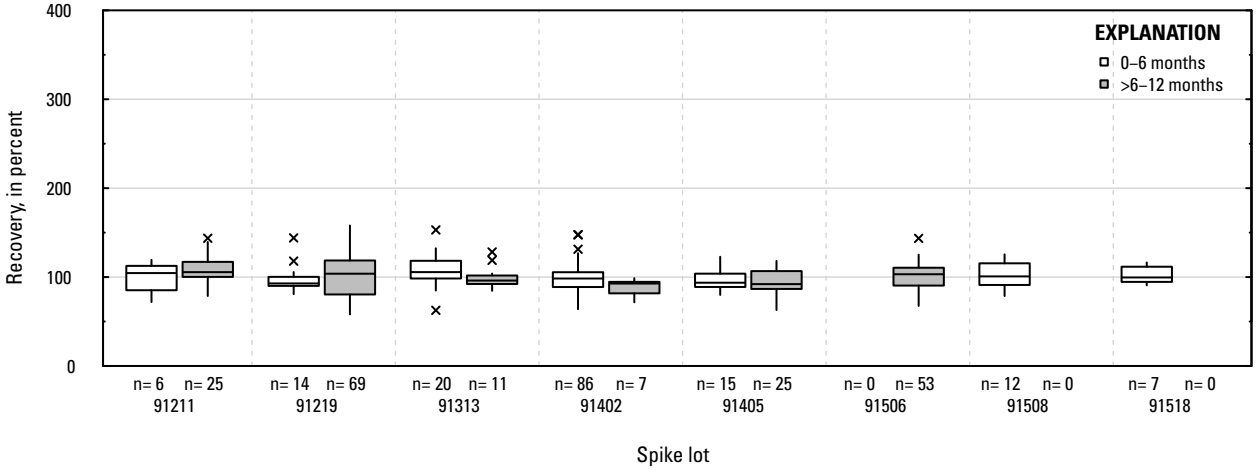
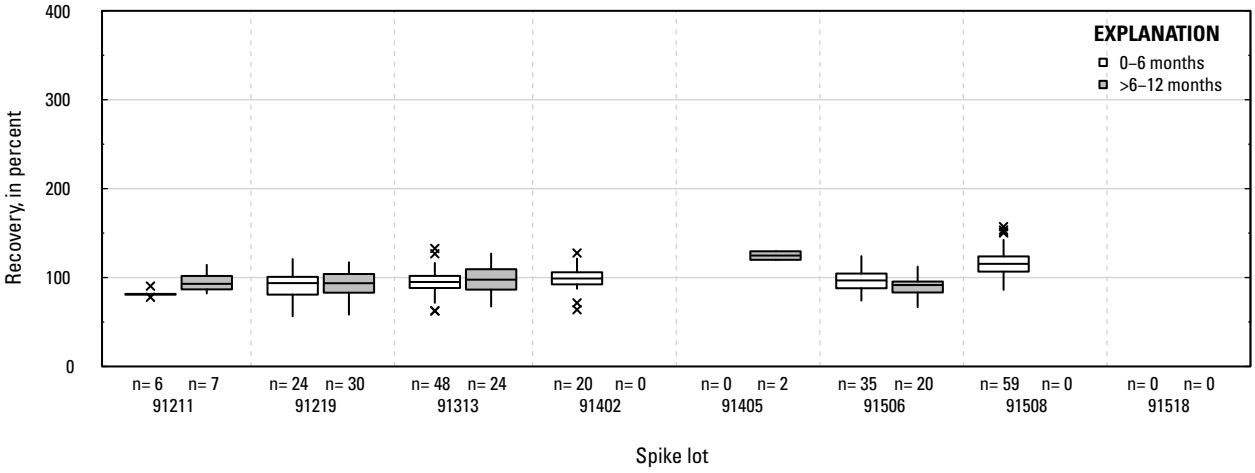
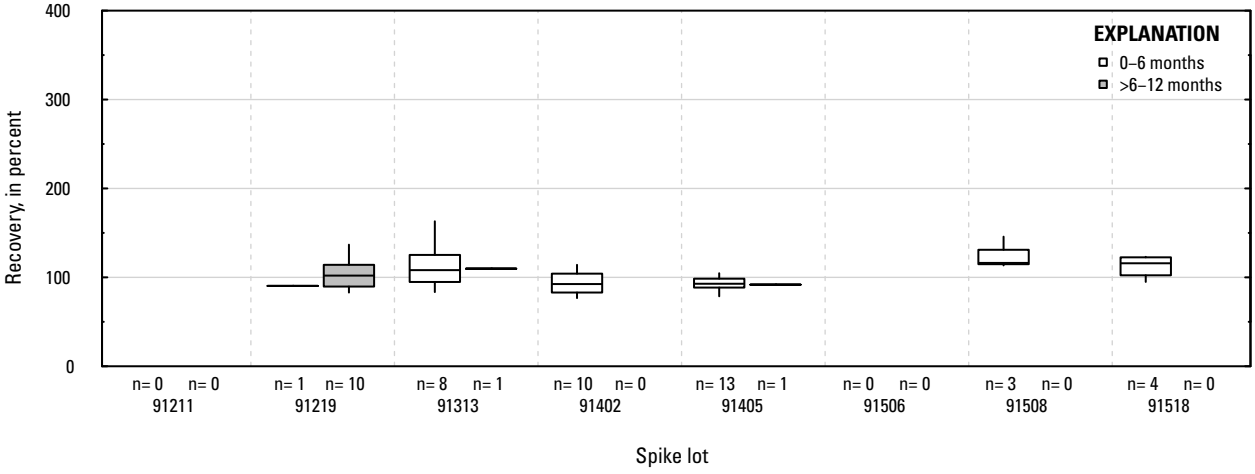


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

NO. **Imazethapyr: laboratory reagent spikes**



NP. **Imazethapyr: groundwater field matrix spikes**



NQ. **Imazethapyr: surface water field matrix spikes**

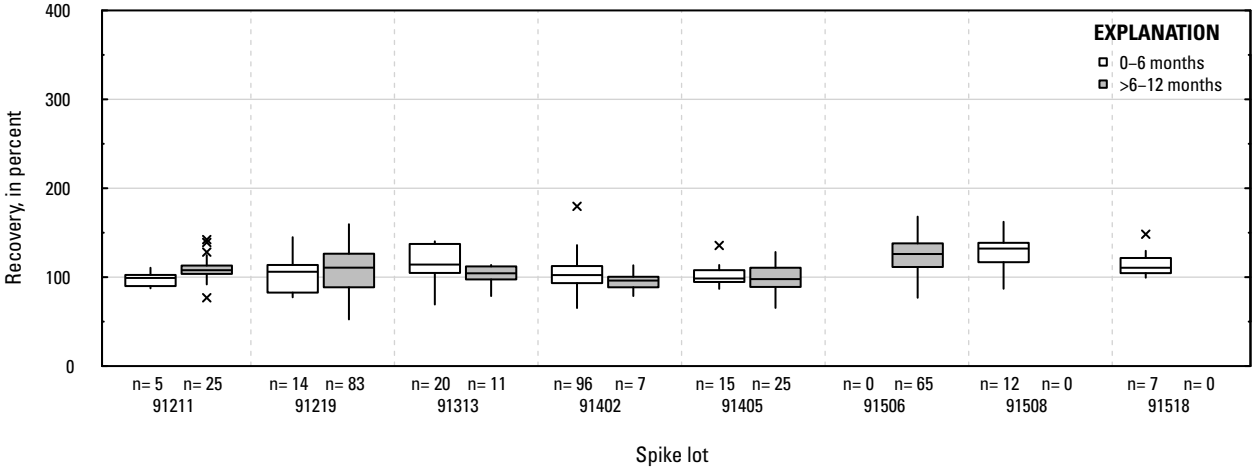
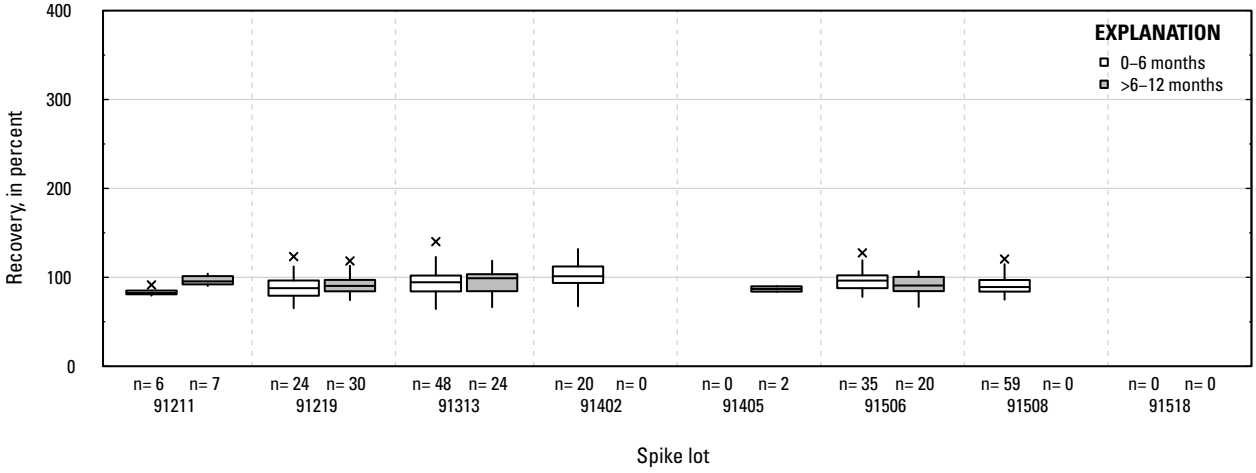
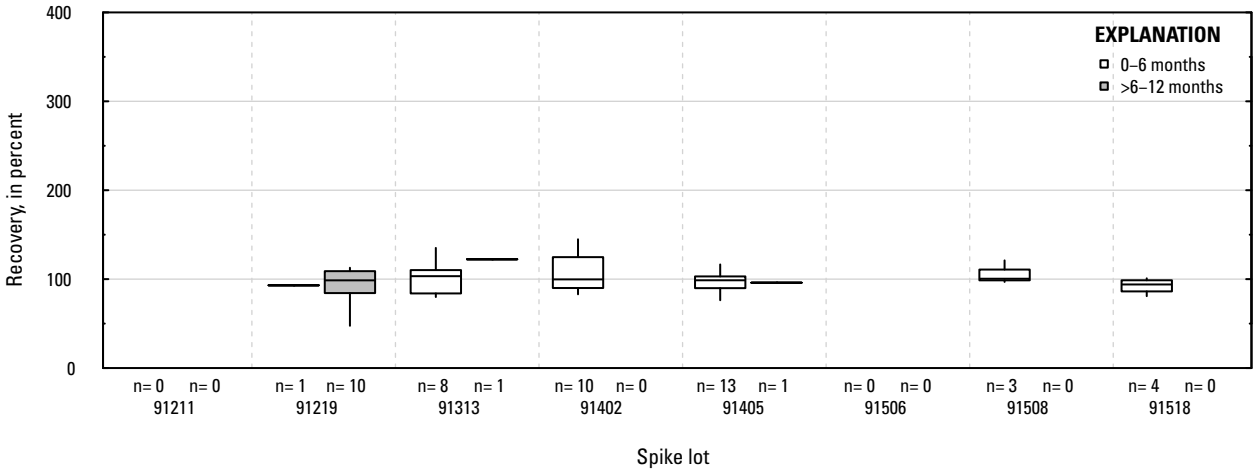


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

NR. **Imidacloprid: laboratory reagent spikes**



NS. **Imidacloprid: groundwater field matrix spikes**



NT. **Imidacloprid: surface water field matrix spikes**

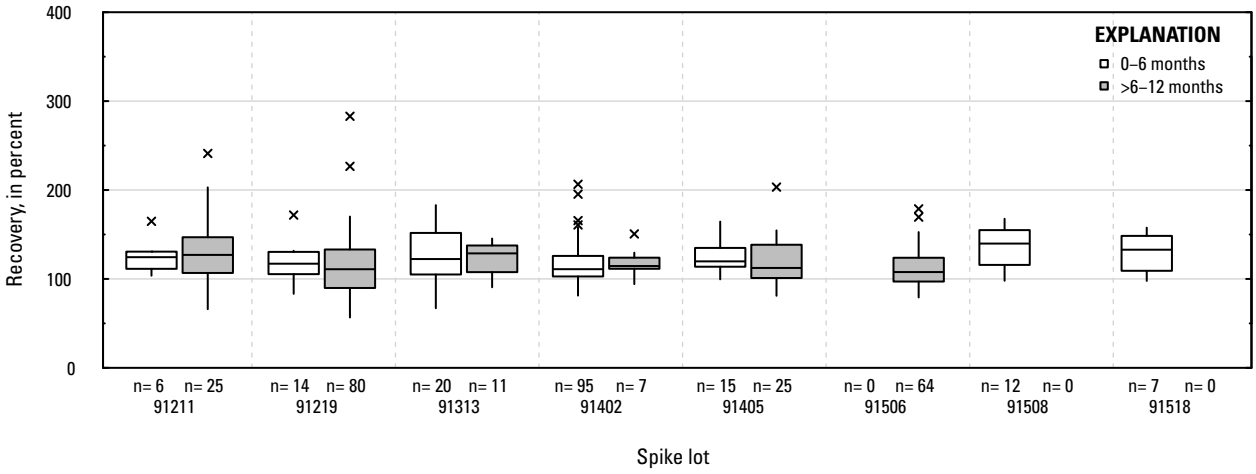
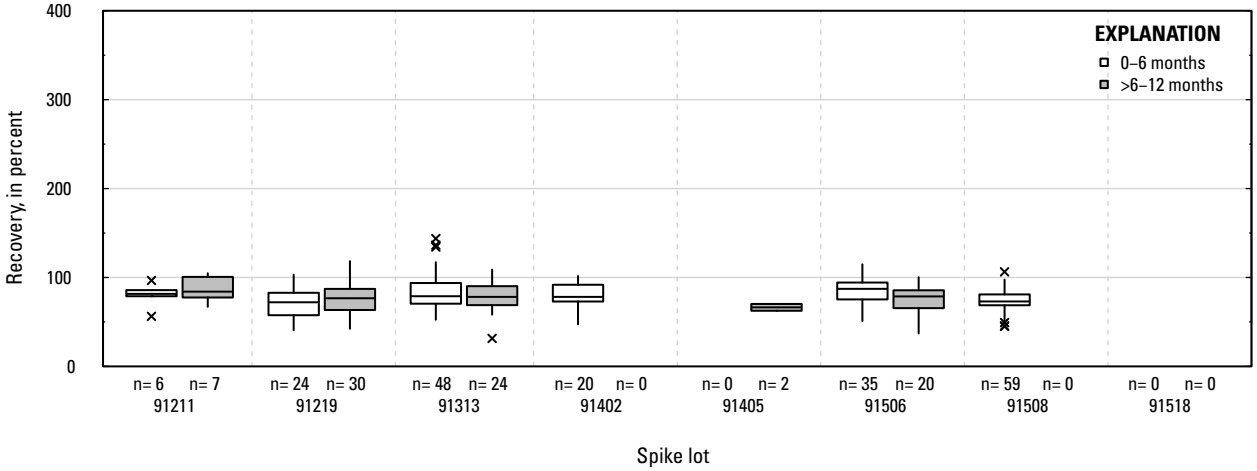
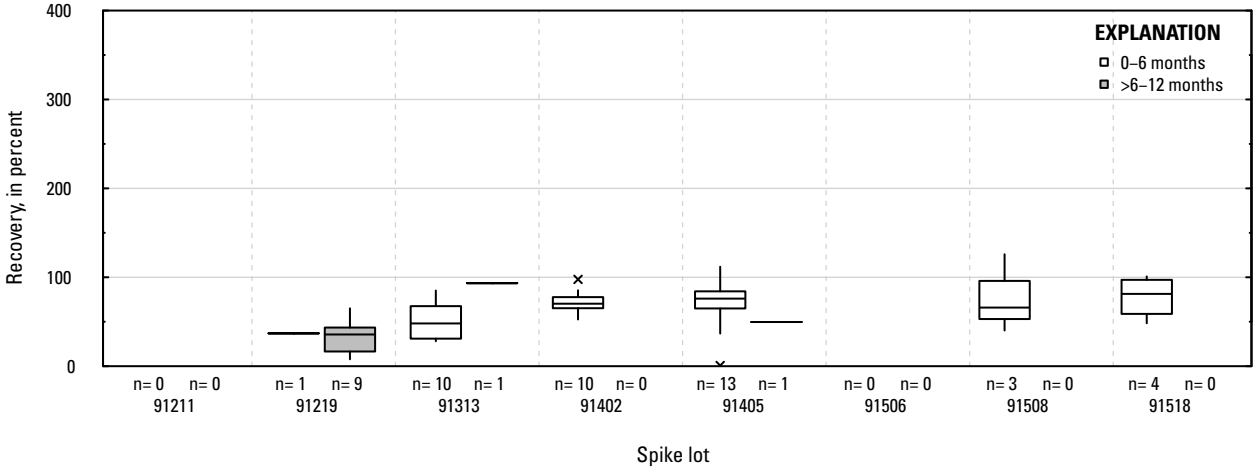


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

NU. **Indoxacarb: laboratory reagent spikes**



NV. **Indoxacarb: groundwater field matrix spikes**



NW. **Indoxacarb: surface water field matrix spikes**

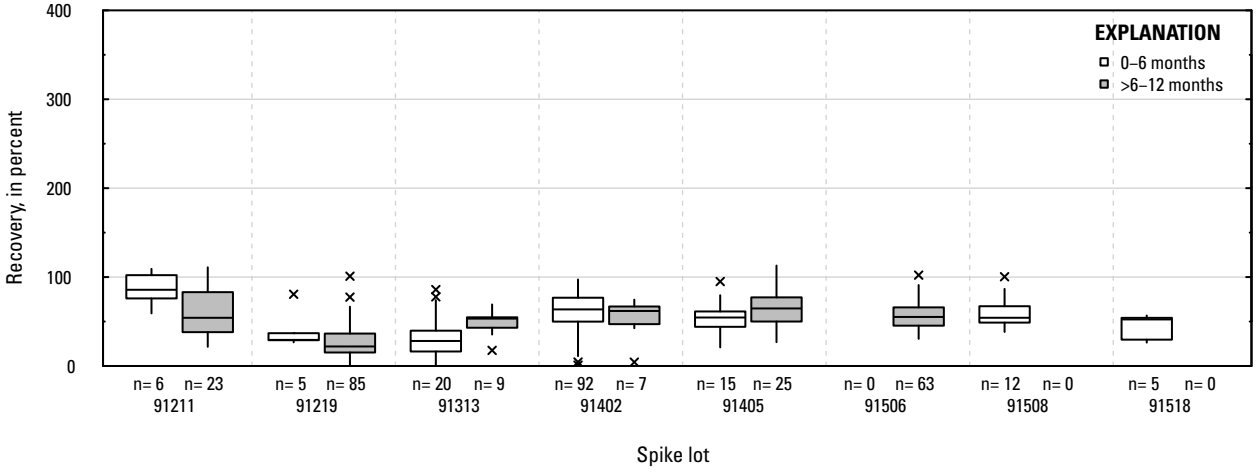
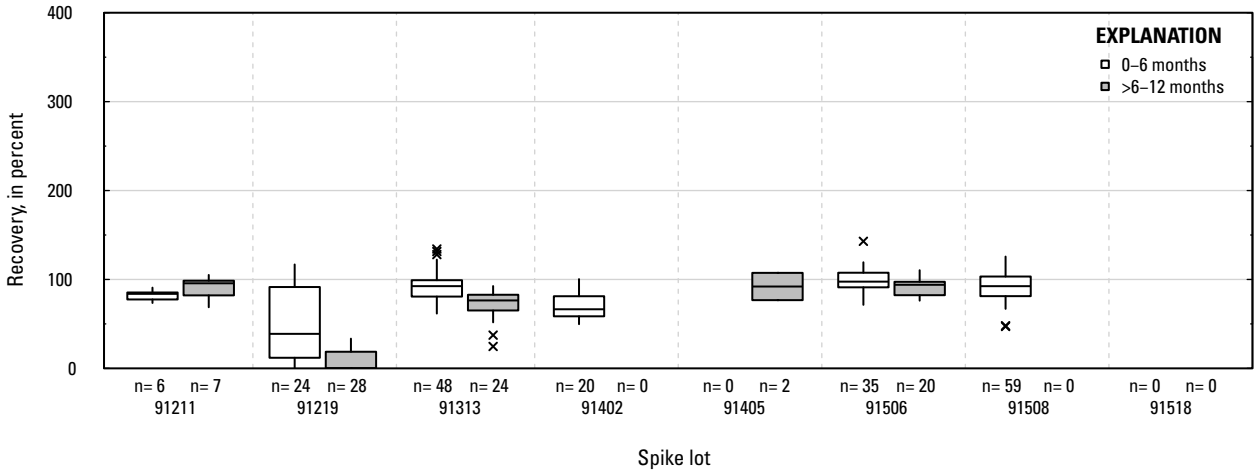
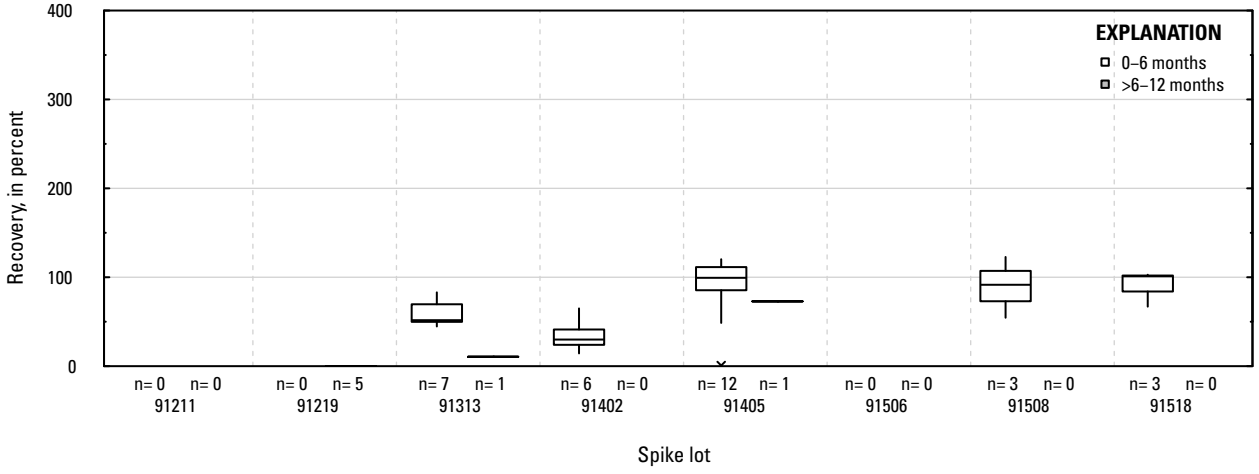


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

NX. **Isoxaflutole: laboratory reagent spikes**



NY. **Isoxaflutole: groundwater field matrix spikes**



NZ. **Isoxaflutole: surface water field matrix spikes**

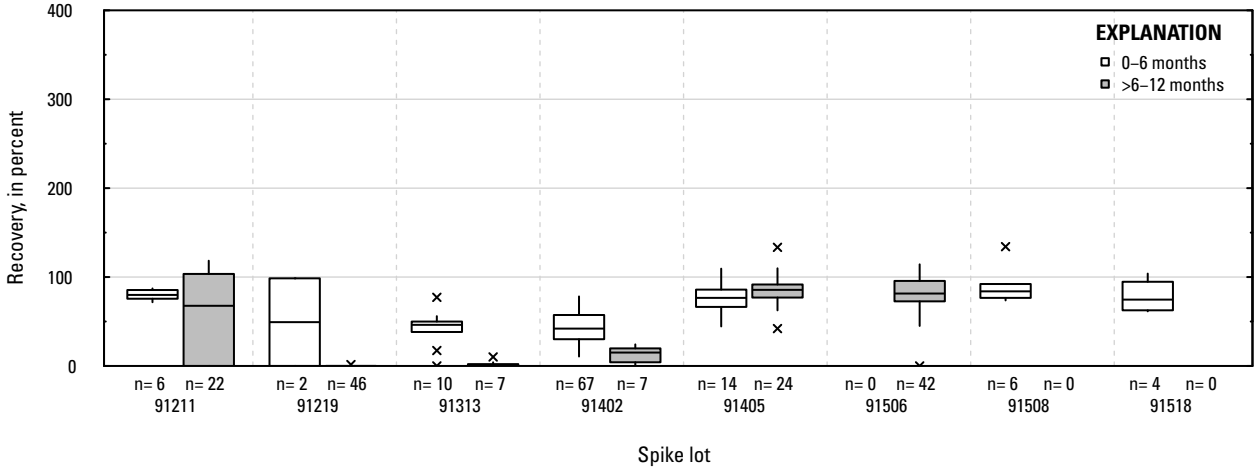
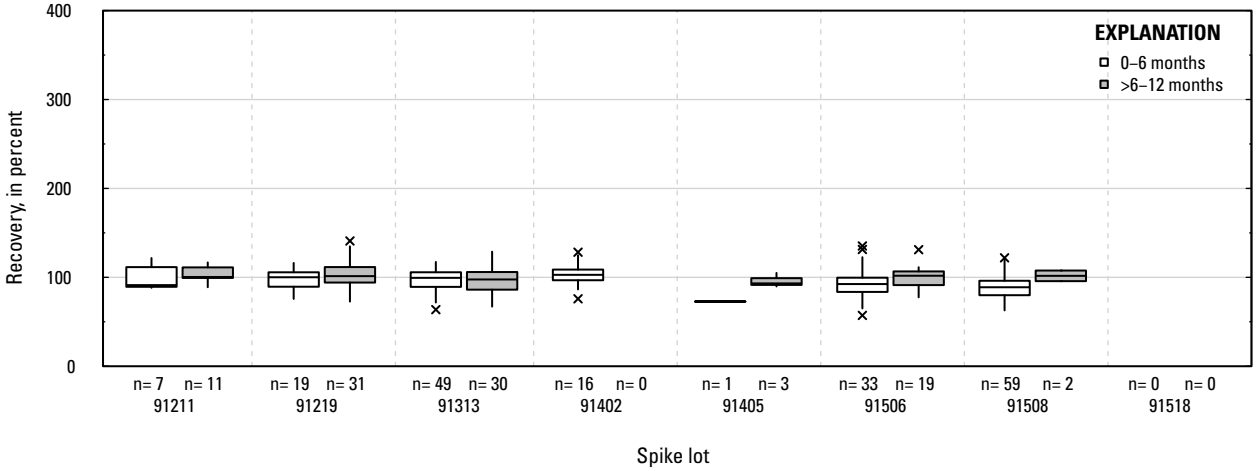
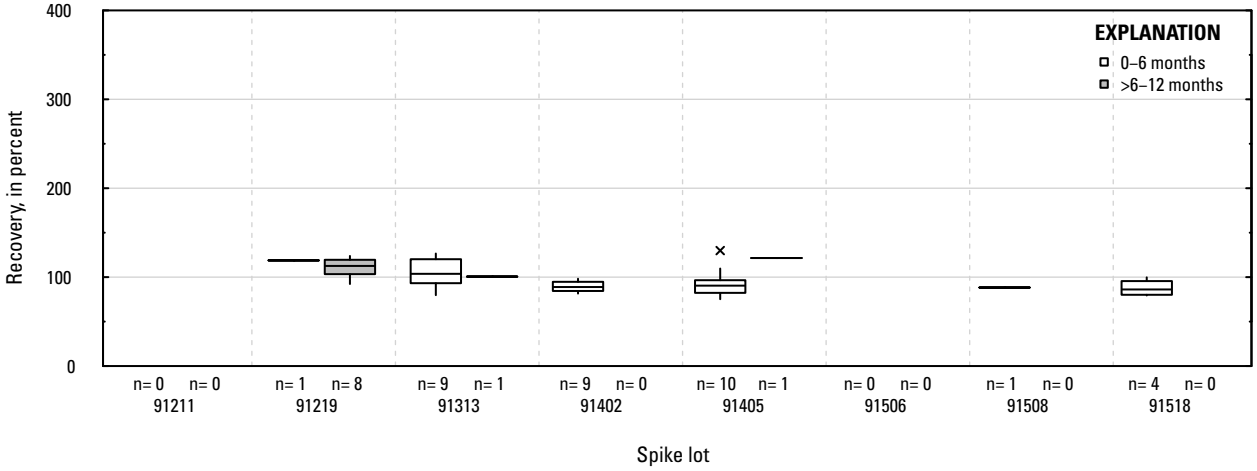


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

OA. **Isoxaflutole acid metabolite RPA 203328: laboratory reagent spikes**



OB. **Isoxaflutole acid metabolite RPA 203328: groundwater field matrix spikes**



OC. **Isoxaflutole acid metabolite RPA 203328: surface water field matrix spikes**

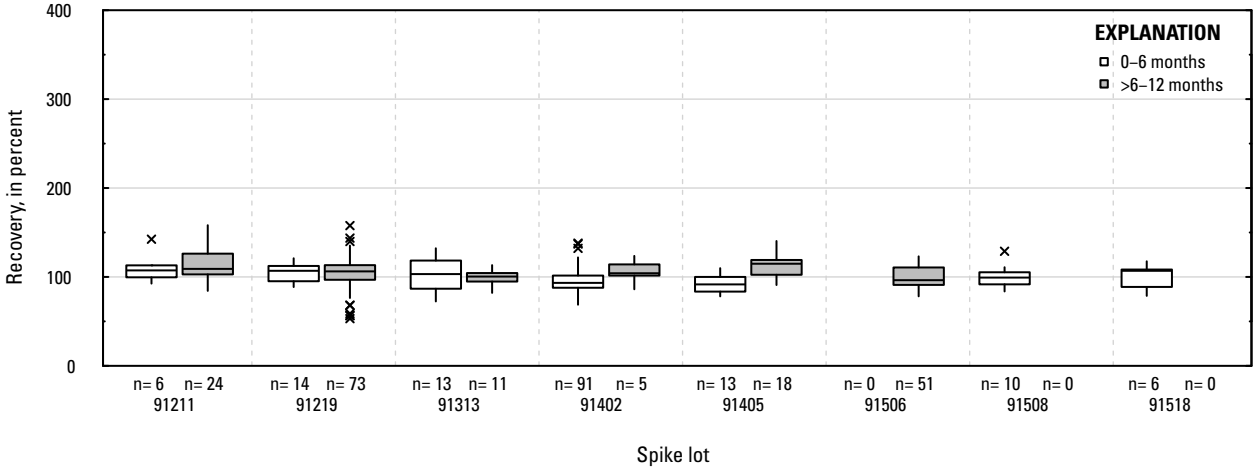
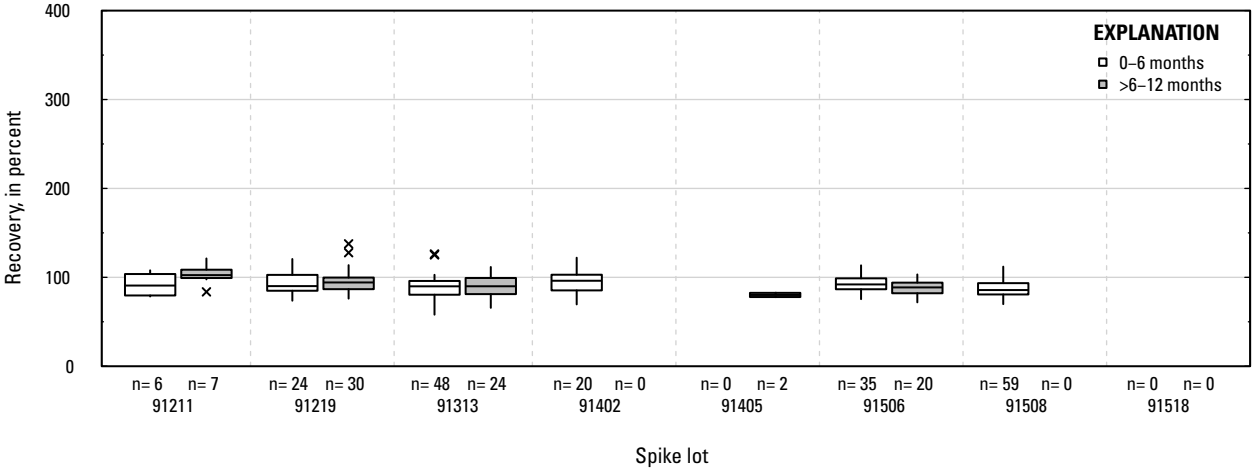
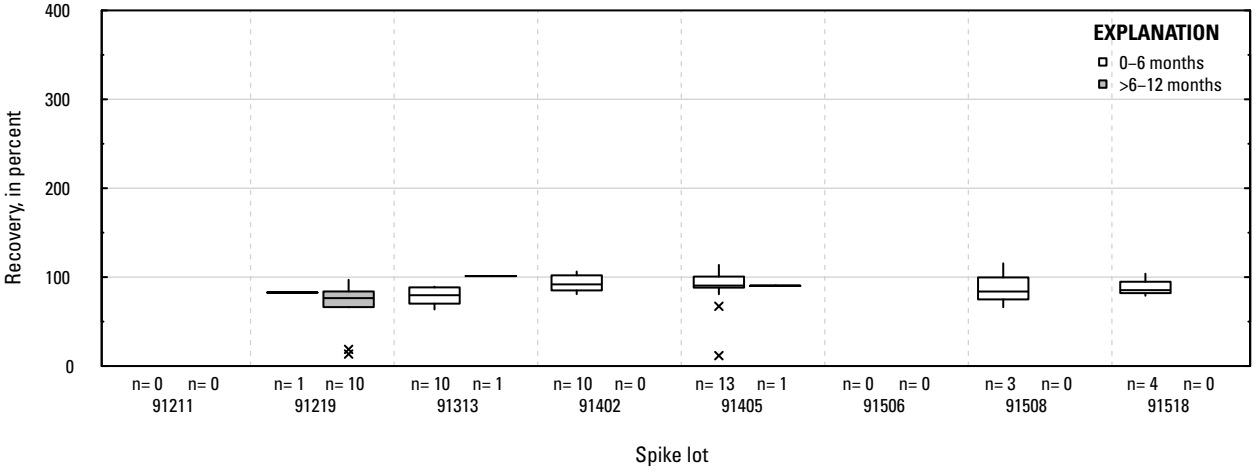


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

OD. **Kresoxim–methyl: laboratory reagent spikes**



OE. **Kresoxim–methyl: groundwater field matrix spikes**



OF. **Kresoxim–methyl: surface water field matrix spikes**

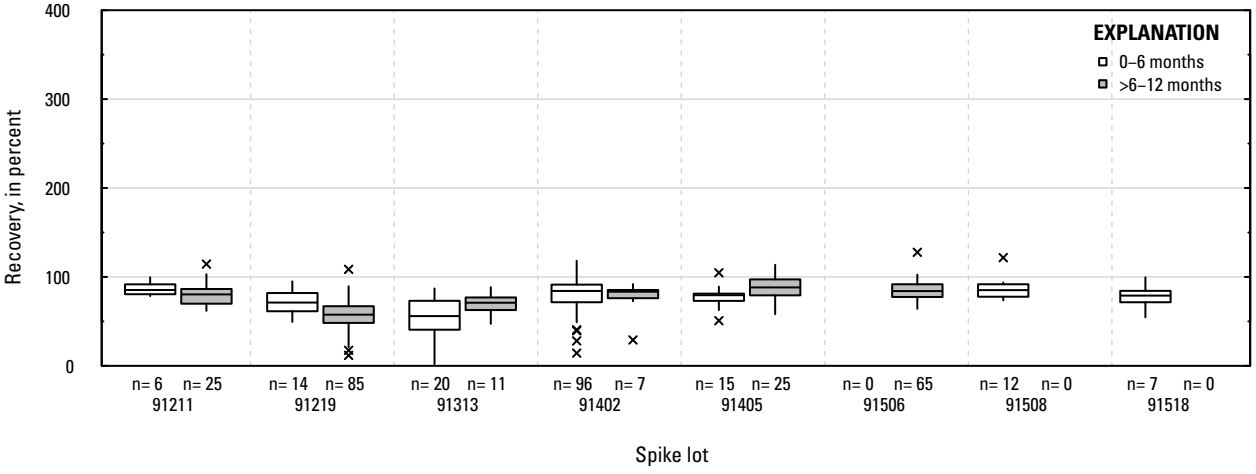
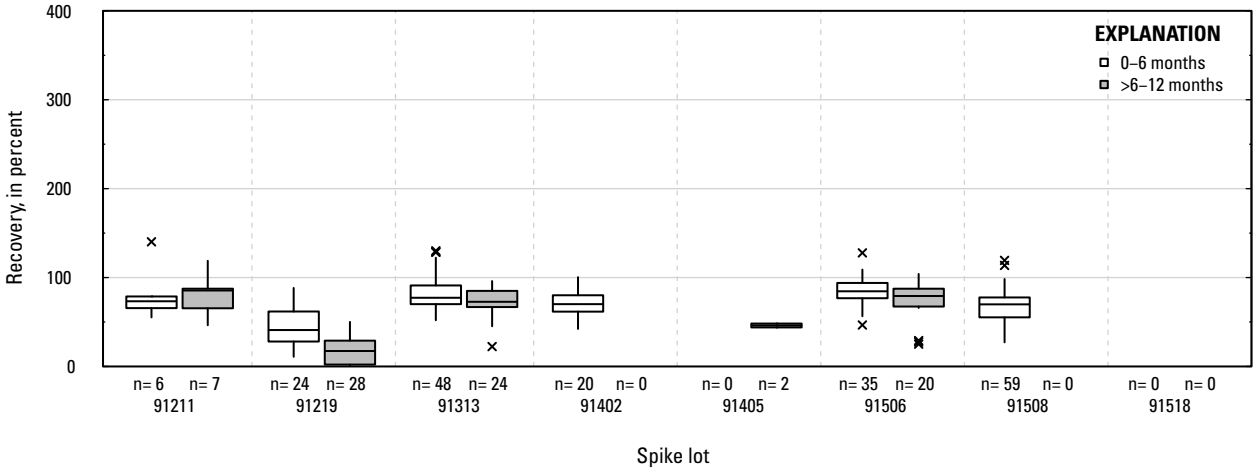
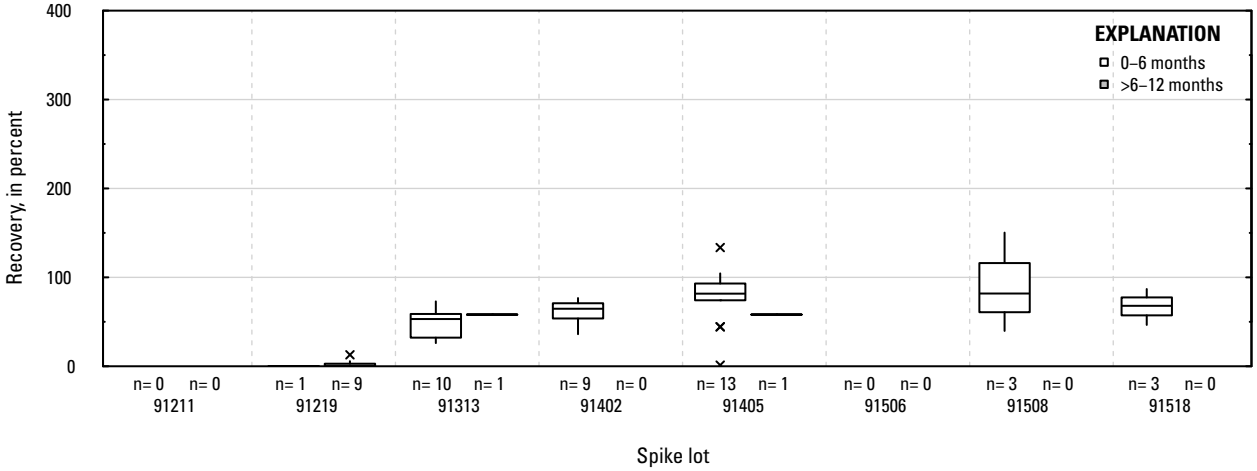


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

OG. **Lactofen: laboratory reagent spikes**



OH. **Lactofen: groundwater field matrix spikes**



OI. **Lactofen: surface water field matrix spikes**

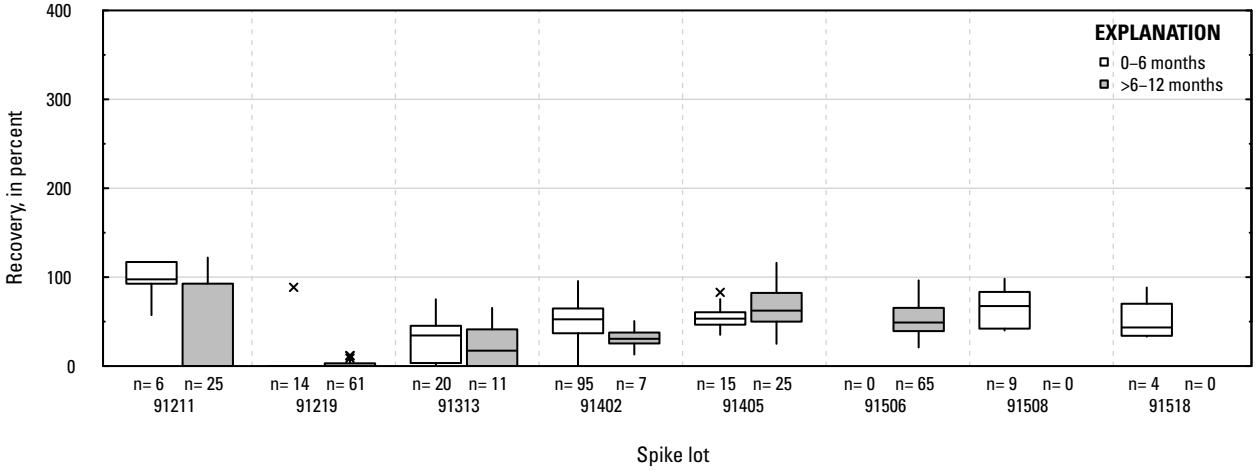
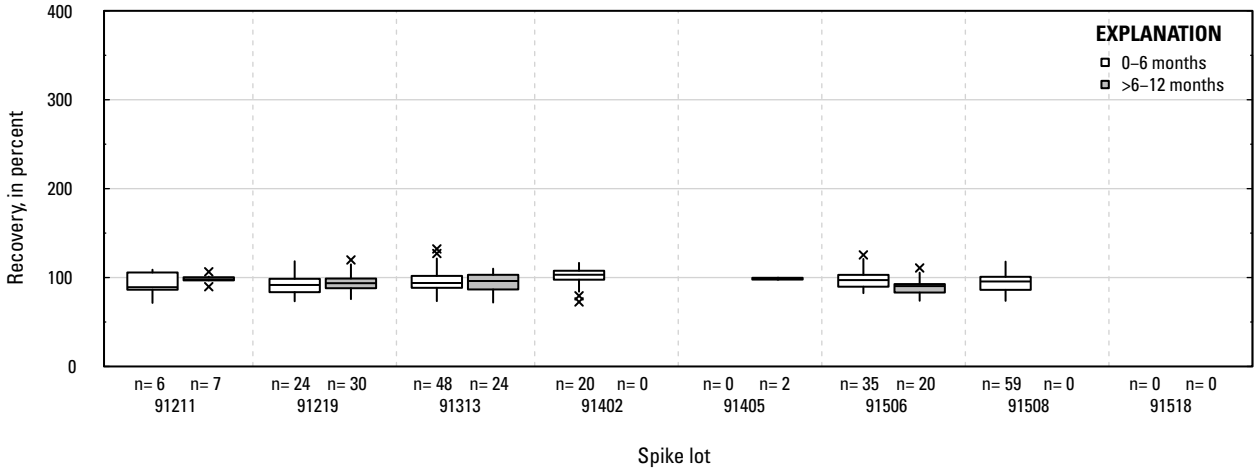
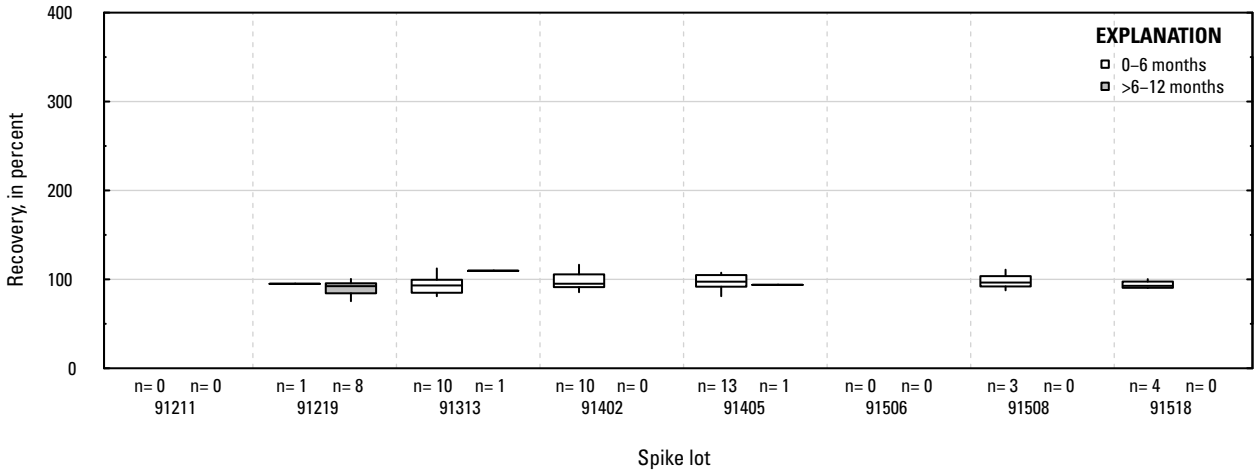


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

OJ. **Linuron: laboratory reagent spikes**



OK. **Linuron: groundwater field matrix spikes**



OL. **Linuron: surface water field matrix spikes**

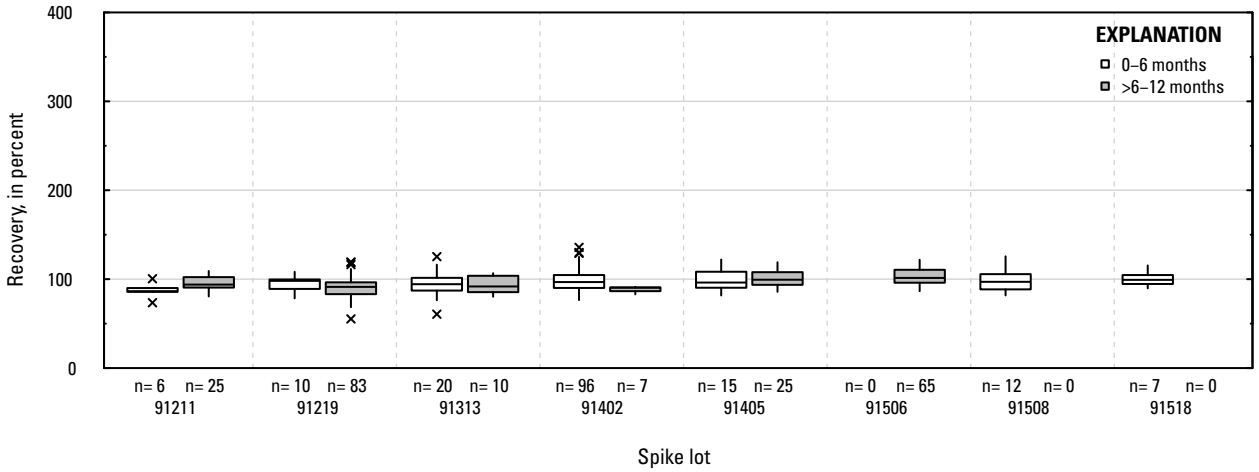
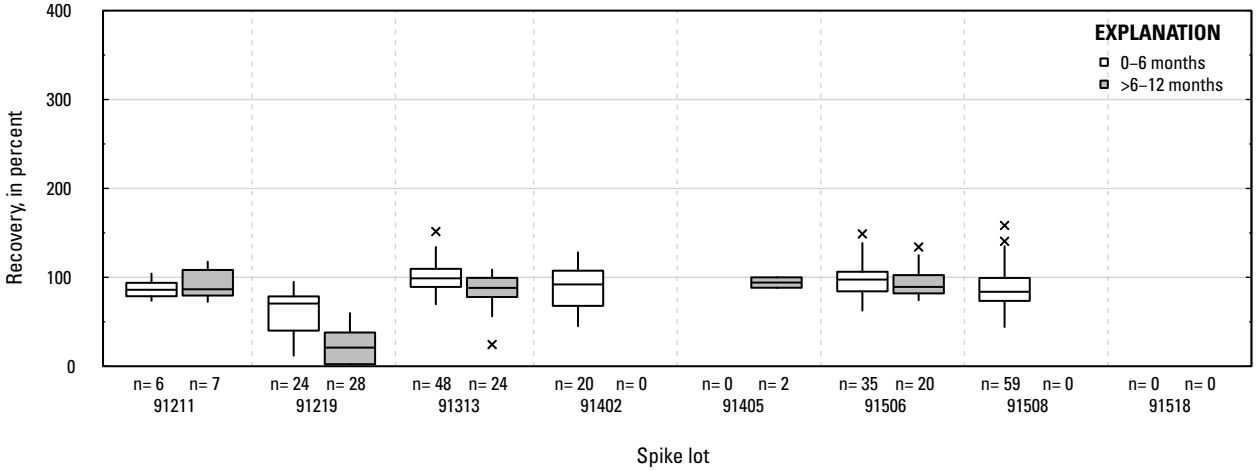
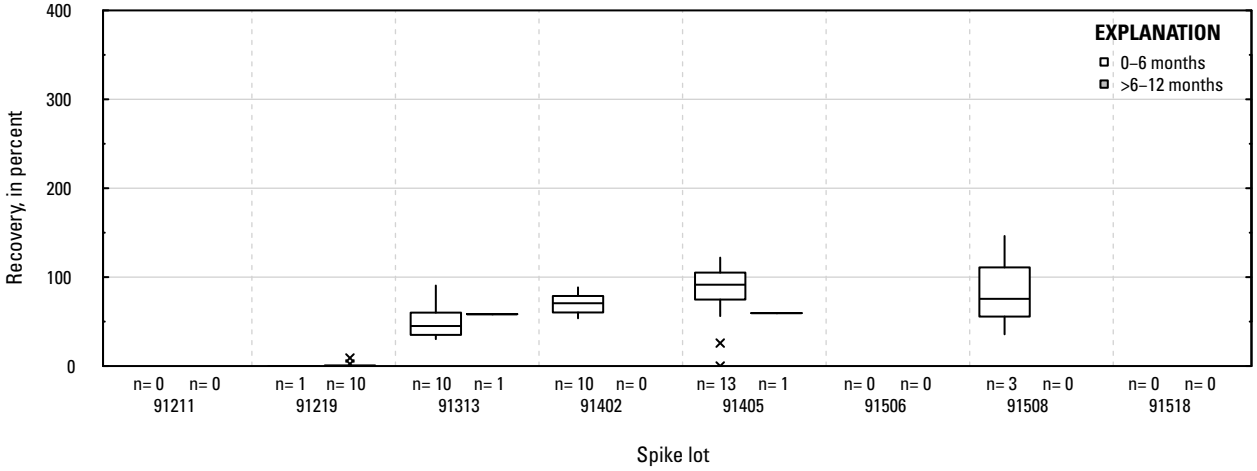


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

OM. **Malaoxon: laboratory reagent spikes**



ON. **Malaoxon: groundwater field matrix spikes**



OO. **Malaoxon: surface water field matrix spikes**

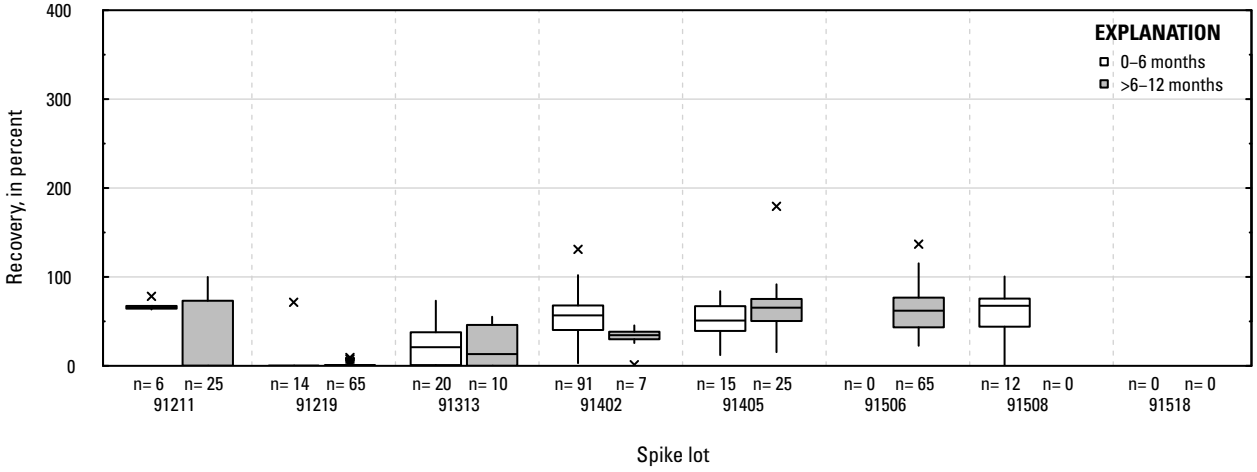
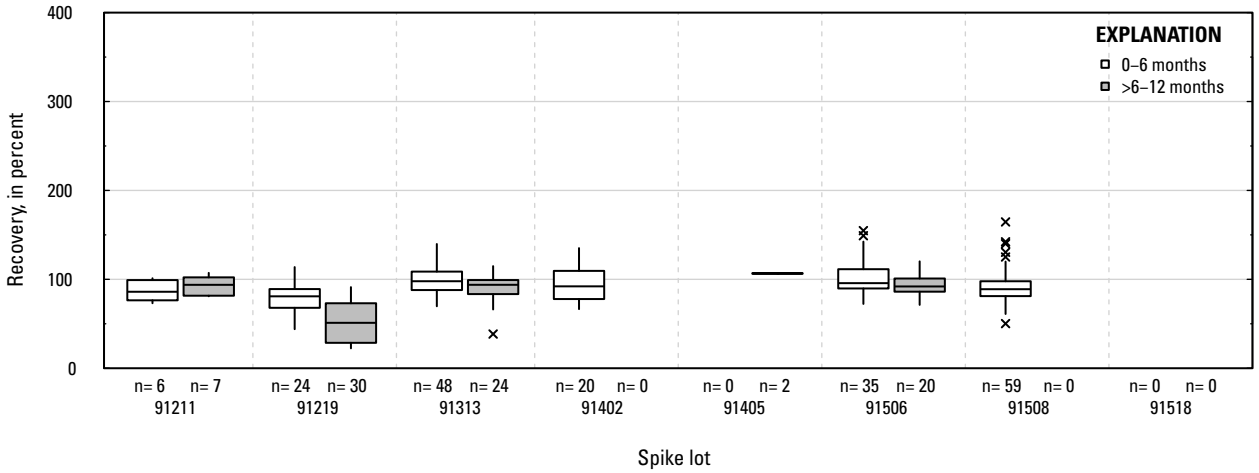
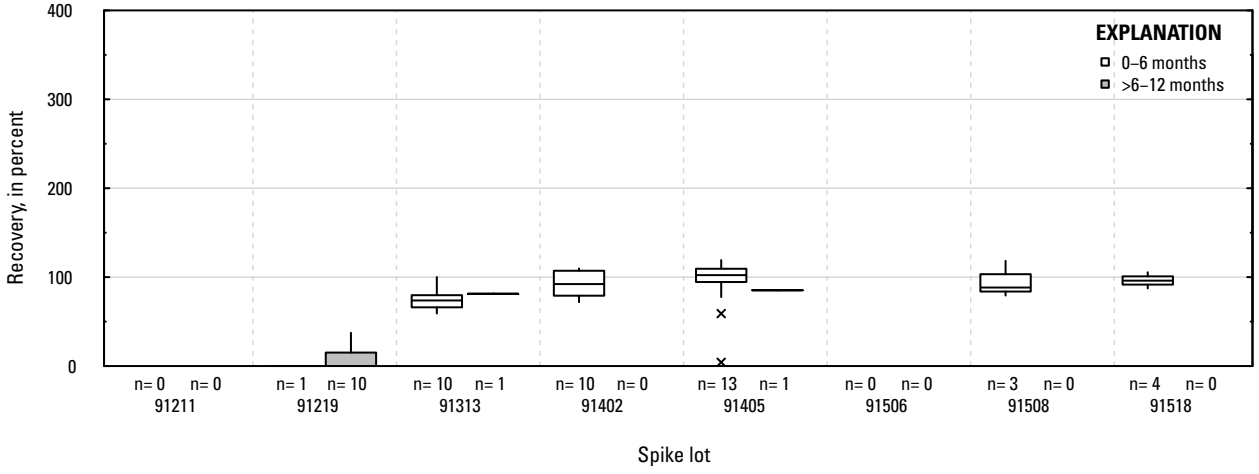


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

OP. **Malathion: laboratory reagent spikes**



OQ. **Malathion: groundwater field matrix spikes**



OR. **Malathion: surface water field matrix spikes**

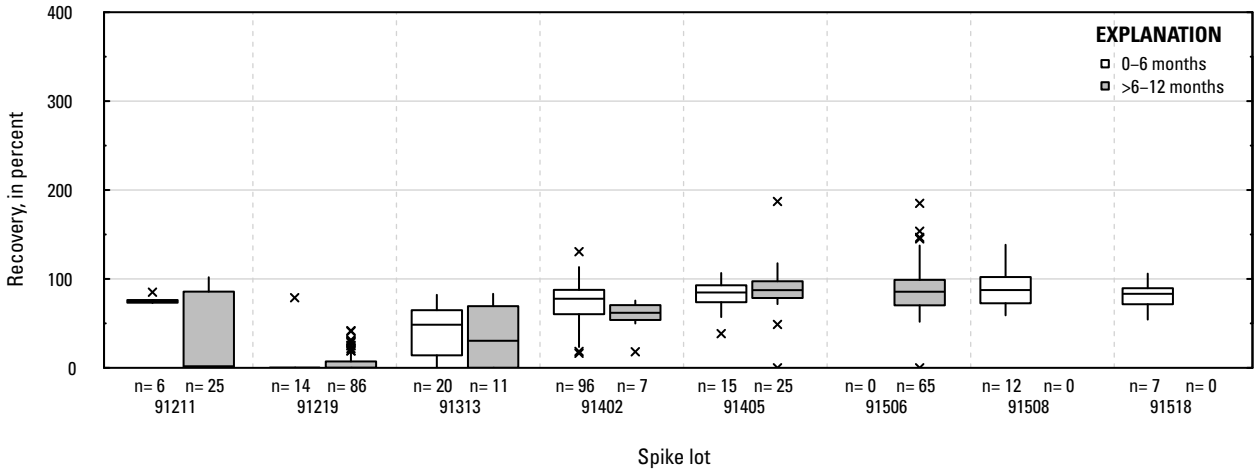
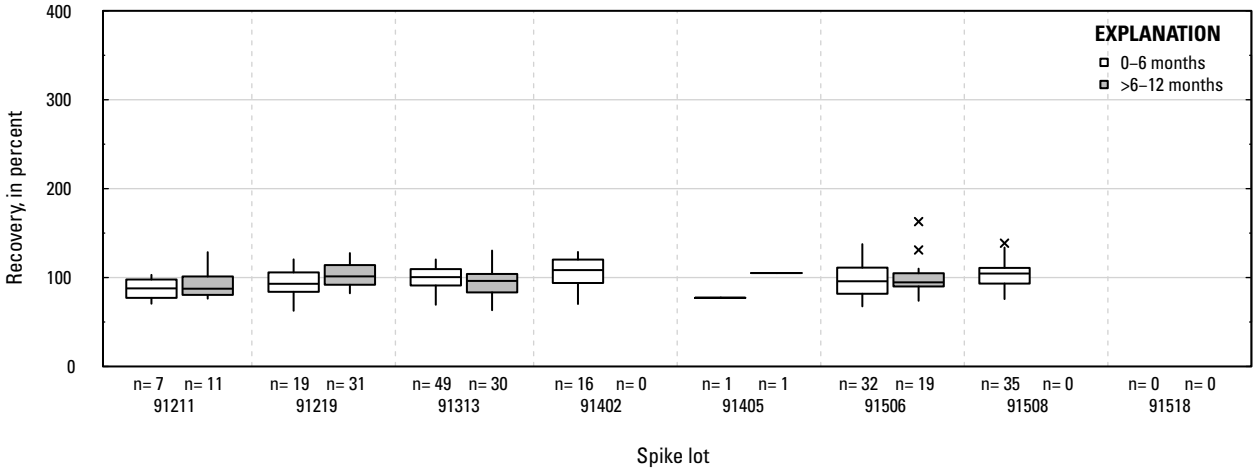
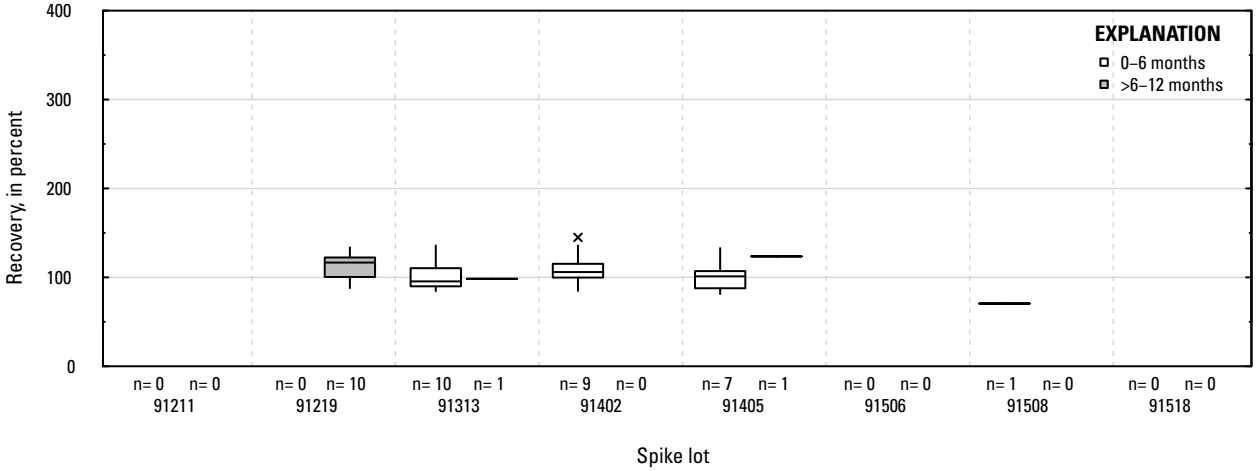


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

OS. **MCPA: laboratory reagent spikes**



OT. **MCPA: groundwater field matrix spikes**



OU. **MCPA: surface water field matrix spikes**

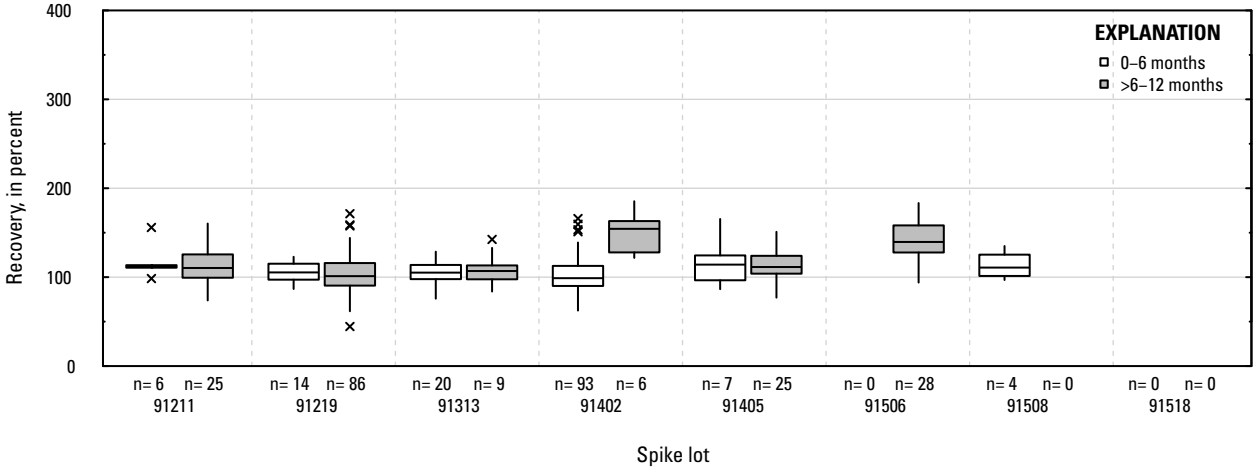
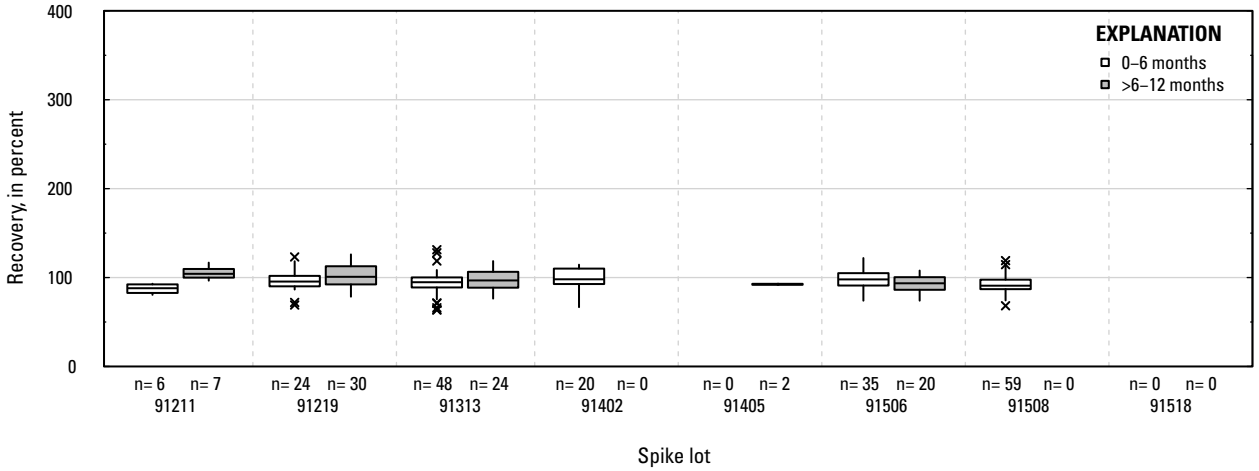
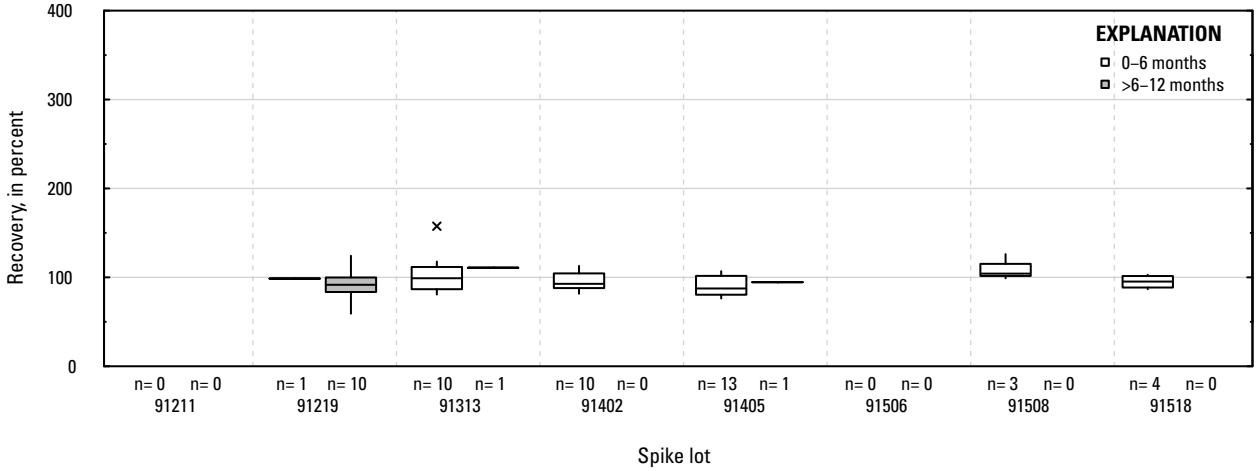


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

OV. **Metalaxyl: laboratory reagent spikes**



OW. **Metalaxyl: groundwater field matrix spikes**



OX. **Metalaxyl: surface water field matrix spikes**

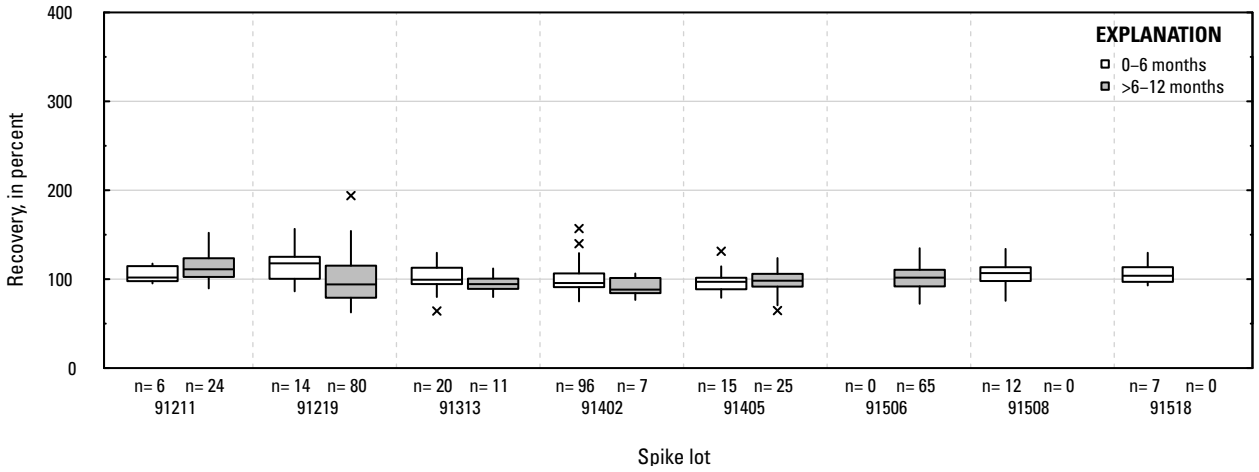
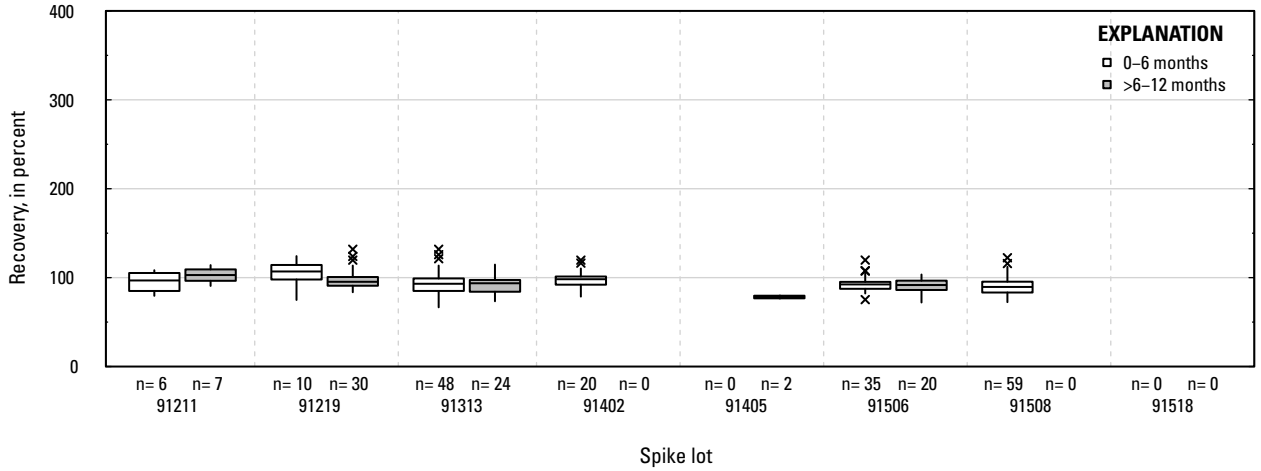
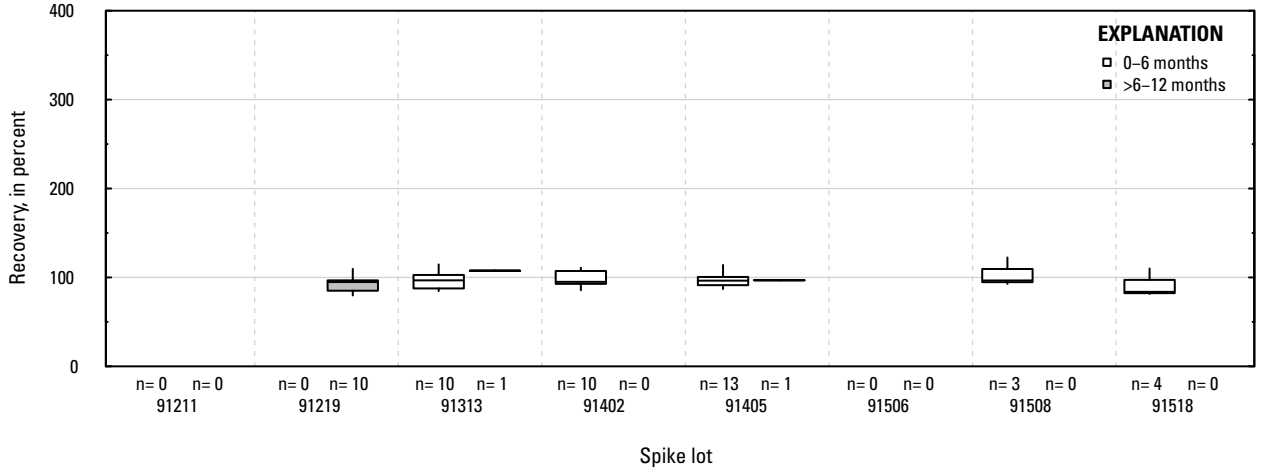


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

OY. **Metconazole: laboratory reagent spikes**



OZ. **Metconazole: groundwater field matrix spikes**



PA. **Metconazole: surface water field matrix spikes**

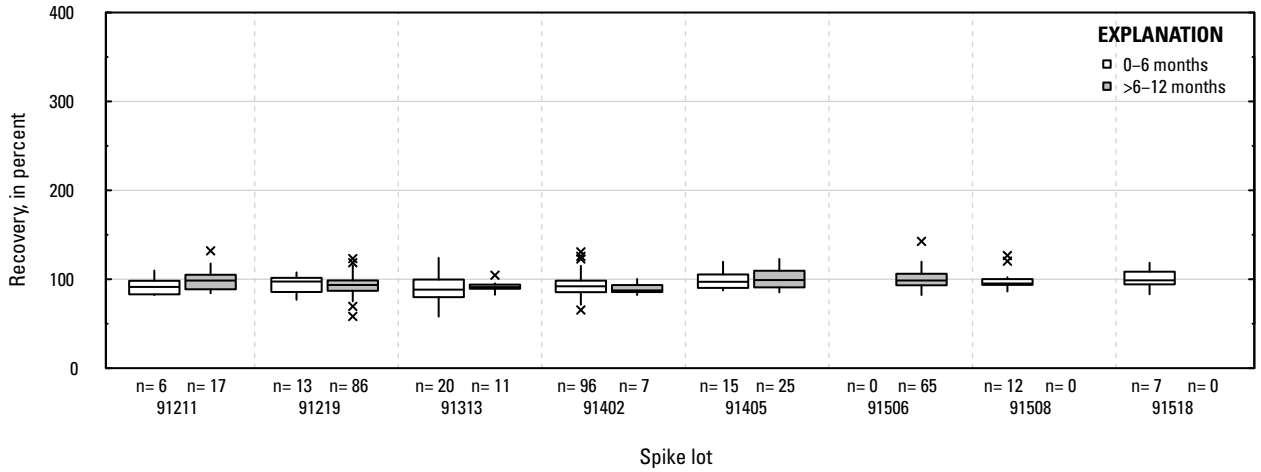
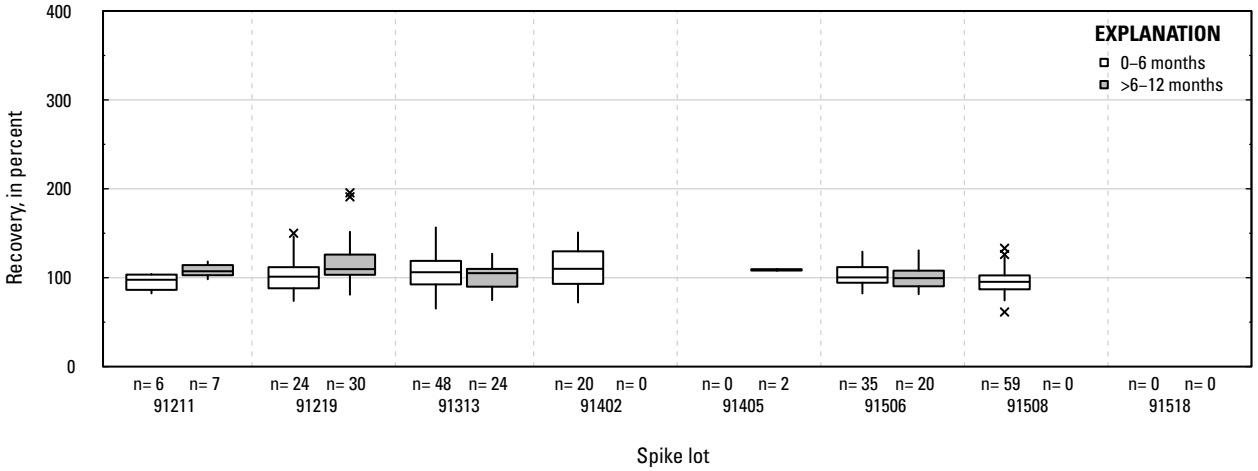
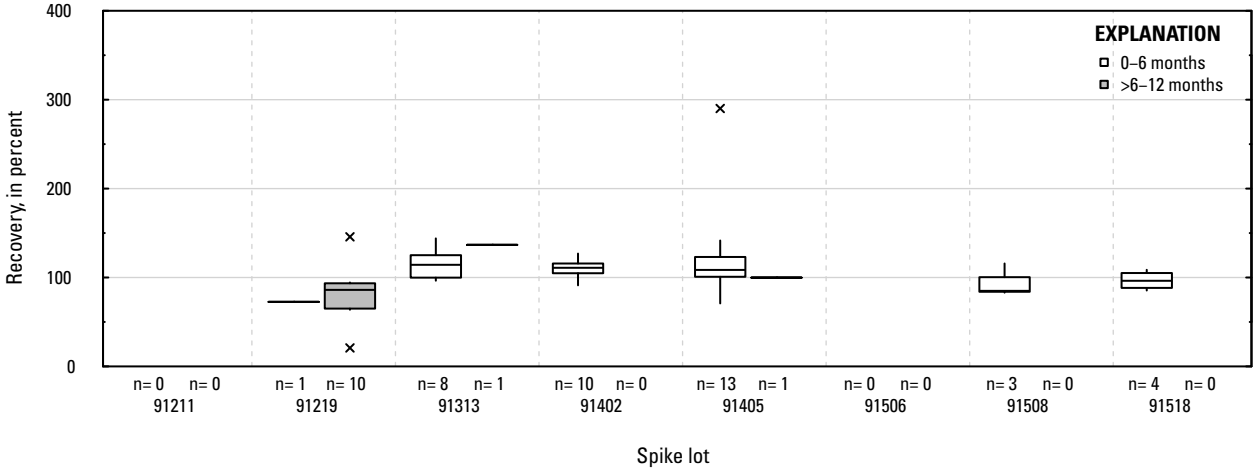


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

PB. **Methamidophos: laboratory reagent spikes**



PC. **Methamidophos: groundwater field matrix spikes**



PD. **Methamidophos: surface water field matrix spikes**

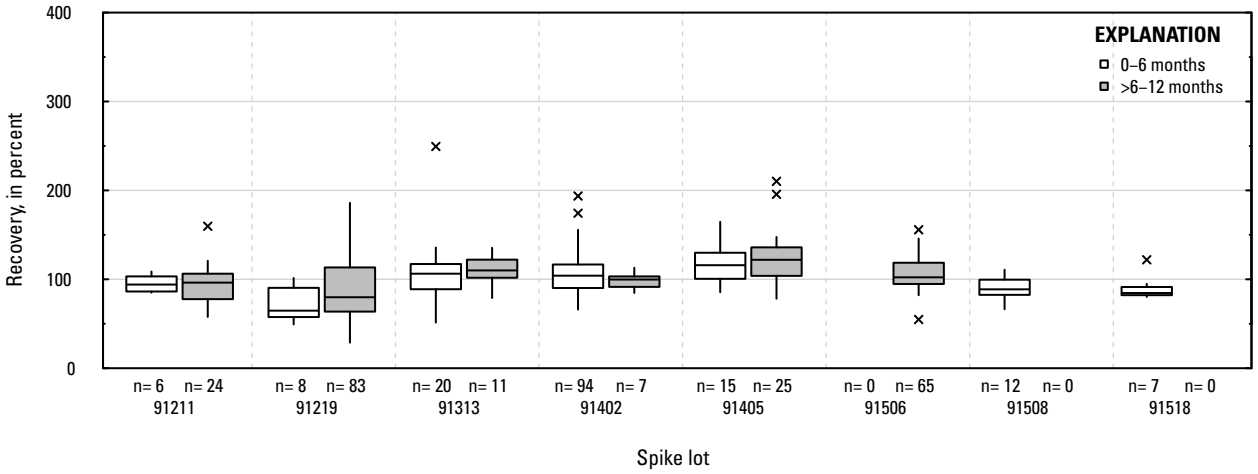
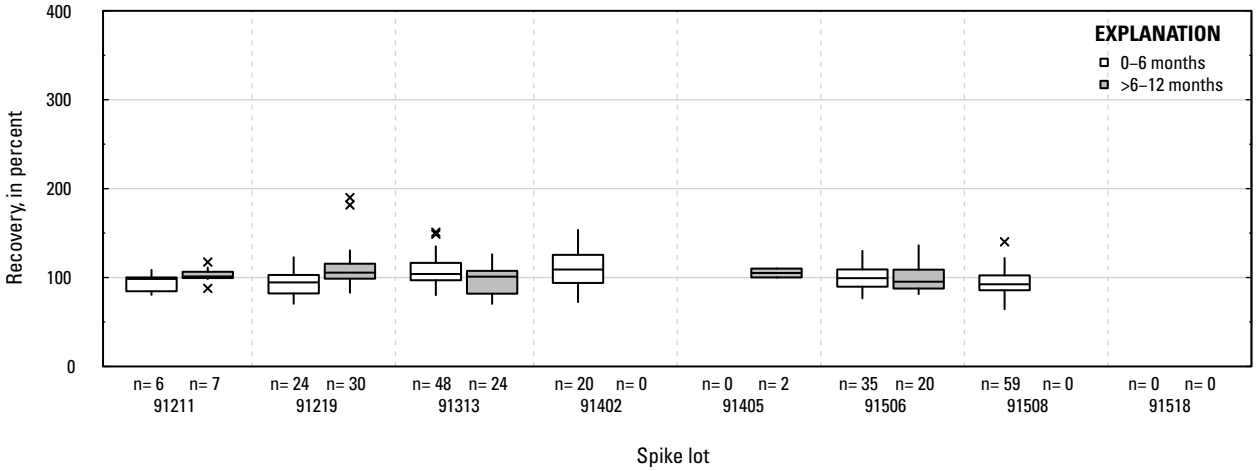
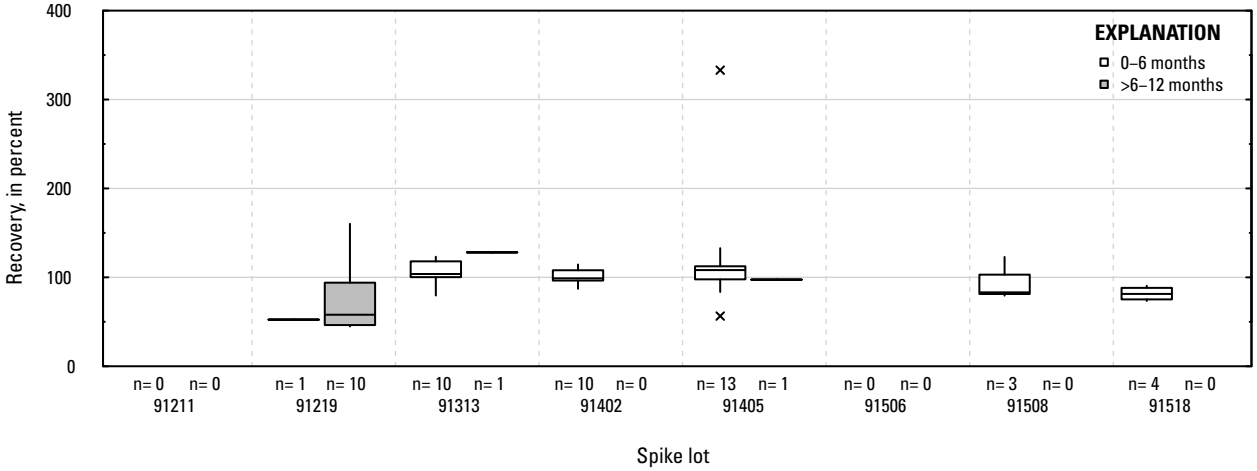


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

PE. **Methidathion: laboratory reagent spikes**



PF. **Methidathion: groundwater field matrix spikes**



PG. **Methidathion: surface water field matrix spikes**

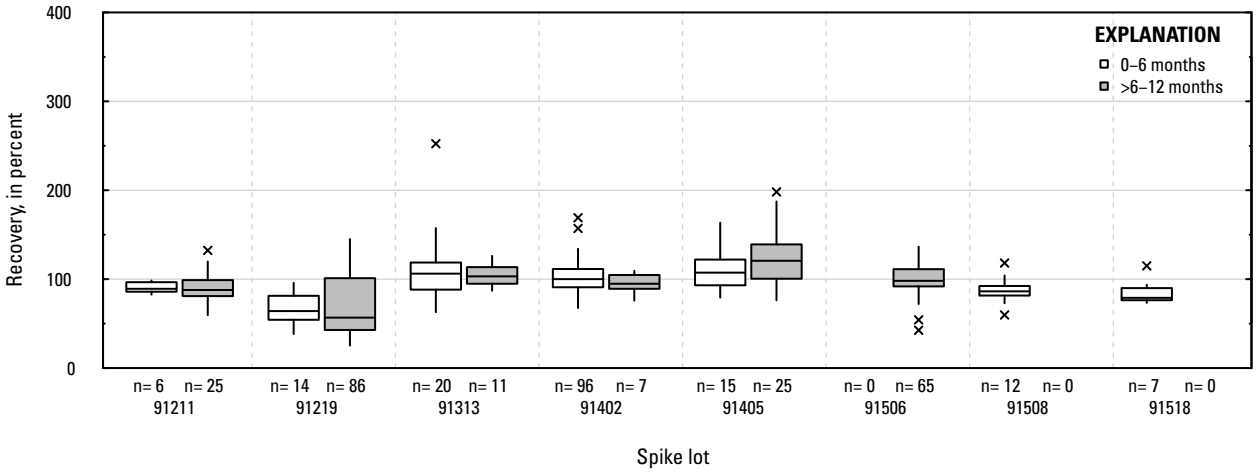
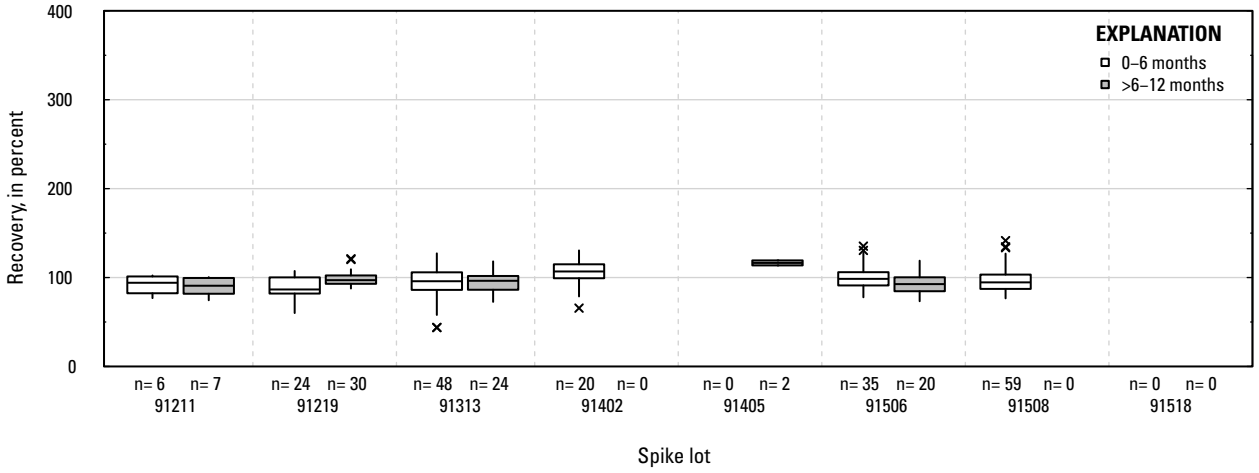
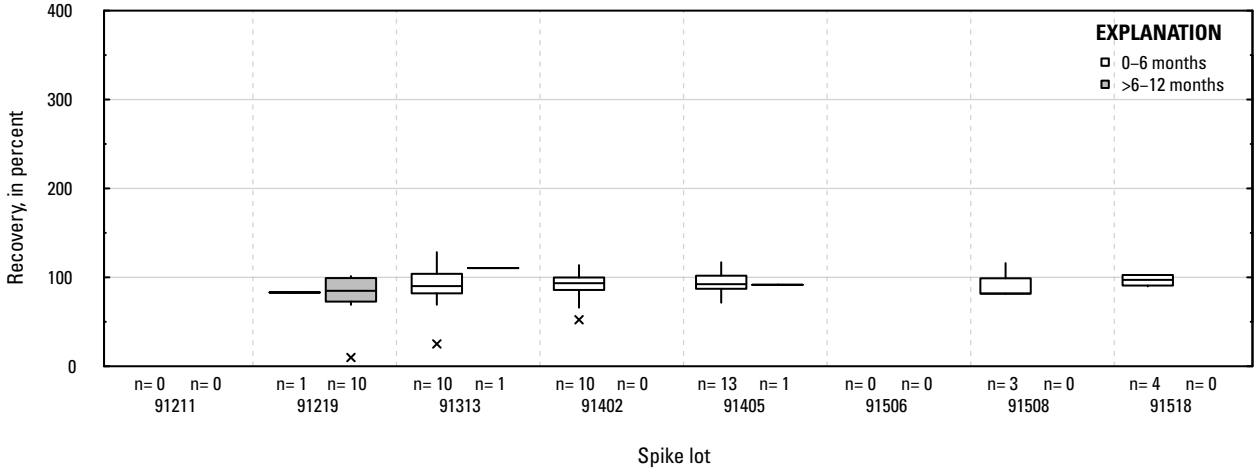


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

PH. **Methomyl: laboratory reagent spikes**



PI. **Methomyl: groundwater field matrix spikes**



PJ. **Methomyl: surface water field matrix spikes**

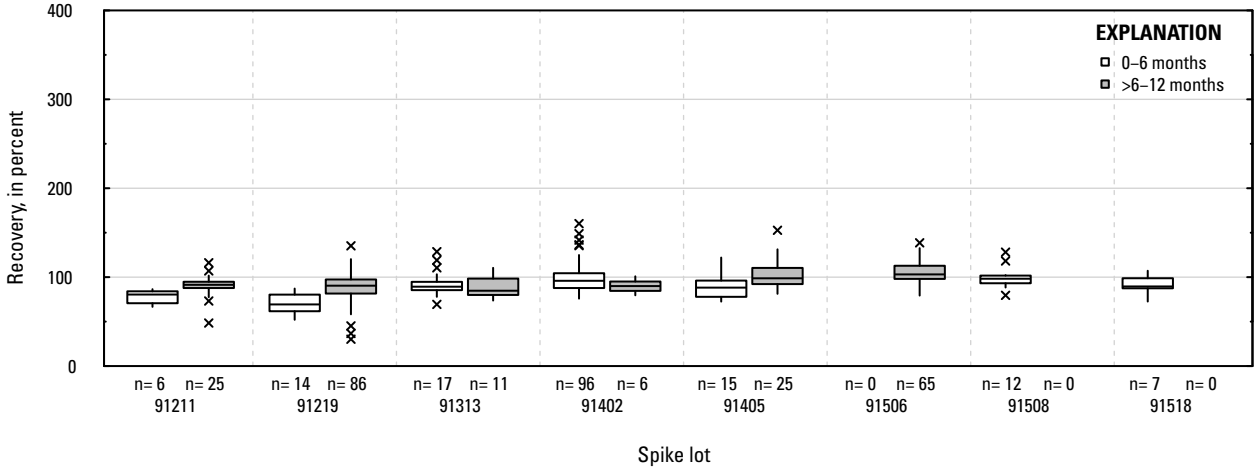
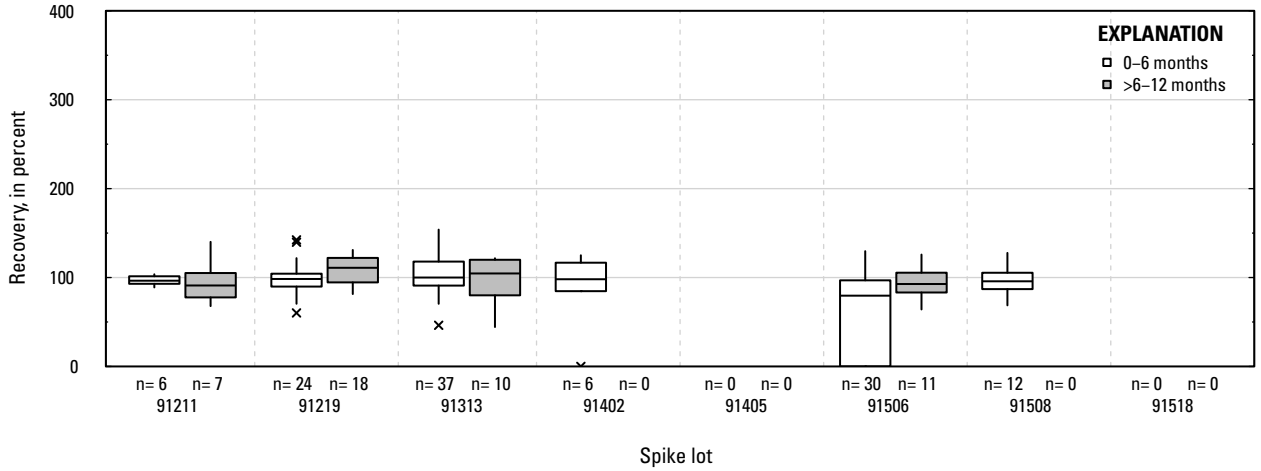
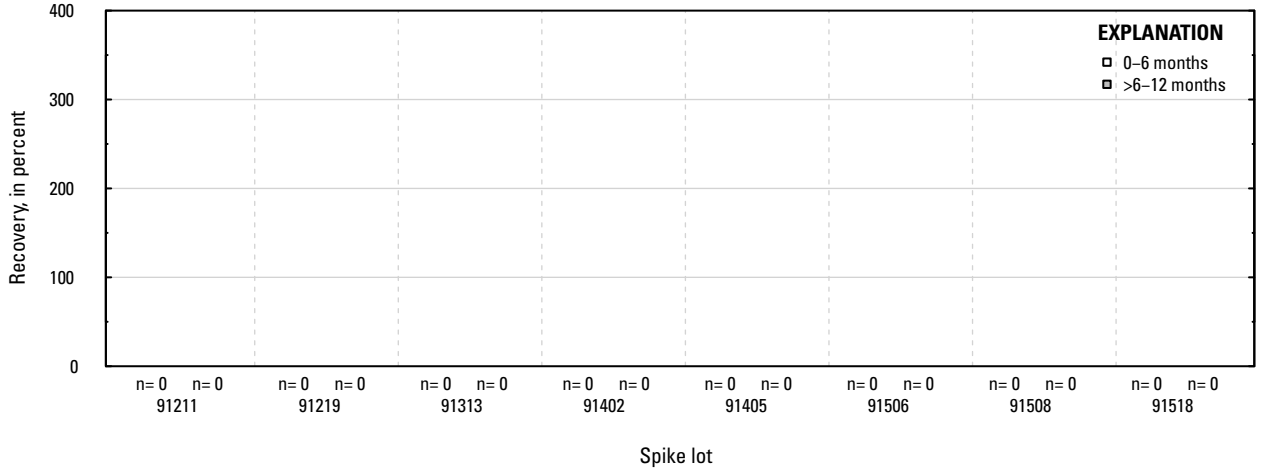


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

PK. **Methomyl oxime: laboratory reagent spikes**



PL. **Methomyl oxime: groundwater field matrix spikes**



PM. **Methomyl oxime: surface water field matrix spikes**

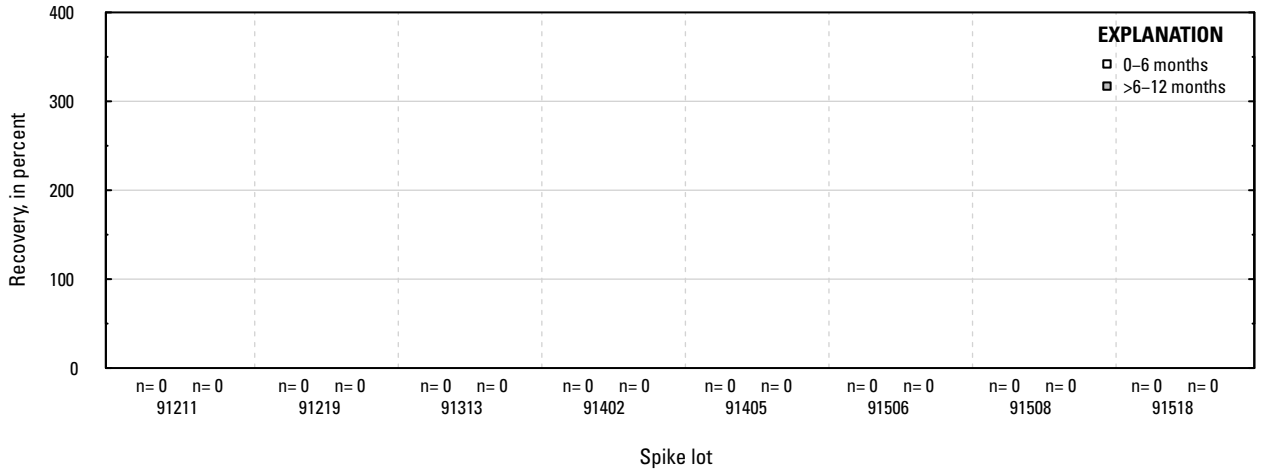
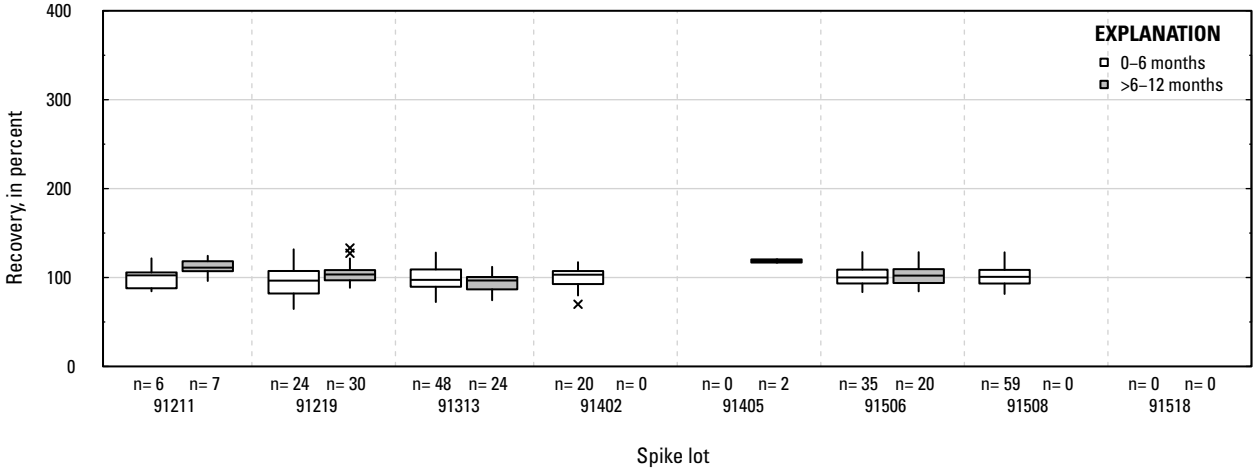
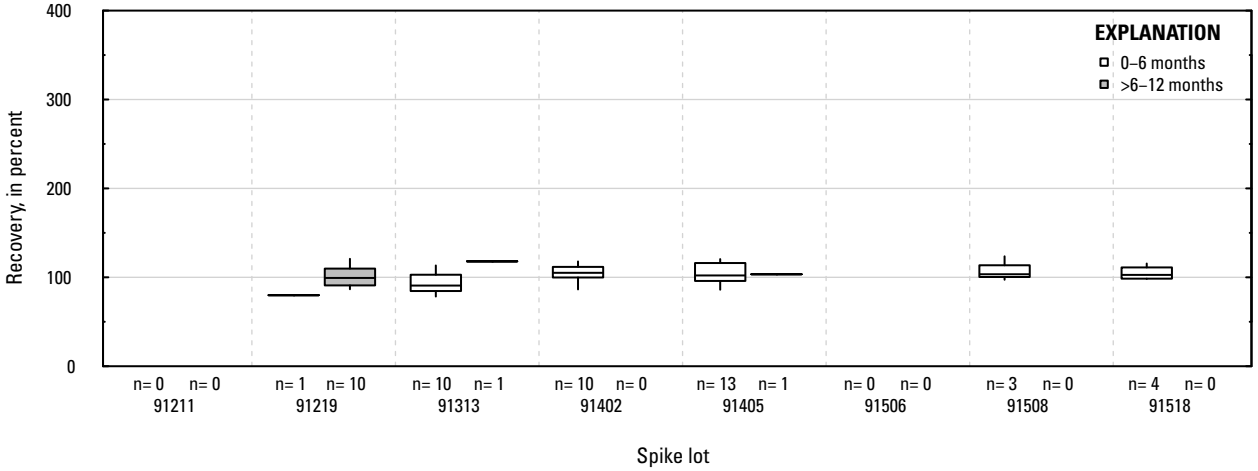


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

PN. **Methoxyfenozide: laboratory reagent spikes**



PO. **Methoxyfenozide: groundwater field matrix spikes**



PP. **Methoxyfenozide: surface water field matrix spikes**

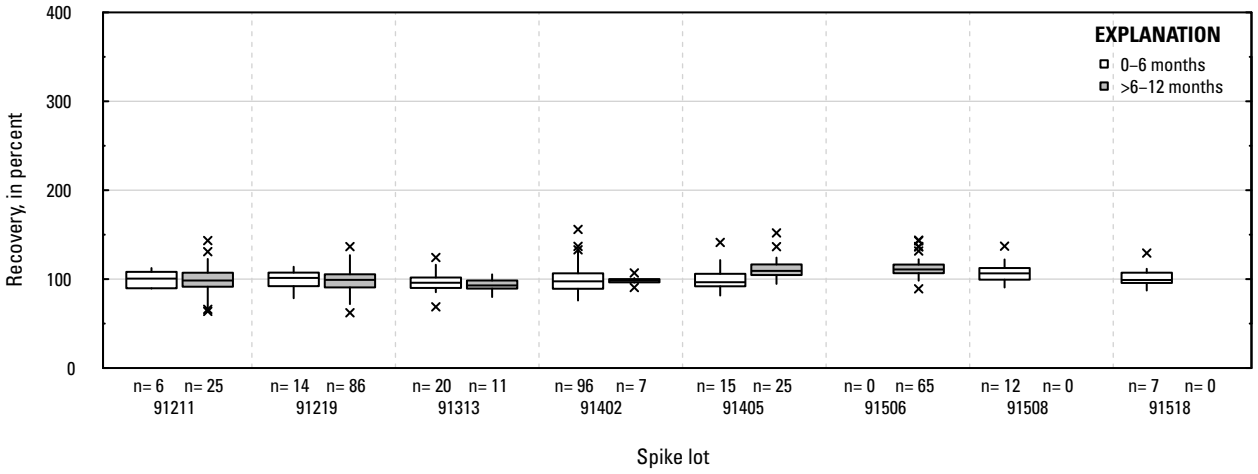
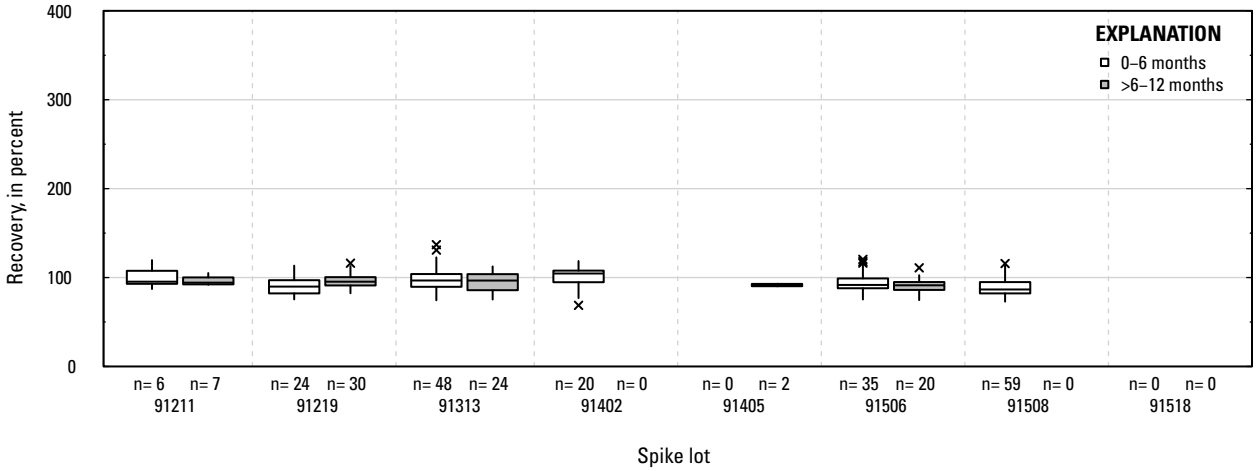
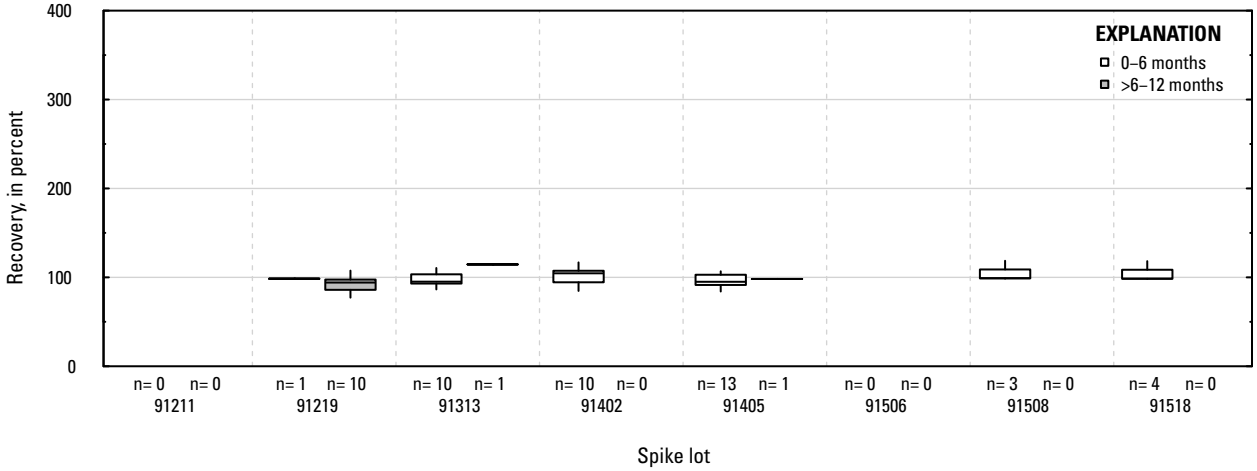


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

PQ. **Metolachlor: laboratory reagent spikes**



PR. **Metolachlor: groundwater field matrix spikes**



PS. **Metolachlor: surface water field matrix spikes**

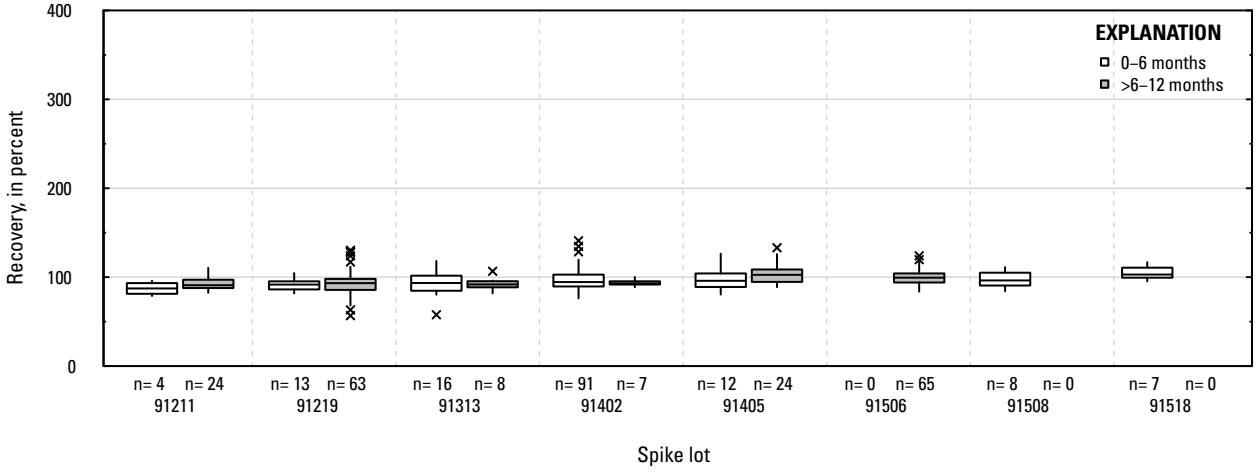
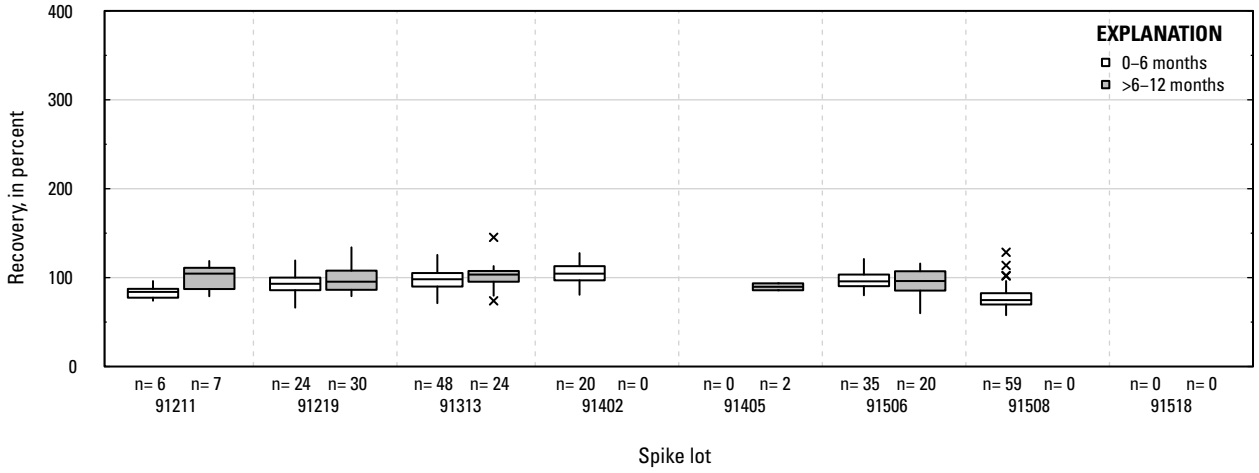
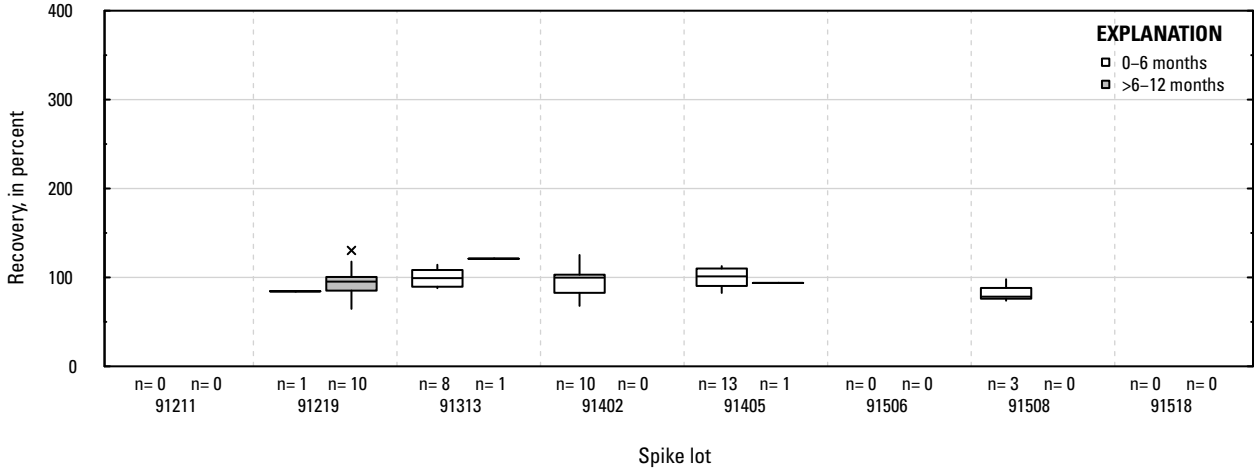


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

PT. **Metolachlor hydroxy morpholinone: laboratory reagent spikes**



PU. **Metolachlor hydroxy morpholinone: groundwater field matrix spikes**



PV. **Metolachlor hydroxy morpholinone: surface water field matrix spikes**

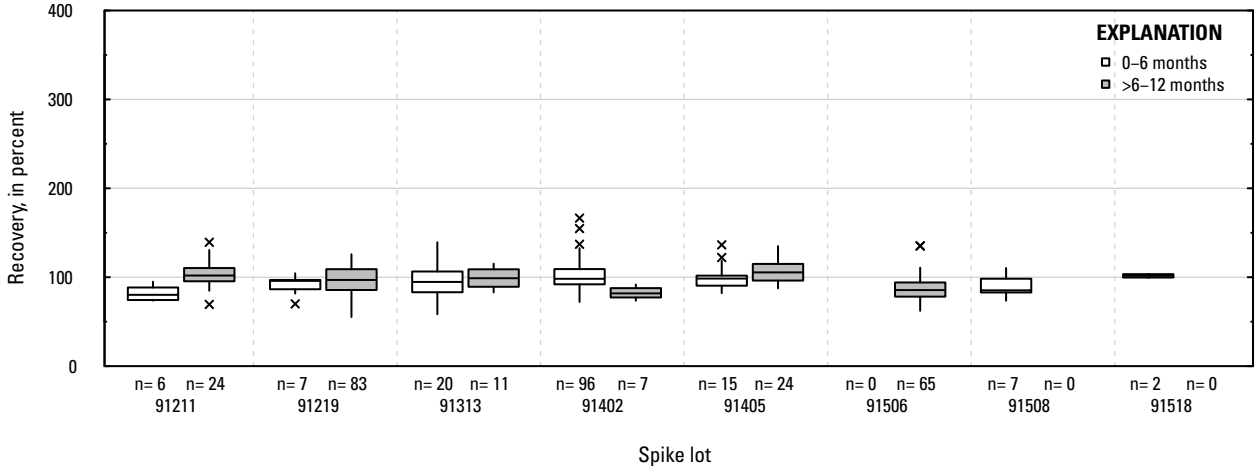
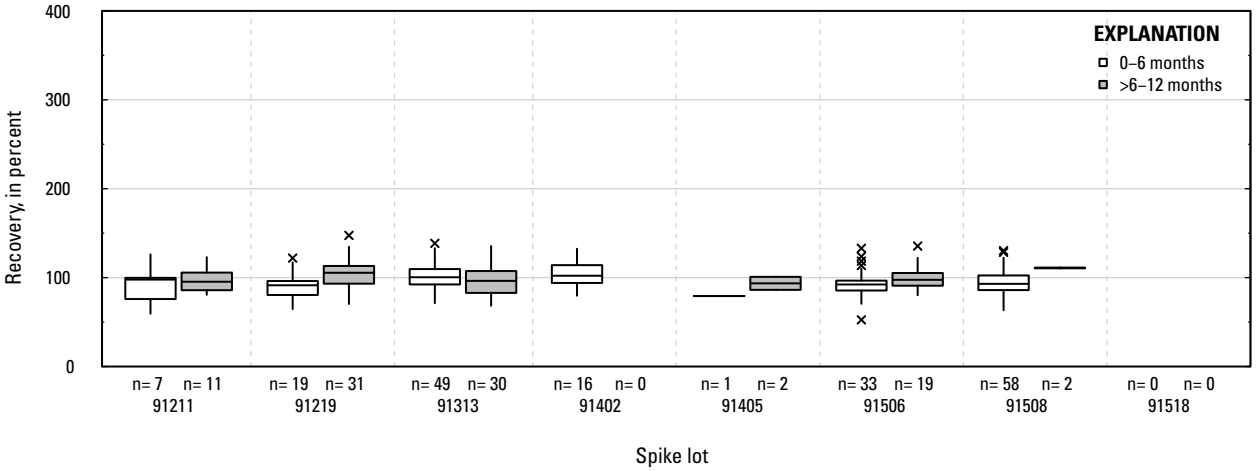
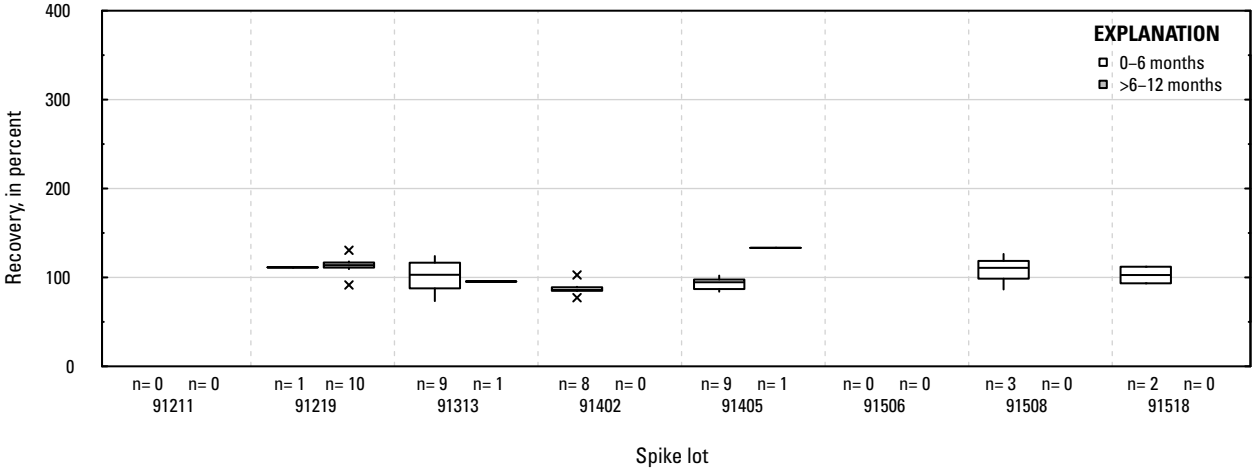


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

PW. **Metolachlor oxanilic acid: laboratory reagent spikes**



PX. **Metolachlor oxanilic acid: groundwater field matrix spikes**



PY. **Metolachlor oxanilic acid: surface water field matrix spikes**

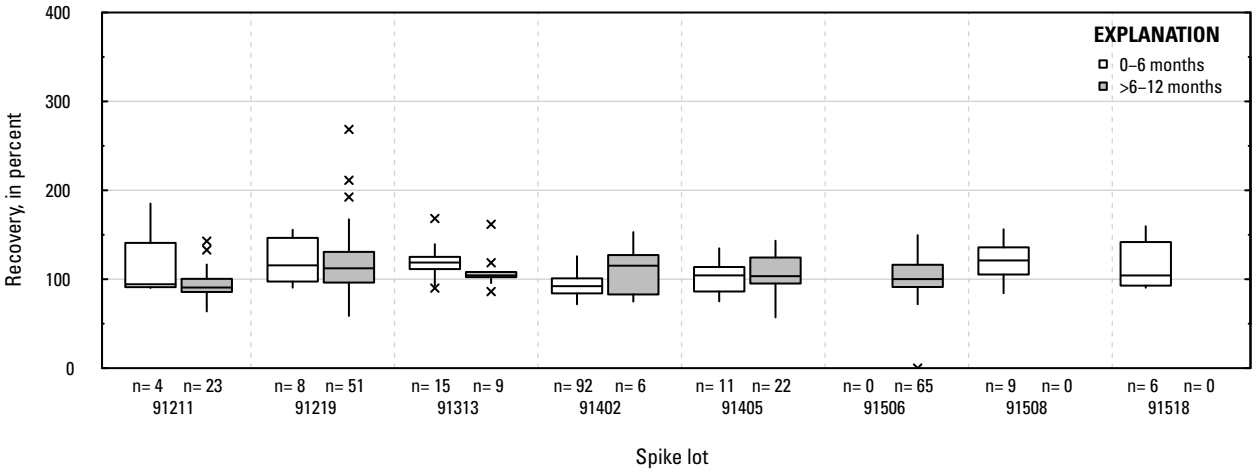
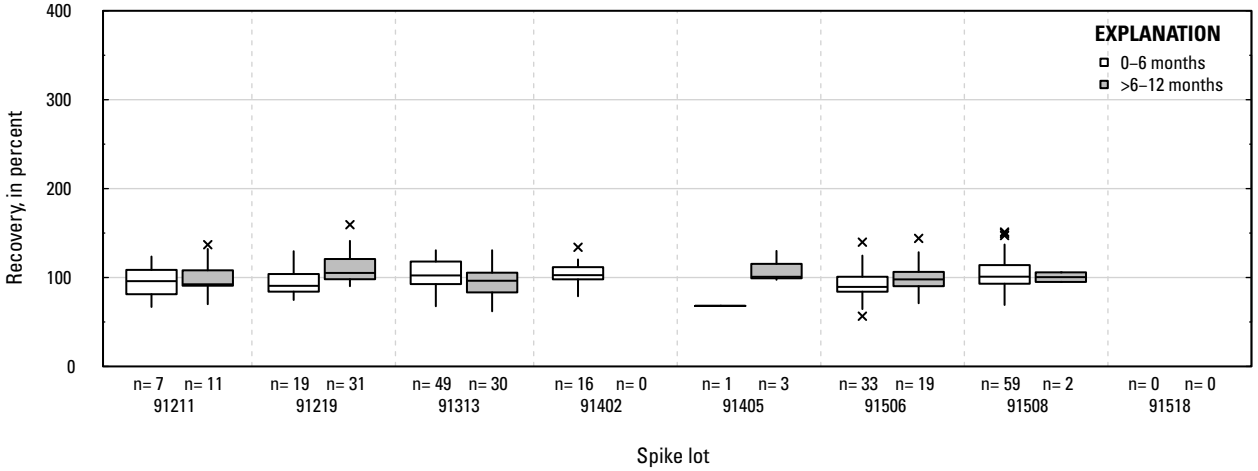
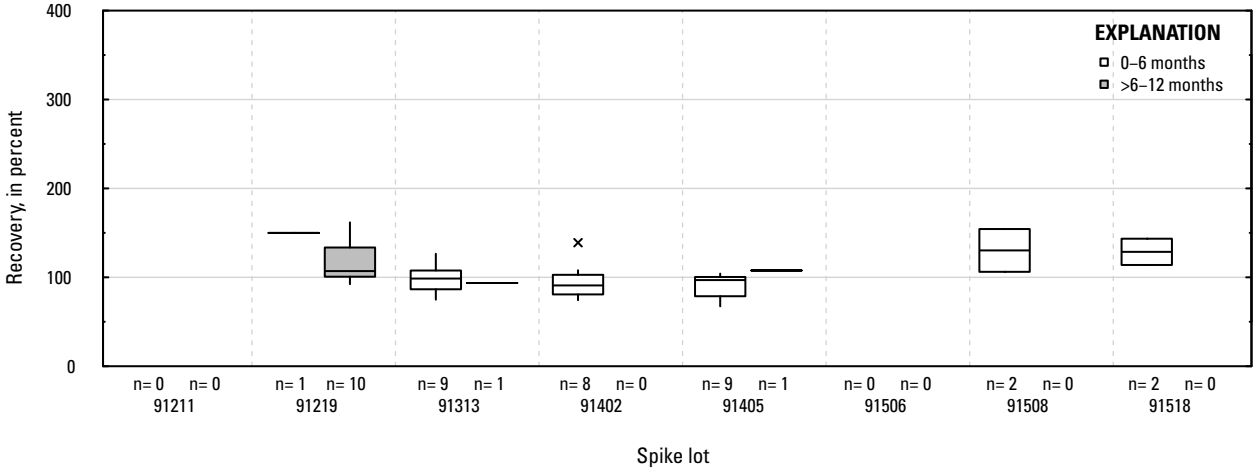


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

PZ. **Metolachlor sulfonic acid: laboratory reagent spikes**



QA. **Metolachlor sulfonic acid: groundwater field matrix spikes**



QB. **Metolachlor sulfonic acid: surface water field matrix spikes**

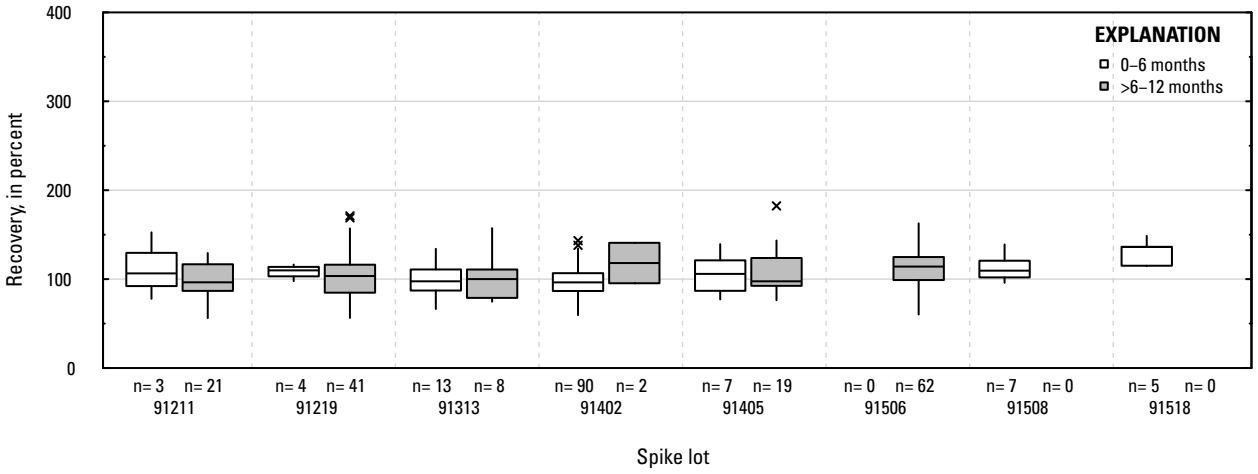
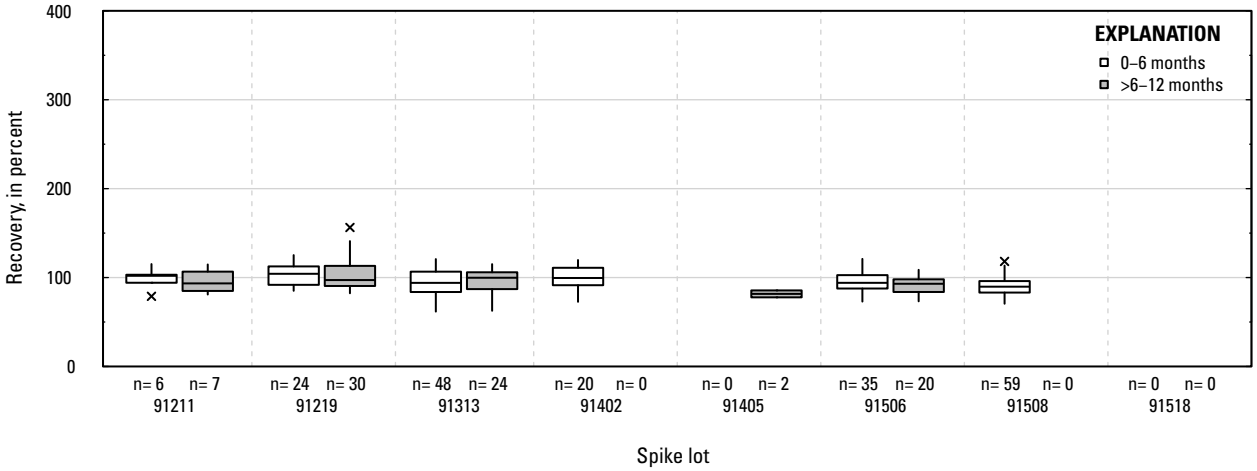
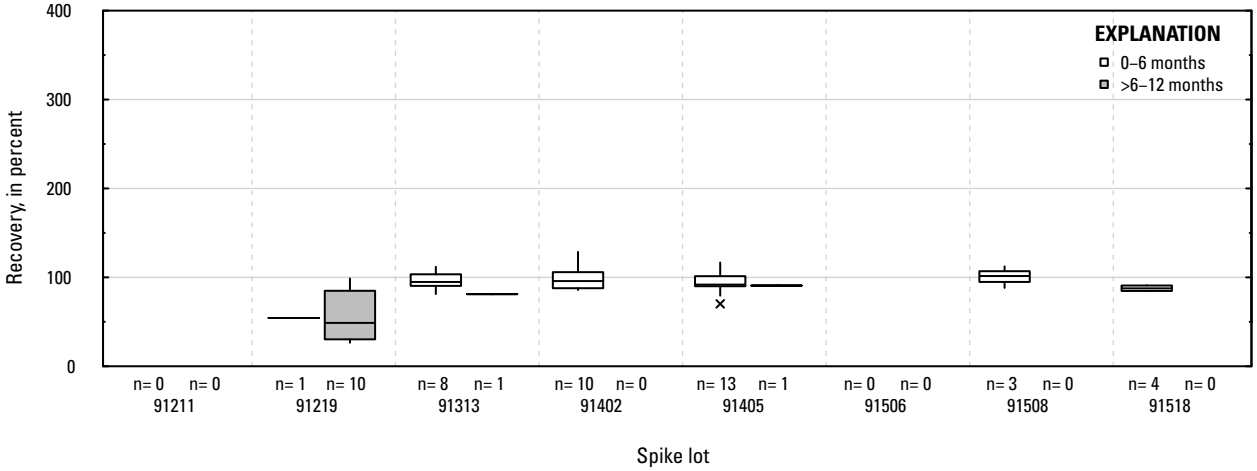


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

QC. **Metribuzin: laboratory reagent spikes**



QD. **Metribuzin: groundwater field matrix spikes**



QE. **Metribuzin: surface water field matrix spikes**

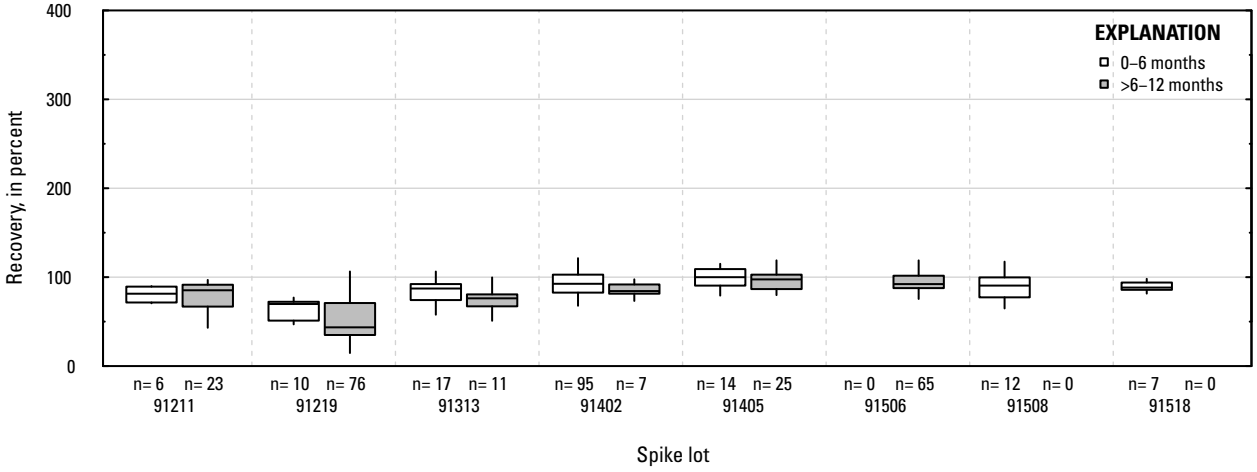
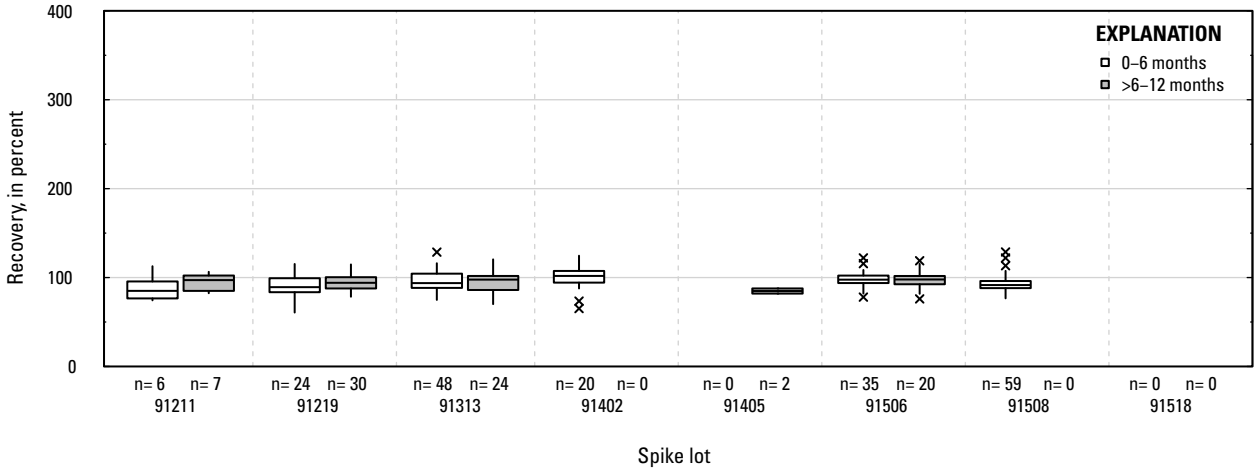
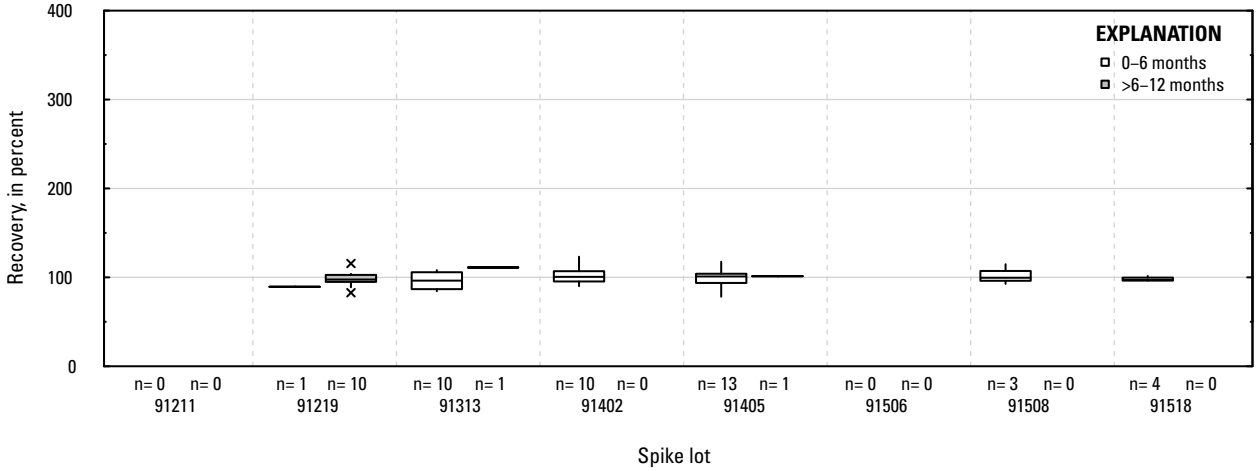


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

QF. **Desamino metribuzin: laboratory reagent spikes**



QG. **Desamino metribuzin: groundwater field matrix spikes**



QH. **Desamino metribuzin: surface water field matrix spikes**

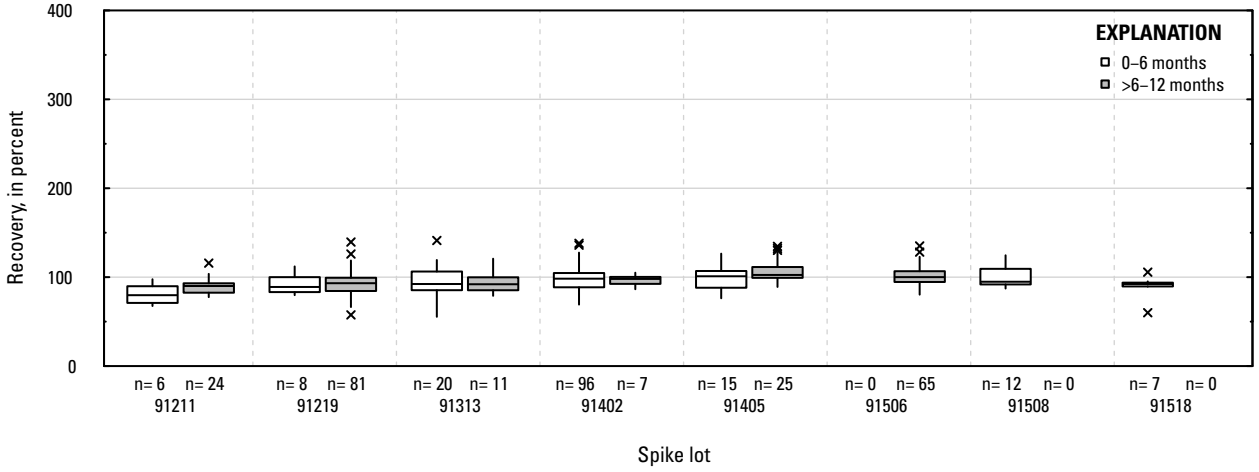
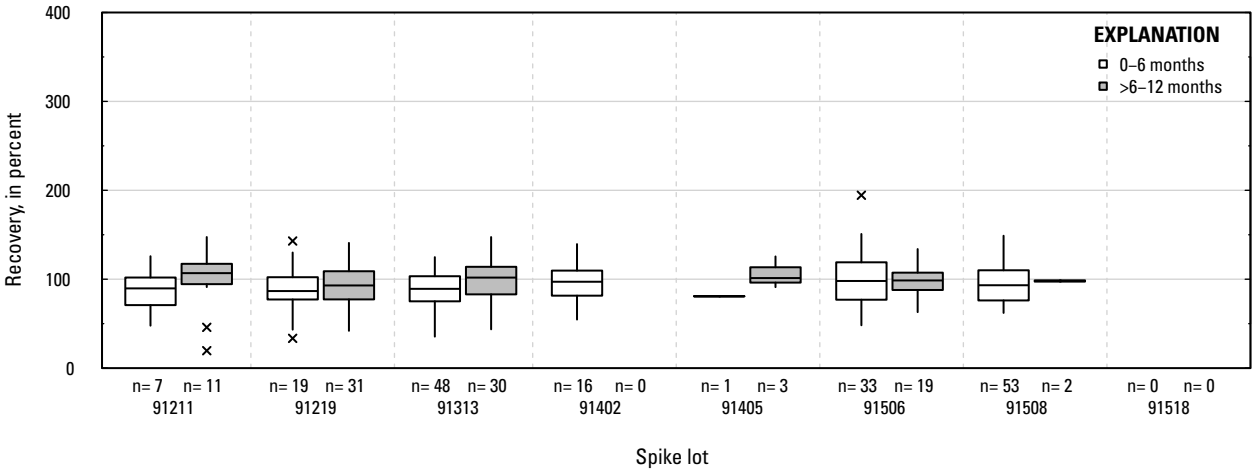
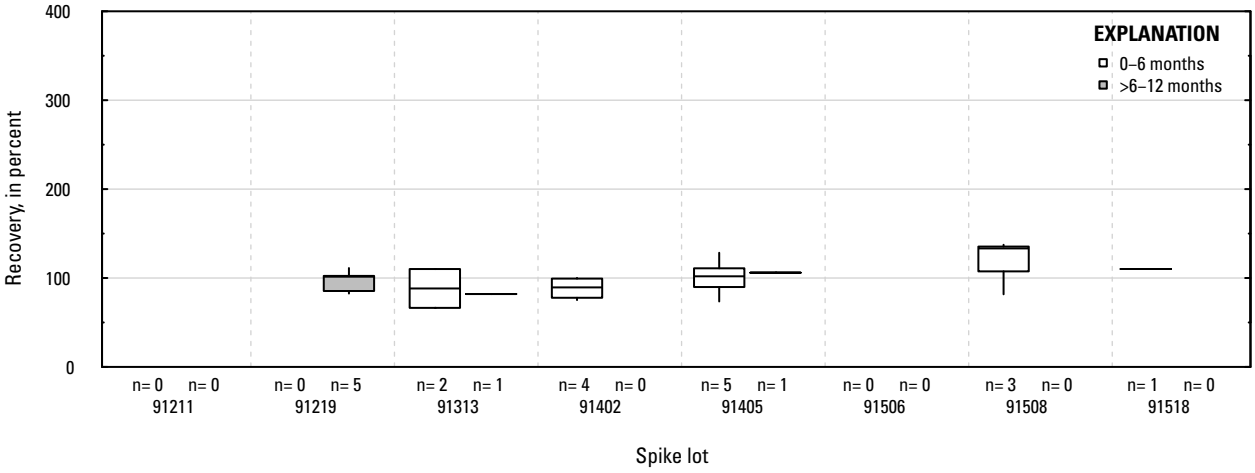


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

QI. **Desamino–diketo metribuzin: laboratory reagent spikes**



QJ. **Desamino–diketo metribuzin: groundwater field matrix spikes**



QK. **Desamino–diketo metribuzin: surface water field matrix spikes**

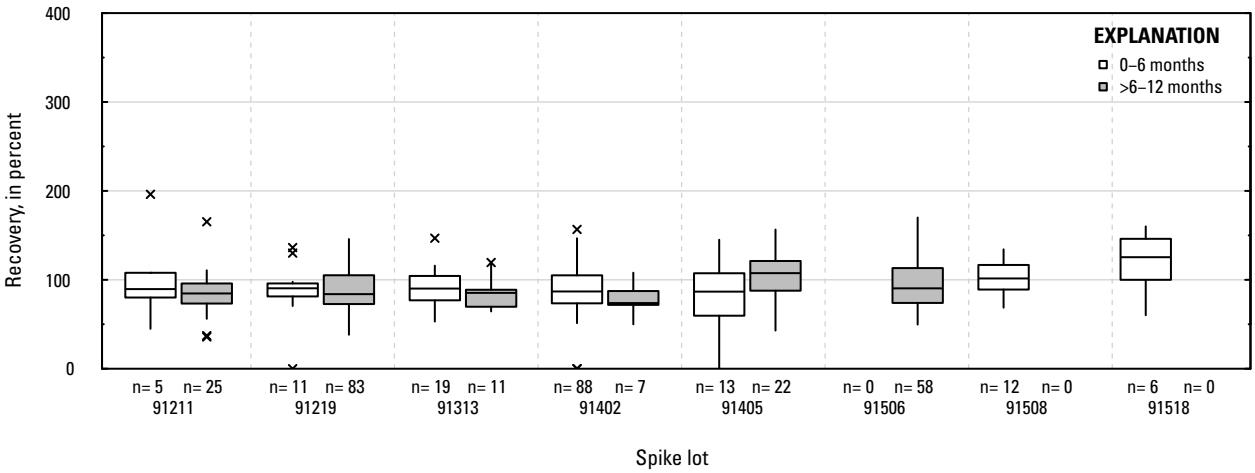
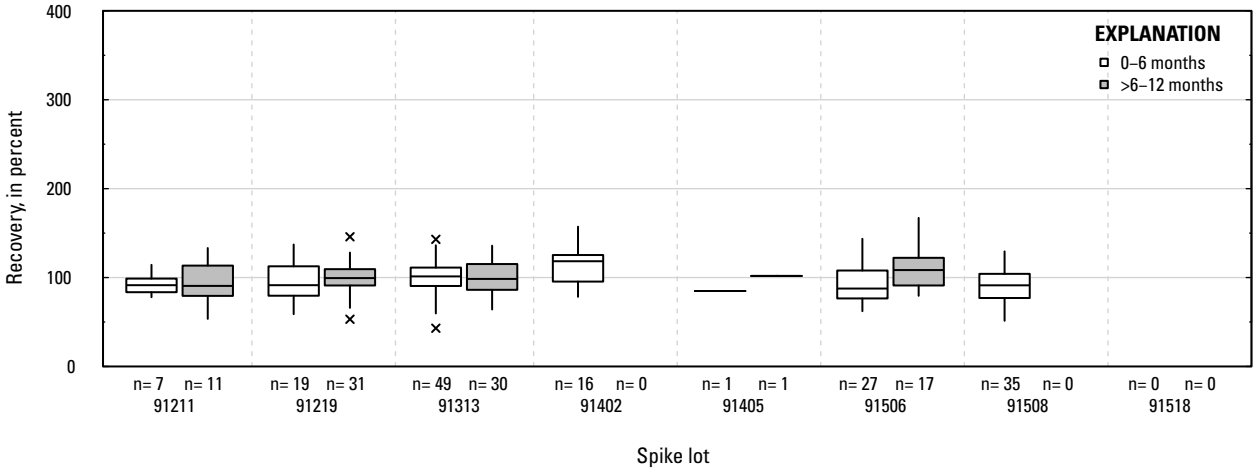
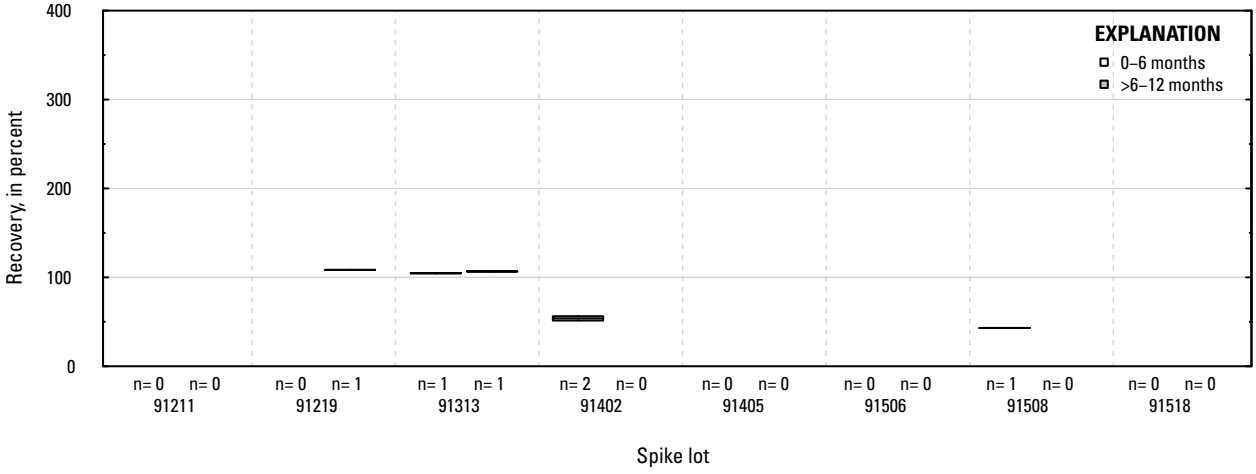


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

QL. **Metribuzin DK: laboratory reagent spikes**



QM. **Metribuzin DK: groundwater field matrix spikes**



QN. **Metribuzin DK: surface water field matrix spikes**

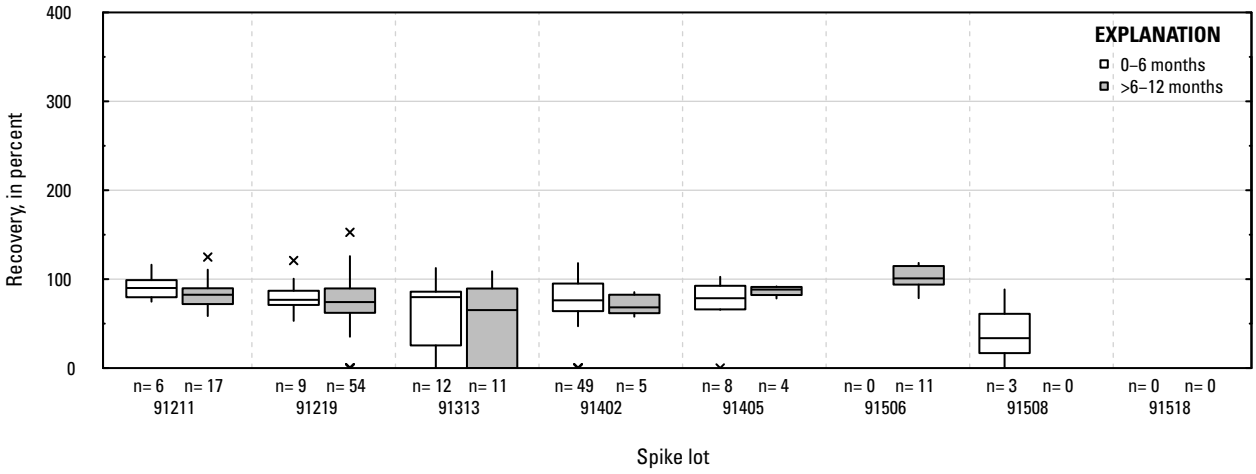
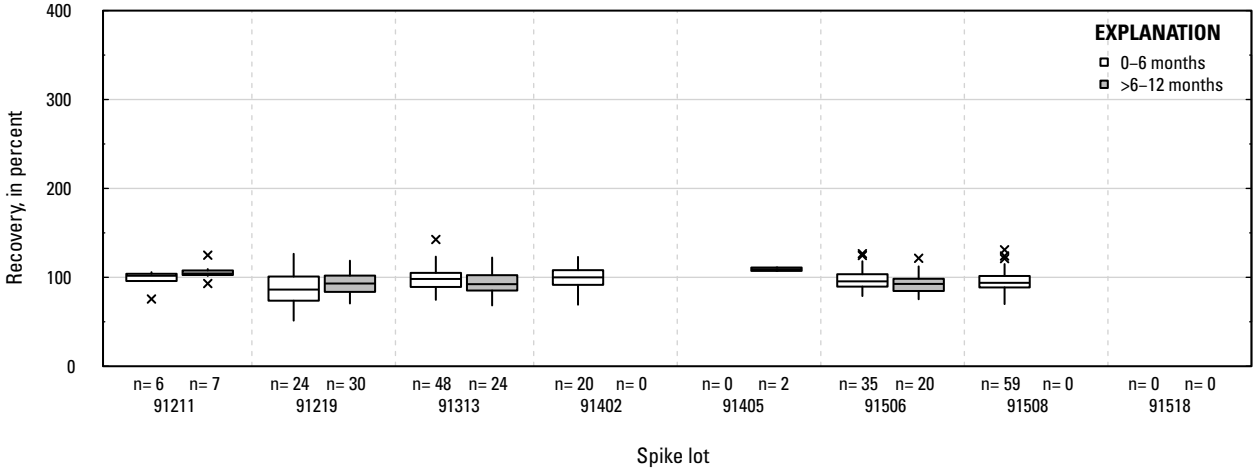
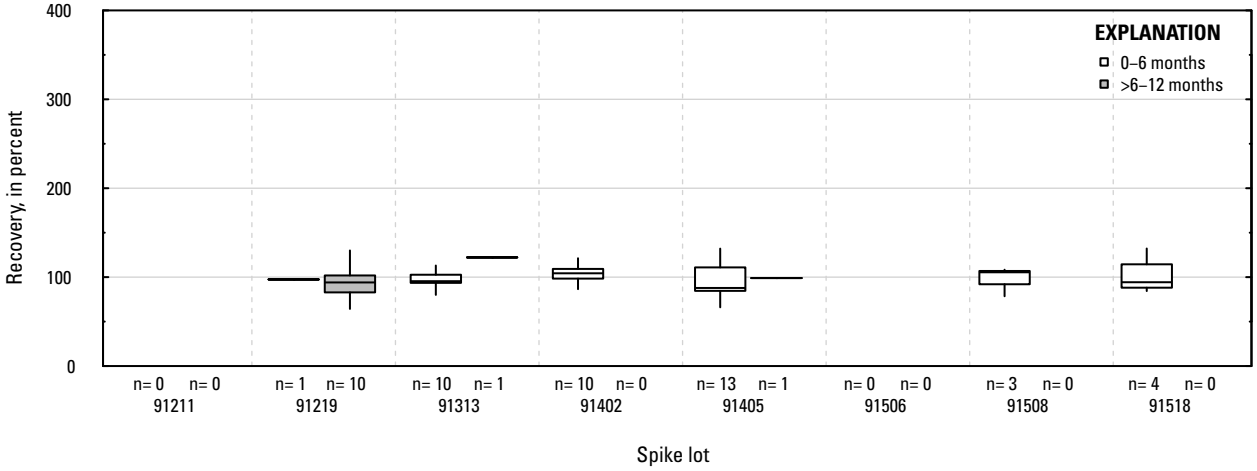


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

QO. **Molinate: laboratory reagent spikes**



QP. **Molinate: groundwater field matrix spikes**



QQ. **Molinate: surface water field matrix spikes**

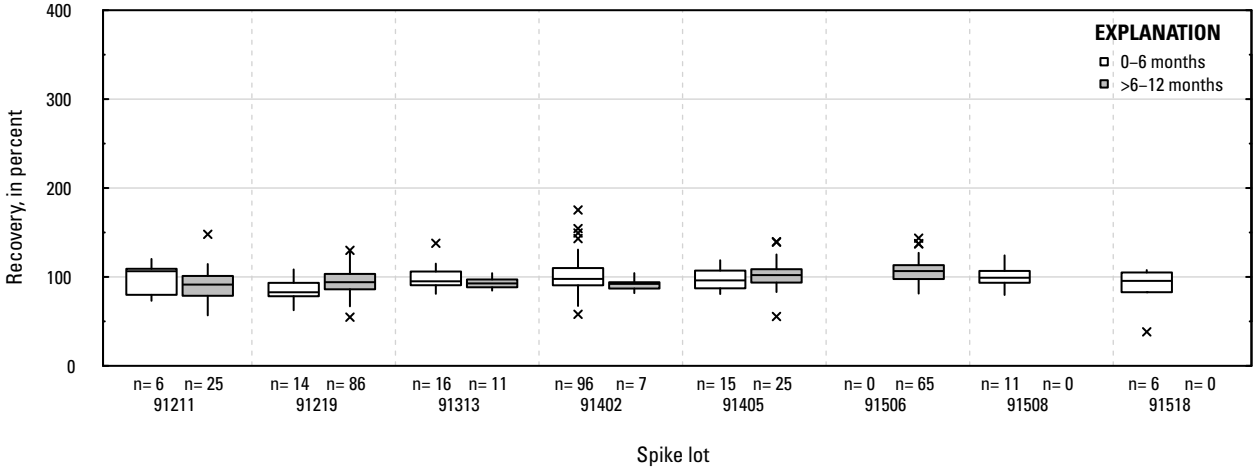
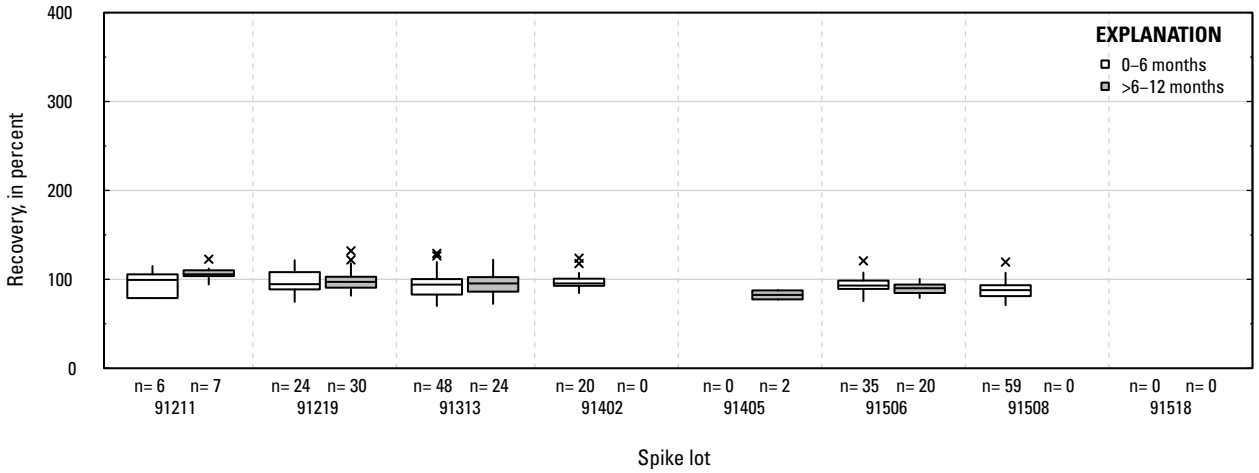
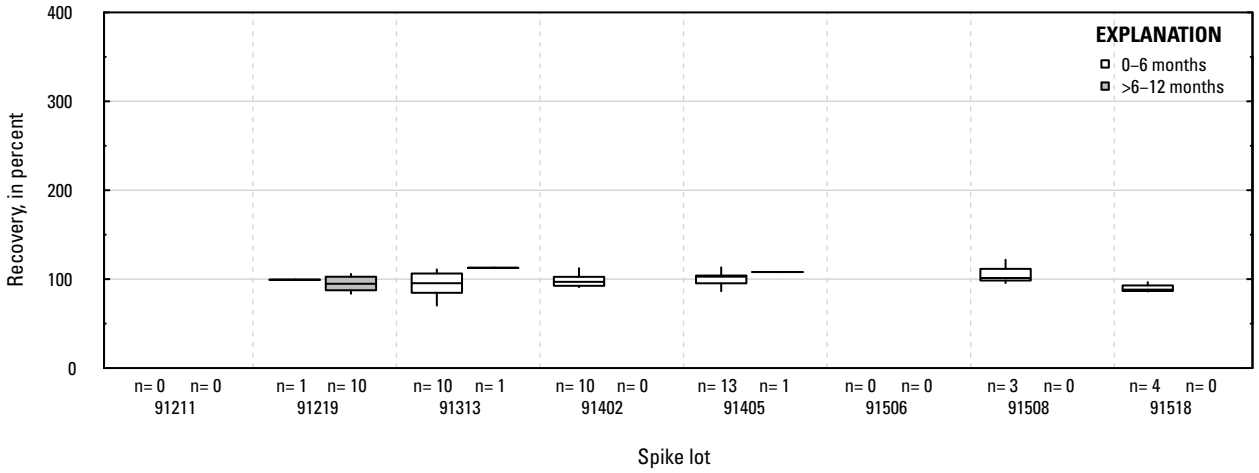


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

QR. **Myclobutanil: laboratory reagent spikes**



QS. **Myclobutanil: groundwater field matrix spikes**



QT. **Myclobutanil: surface water field matrix spikes**

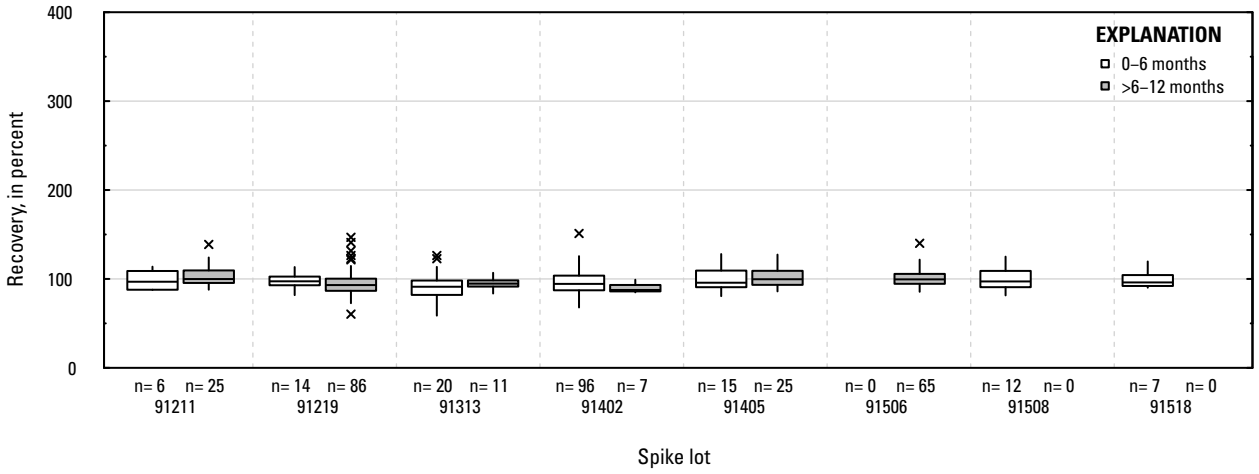
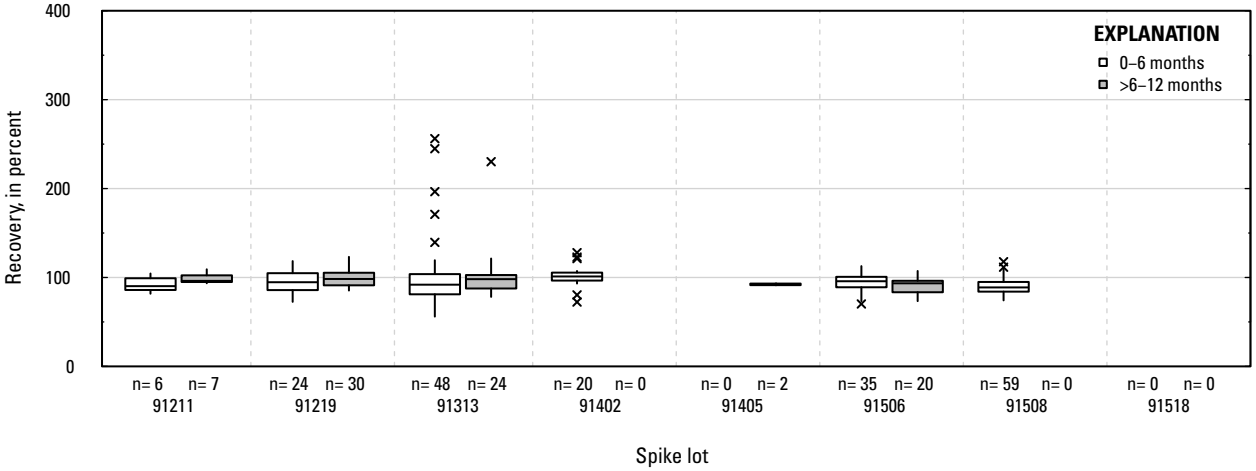
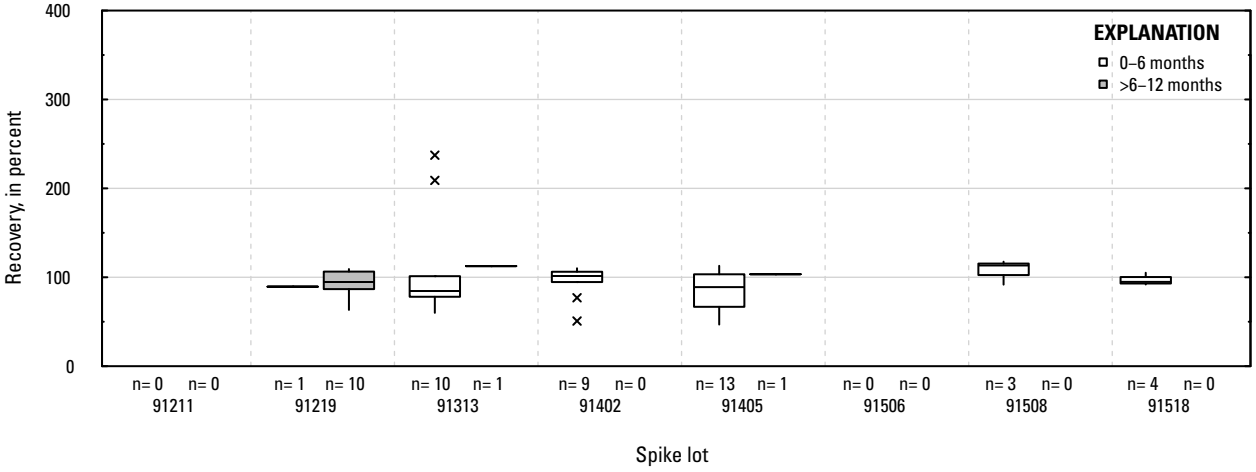


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

QU. **N–(3,4–Dichlorophenyl)–N'–methylurea: laboratory reagent spikes**



QV. **N–(3,4–Dichlorophenyl)–N'–methylurea: groundwater field matrix spikes**



QW. **N–(3,4–Dichlorophenyl)–N'–methylurea: surface water field matrix spikes**

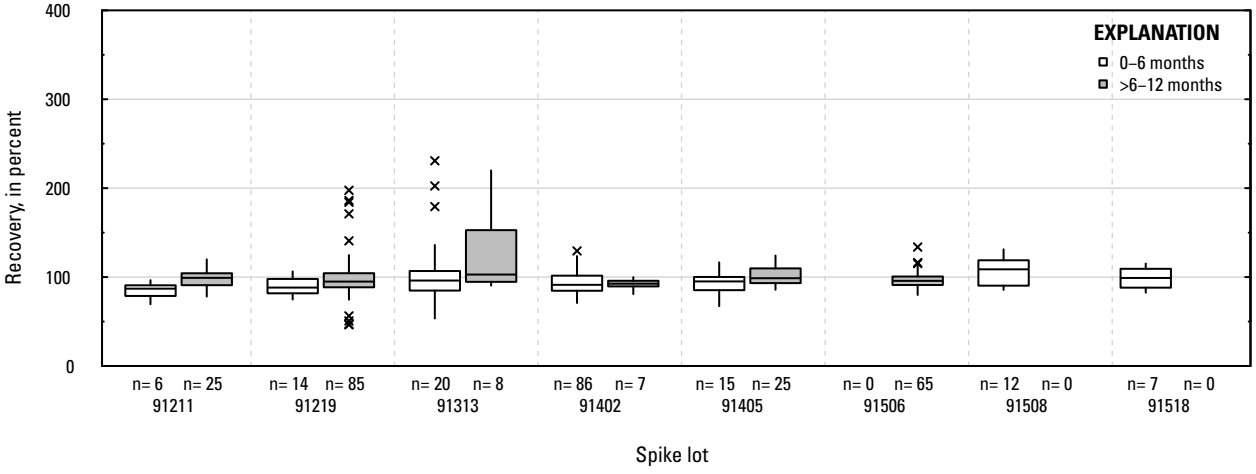
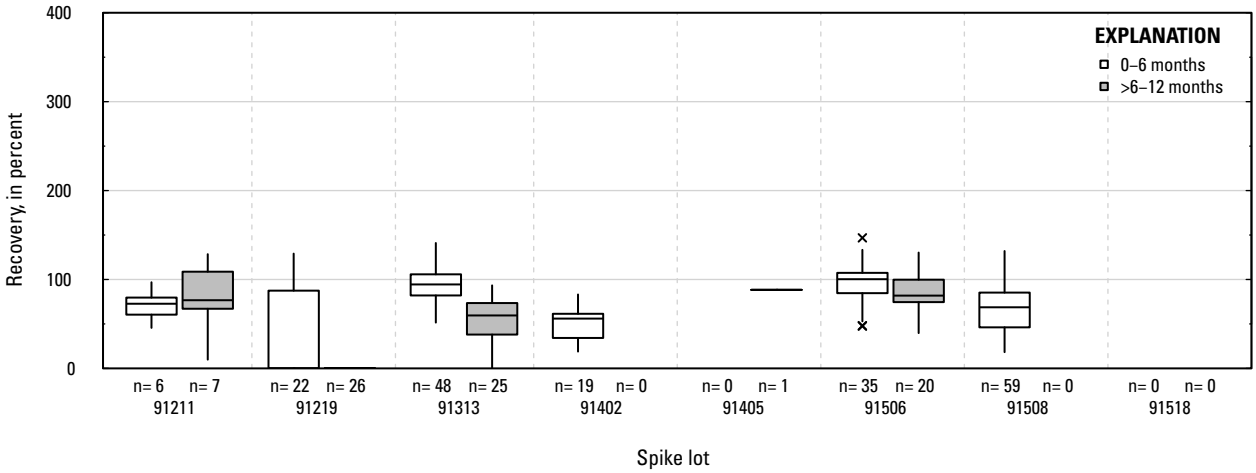
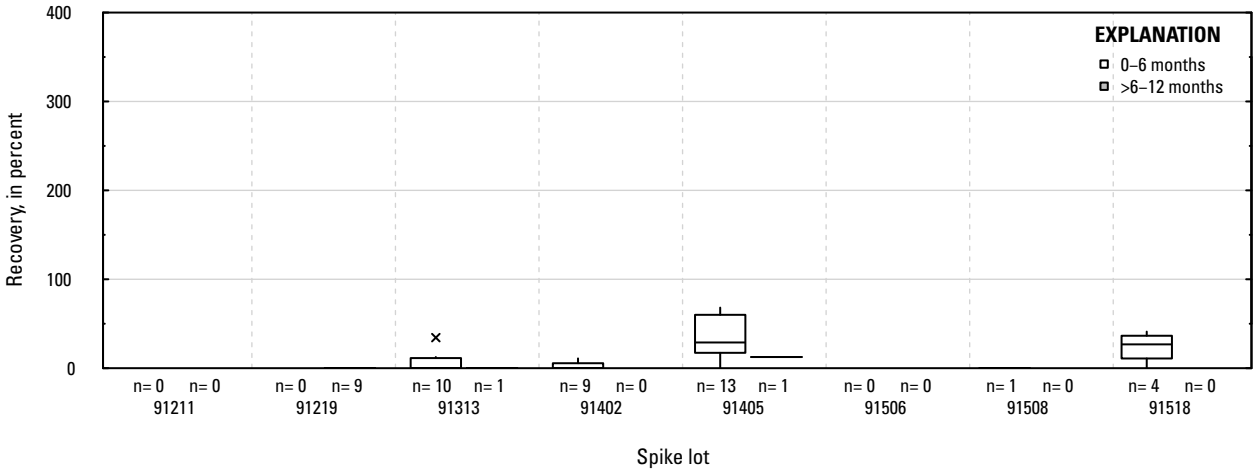


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

QX. **Naled: laboratory reagent spikes**



QY. **Naled: groundwater field matrix spikes**



QZ. **Naled: surface water field matrix spikes**

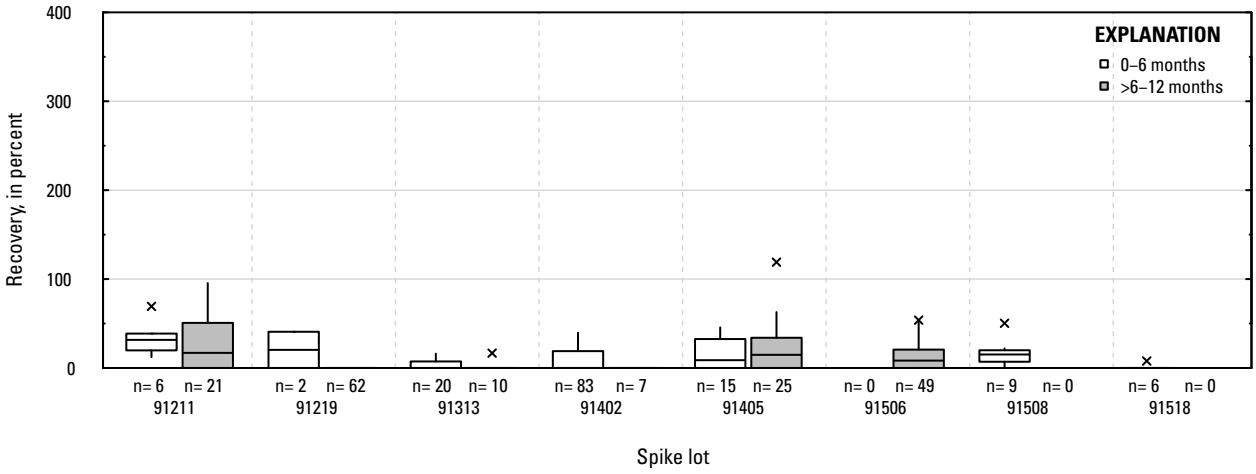
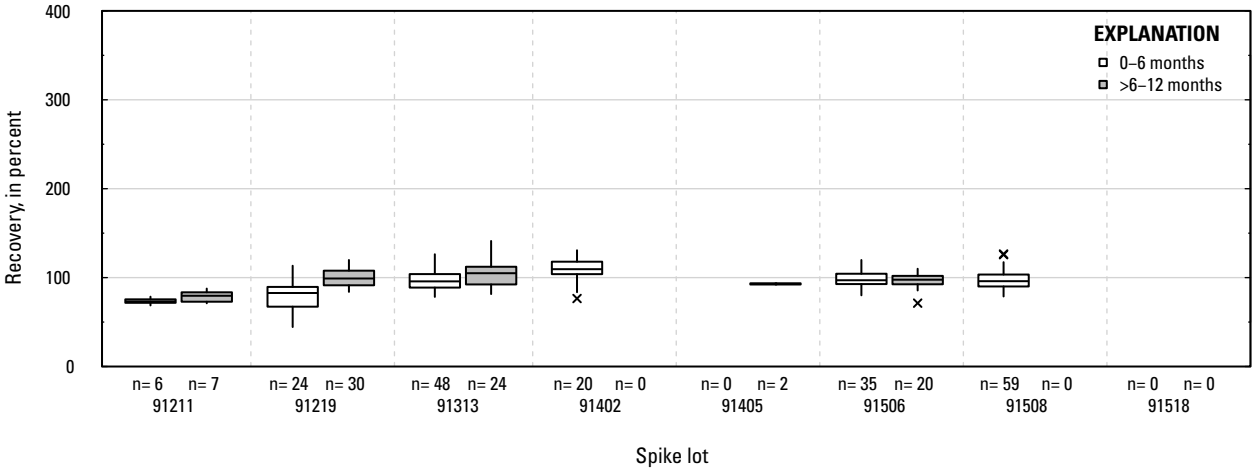
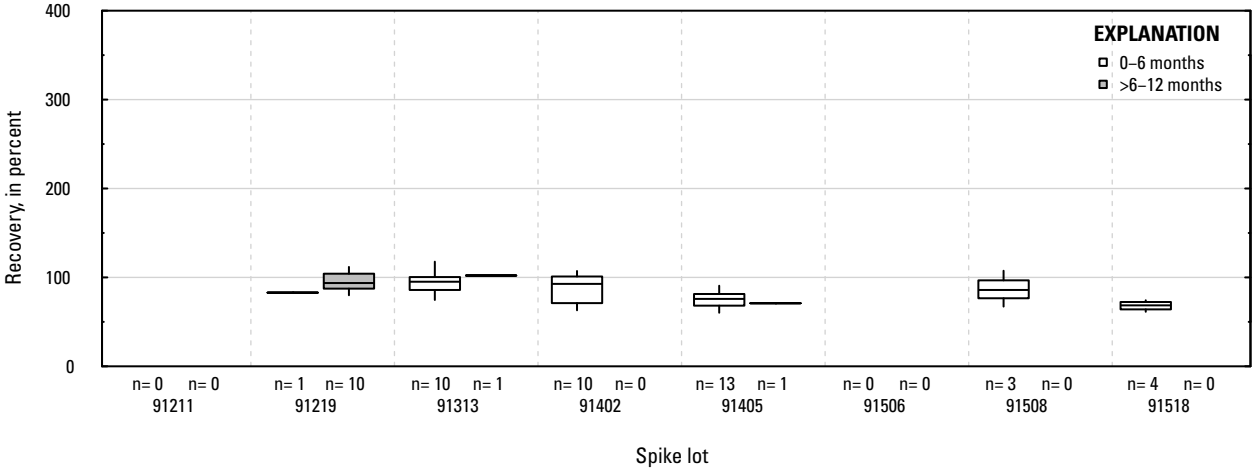


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

RA. **Nicosulfuron: laboratory reagent spikes**



RB. **Nicosulfuron: groundwater field matrix spikes**



RC. **Nicosulfuron: surface water field matrix spikes**

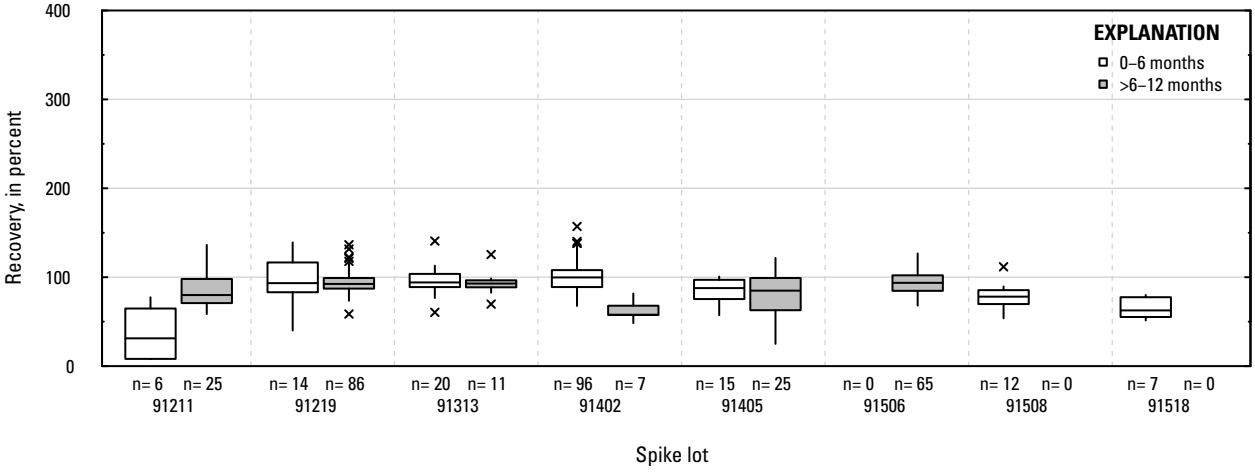
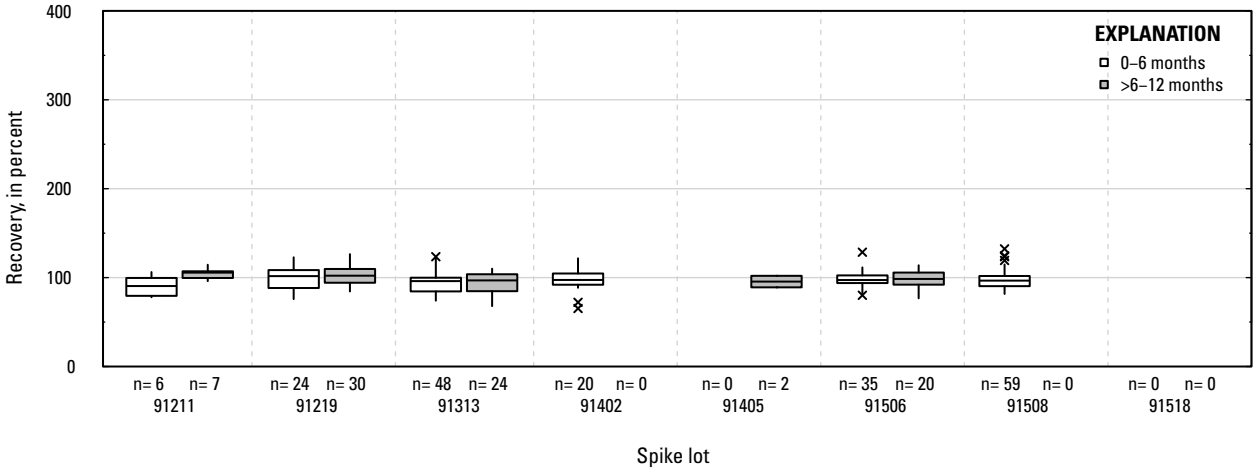
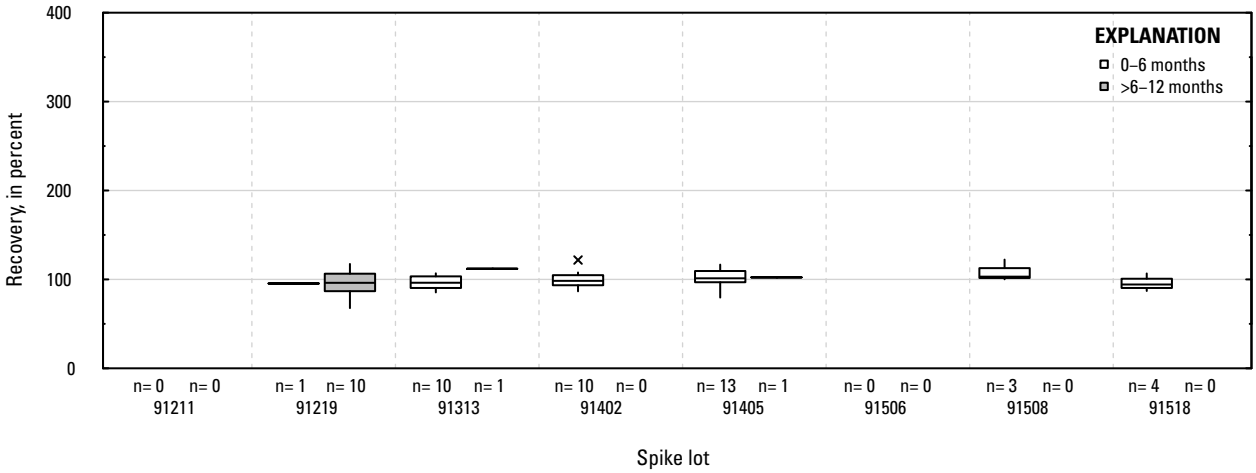


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

RD. **Norflurazon: laboratory reagent spikes**



RE. **Norflurazon: groundwater field matrix spikes**



RF. **Norflurazon: surface water field matrix spikes**

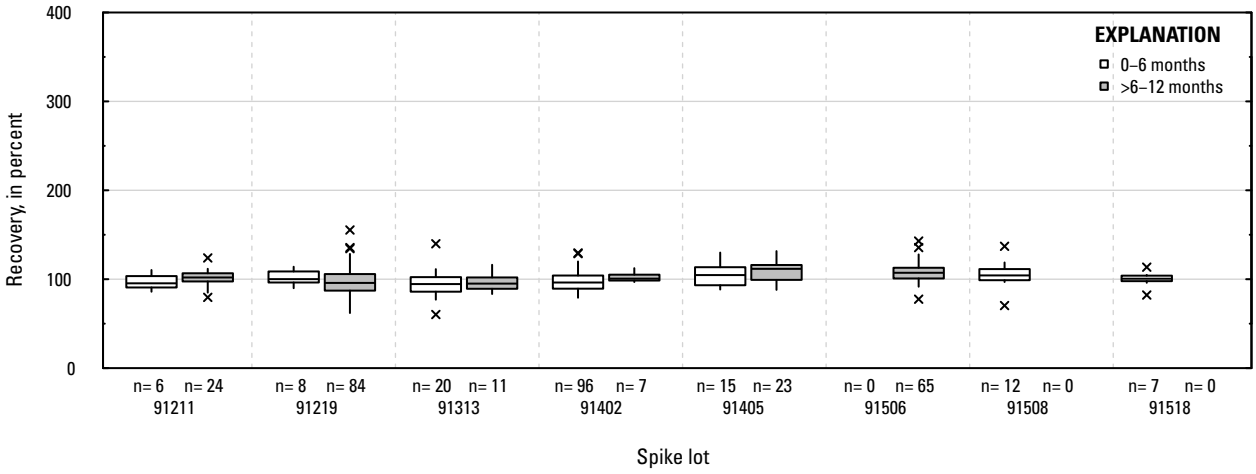
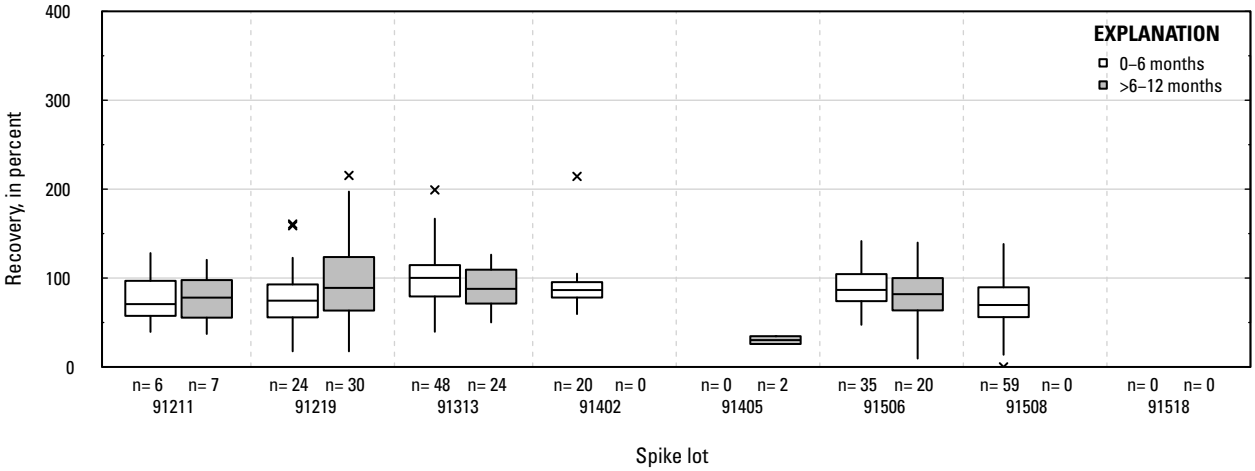
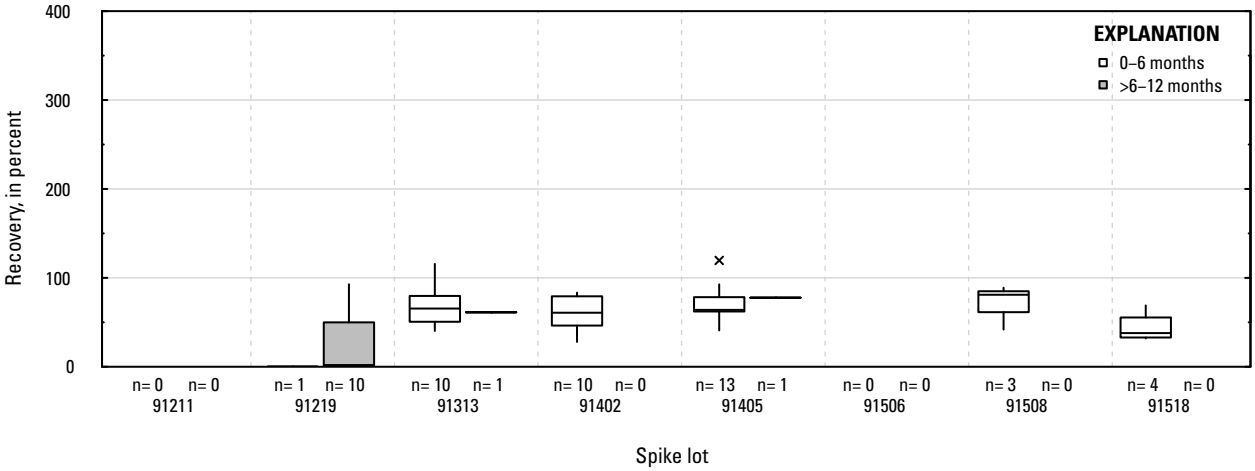


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

RG. **Novaluron: laboratory reagent spikes**



RH. **Novaluron: groundwater field matrix spikes**



RI. **Novaluron: surface water field matrix spikes**

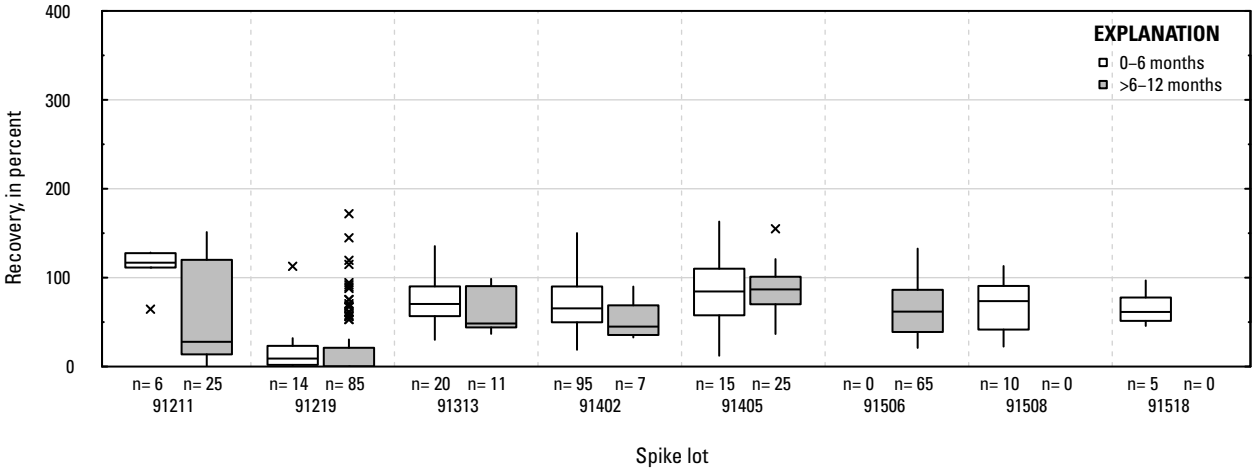
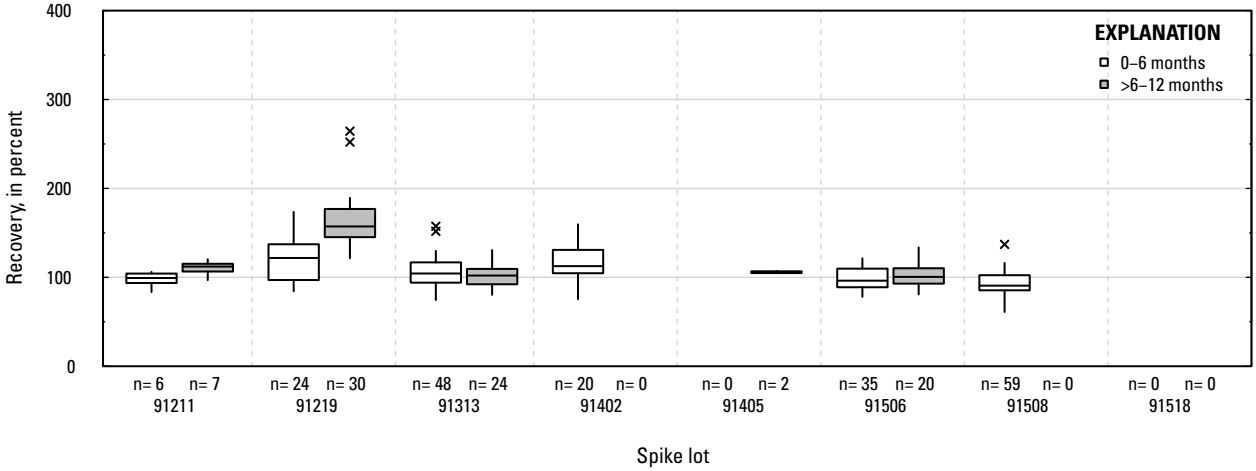
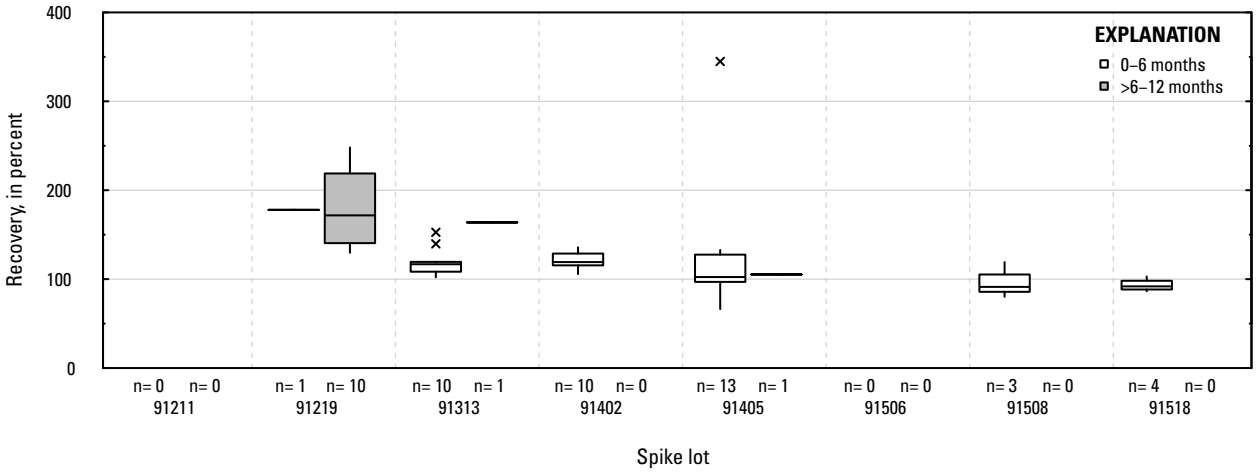


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

RJ. **O–Ethyl–O–methyl–S–propylphosphorothioate: laboratory reagent spikes**



RK. **O–Ethyl–O–methyl–S–propylphosphorothioate: groundwater field matrix spikes**



RL. **O–Ethyl–O–methyl–S–propylphosphorothioate: surface water field matrix spikes**

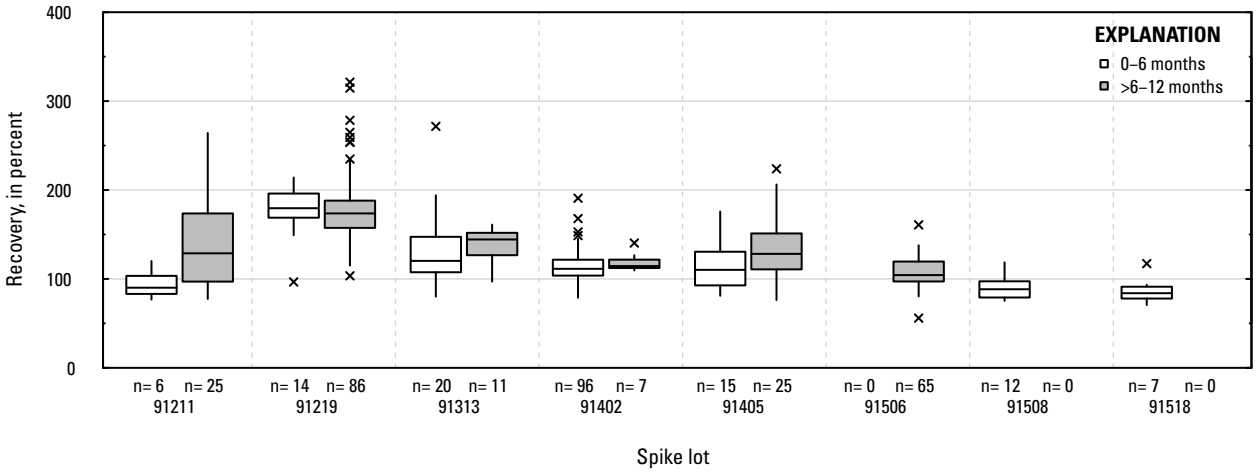
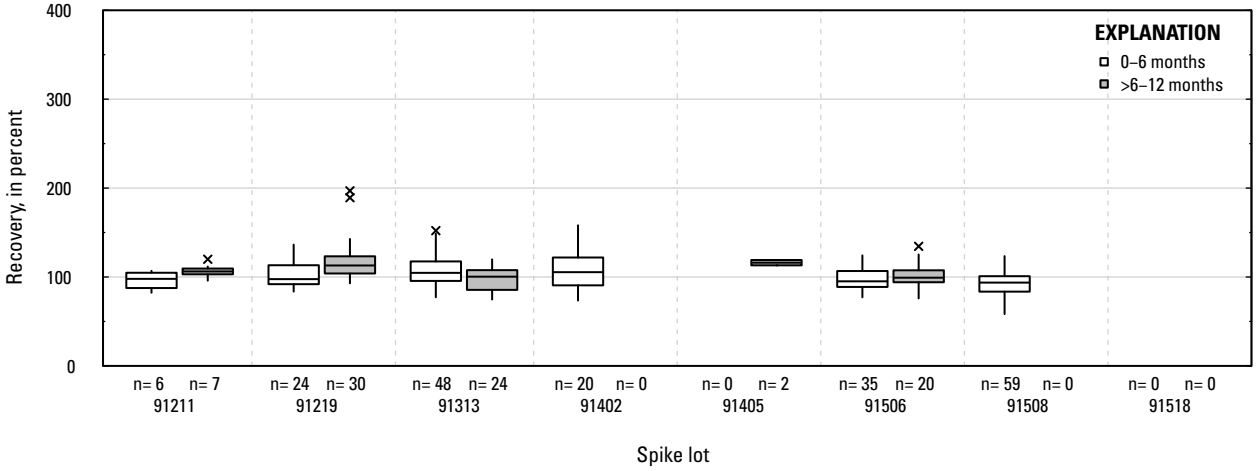
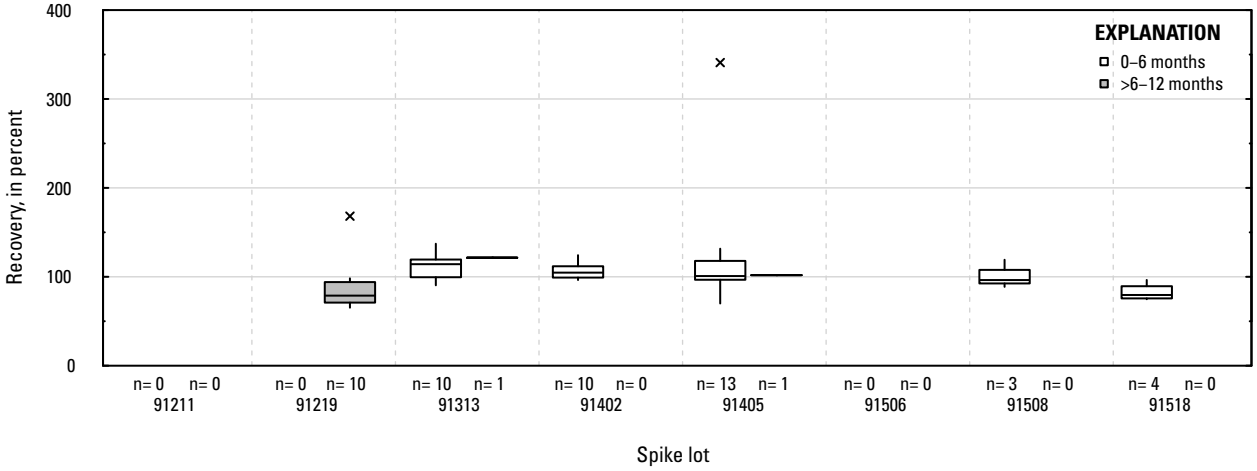


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

RM. **O–Ethyl–S–methyl–S–propyl phosphorodithioate: laboratory reagent spikes**



RN. **O–Ethyl–S–methyl–S–propyl phosphorodithioate: groundwater field matrix spikes**



RO. **O–Ethyl–S–methyl–S–propyl phosphorodithioate: surface water field matrix spikes**

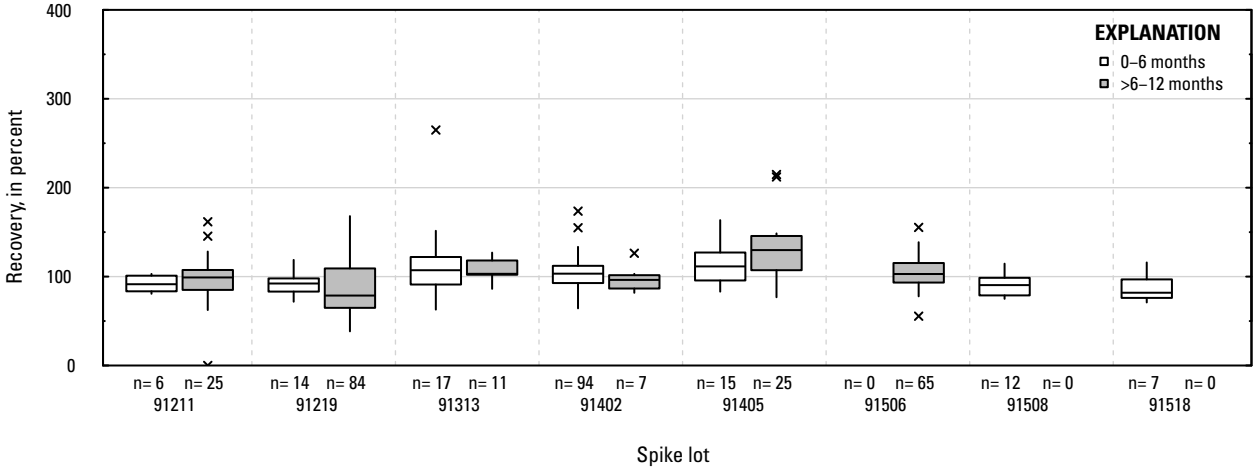
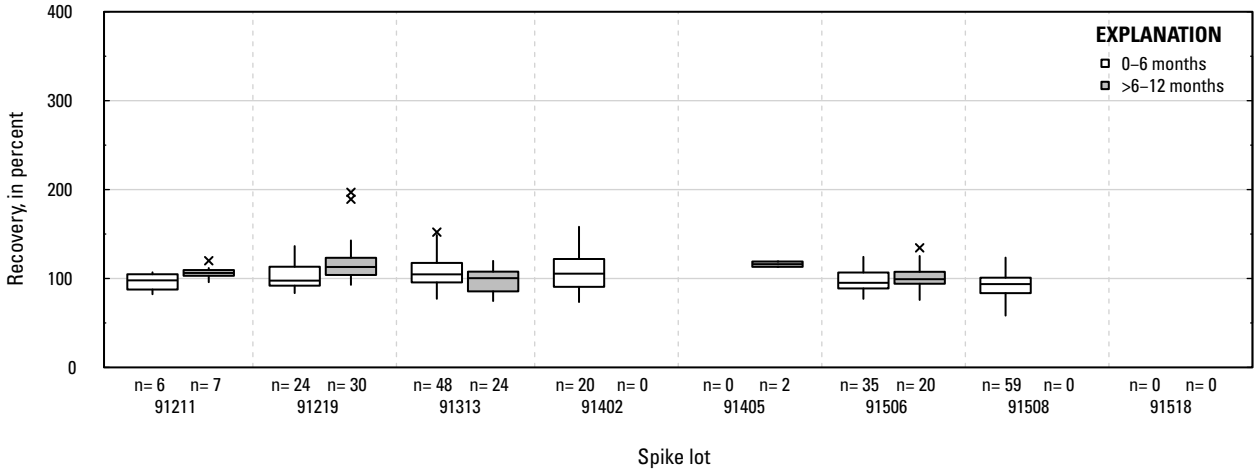
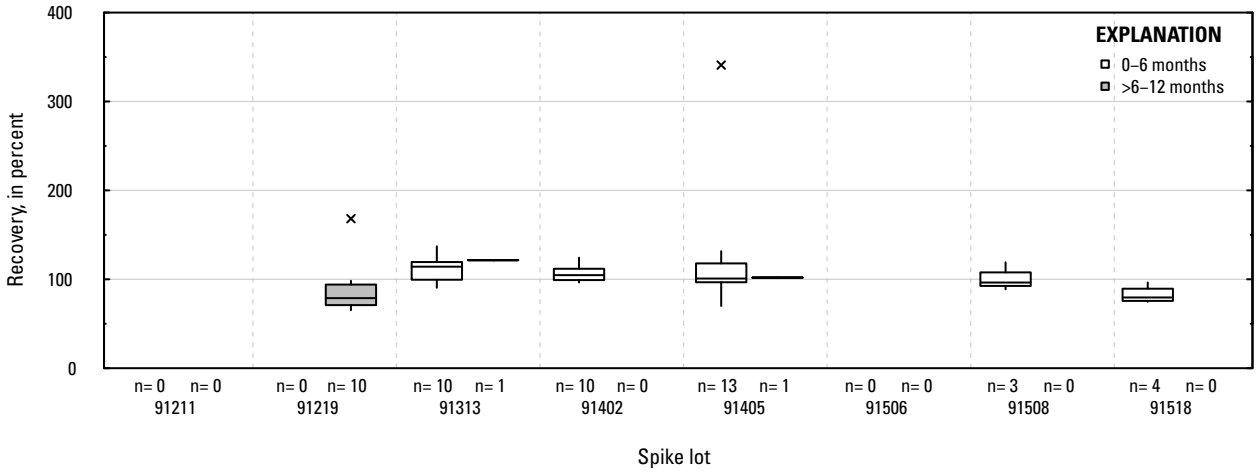


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

RM. **O–Ethyl–S–methyl–S–propyl phosphorodithioate: laboratory reagent spikes**



RN. **O–Ethyl–S–methyl–S–propyl phosphorodithioate: groundwater field matrix spikes**



RO. **O–Ethyl–S–methyl–S–propyl phosphorodithioate: surface water field matrix spikes**

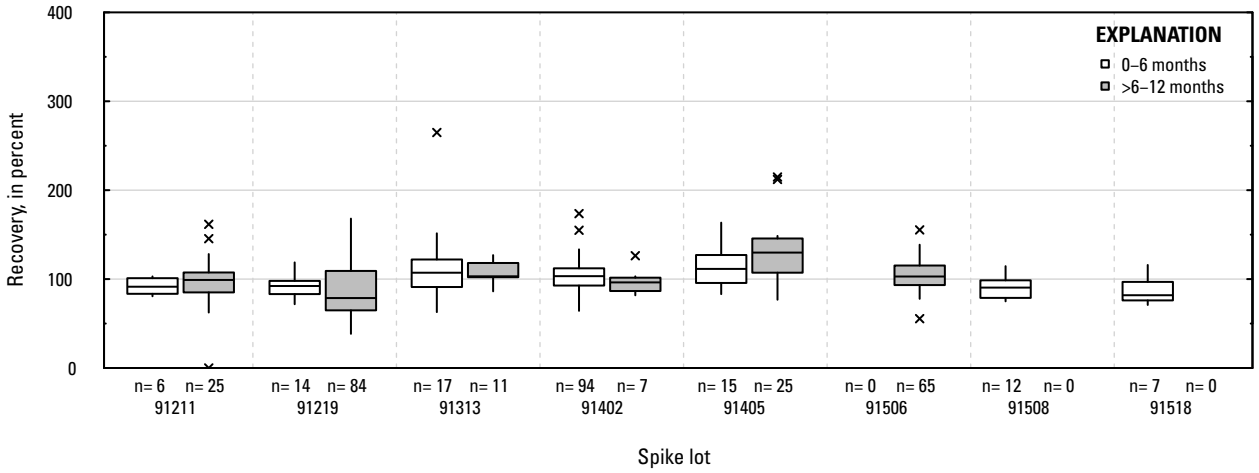
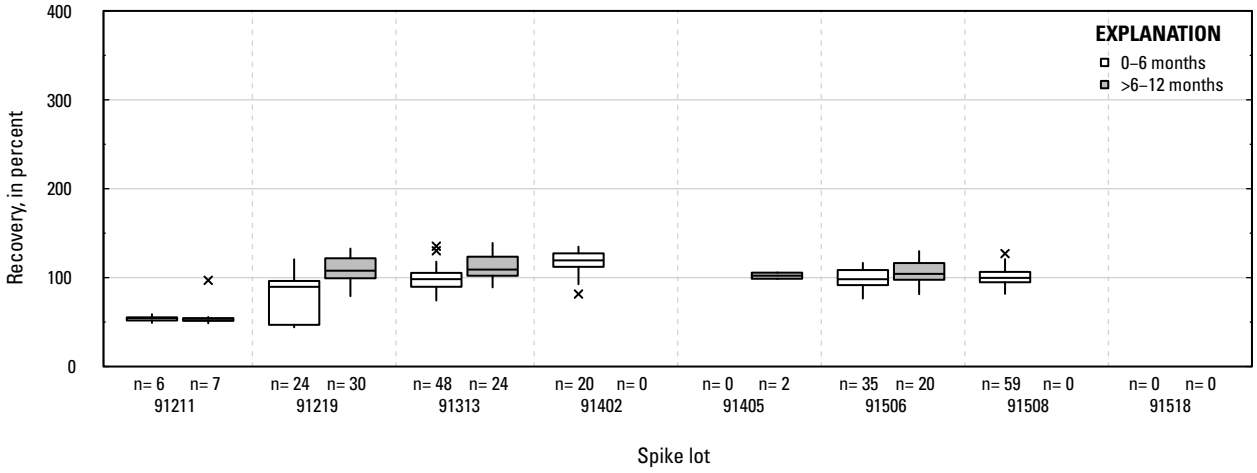
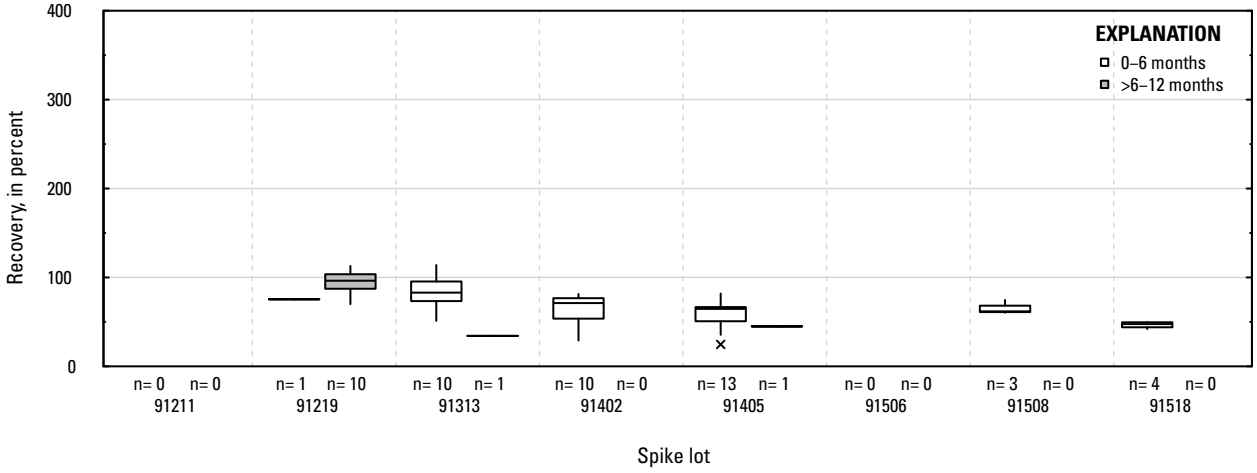


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

RS. **Orthosulfamuron: laboratory reagent spikes**



RT. **Orthosulfamuron: groundwater field matrix spikes**



RU. **Orthosulfamuron: surface water field matrix spikes**

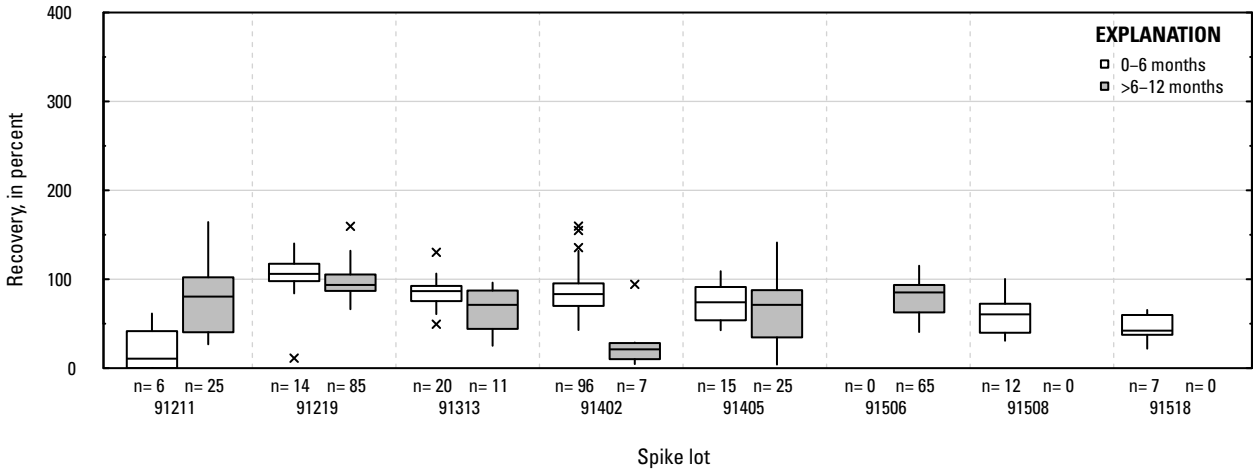
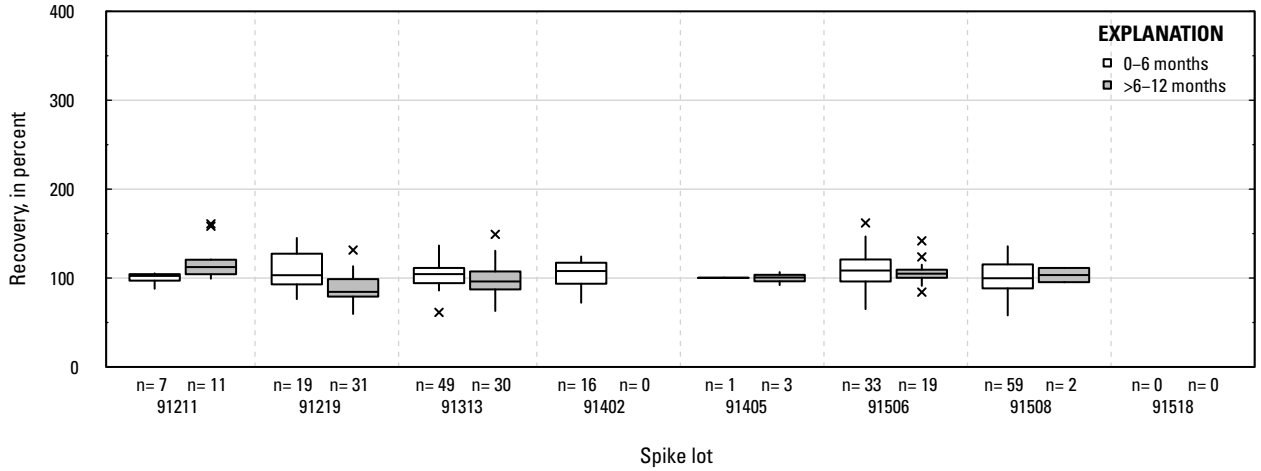
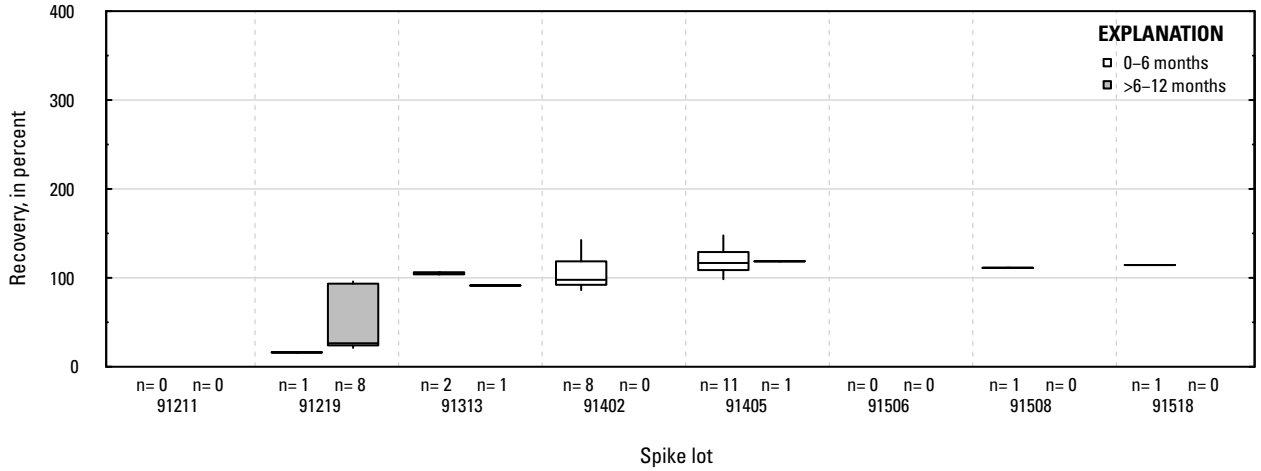


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

RV. **Oryzalin: laboratory reagent spikes**



RW. **Oryzalin: groundwater field matrix spikes**



RX. **Oryzalin: surface water field matrix spikes**

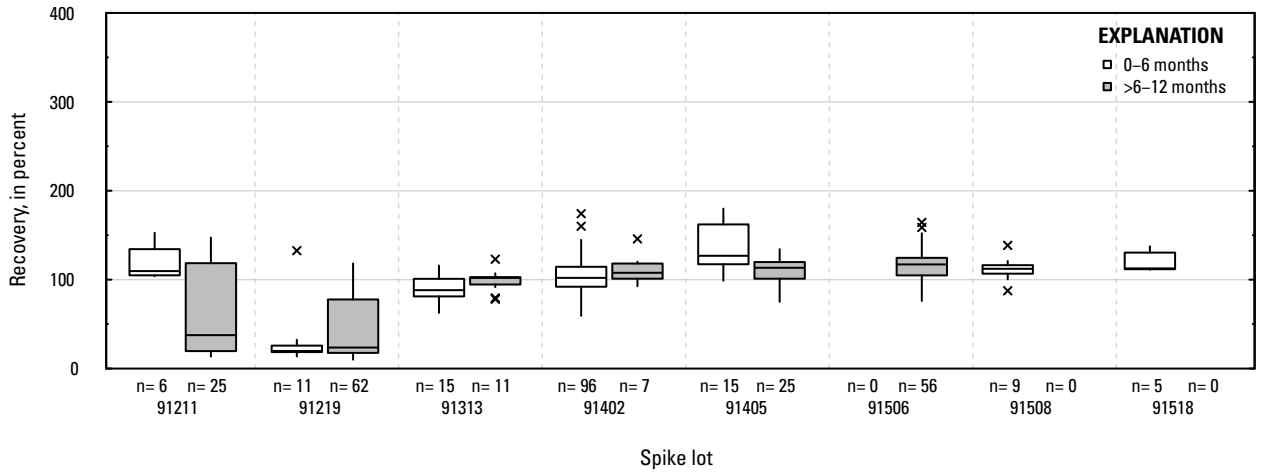
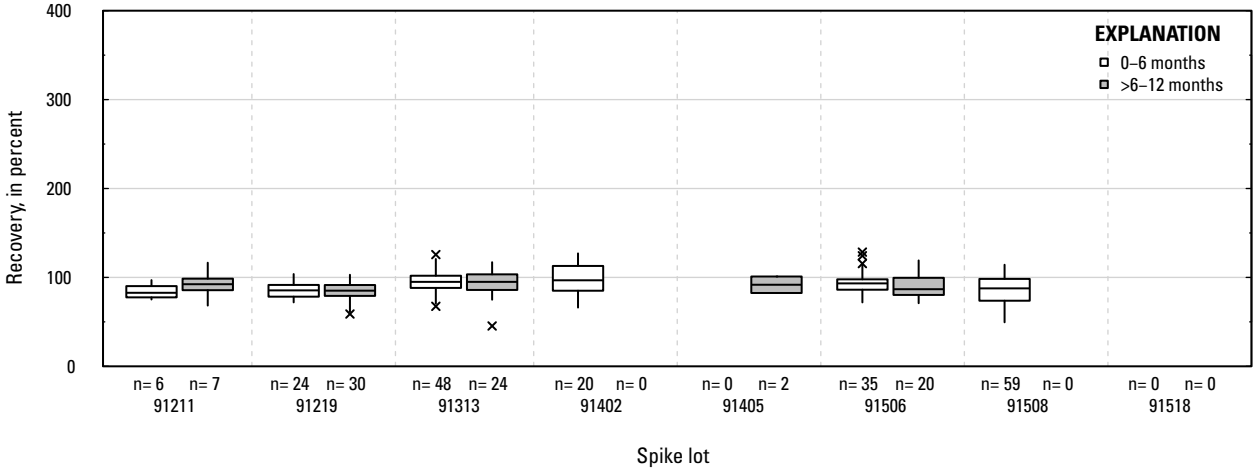
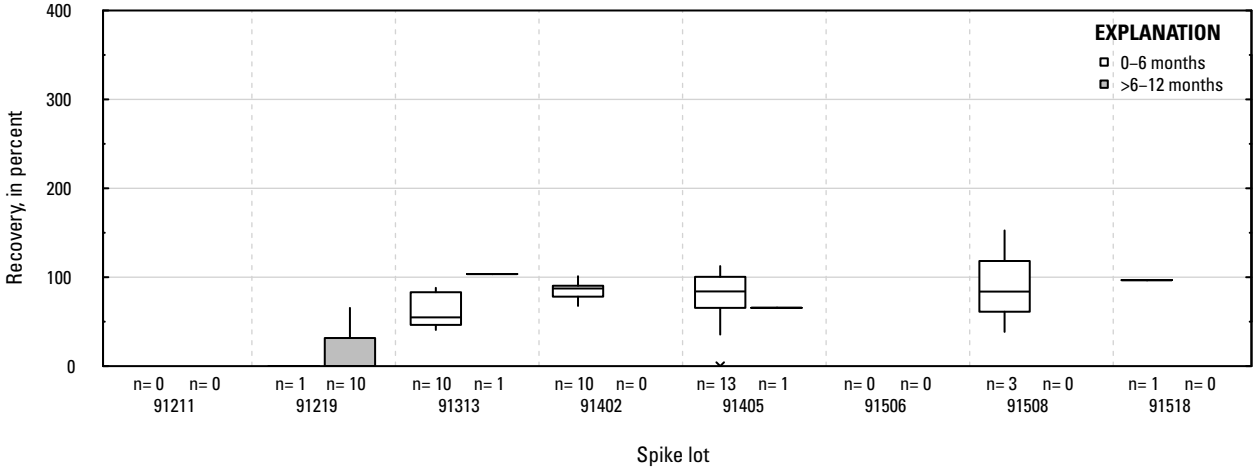


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

RY. **Oxamyl: laboratory reagent spikes**



RZ. **Oxamyl: groundwater field matrix spikes**



SA. **Oxamyl: surface water field matrix spikes**

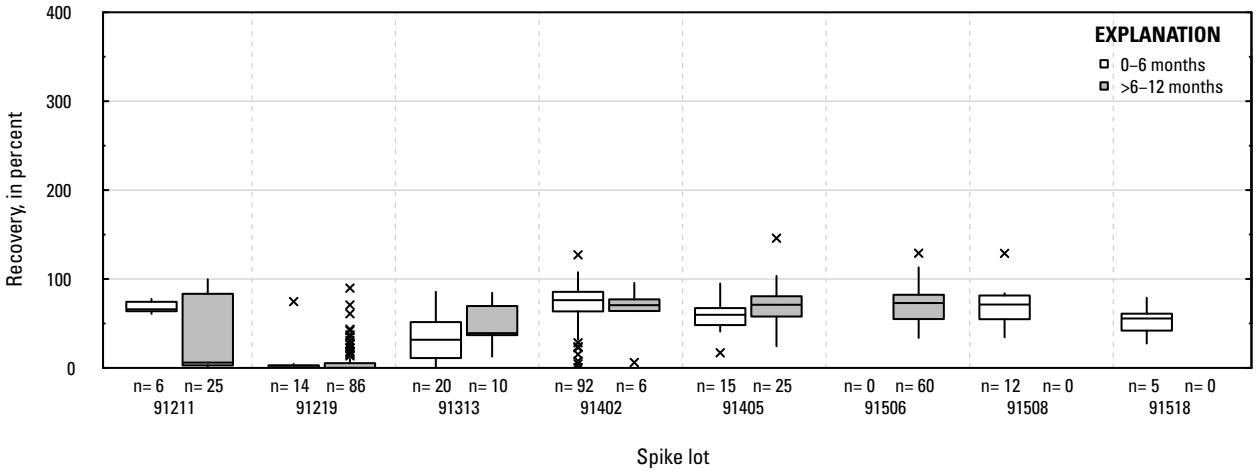
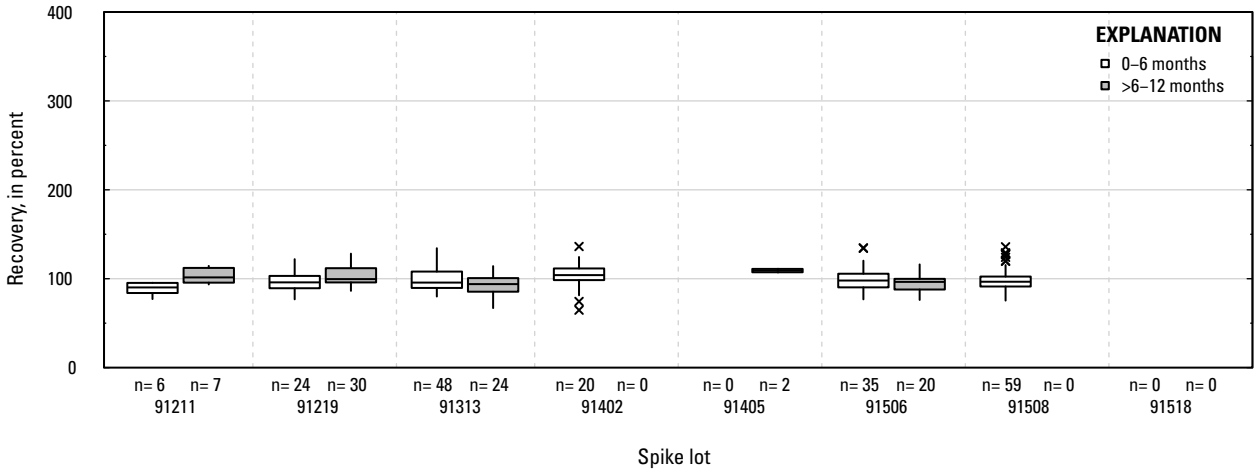
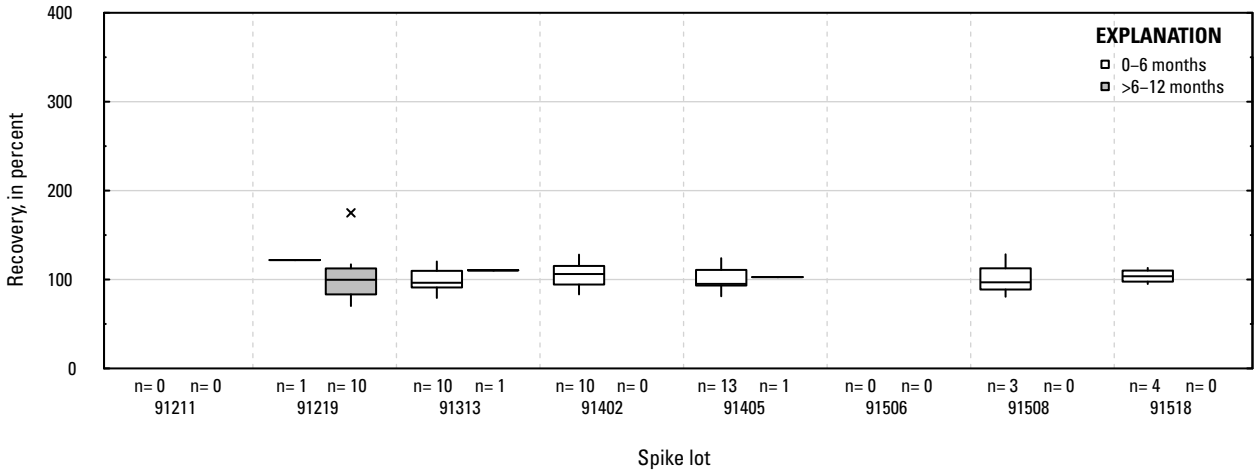


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

SB. **Oxamyl oxime: laboratory reagent spikes**



SC. **Oxamyl oxime: groundwater field matrix spikes**



SD. **Oxamyl oxime: surface water field matrix spikes**

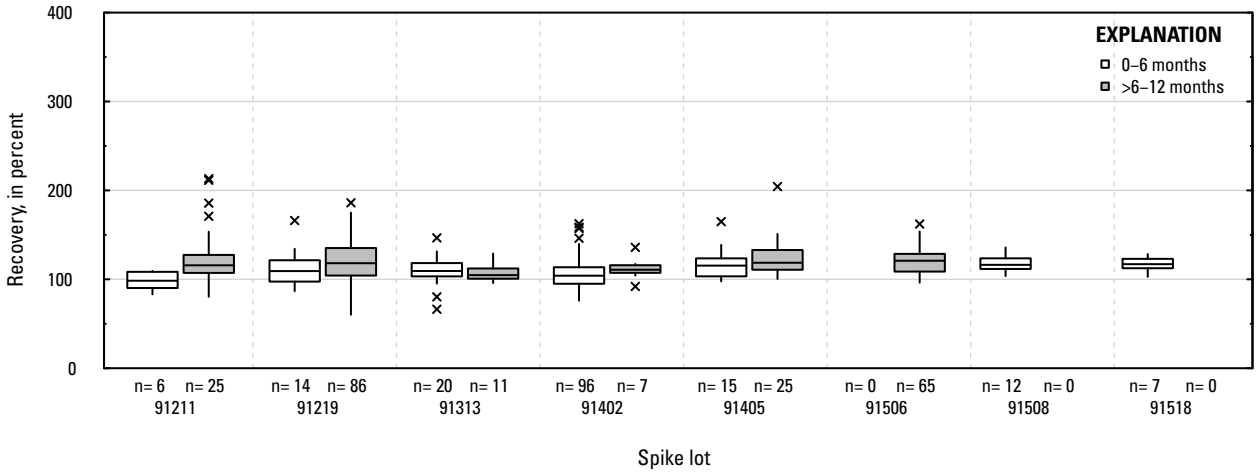
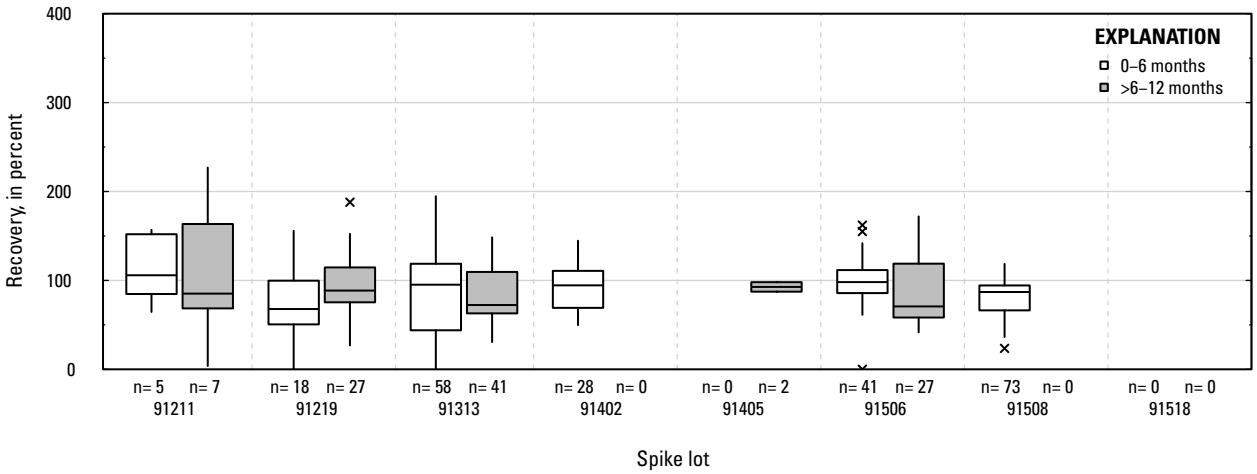
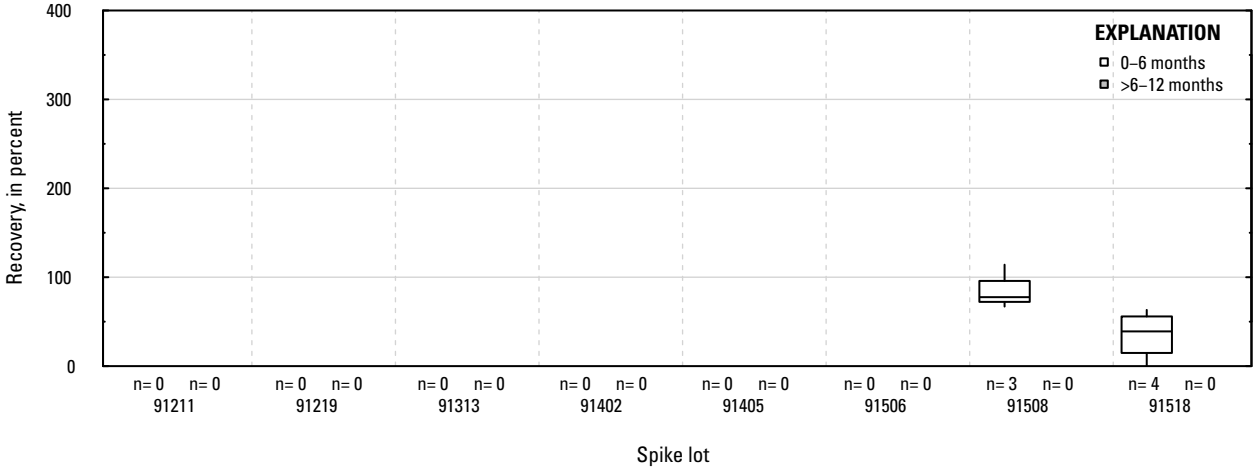


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

SE. **Oxyfluorfen: laboratory reagent spikes**



SF. **Oxyfluorfen: groundwater field matrix spikes**



SG. **Oxyfluorfen: surface water field matrix spikes**

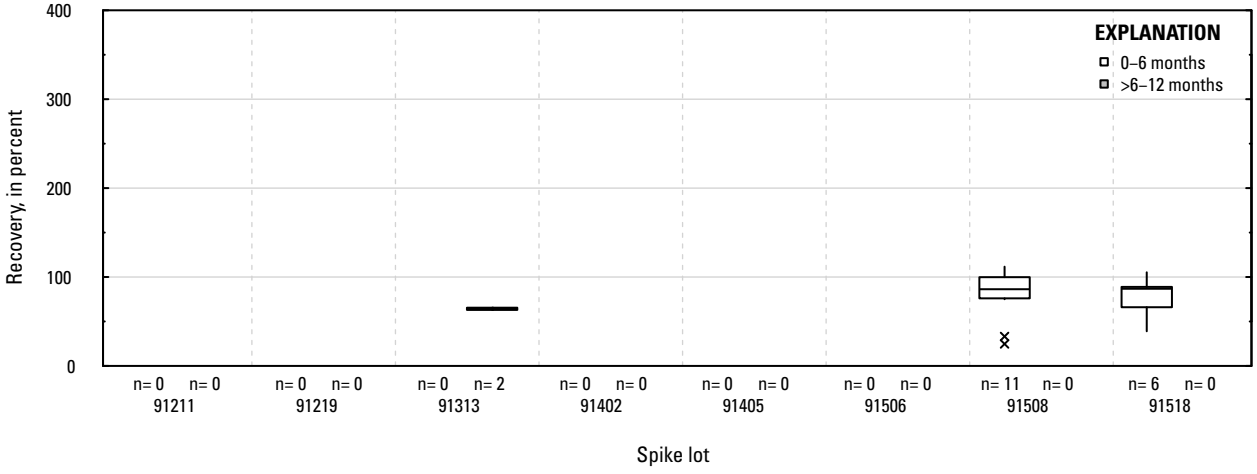
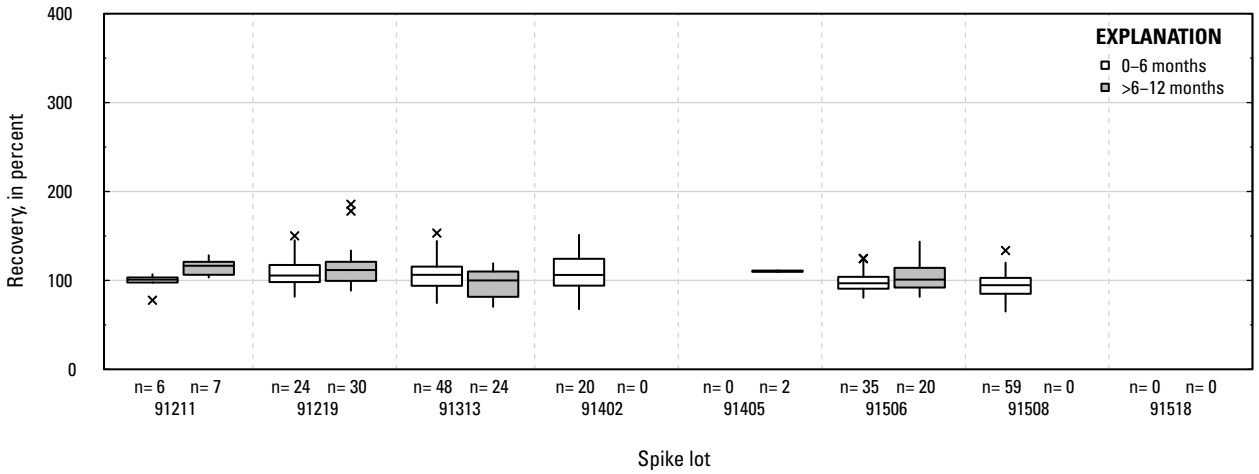
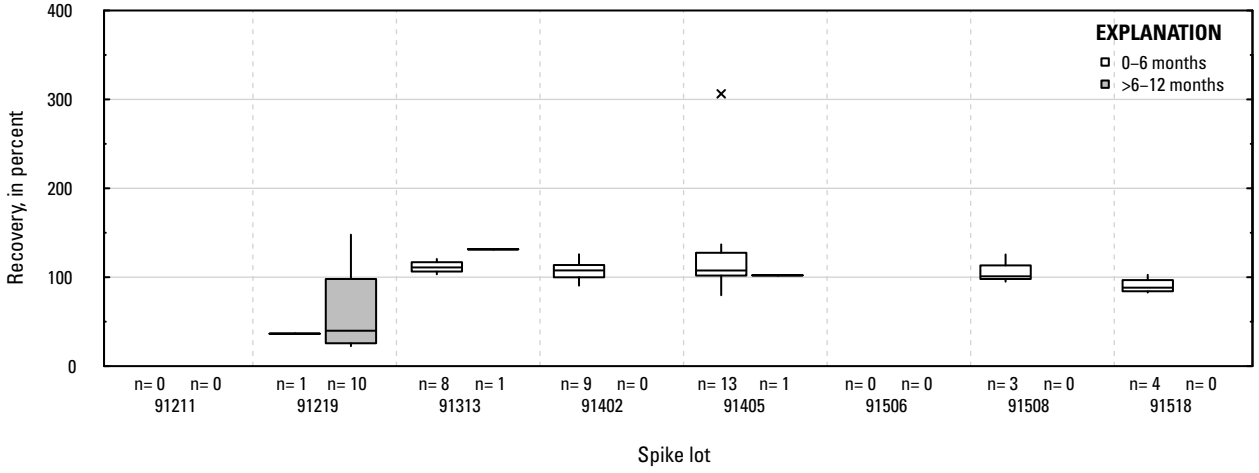


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

SH. **Paraoxon: laboratory reagent spikes**



SI. **Paraoxon: groundwater field matrix spikes**



SJ. **Paraoxon: surface water field matrix spikes**

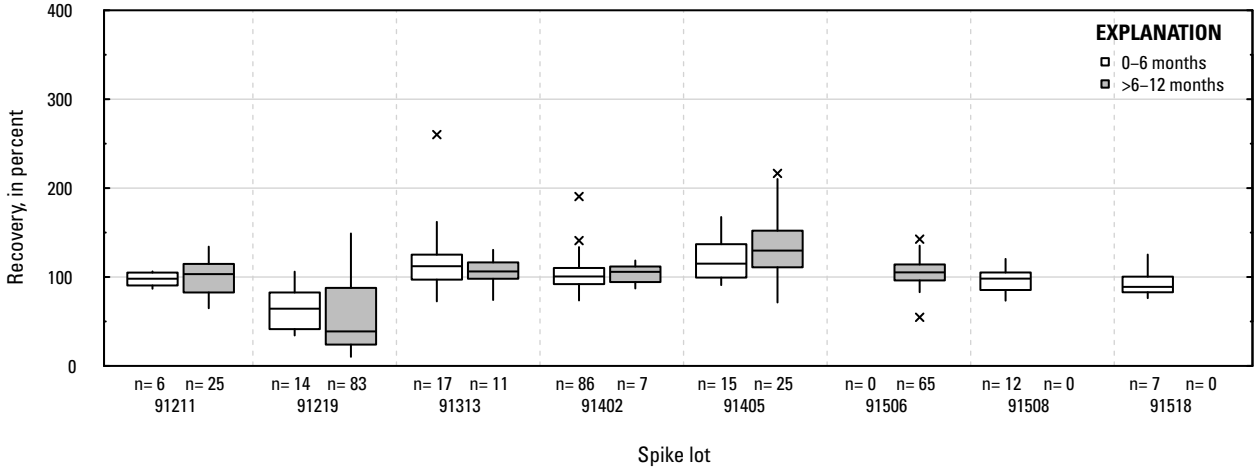
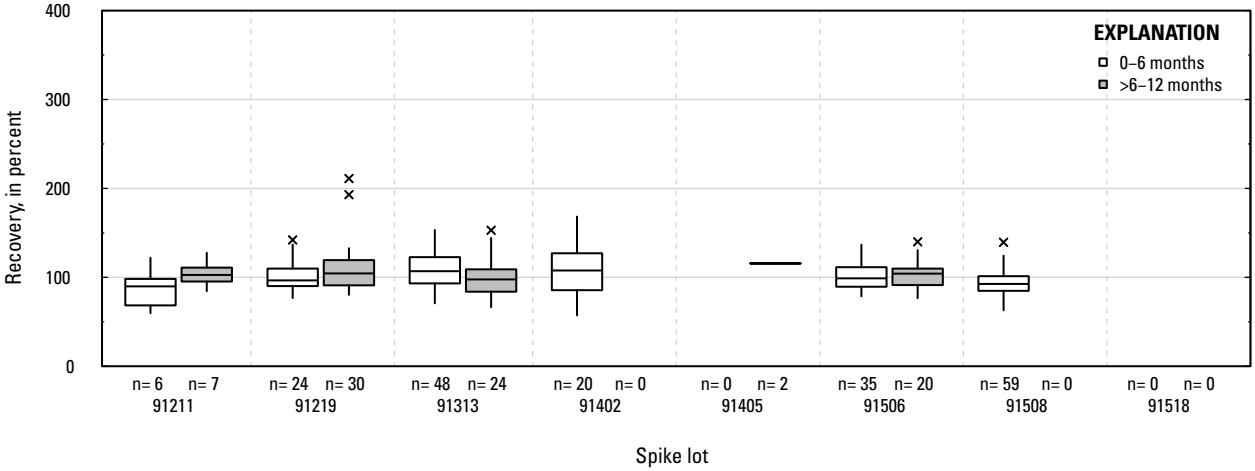
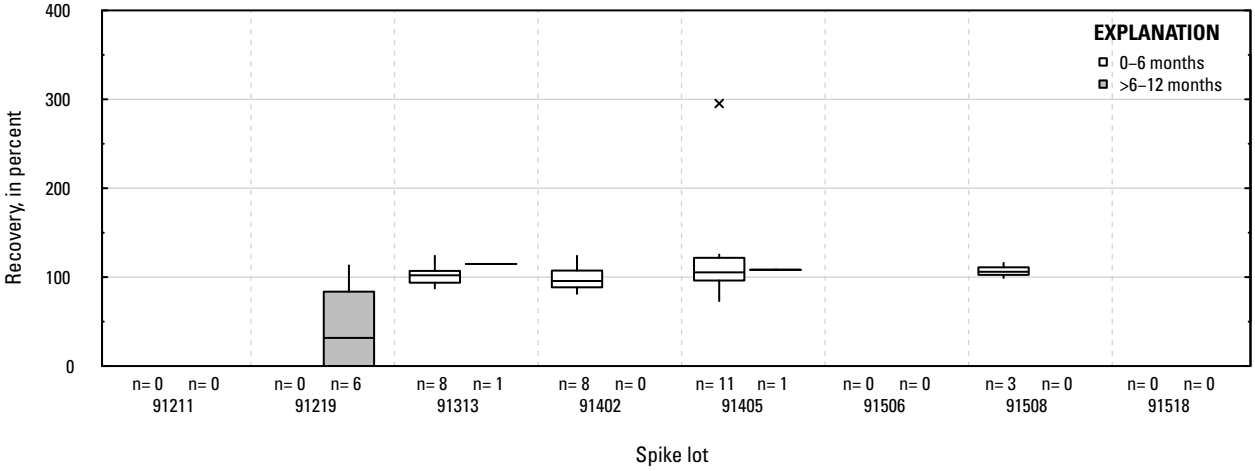


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

SK. **Methyl paraoxon: laboratory reagent spikes**



SL. **Methyl paraoxon: groundwater field matrix spikes**



SM. **Methyl paraoxon: surface water field matrix spikes**

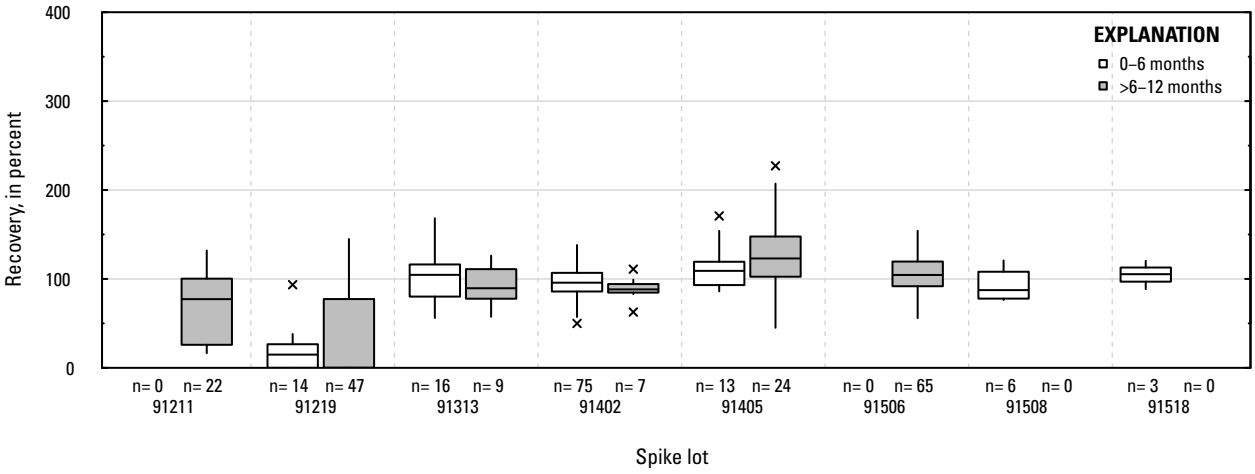
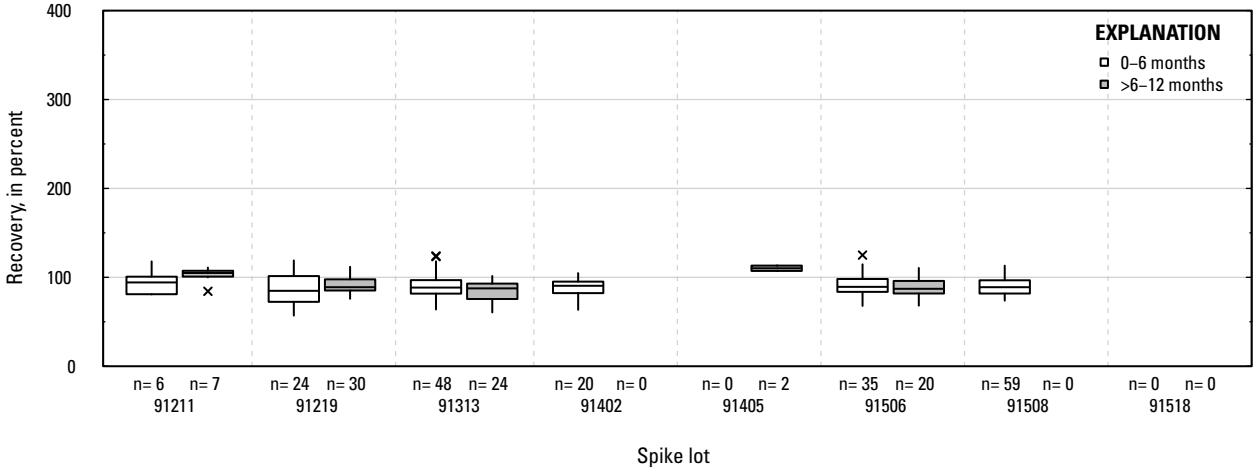
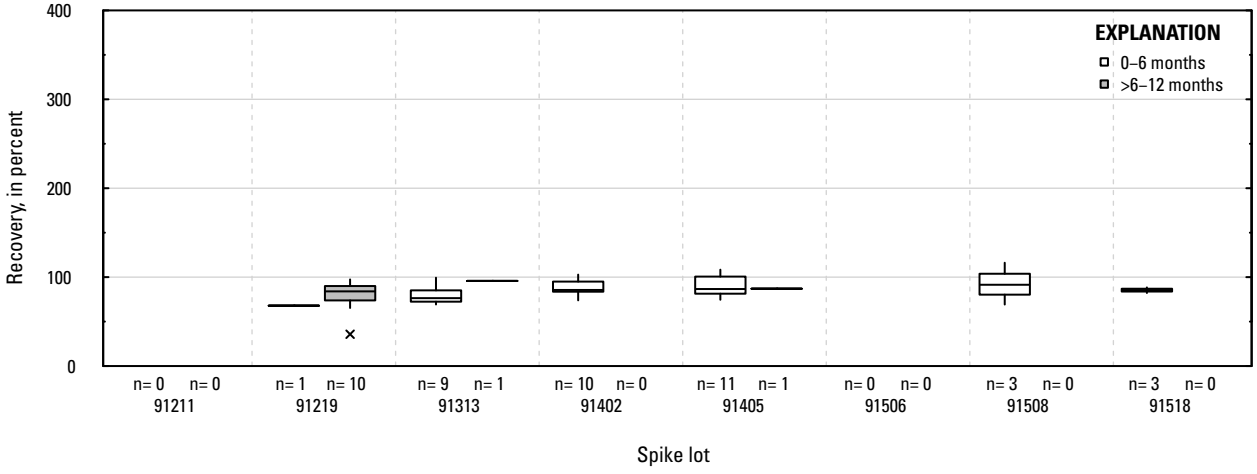


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

SN. **Pendimethalin: laboratory reagent spikes**



SO. **Pendimethalin: groundwater field matrix spikes**



SP. **Pendimethalin: surface water field matrix spikes**

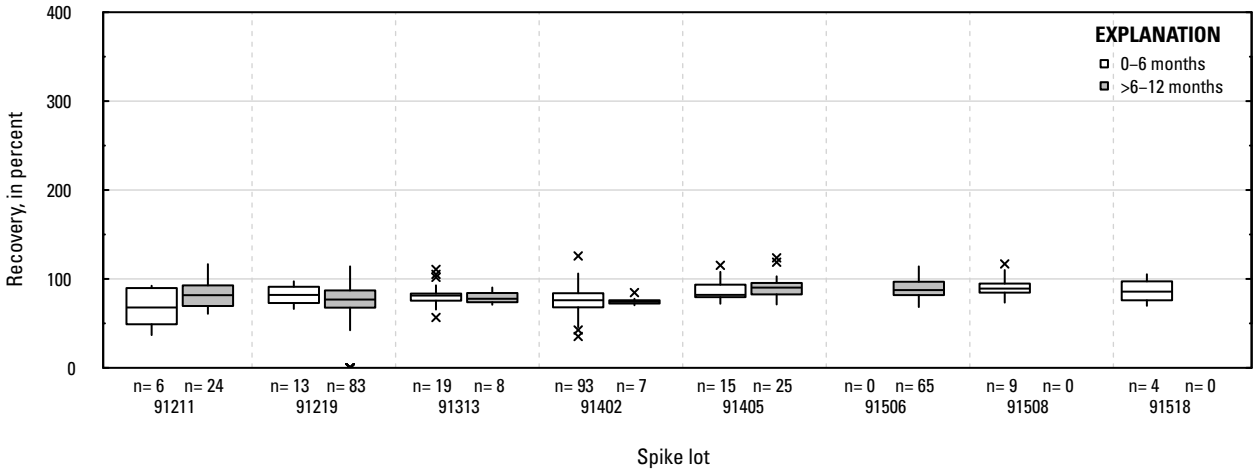
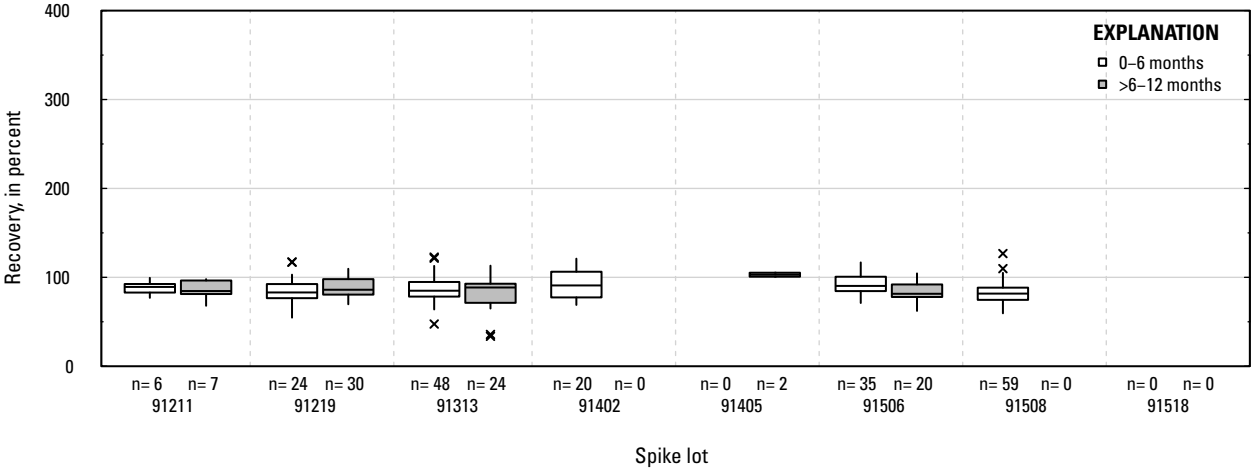
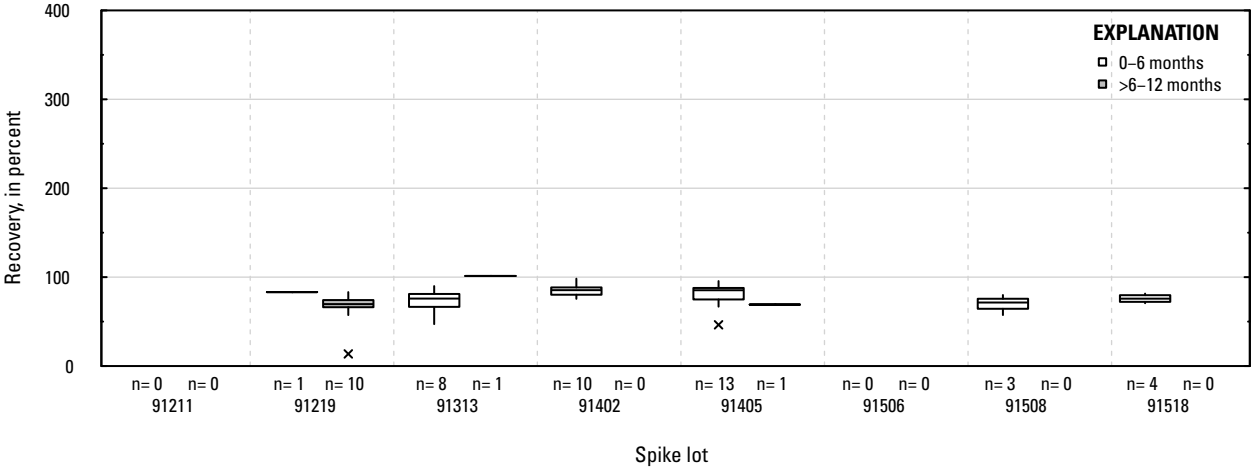


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

SQ. **Phorate: laboratory reagent spikes**



SR. **Phorate: groundwater field matrix spikes**



SS. **Phorate: surface water field matrix spikes**

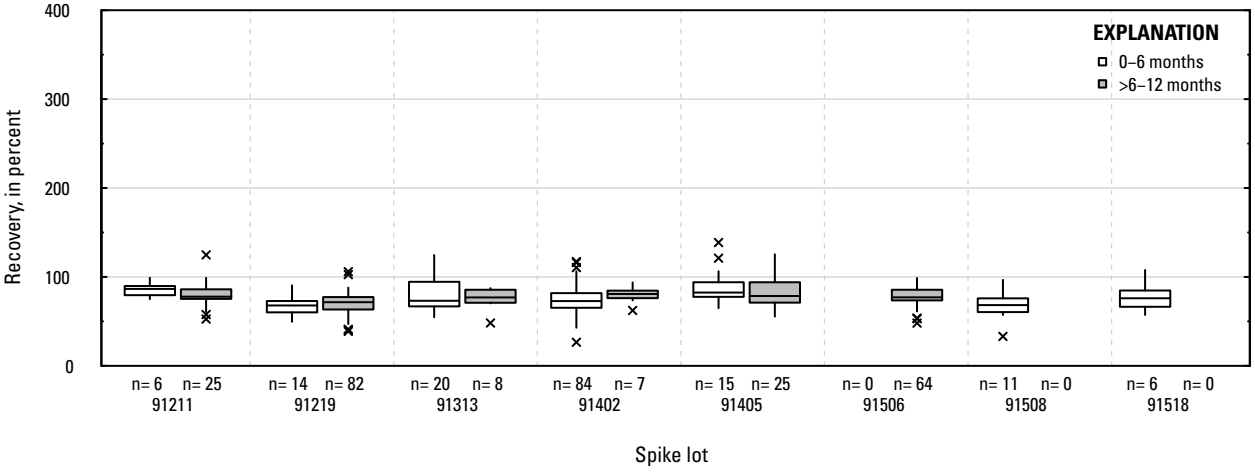
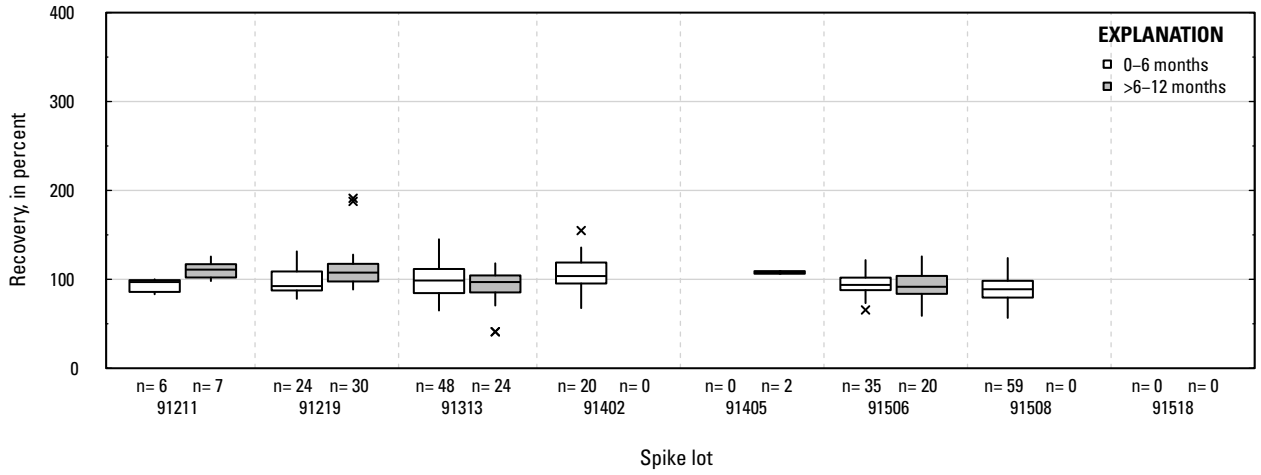
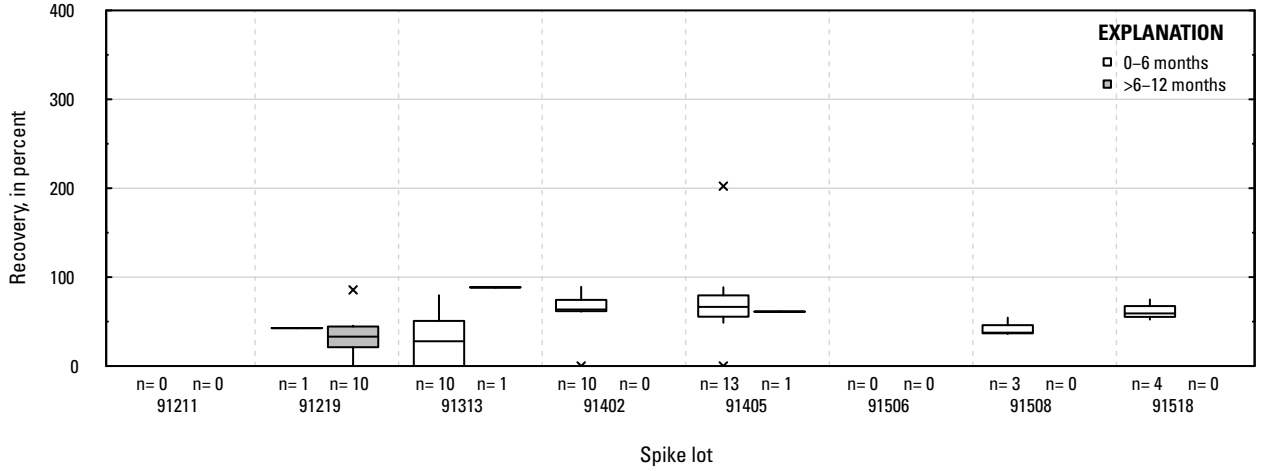


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

ST. **Phorate oxon: laboratory reagent spikes**



SU. **Phorate oxon: groundwater field matrix spikes**



SV. **Phorate oxon: surface water field matrix spikes**

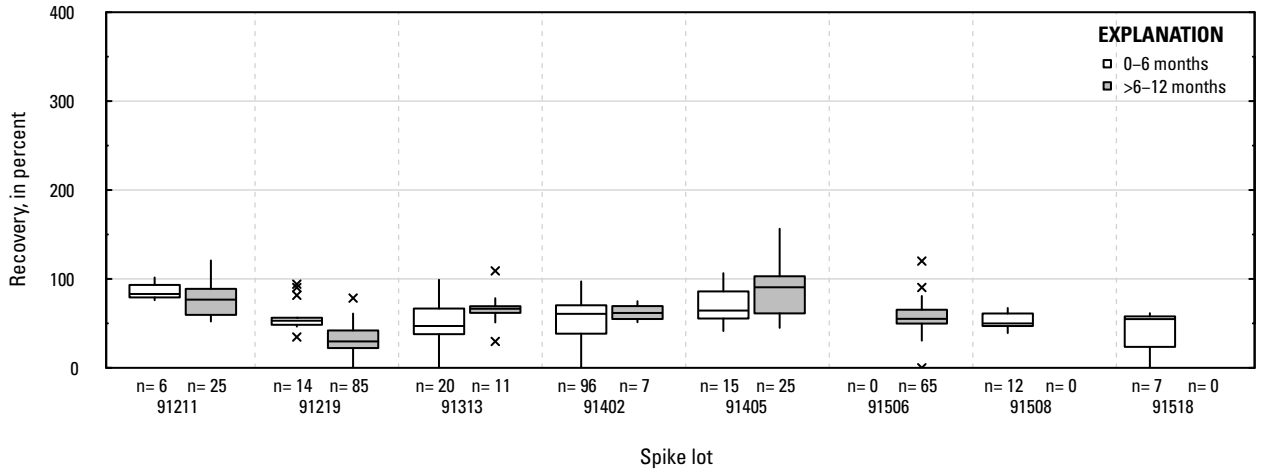
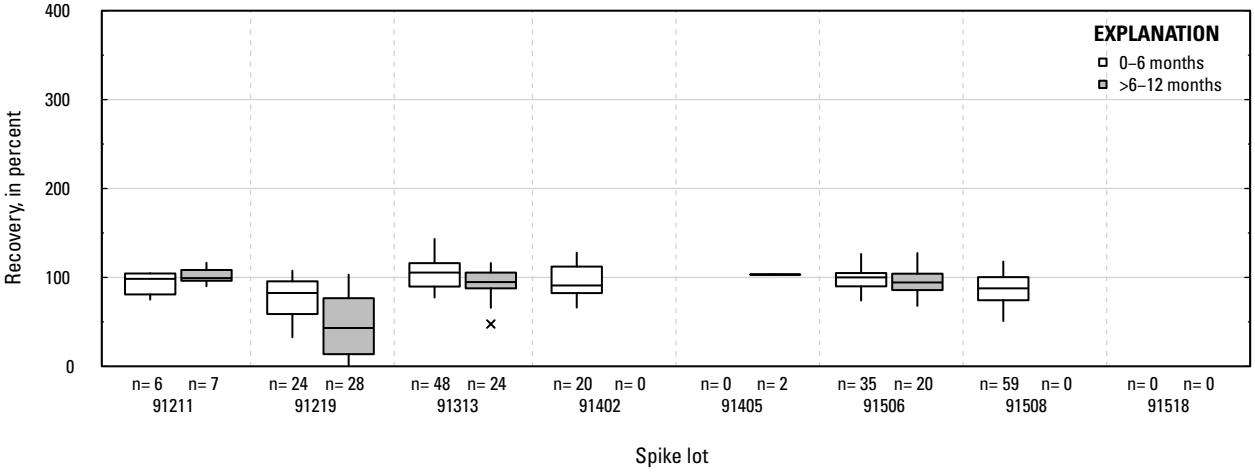
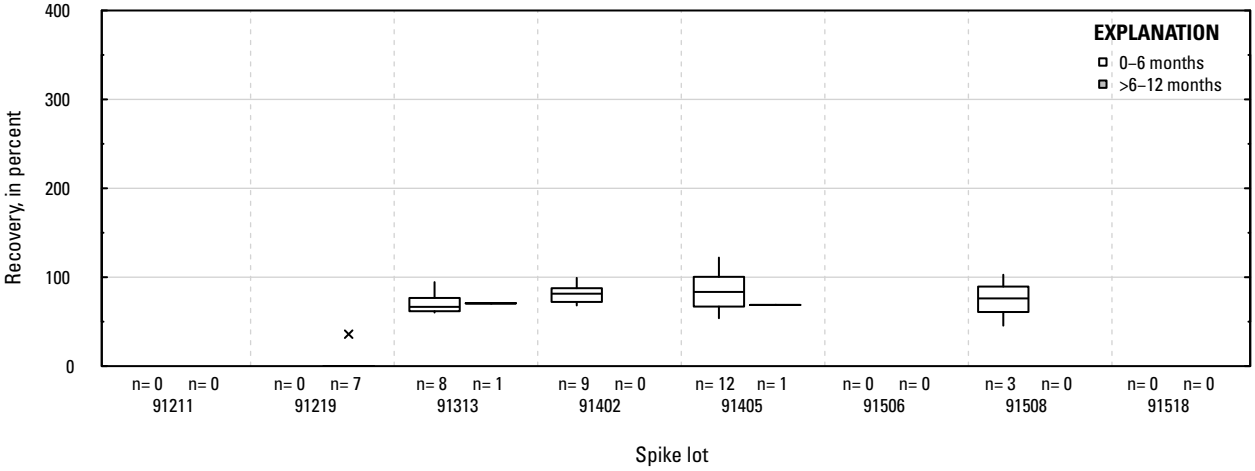


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

SW. **Phorate oxon sulfone: laboratory reagent spikes**



SX. **Phorate oxon sulfone: groundwater field matrix spikes**



SY. **Phorate oxon sulfone: surface water field matrix spikes**

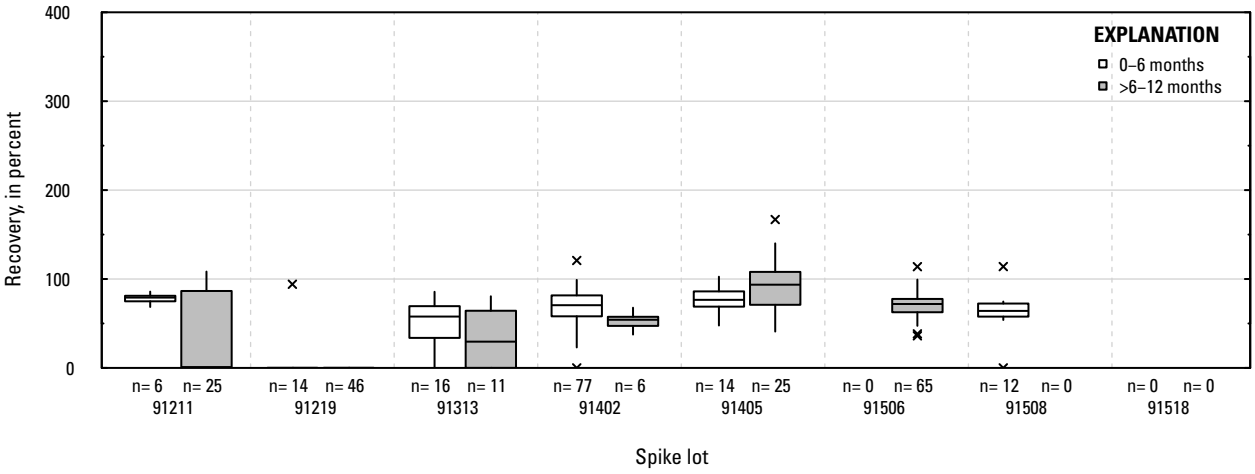
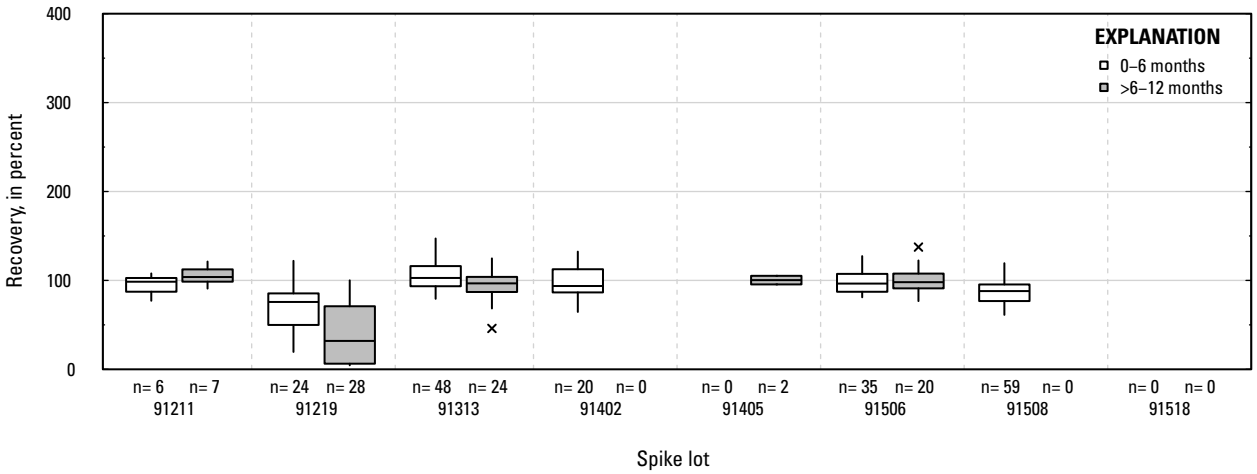
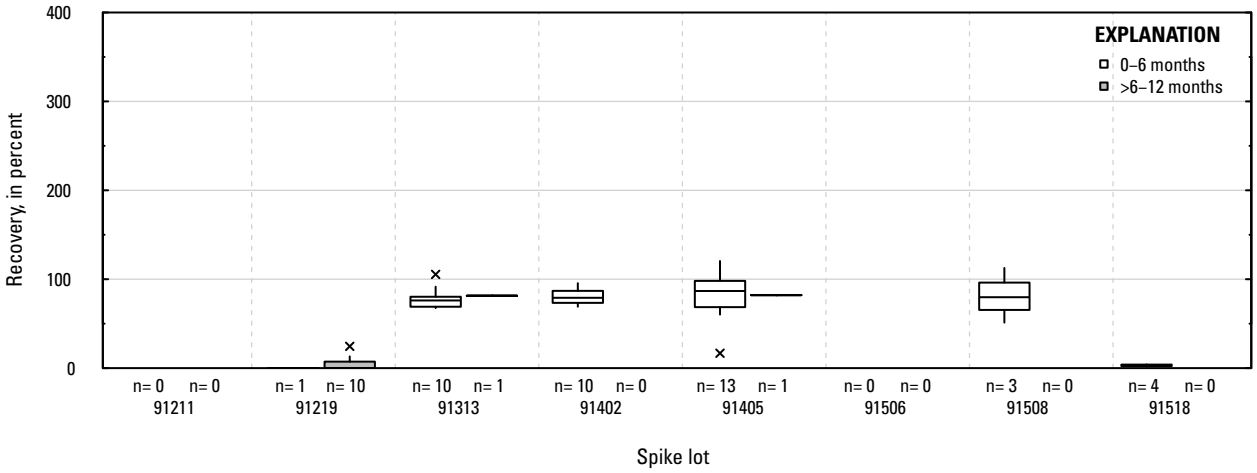


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

SZ. **Phorate oxon sulfoxide: laboratory reagent spikes**



TA. **Phorate oxon sulfoxide: groundwater field matrix spikes**



TB. **Phorate oxon sulfoxide: surface water field matrix spikes**

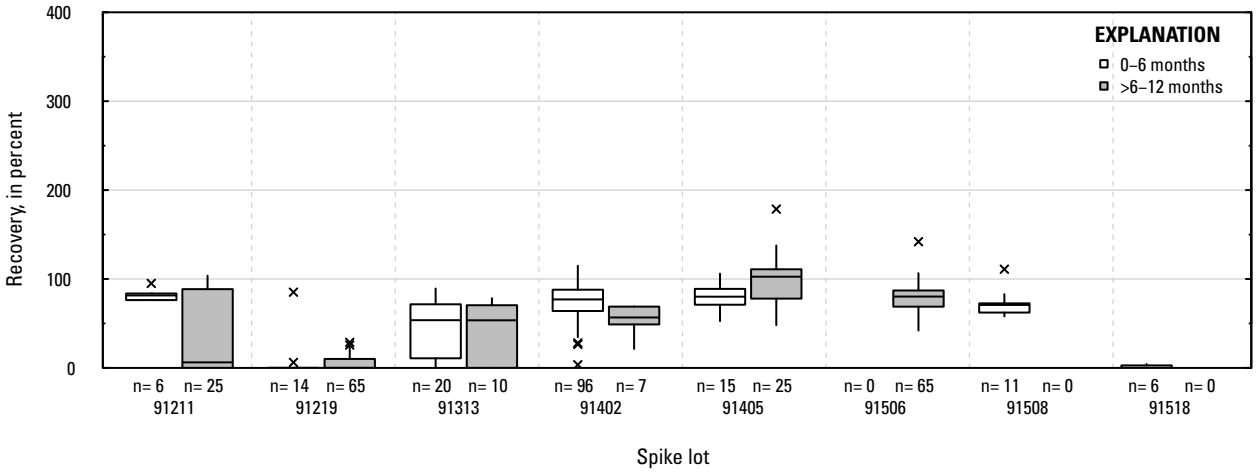
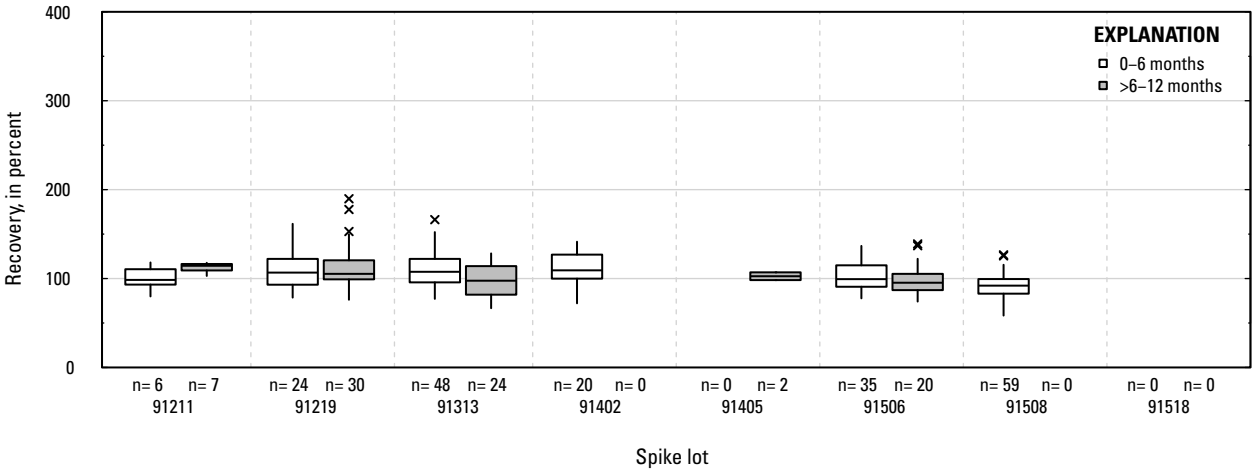
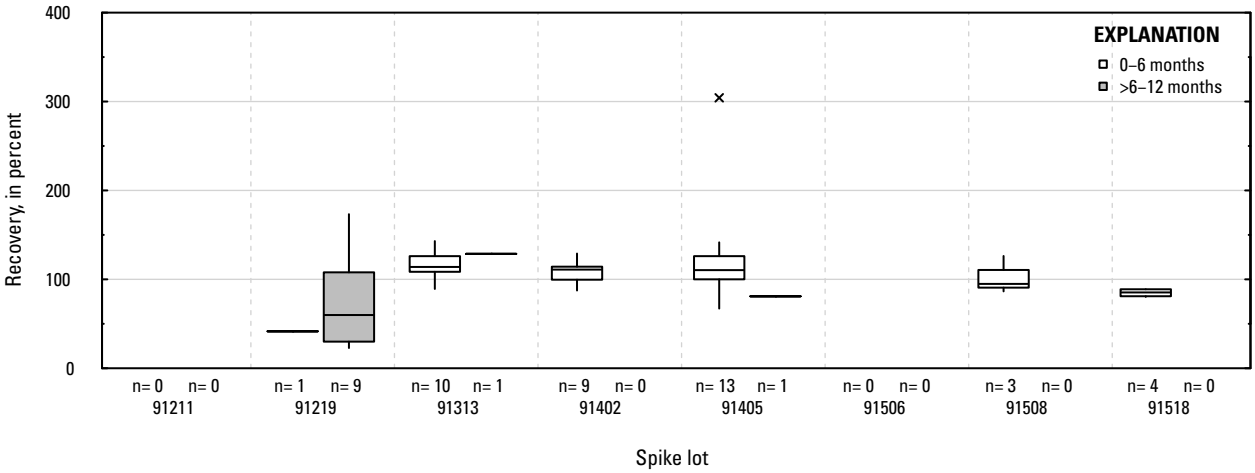


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

TC. **Phorate sulfone: laboratory reagent spikes**



TD. **Phorate sulfone: groundwater field matrix spikes**



TE. **Phorate sulfone: surface water field matrix spikes**

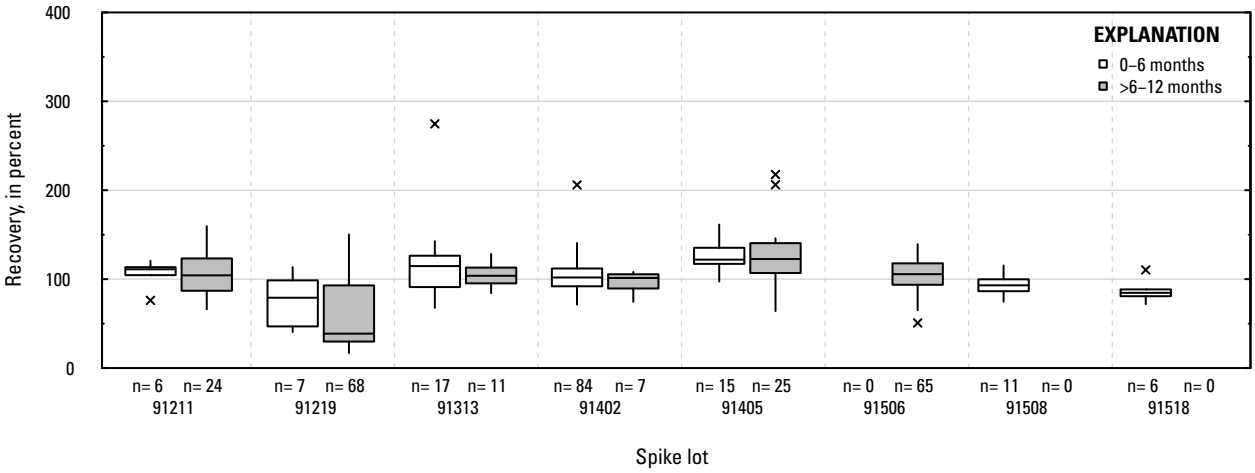
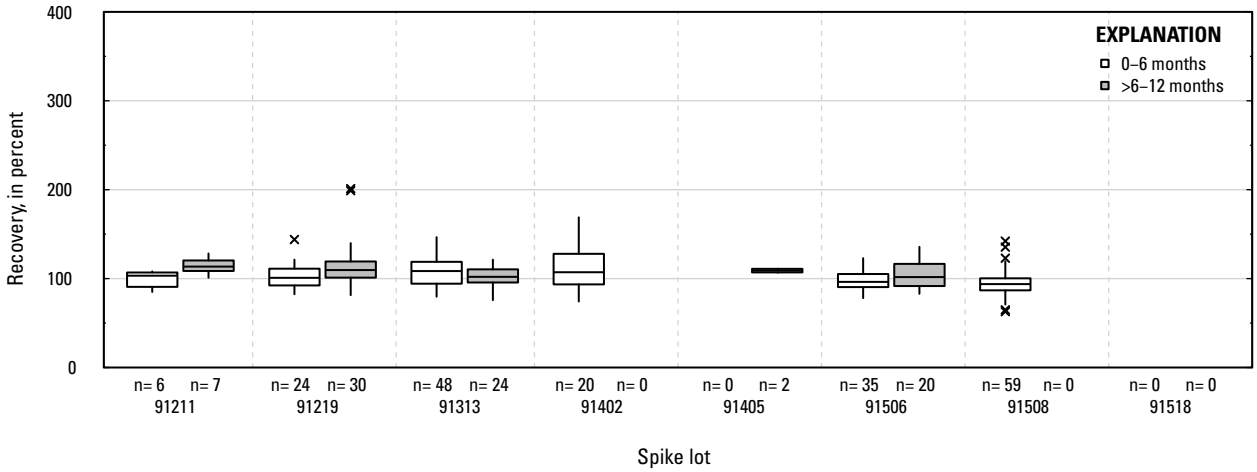
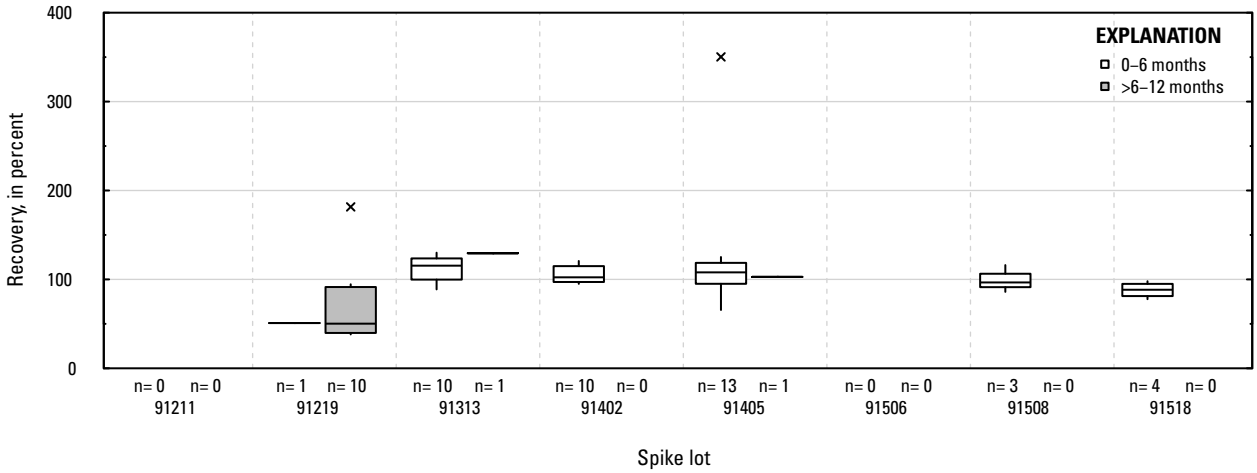


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

TF. **Phorate sulfoxide: laboratory reagent spikes**



TG. **Phorate sulfoxide: groundwater field matrix spikes**



TH. **Phorate sulfoxide: surface water field matrix spikes**

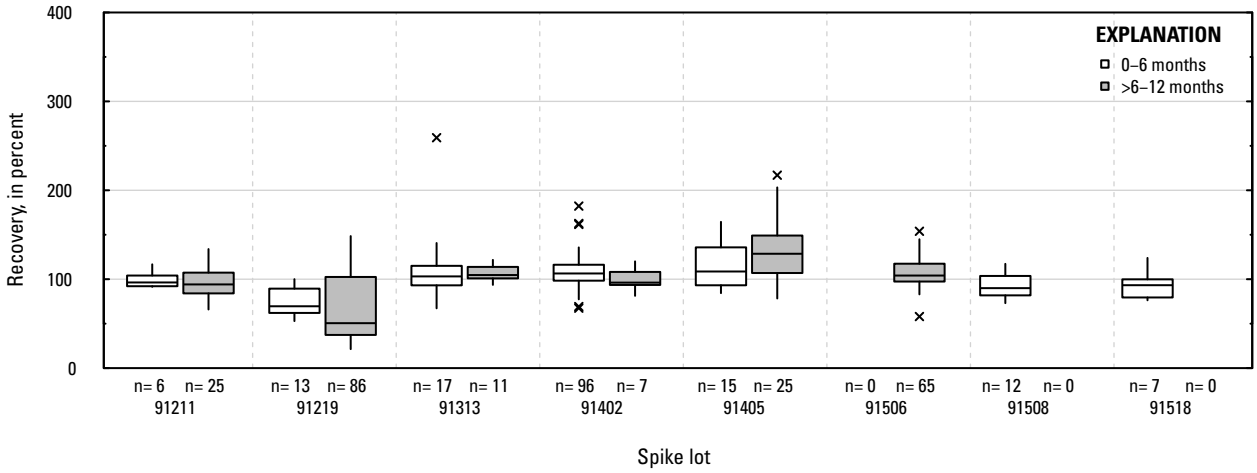
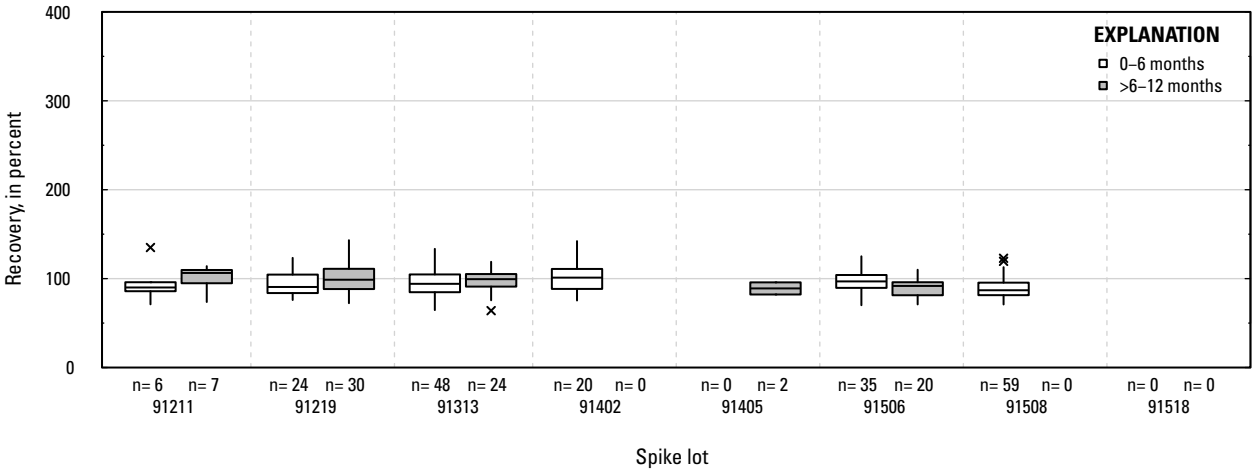
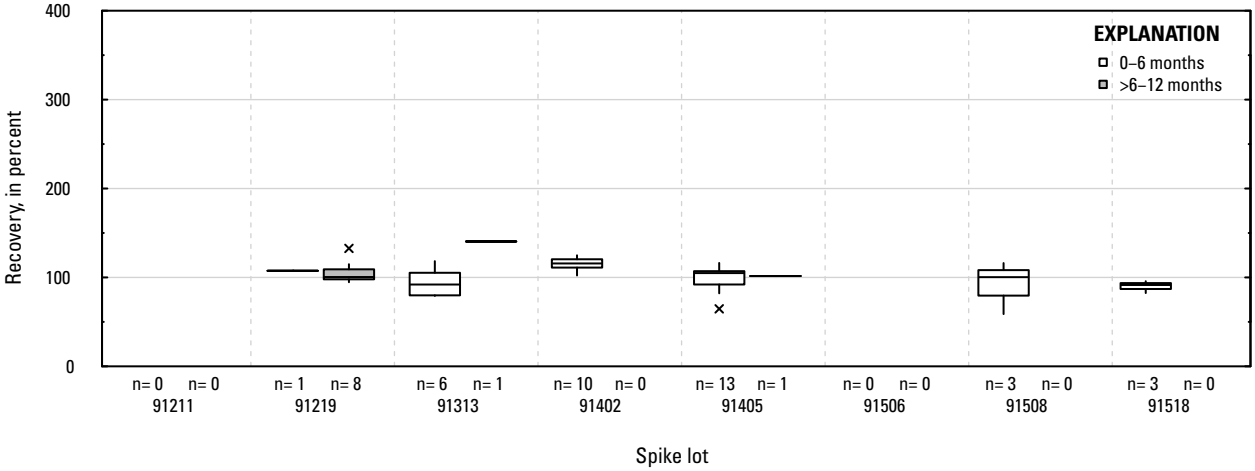


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

TI. **Phthalazinone: laboratory reagent spikes**



TJ. **Phthalazinone: groundwater field matrix spikes**



TK. **Phthalazinone: surface water field matrix spikes**

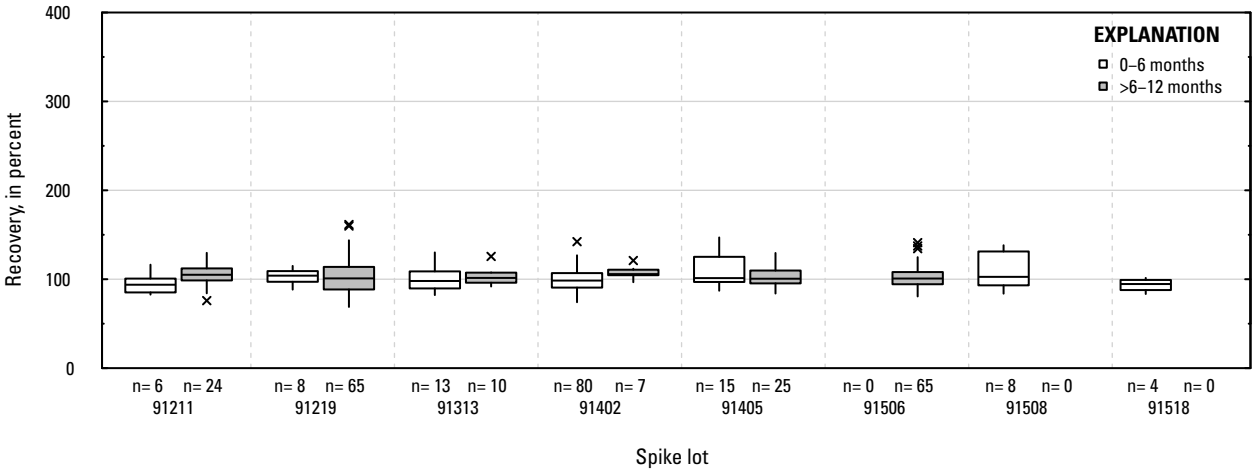
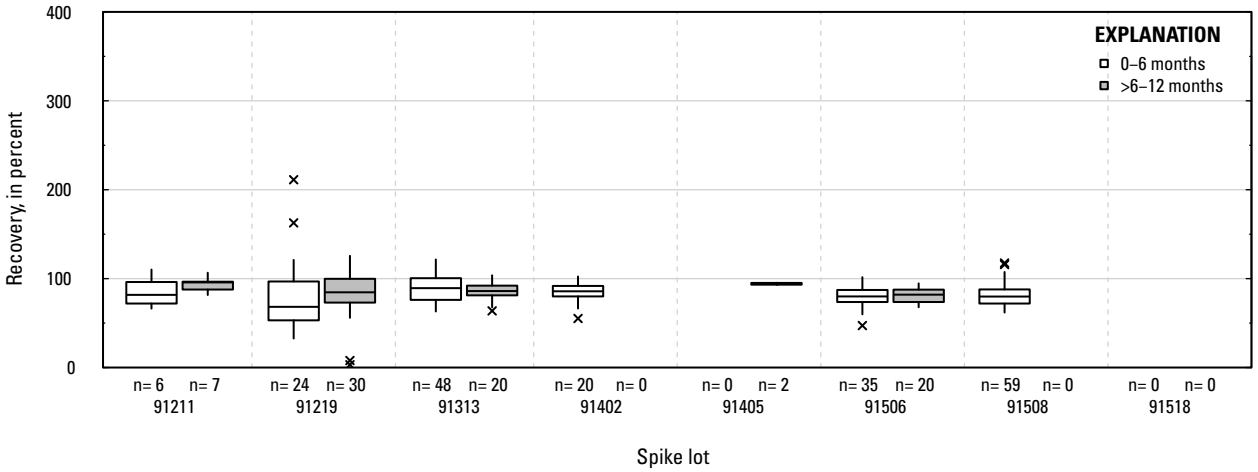
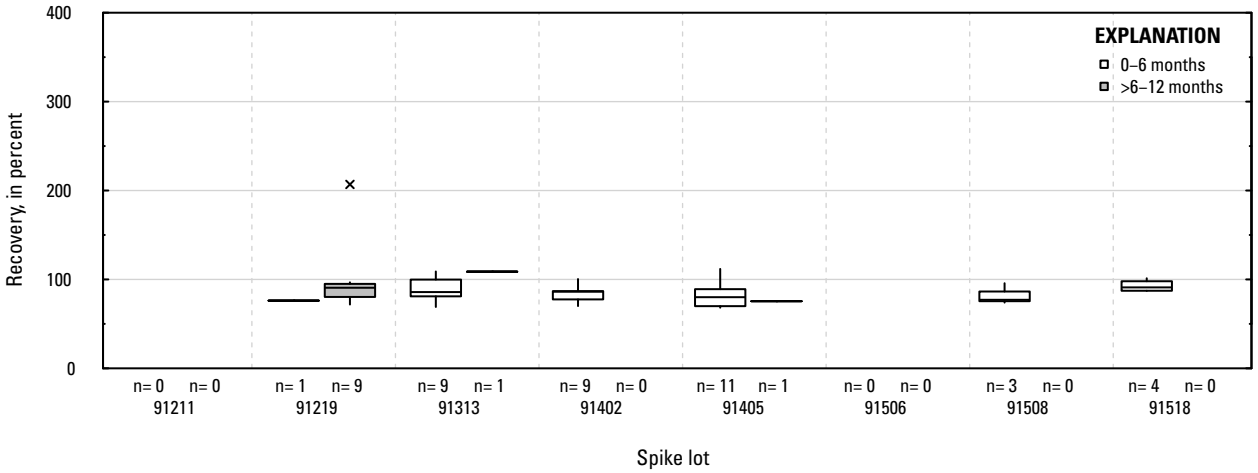


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

TL. **Piperonyl butoxide: laboratory reagent spikes**



TM. **Piperonyl butoxide: groundwater field matrix spikes**



TN. **Piperonyl butoxide: surface water field matrix spikes**

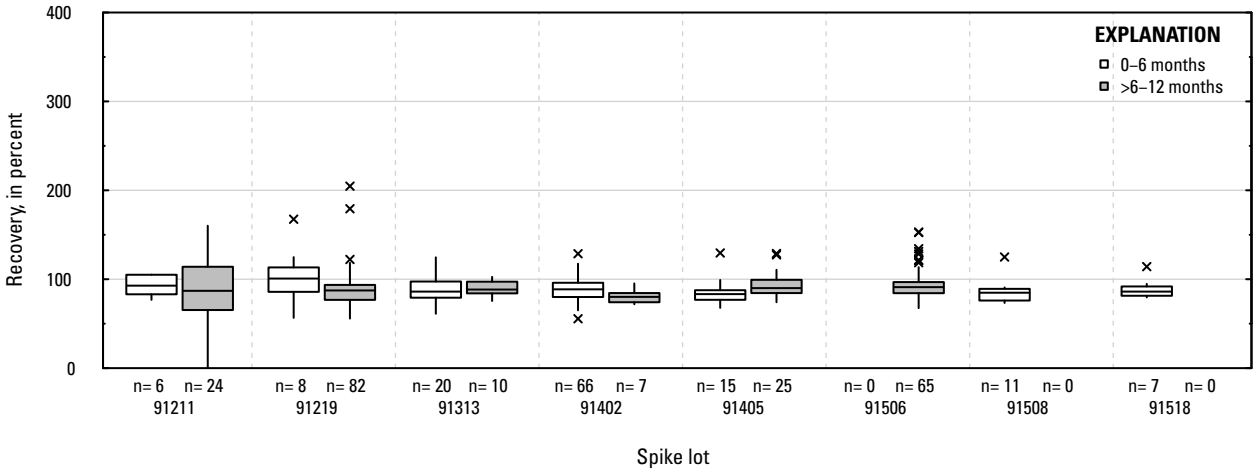
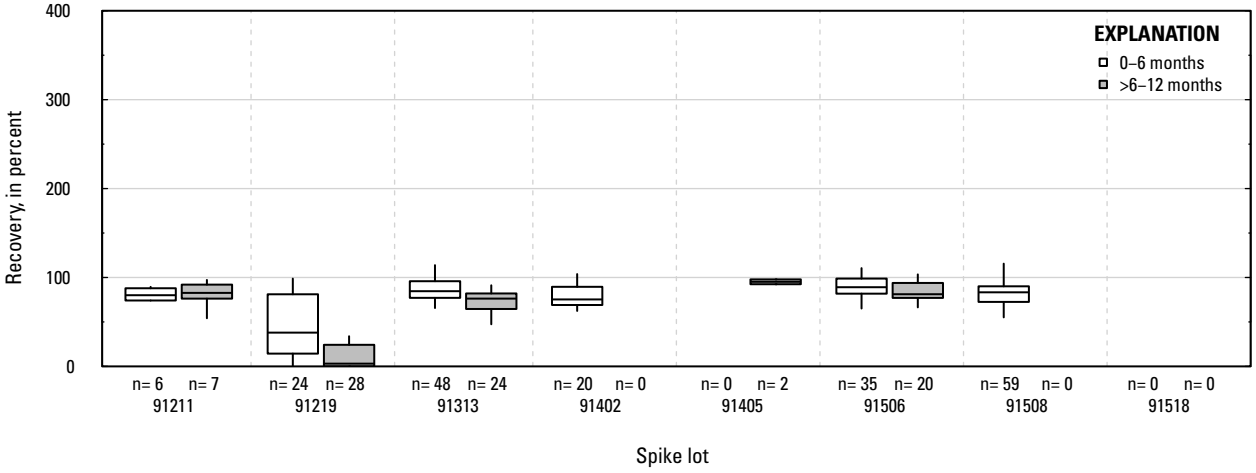
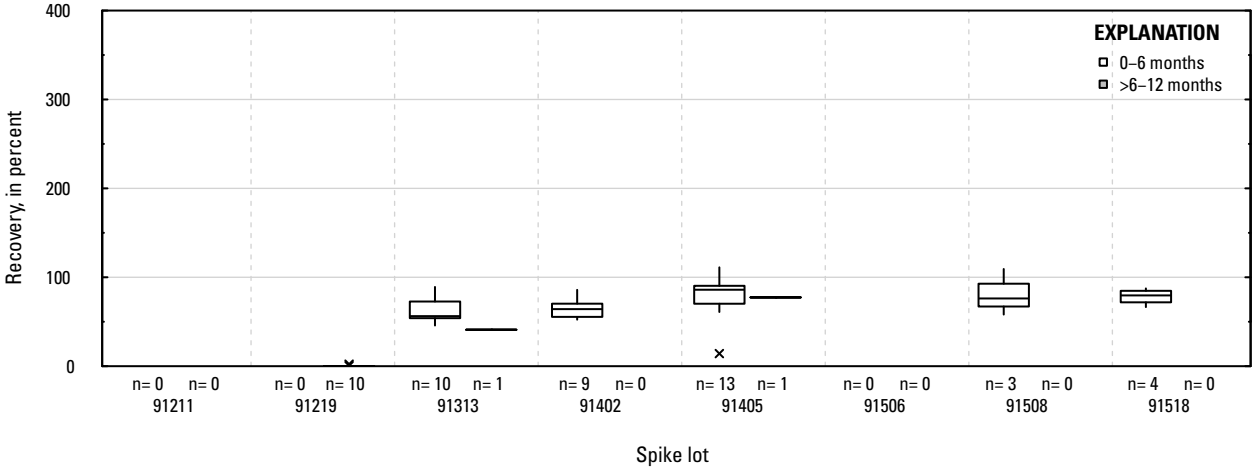


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

TO. **Profenofos: laboratory reagent spikes**



TP. **Profenofos: groundwater field matrix spikes**



TQ. **Profenofos: surface water field matrix spikes**

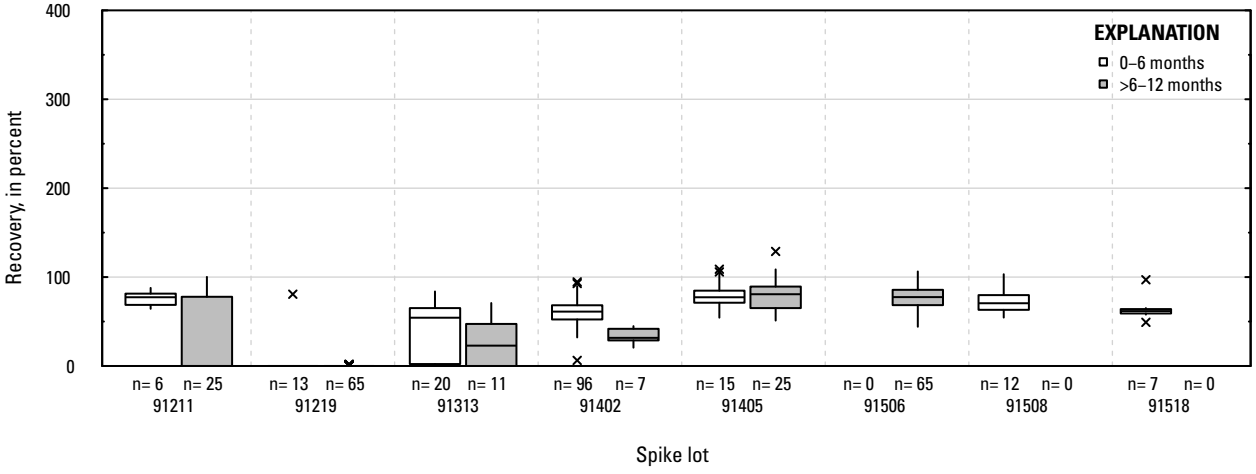
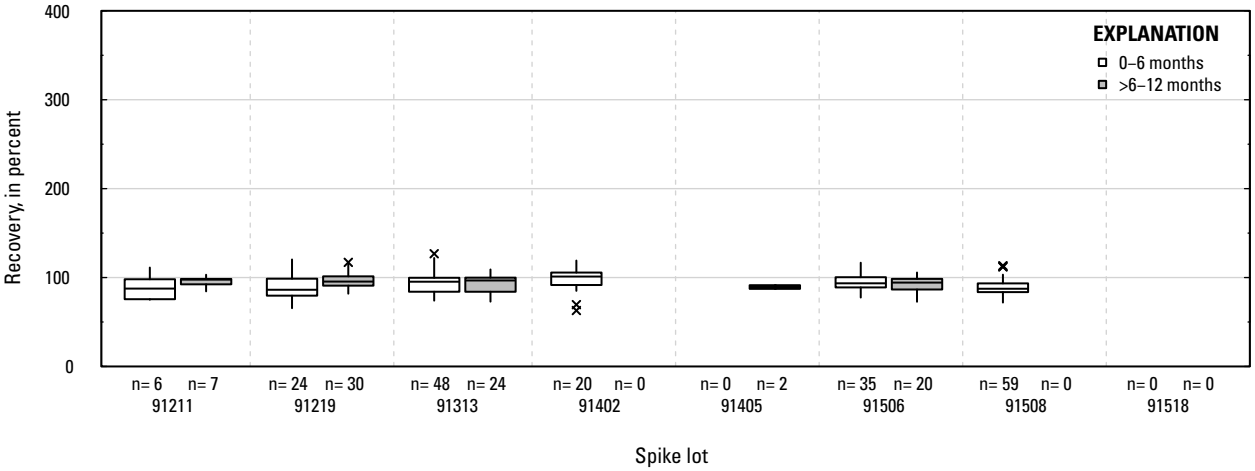
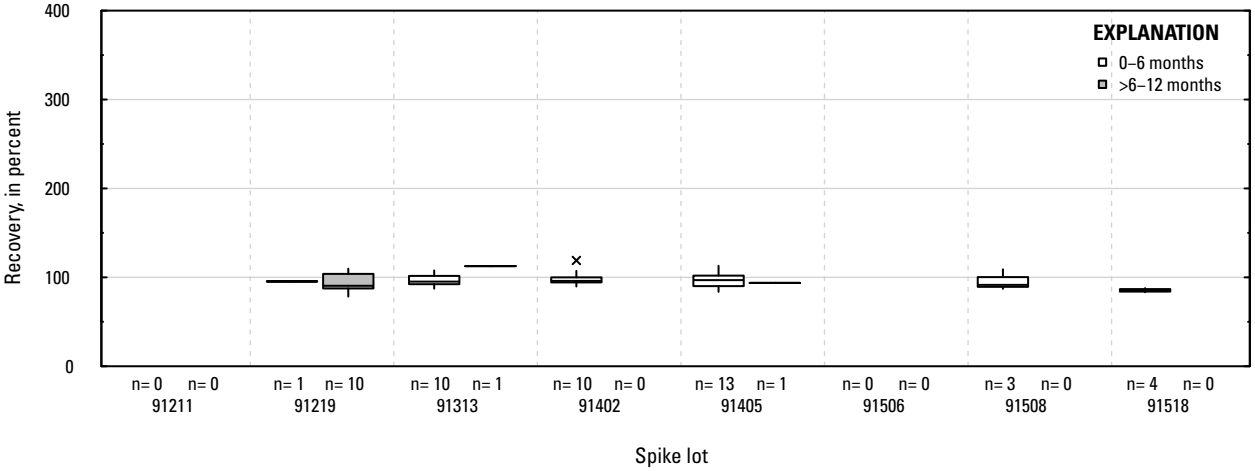


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

TR. **Prometon: laboratory reagent spikes**



TS. **Prometon: groundwater field matrix spikes**



TT. **Prometon: surface water field matrix spikes**

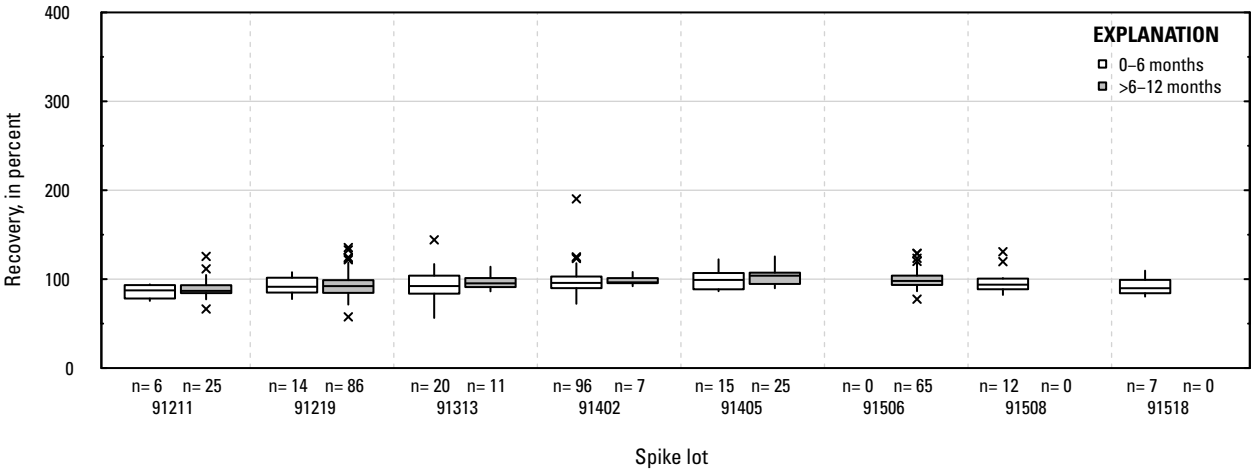
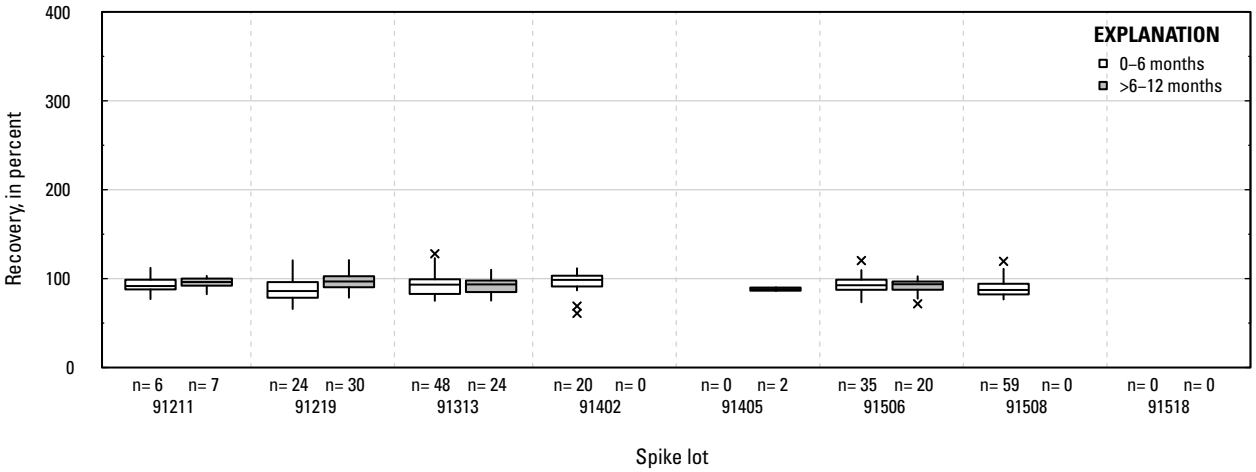
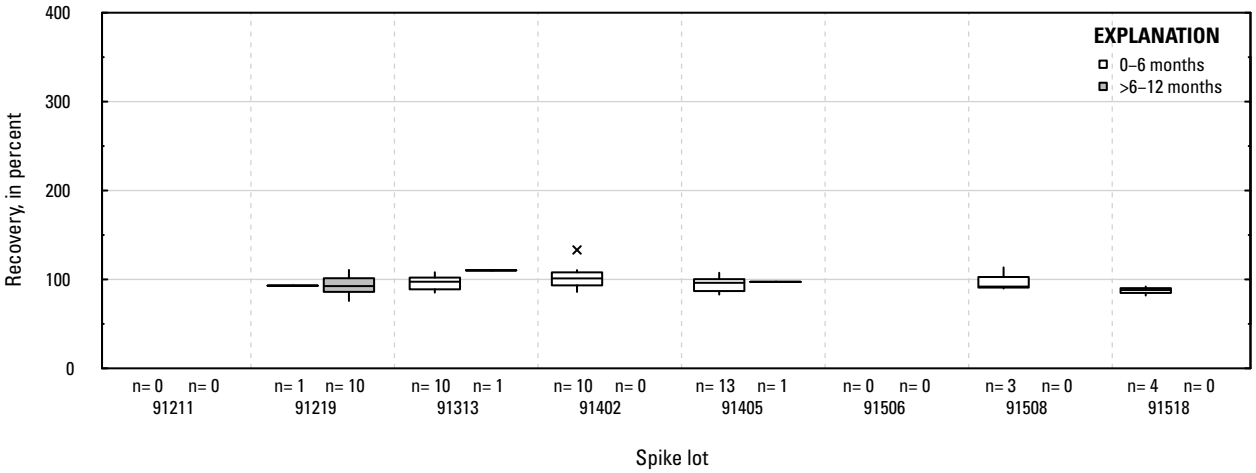


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

TU. **Prometryn: laboratory reagent spikes**



TV. **Prometryn: groundwater field matrix spikes**



TW. **Prometryn: surface water field matrix spikes**

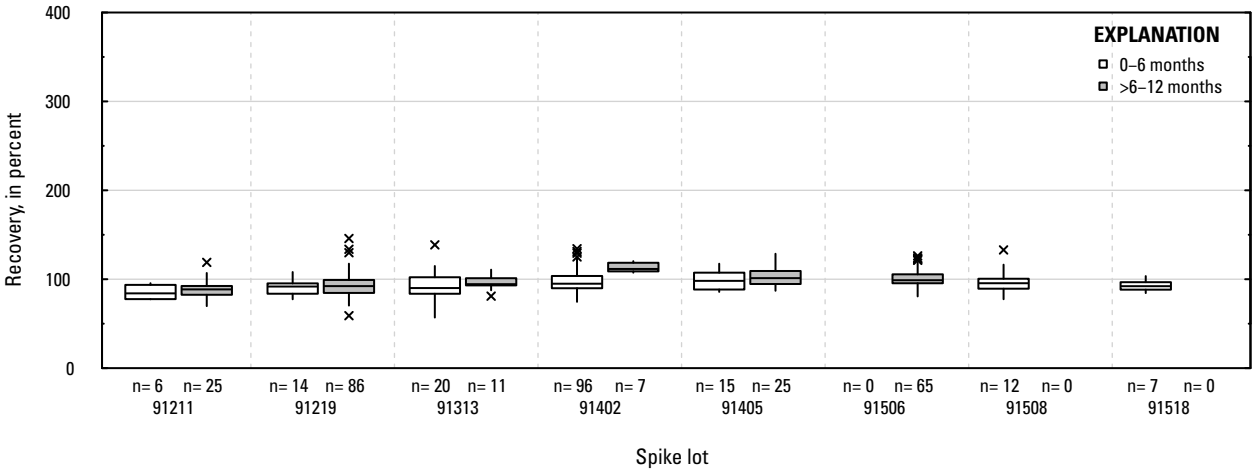
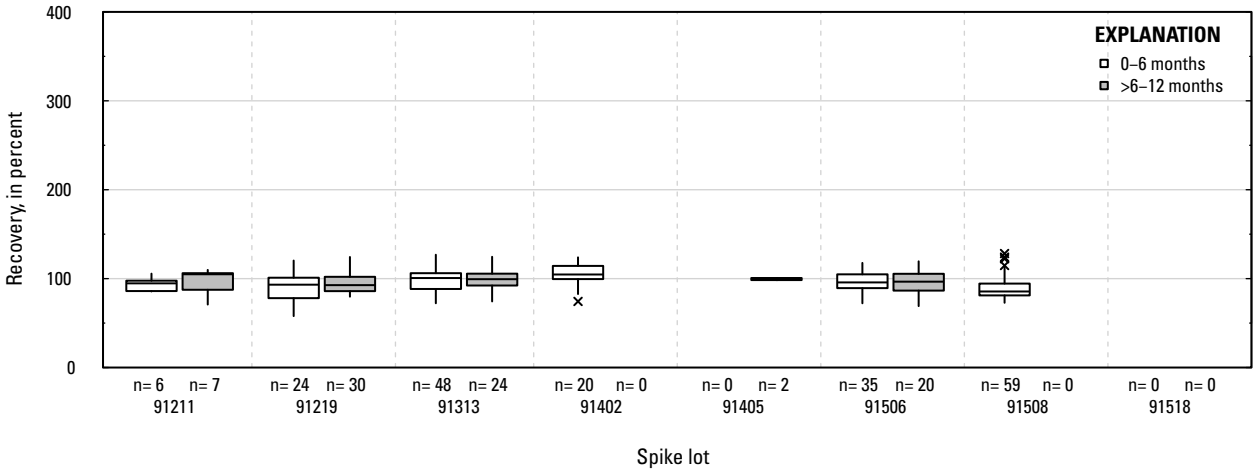
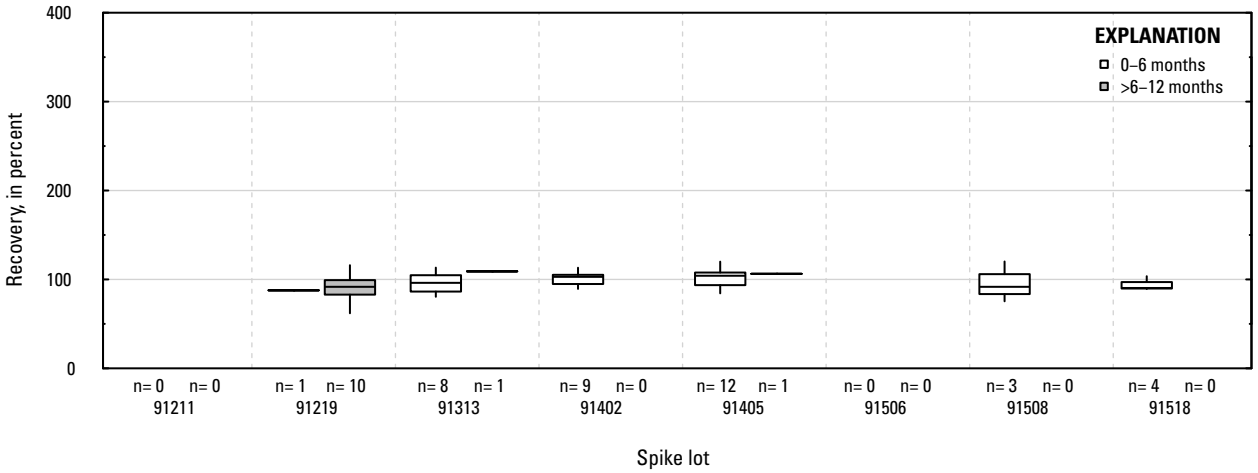


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

TX. **Propyzamide: laboratory reagent spikes**



TY. **Propyzamide: groundwater field matrix spikes**



TZ. **Propyzamide: surface water field matrix spikes**

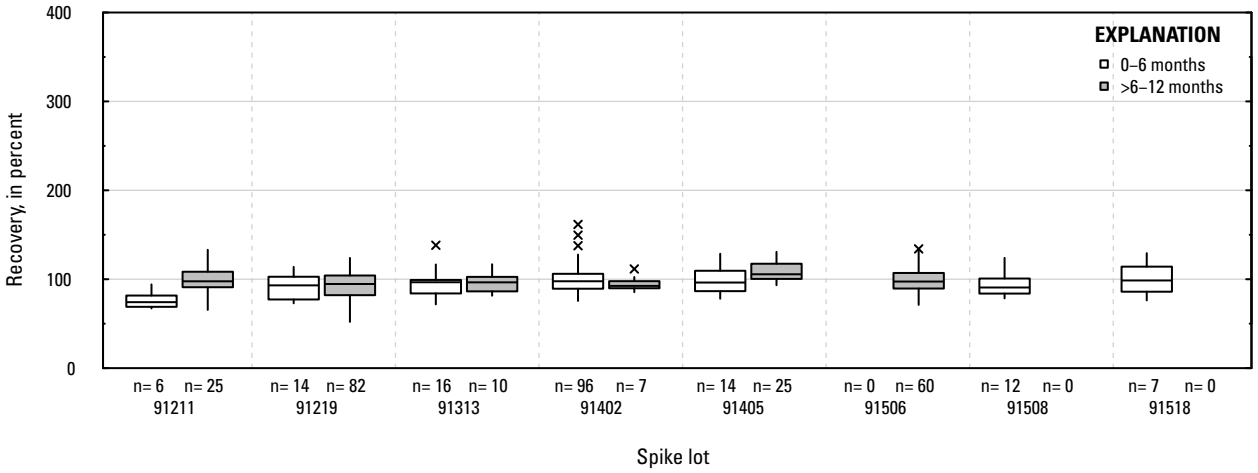
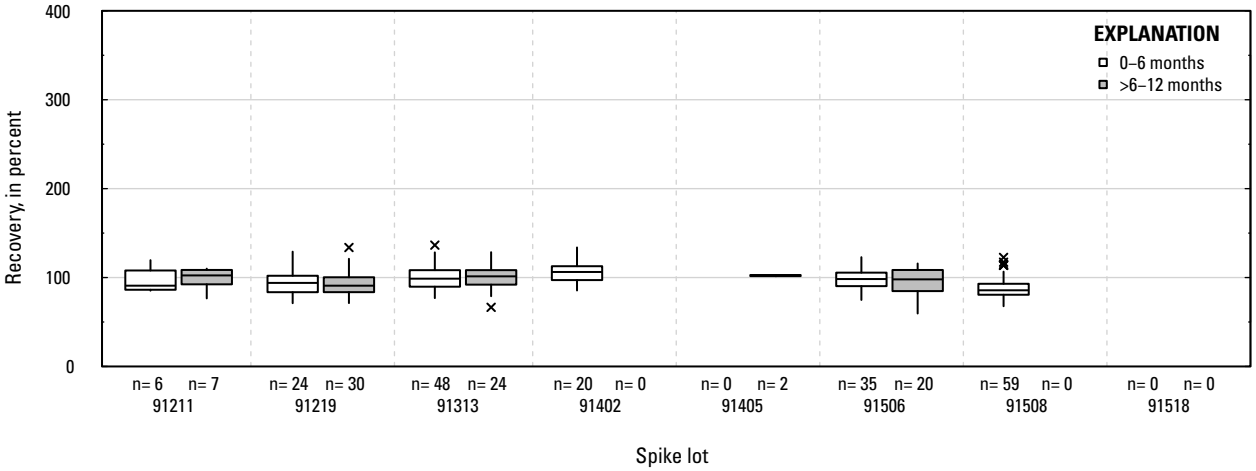
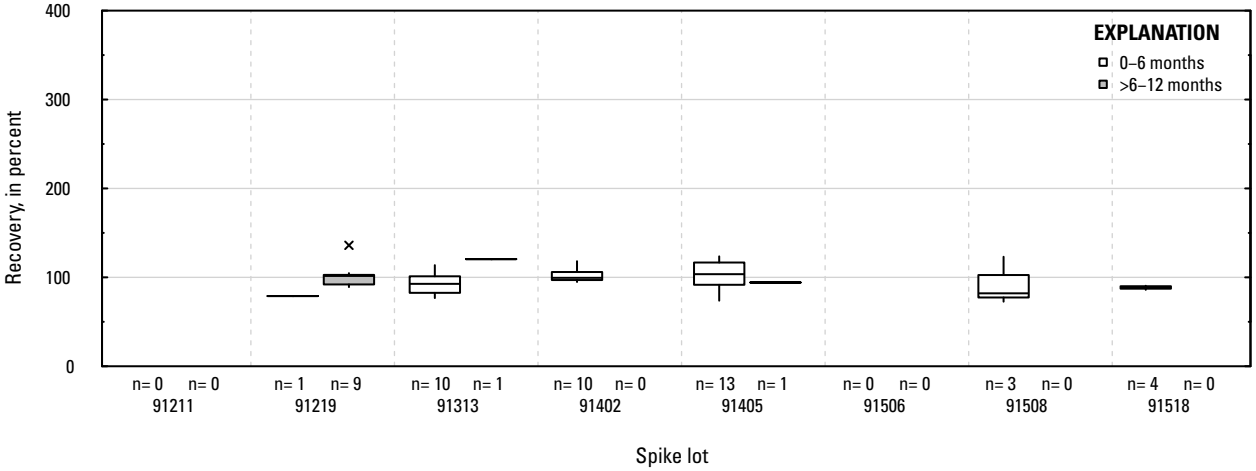


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

UA. **Propanil: laboratory reagent spikes**



UB. **Propanil: groundwater field matrix spikes**



UC. **Propanil: surface water field matrix spikes**

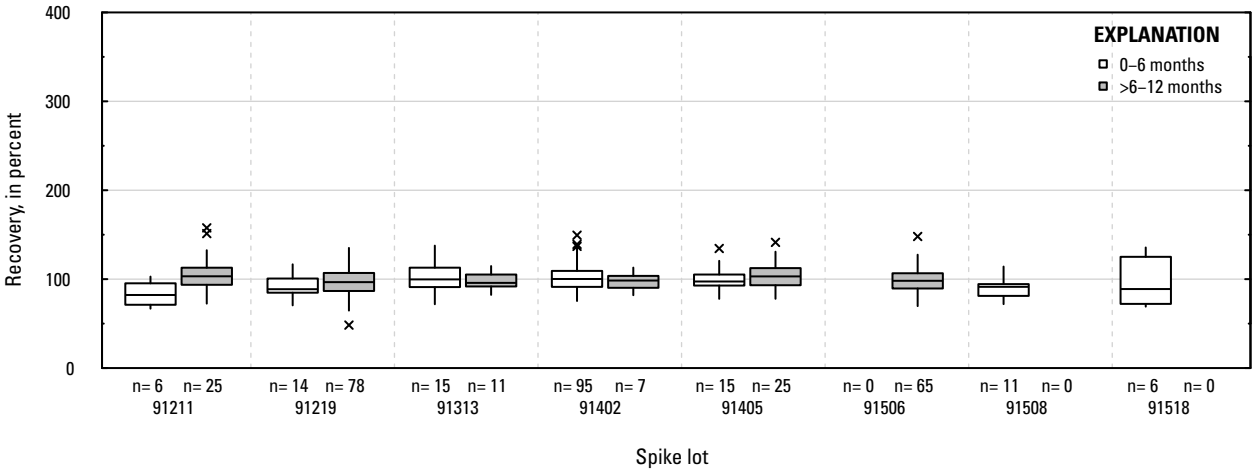
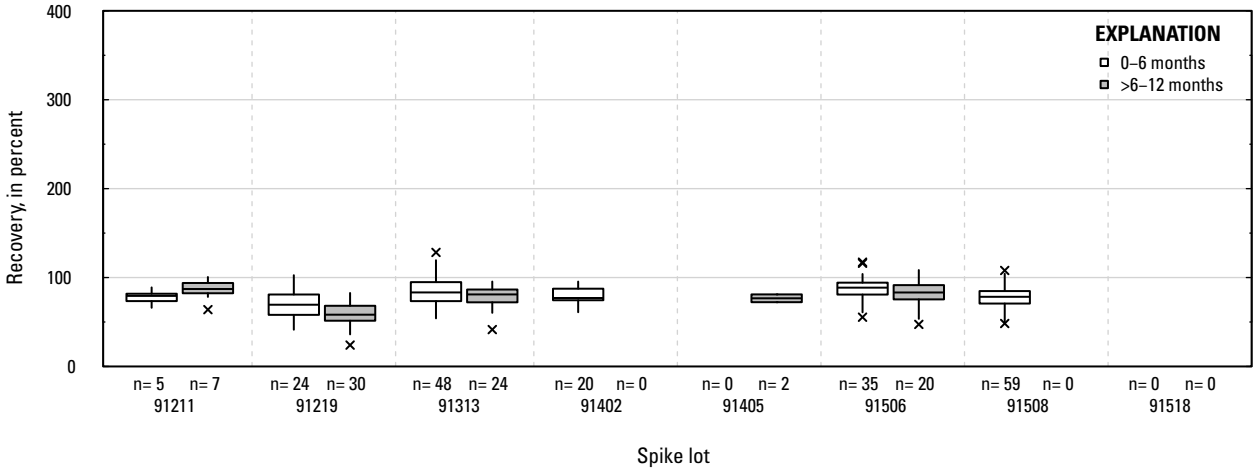
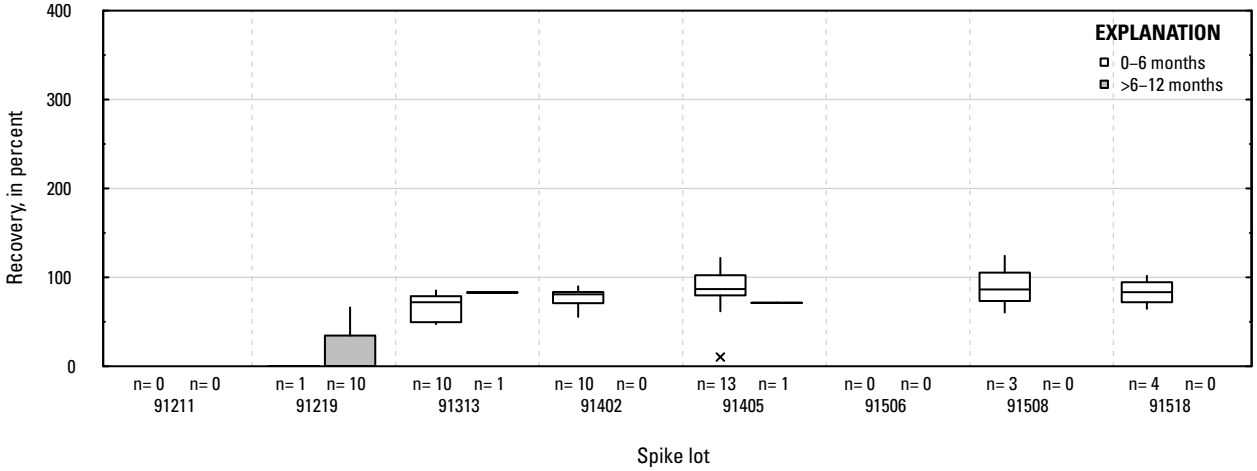


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

UD. **Propargite: laboratory reagent spikes**



UE. **Propargite: groundwater field matrix spikes**



UF. **Propargite: surface water field matrix spikes**

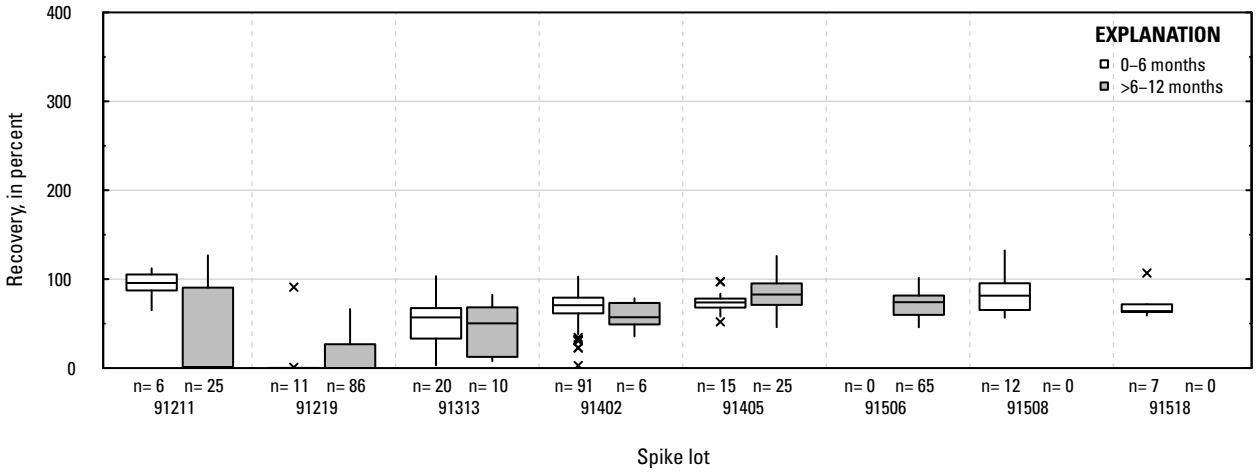
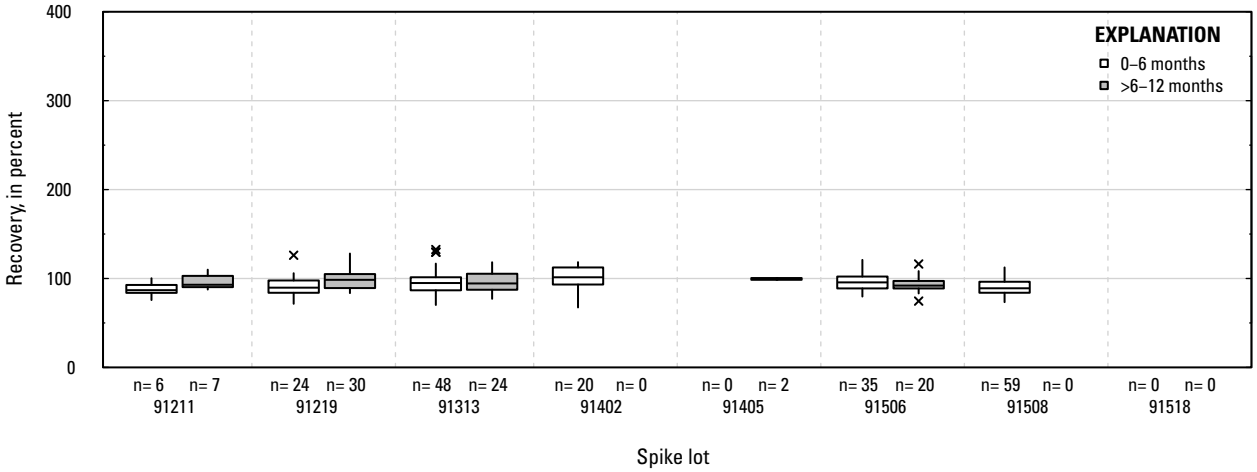
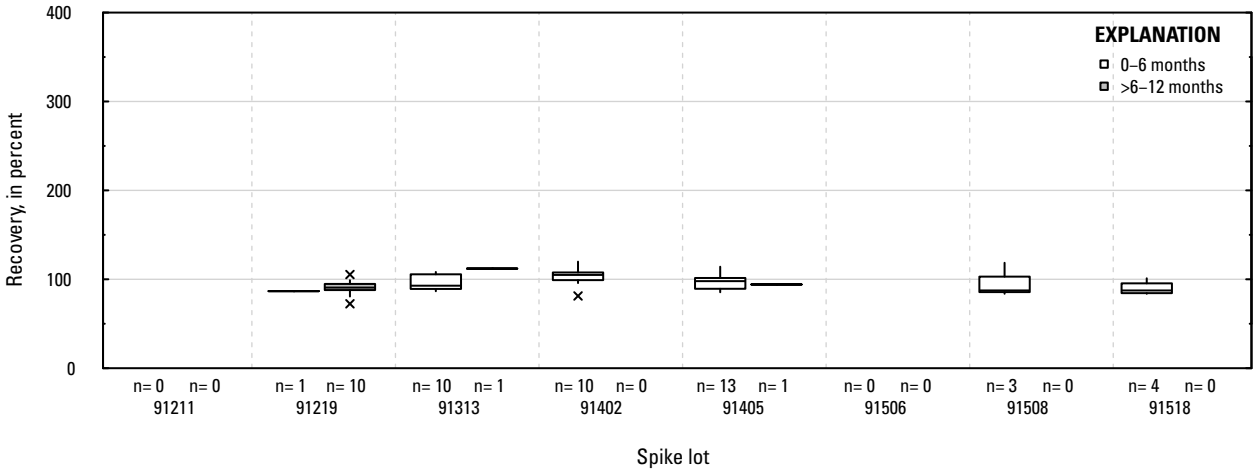


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

UG. **Propazine: laboratory reagent spikes**



UH. **Propazine: groundwater field matrix spikes**



UI. **Propazine: surface water field matrix spikes**

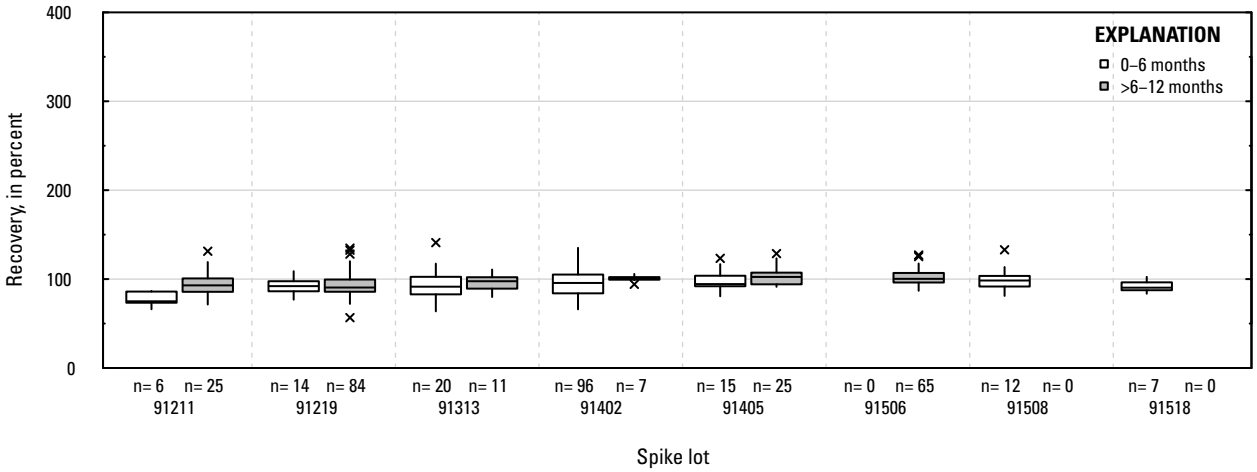
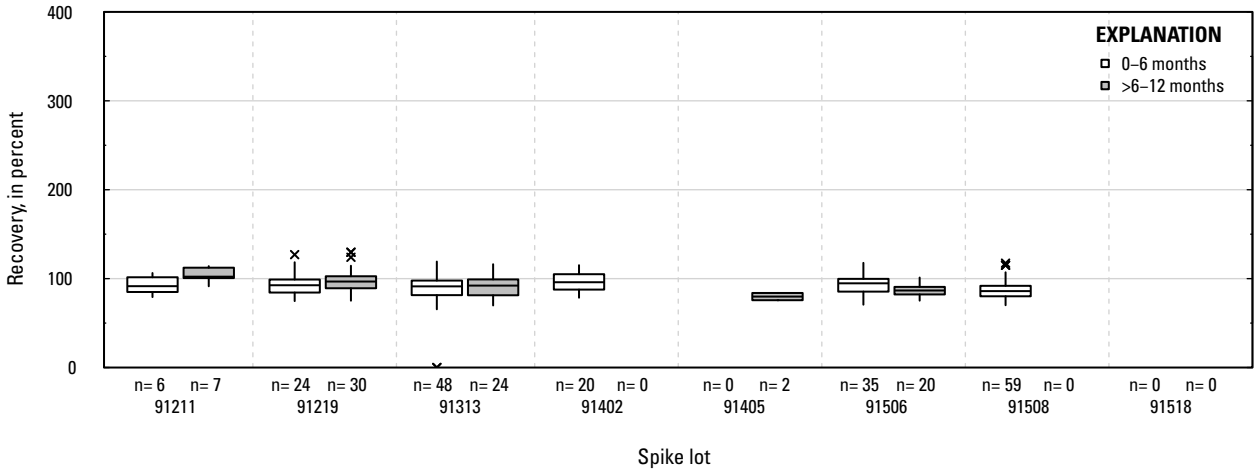
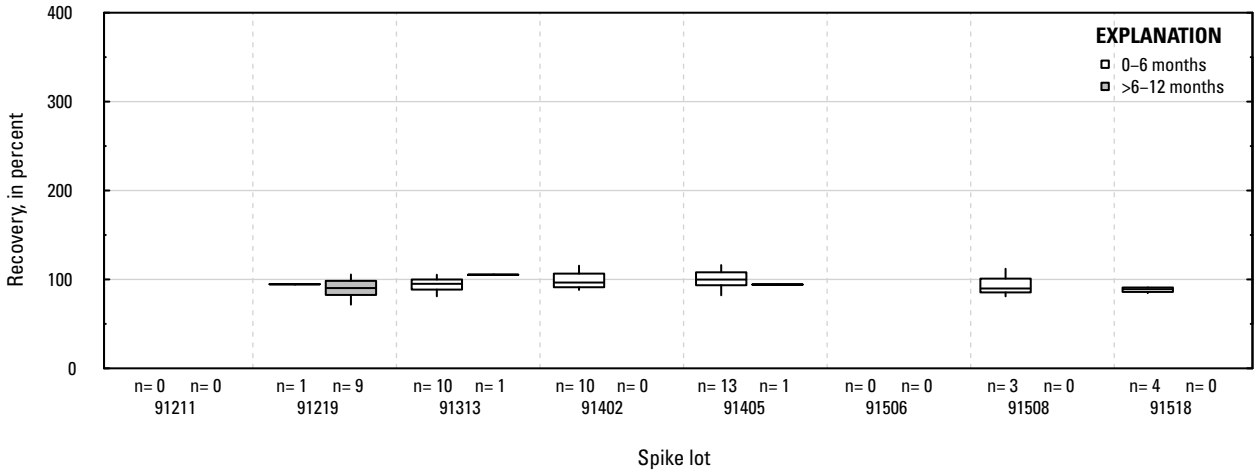


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

UJ. **Propiconazole: laboratory reagent spikes**



UK. **Propiconazole: groundwater field matrix spikes**



UL. **Propiconazole: surface water field matrix spikes**

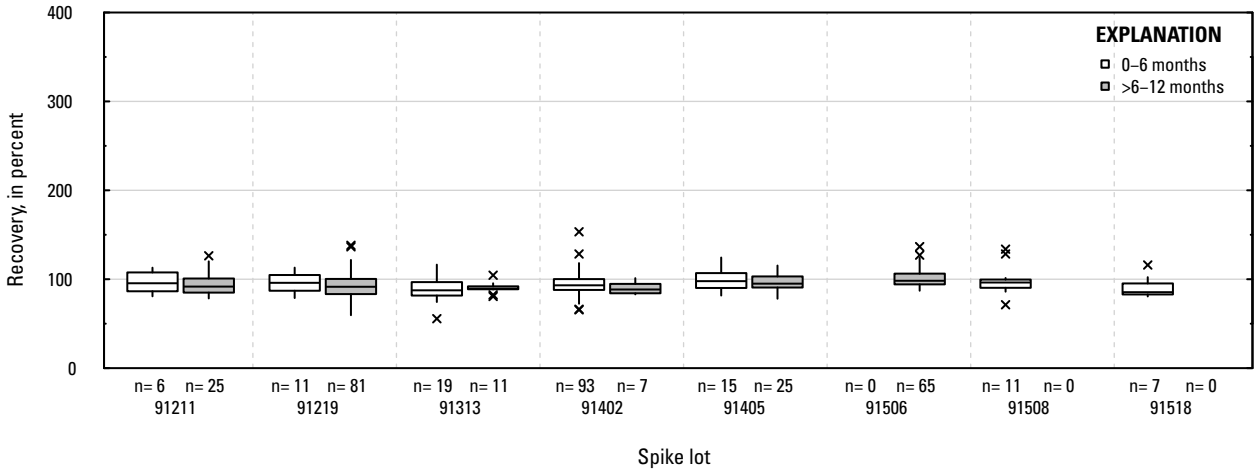
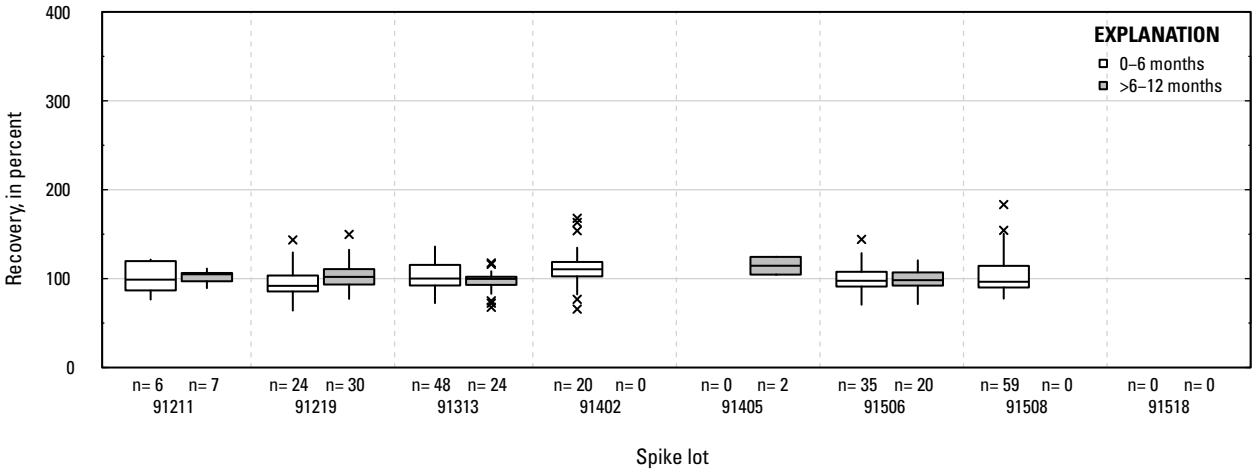
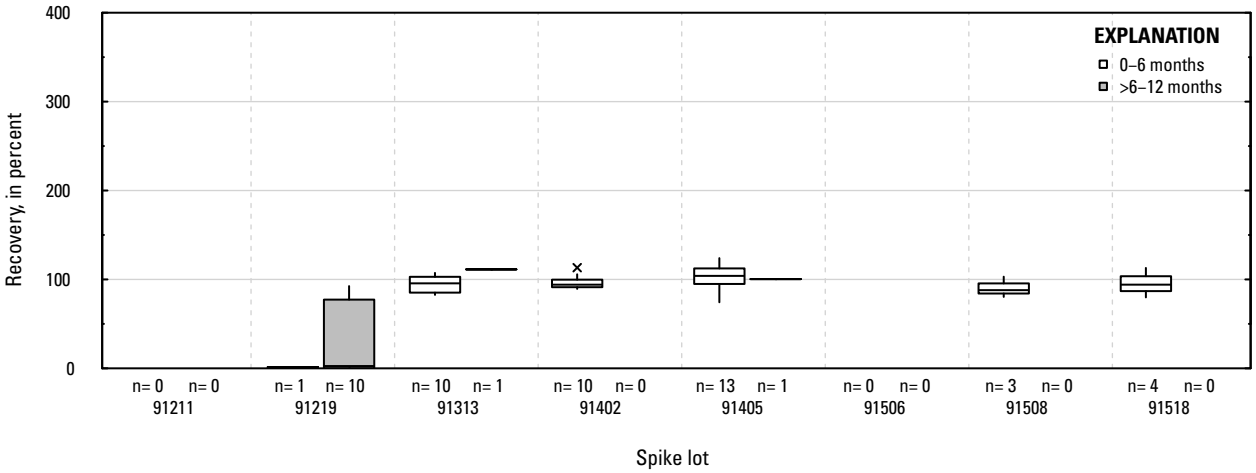


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

UM. **Propoxur: laboratory reagent spikes**



UN. **Propoxur: groundwater field matrix spikes**



UO. **Propoxur: surface water field matrix spikes**

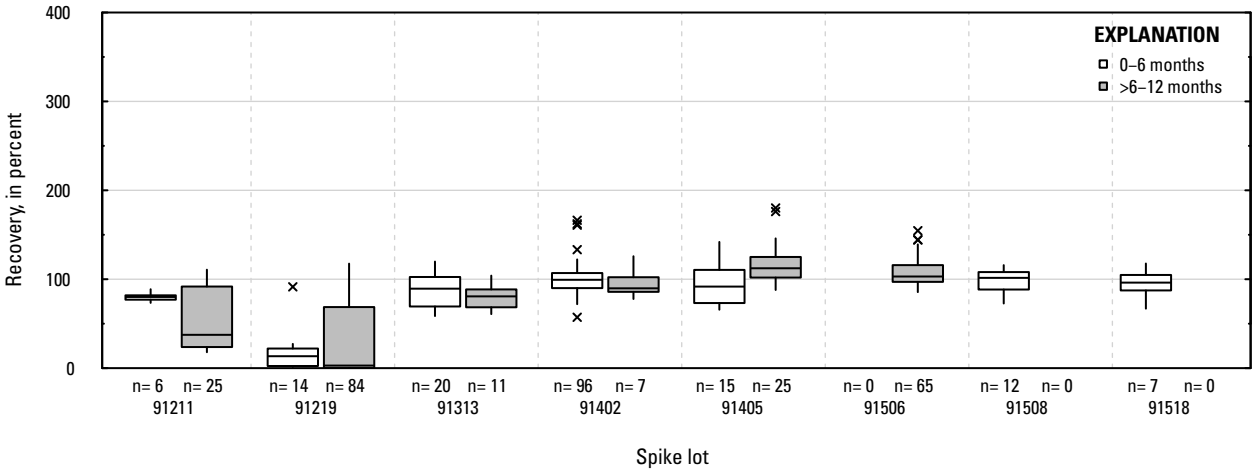
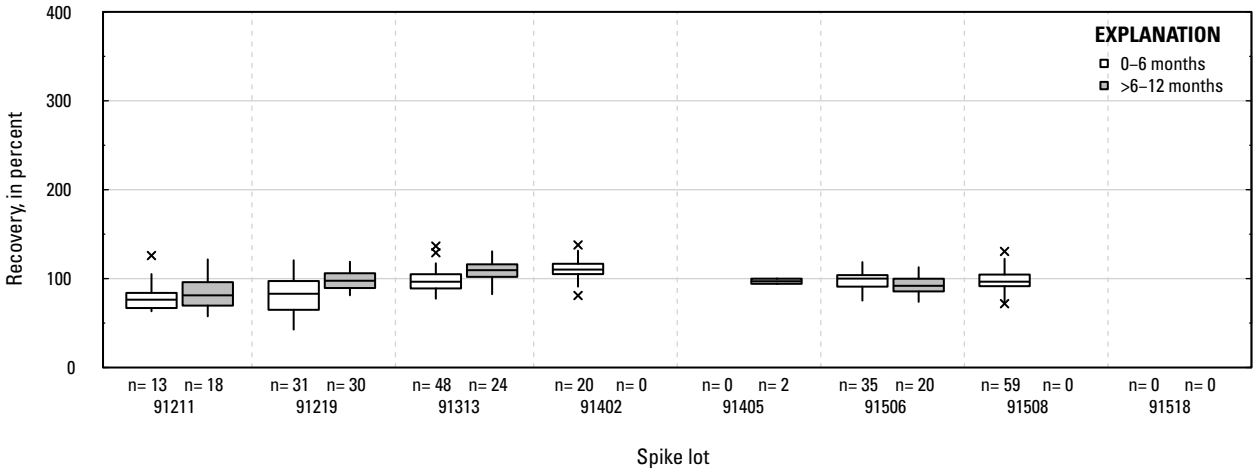
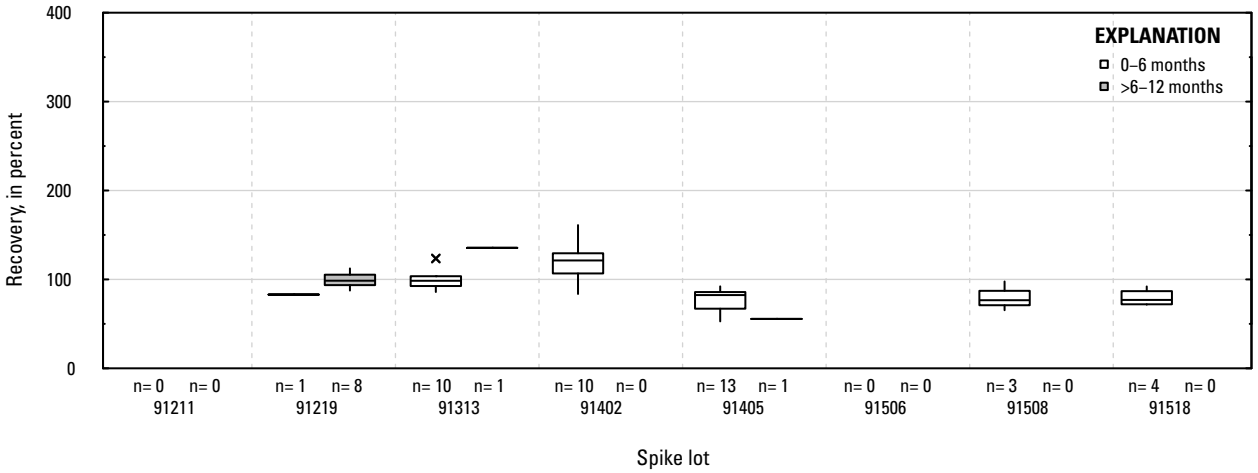


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

UP. **Prosulfuron: laboratory reagent spikes**



UQ. **Prosulfuron: groundwater field matrix spikes**



UR. **Prosulfuron: surface water field matrix spikes**

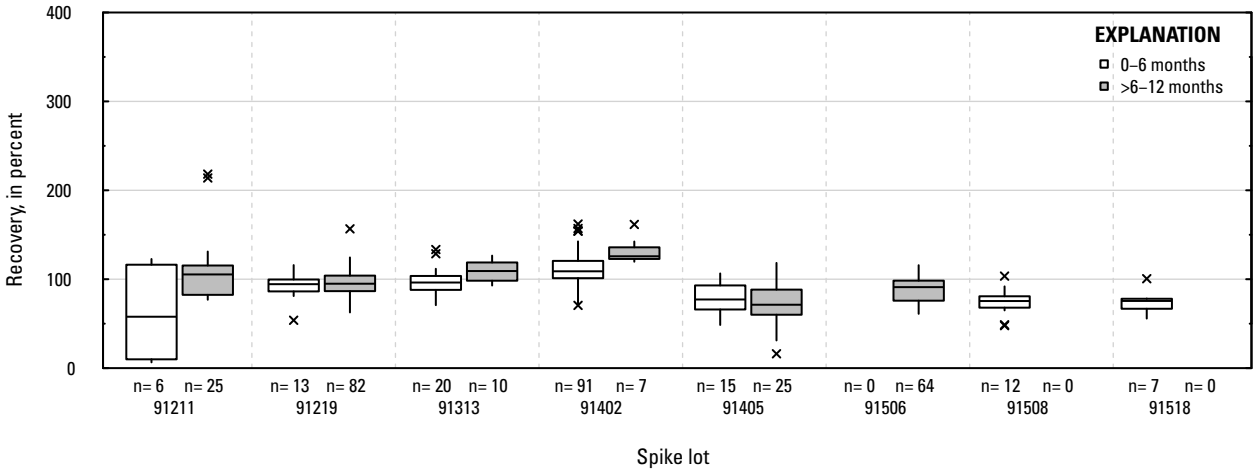
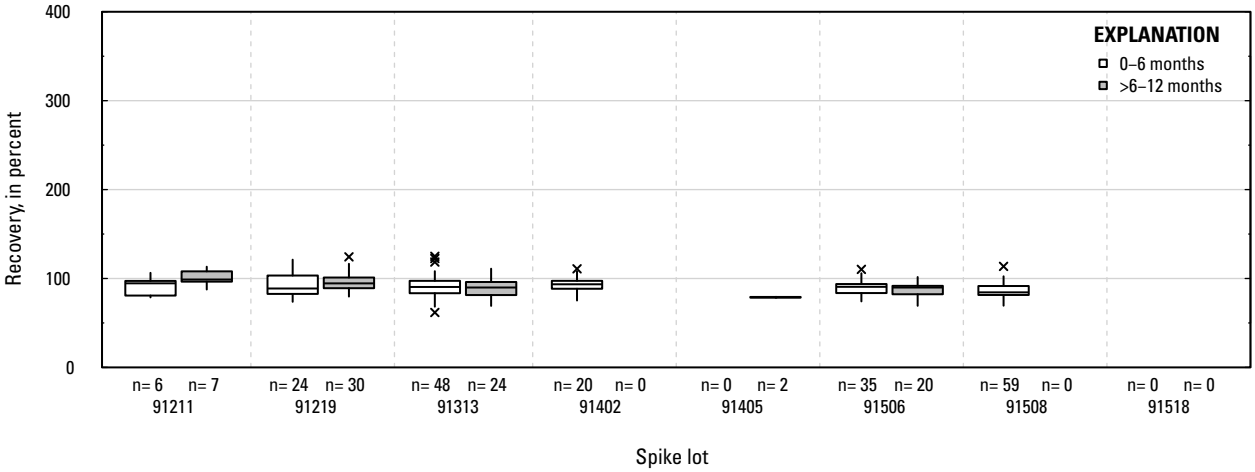
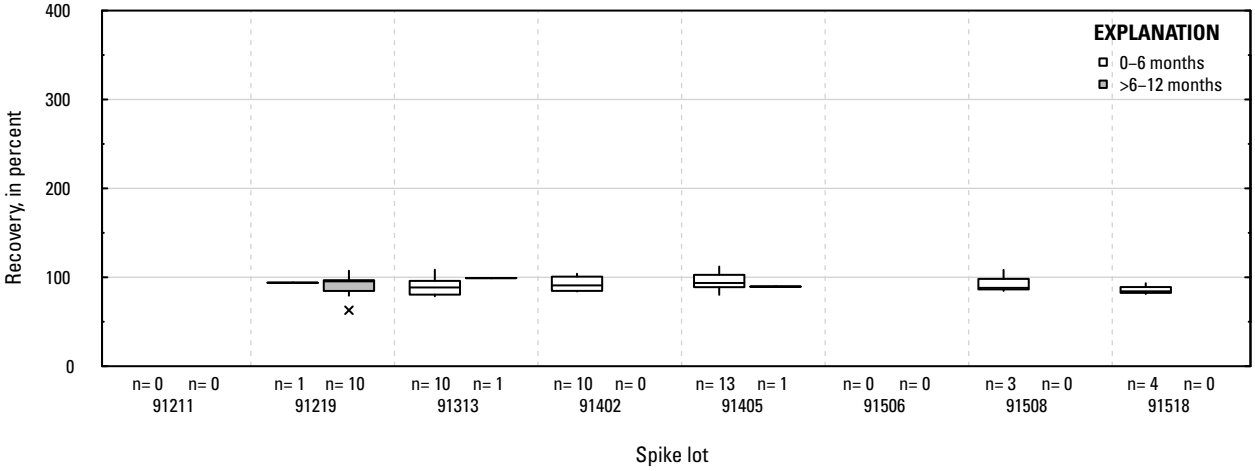


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

US. **Pyraclostrobin: laboratory reagent spikes**



UT. **Pyraclostrobin: groundwater field matrix spikes**



UU. **Pyraclostrobin: surface water field matrix spikes**

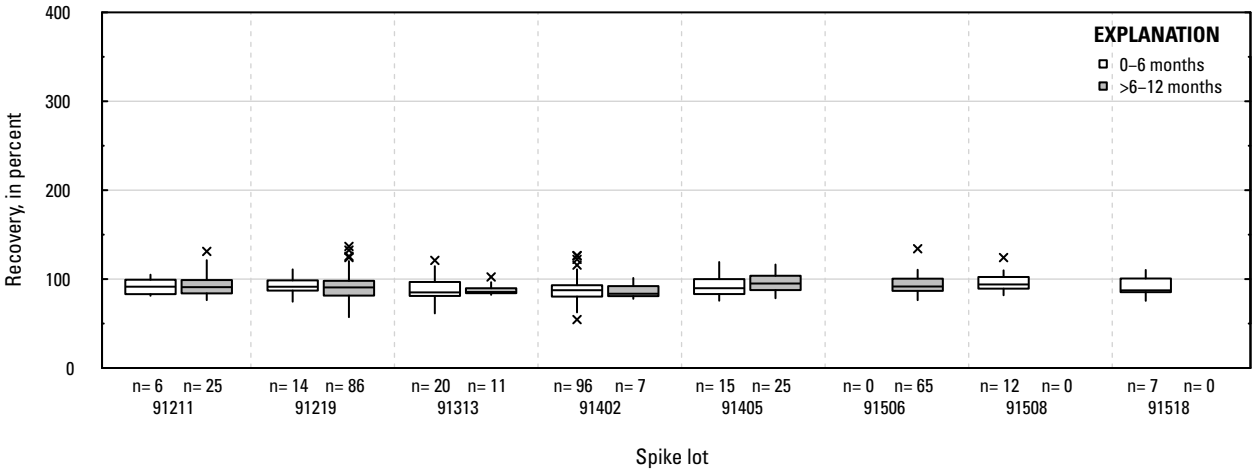
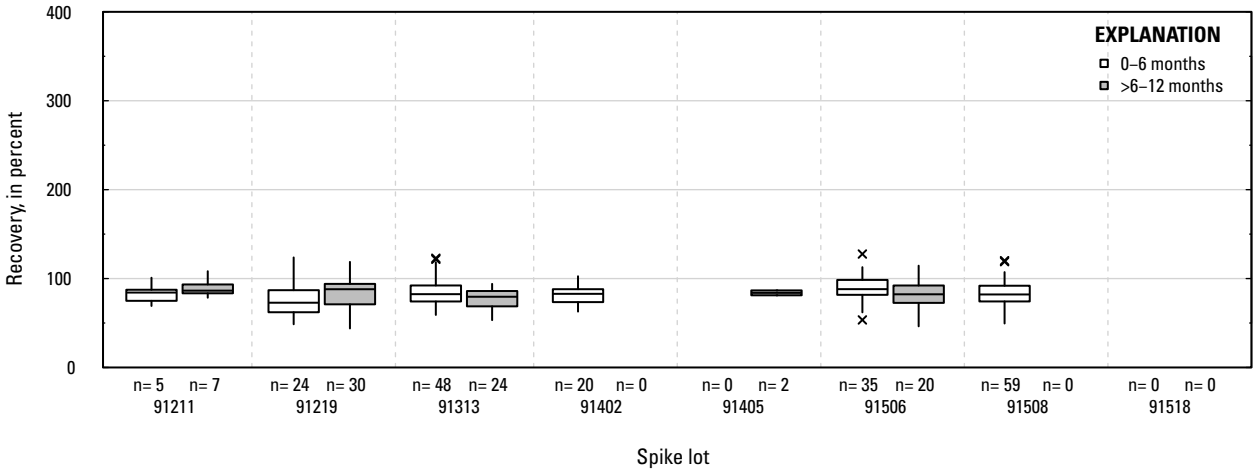
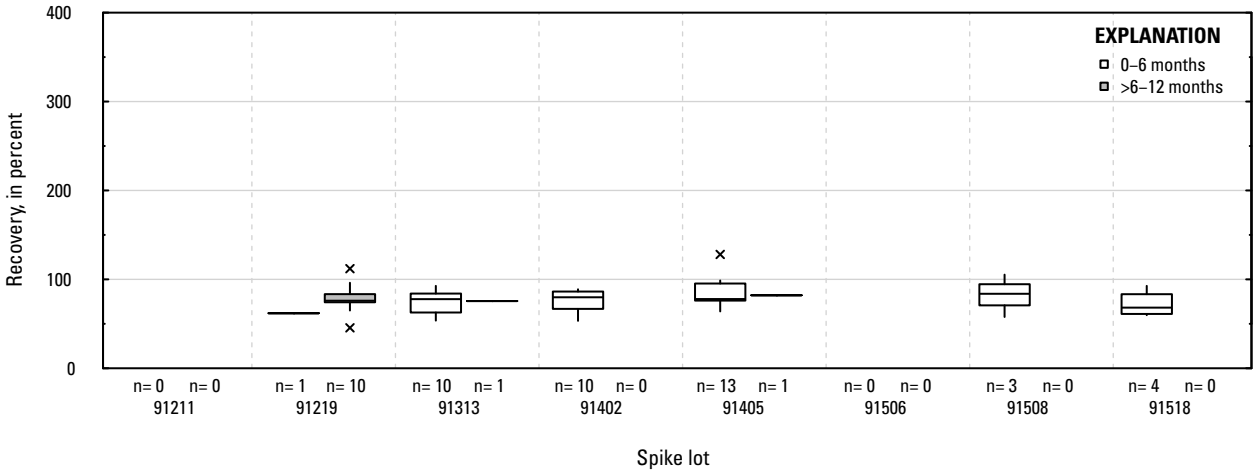


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

UV. **Pyridaben: laboratory reagent spikes**



UW. **Pyridaben: groundwater field matrix spikes**



UX. **Pyridaben: surface water field matrix spikes**

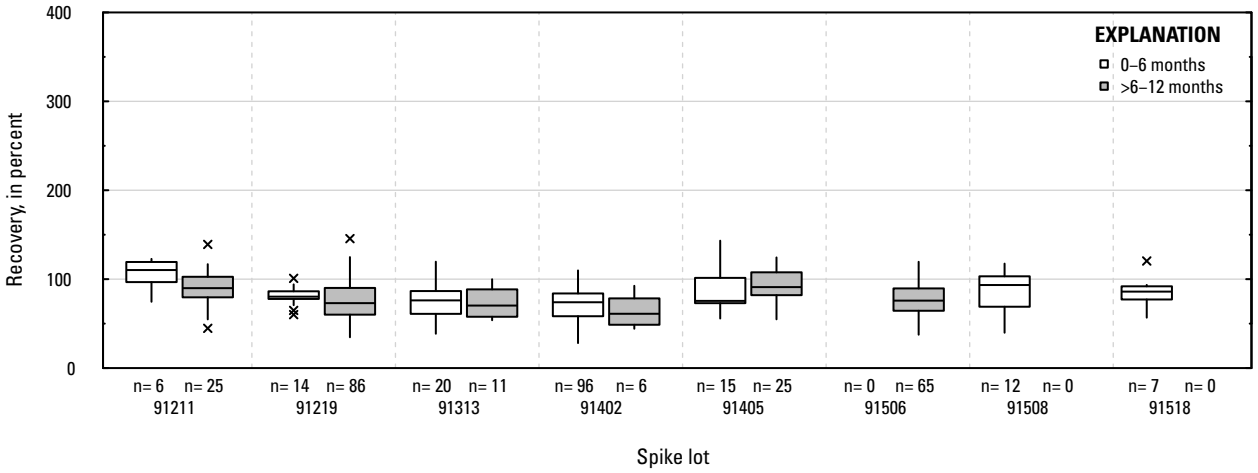
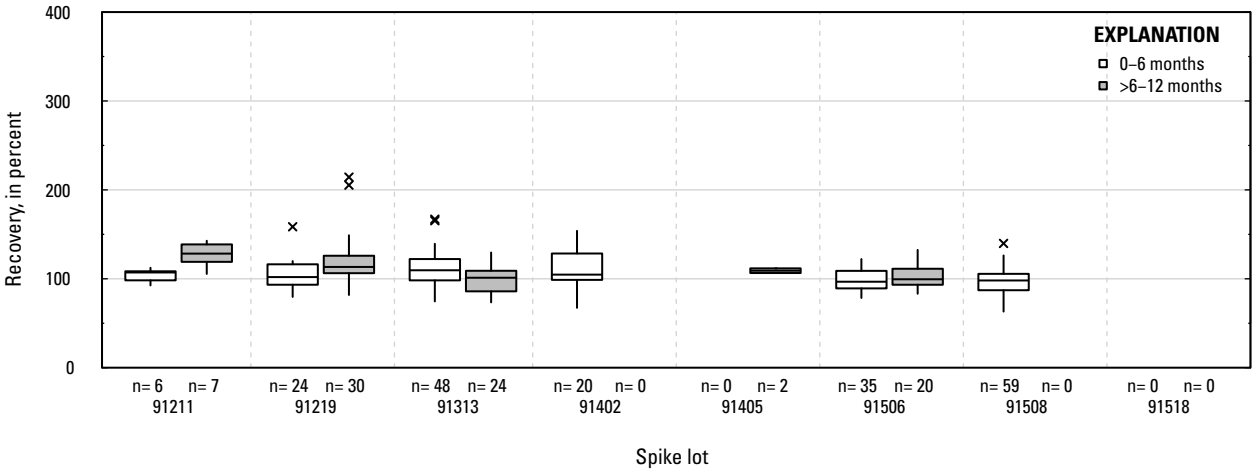
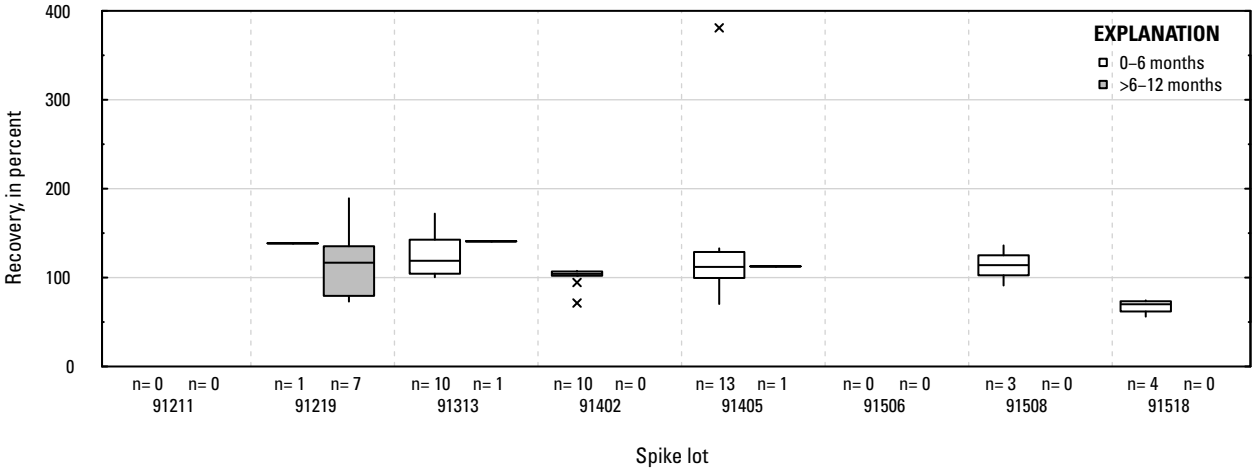


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

UY. **2–Isopropyl–6–methyl–4–pyrimidinol: laboratory reagent spikes**



UZ. **2–Isopropyl–6–methyl–4–pyrimidinol: groundwater field matrix spikes**



VA. **2–Isopropyl–6–methyl–4–pyrimidinol: surface water field matrix spikes**

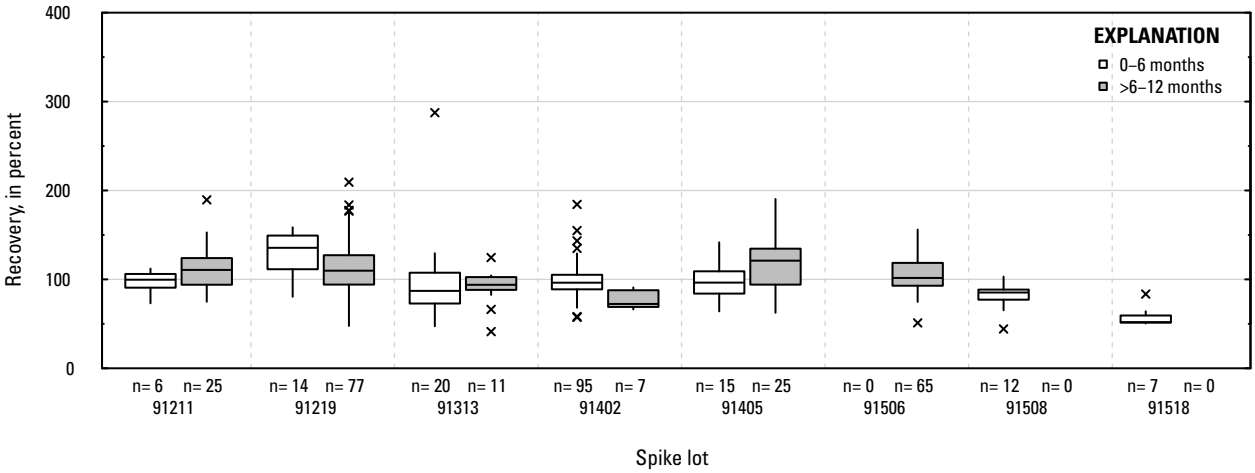
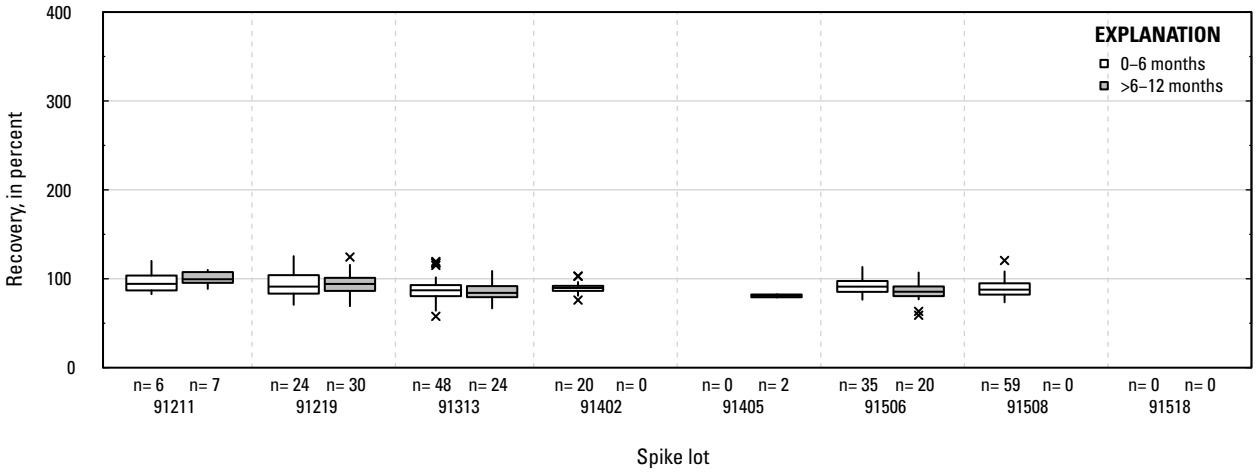
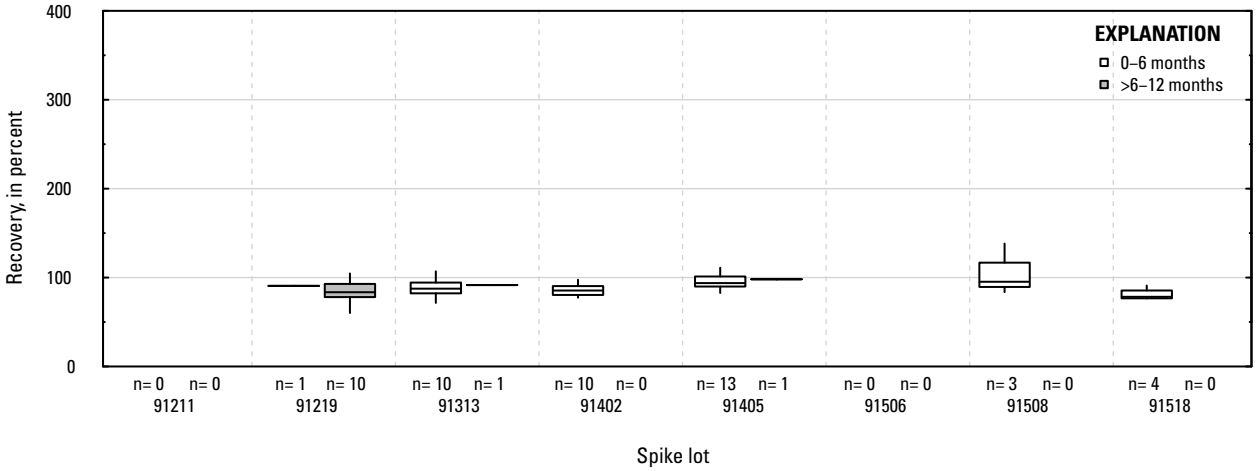


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

VB. **Pyriproxyfen: laboratory reagent spikes**



VC. **Pyriproxyfen: groundwater field matrix spikes**



VD. **Pyriproxyfen: surface water field matrix spikes**

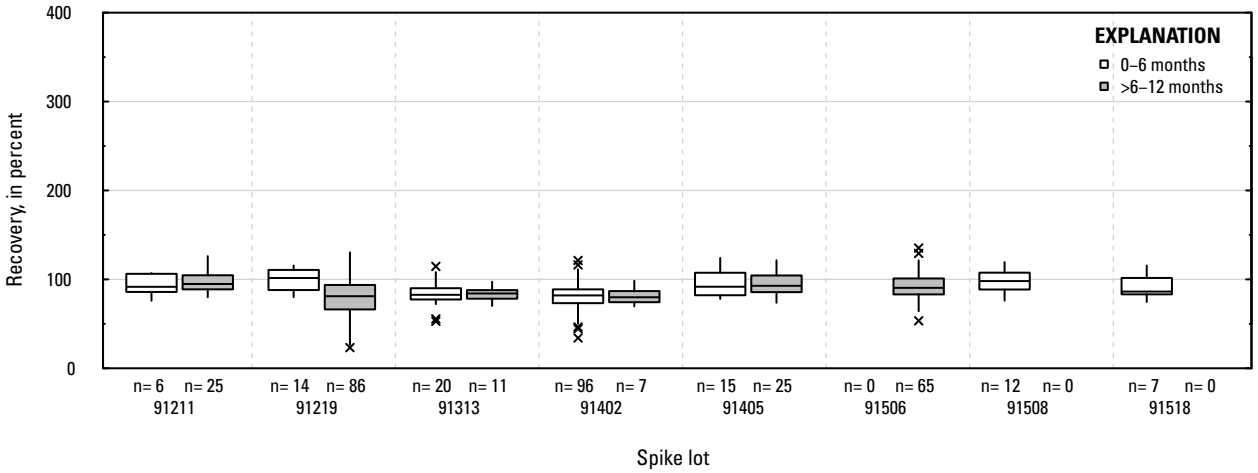
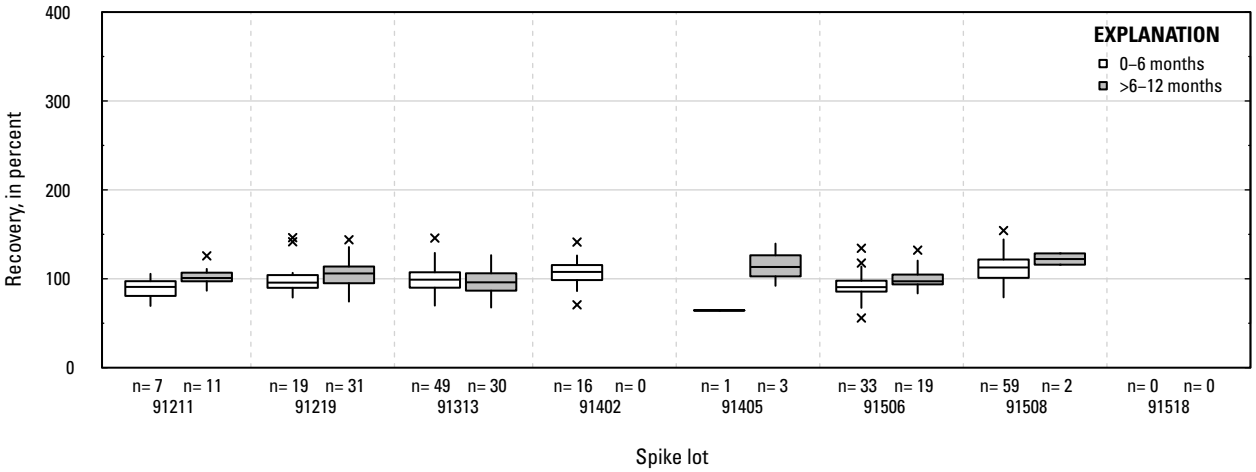
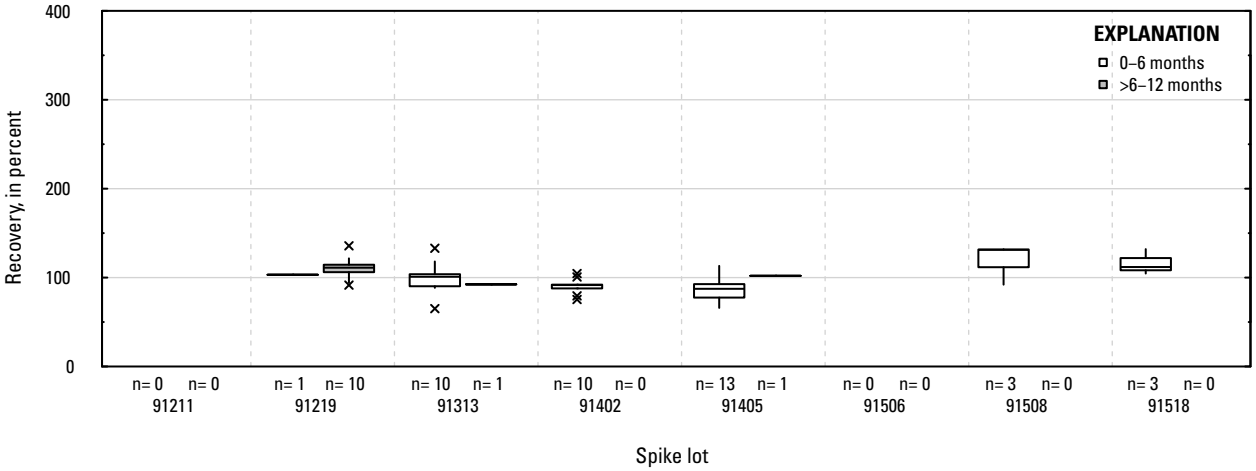


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

VE. **sec–Acetochlor oxanilic acid: laboratory reagent spikes**



VF. **sec–Acetochlor oxanilic acid: groundwater field matrix spikes**



VG. **sec–Acetochlor oxanilic acid: surface water field matrix spikes**

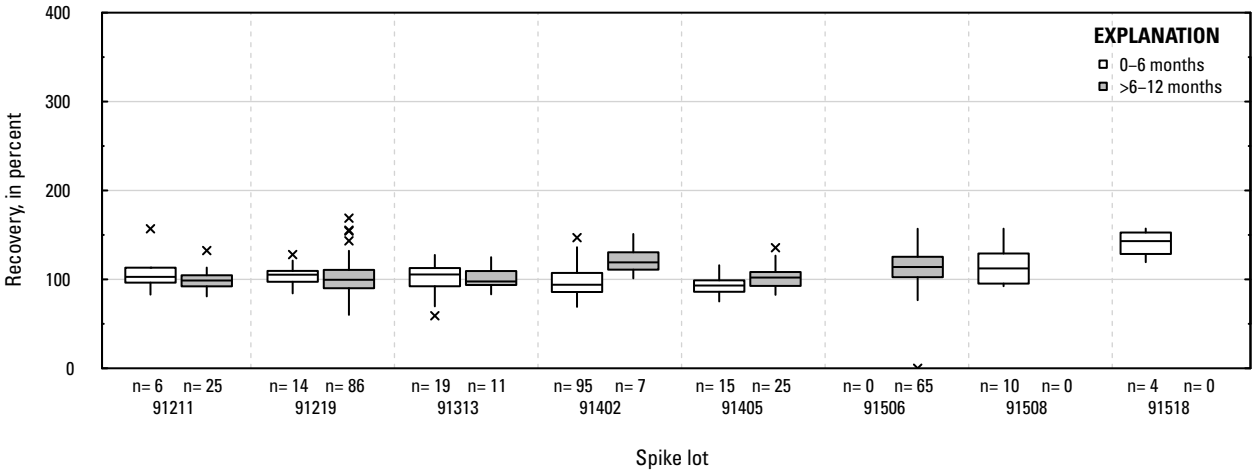
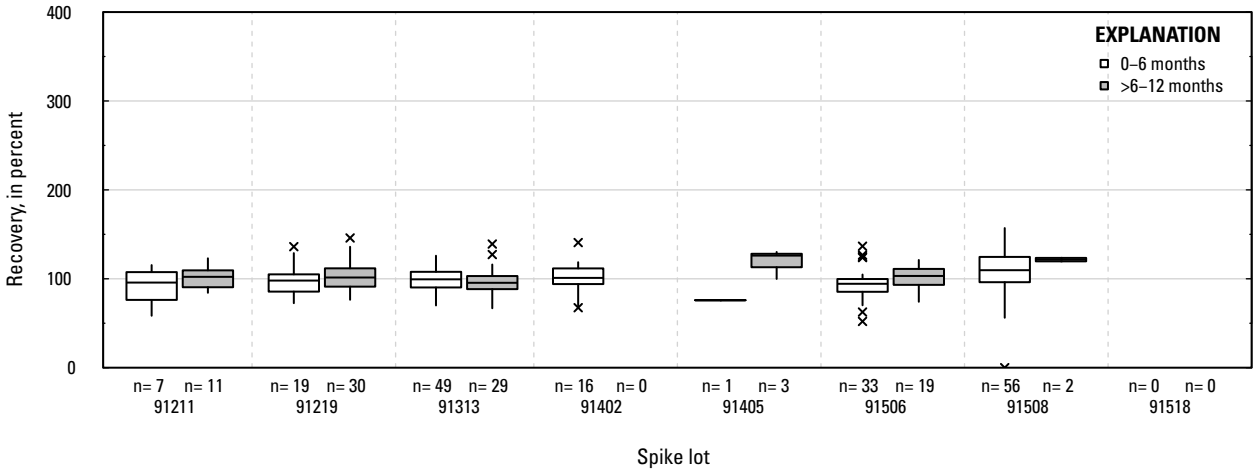
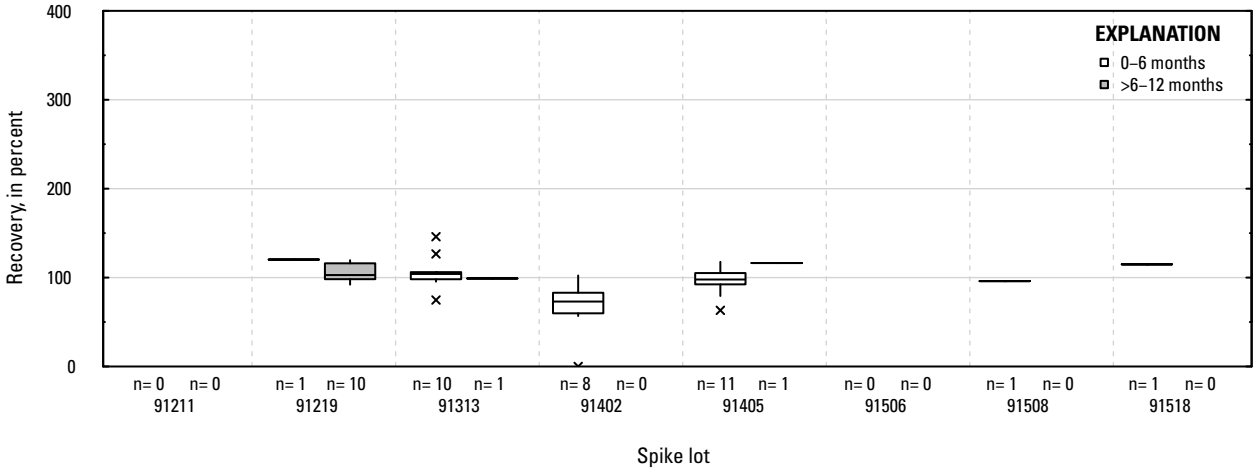


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

VH. **sec–Alachlor oxanilic acid: laboratory reagent spikes**



VI. **sec–Alachlor oxanilic acid: groundwater field matrix spikes**



VJ. **sec–Alachlor oxanilic acid: surface water field matrix spikes**

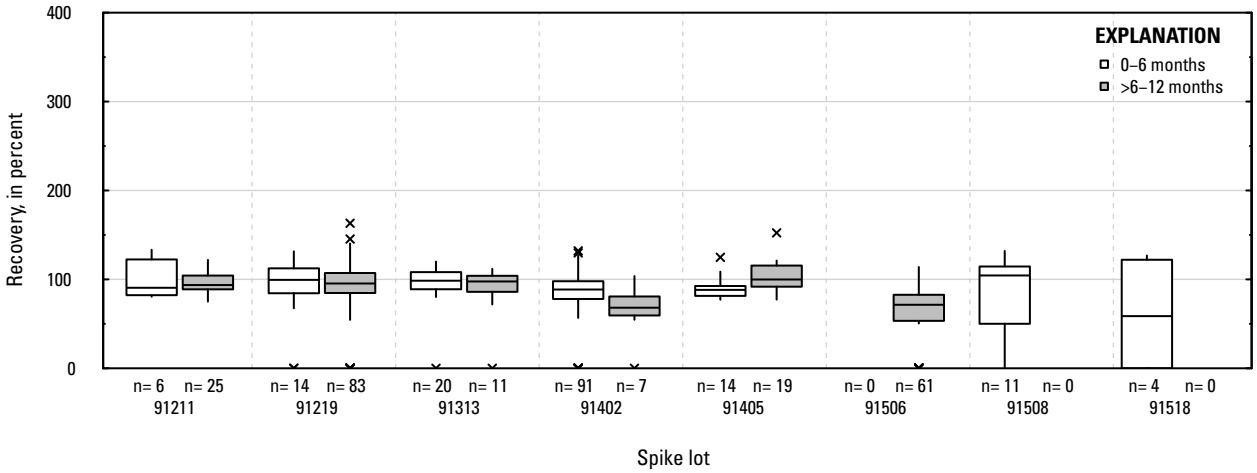
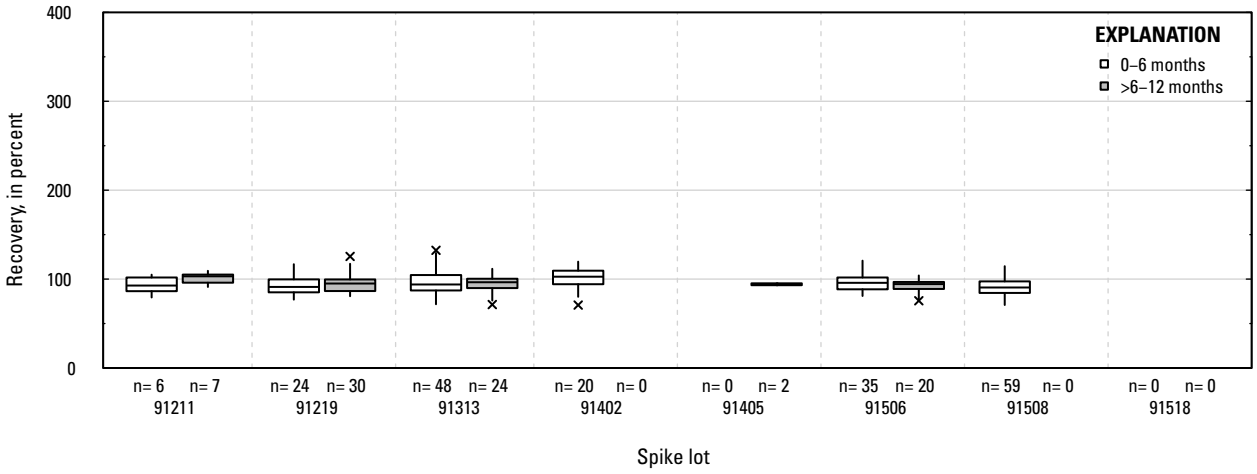
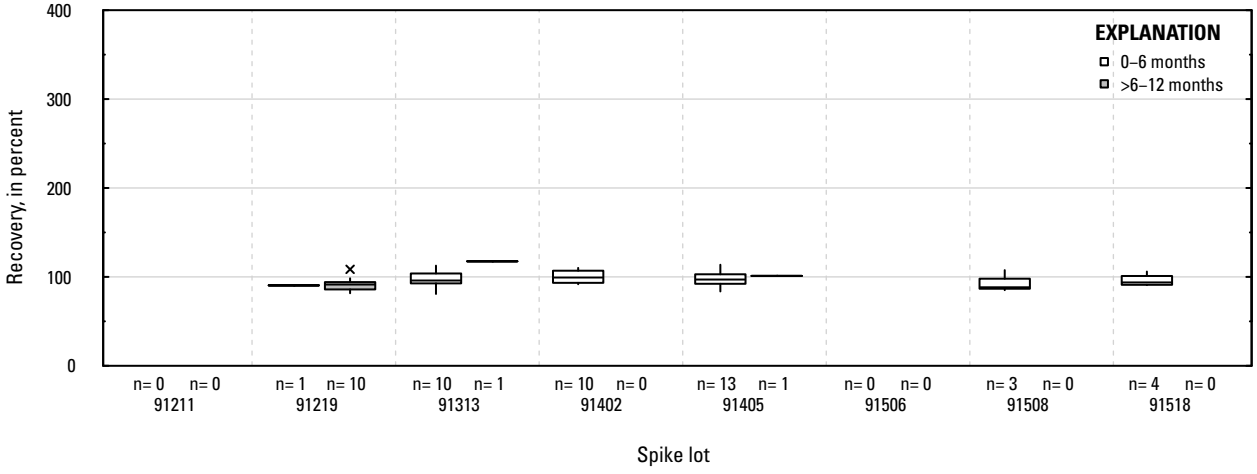


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

VK. **Siduron: laboratory reagent spikes**



VL. **Siduron: groundwater field matrix spikes**



VM. **Siduron: surface water field matrix spikes**

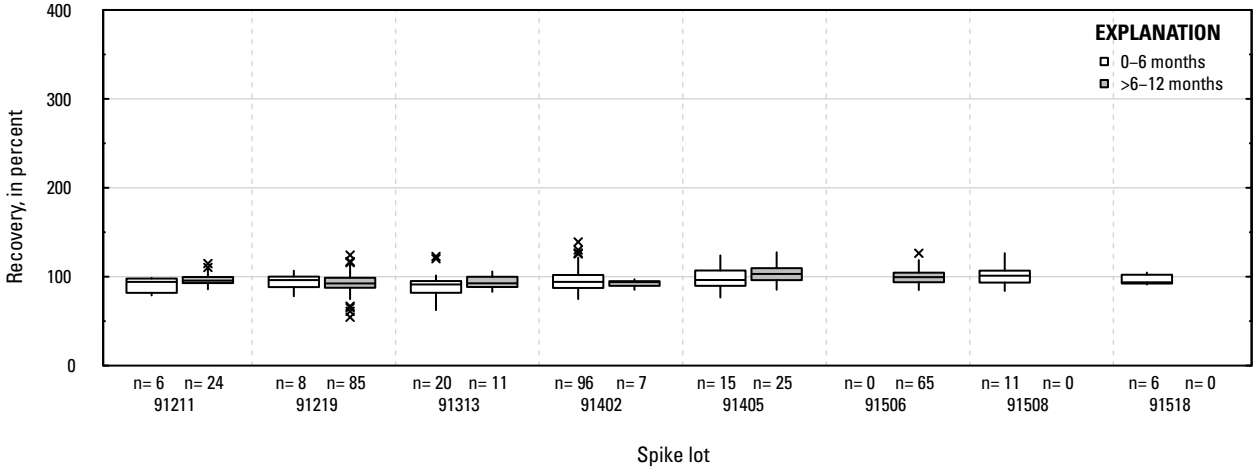
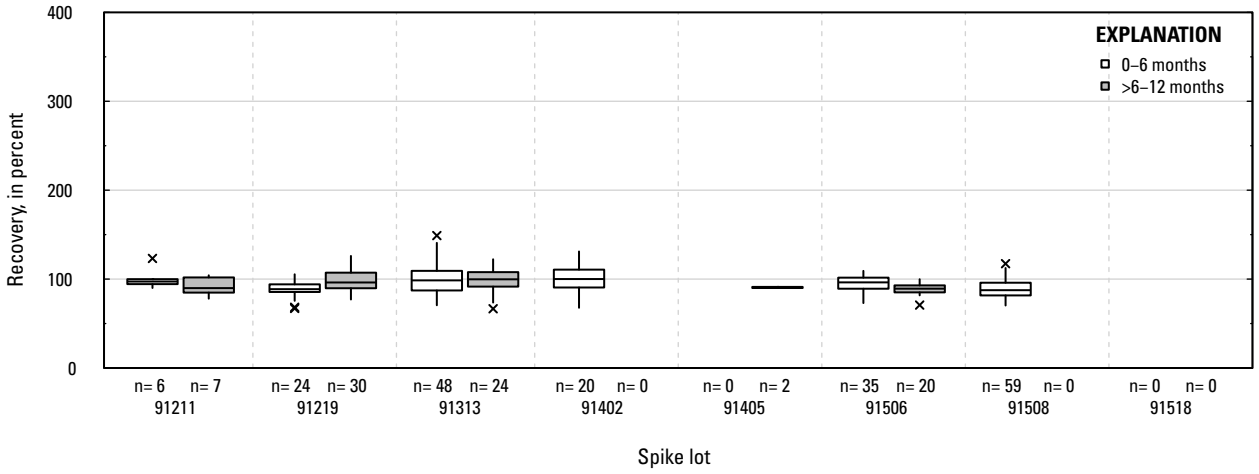
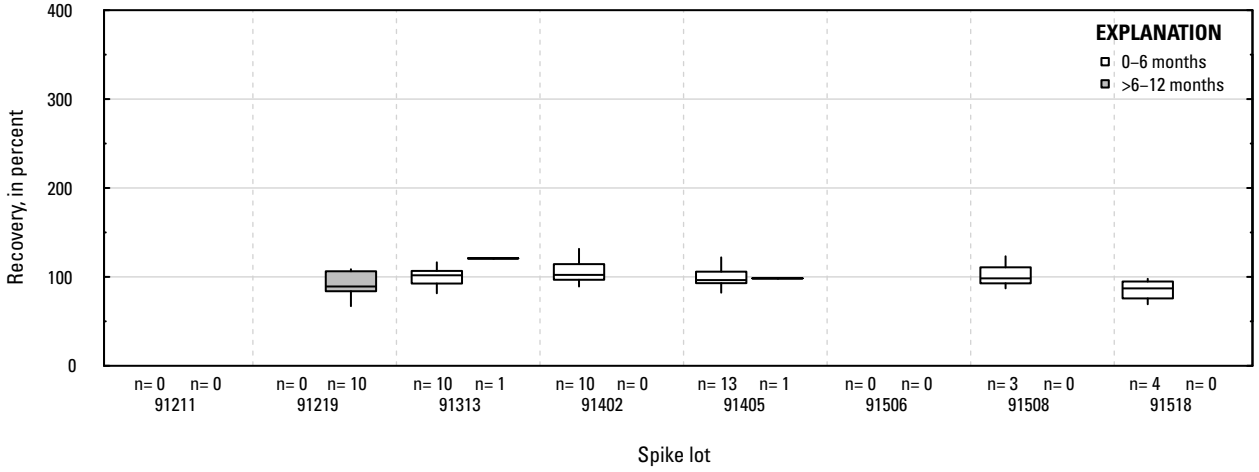


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

VN. **Simazine: laboratory reagent spikes**



VO. **Simazine: groundwater field matrix spikes**



VP. **Simazine: surface water field matrix spikes**

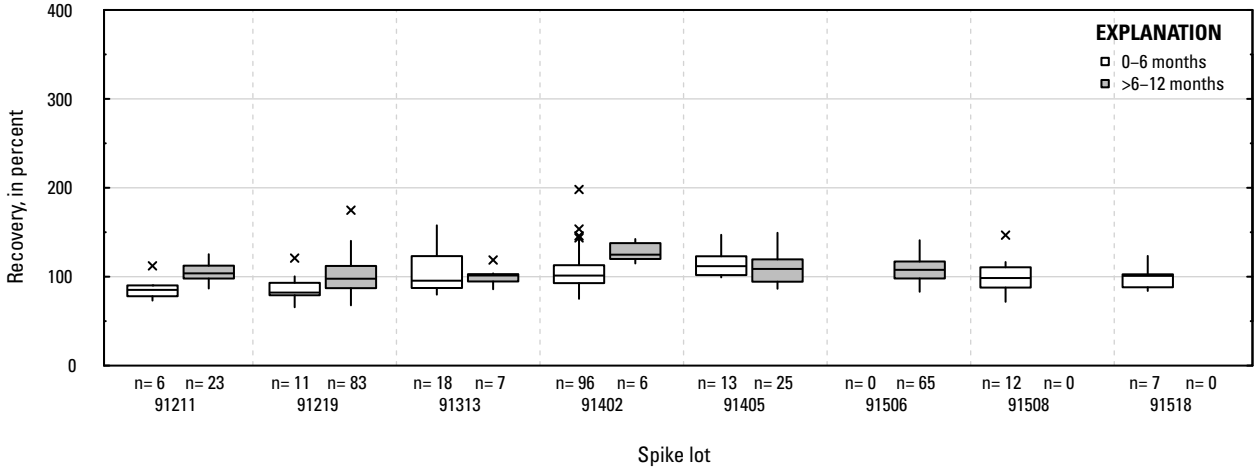
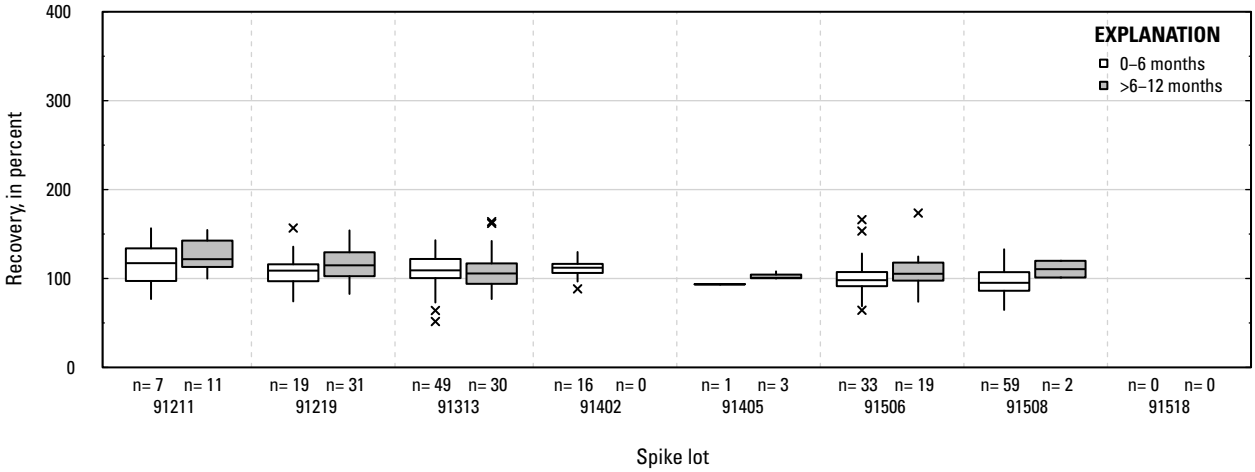
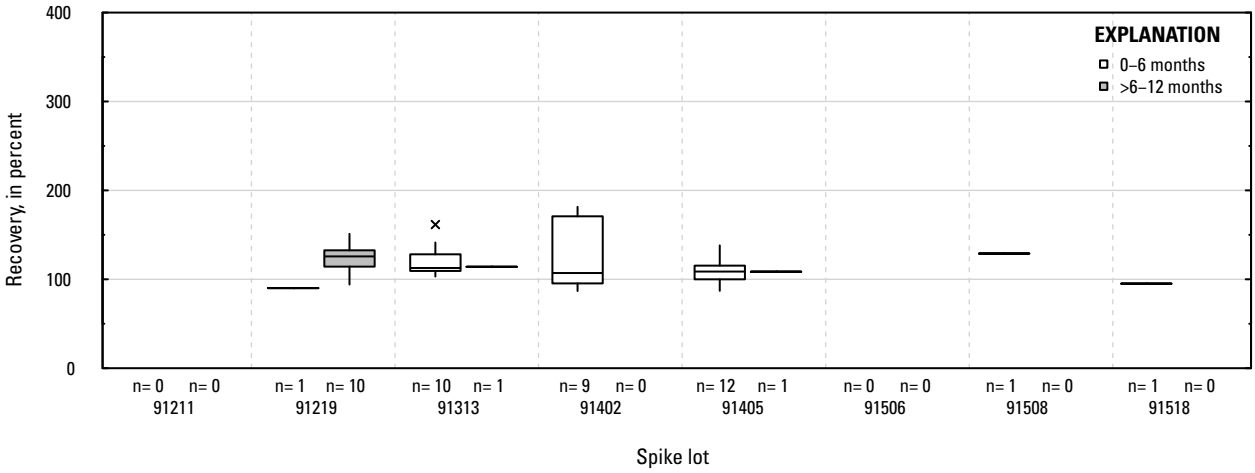


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

VQ. **Sulfentrazone: laboratory reagent spikes**



VR. **Sulfentrazone: groundwater field matrix spikes**



VS. **Sulfentrazone: surface water field matrix spikes**

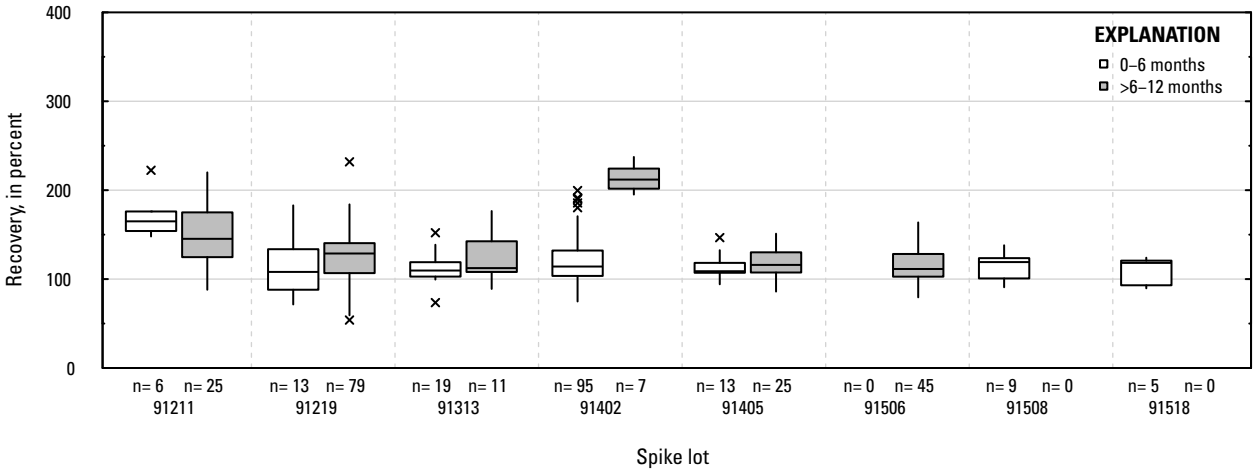
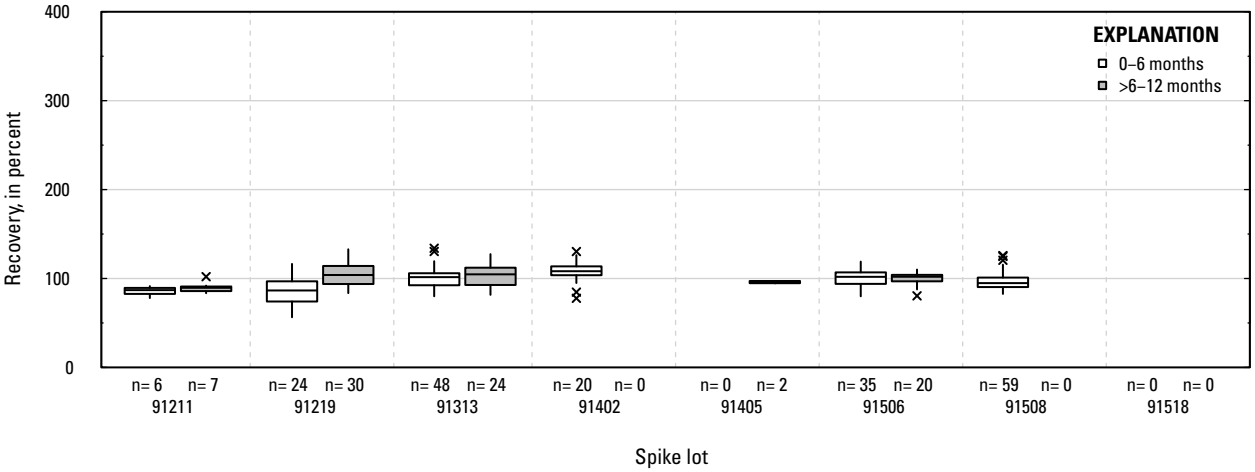
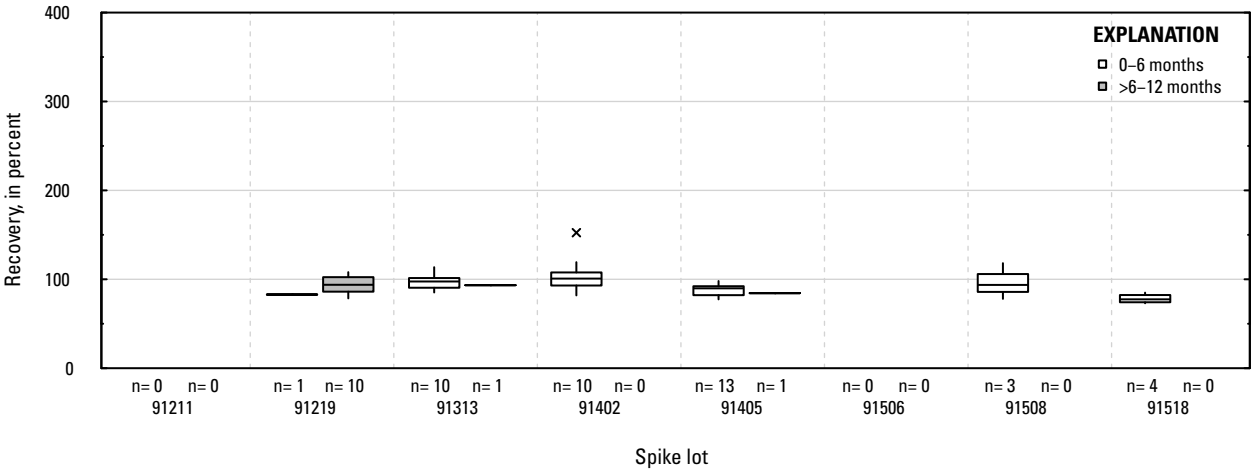


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

VT. **Sulfometuron–methyl: laboratory reagent spikes**



VU. **Sulfometuron–methyl: groundwater field matrix spikes**



VV. **Sulfometuron–methyl: surface water field matrix spikes**

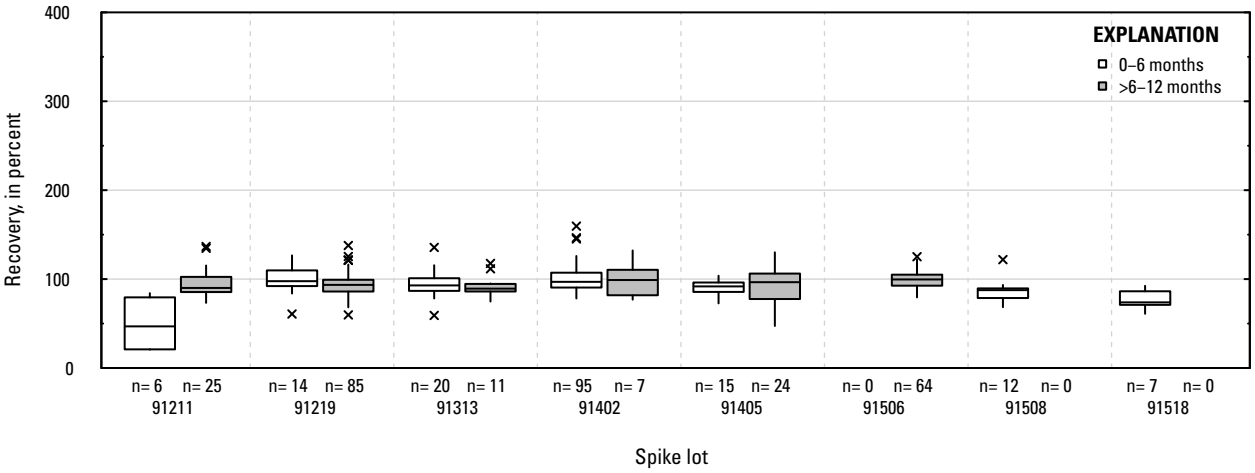
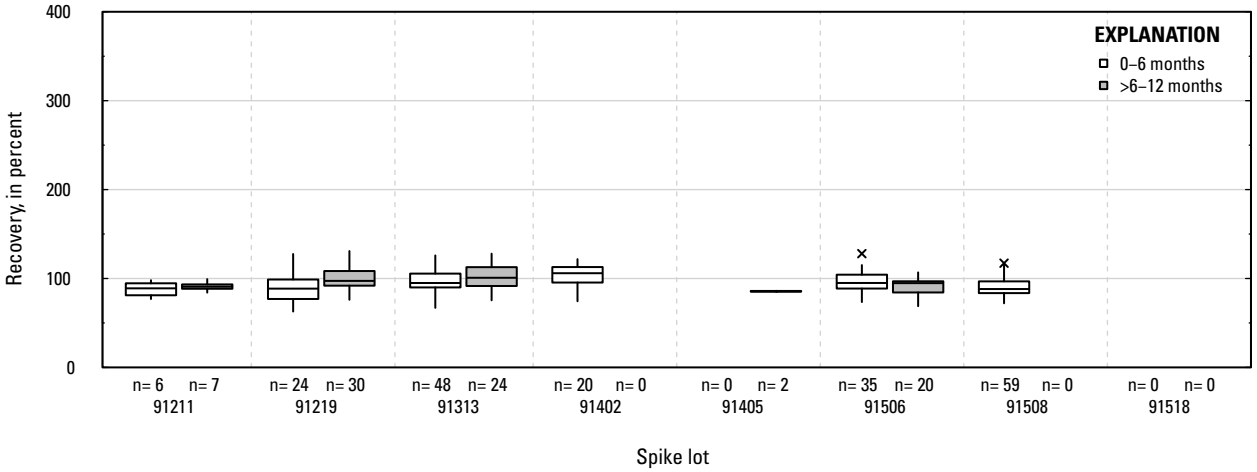
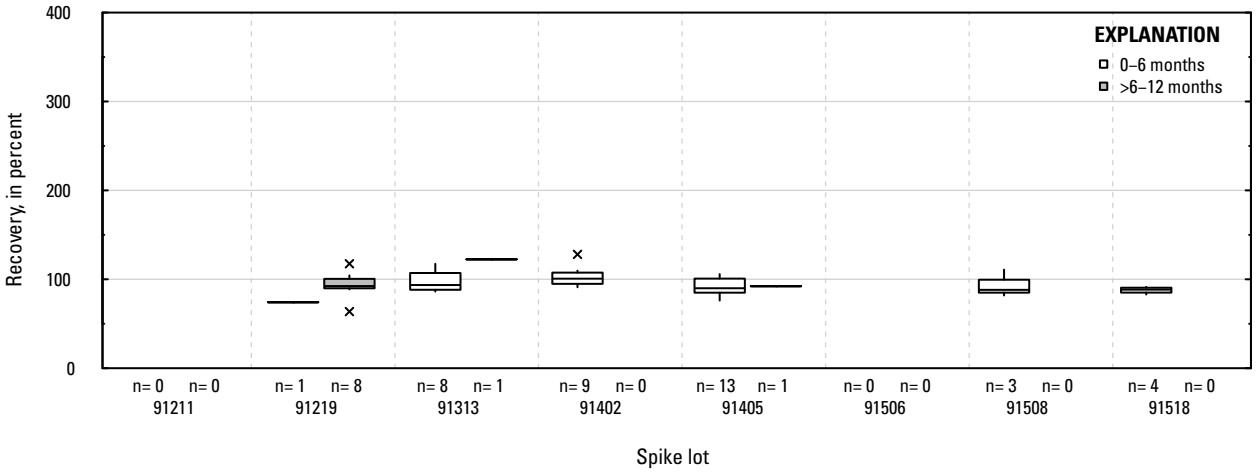


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

VW. **Sulfosulfuron: laboratory reagent spikes**



VX. **Sulfosulfuron: groundwater field matrix spikes**



VY. **Sulfosulfuron: surface water field matrix spikes**

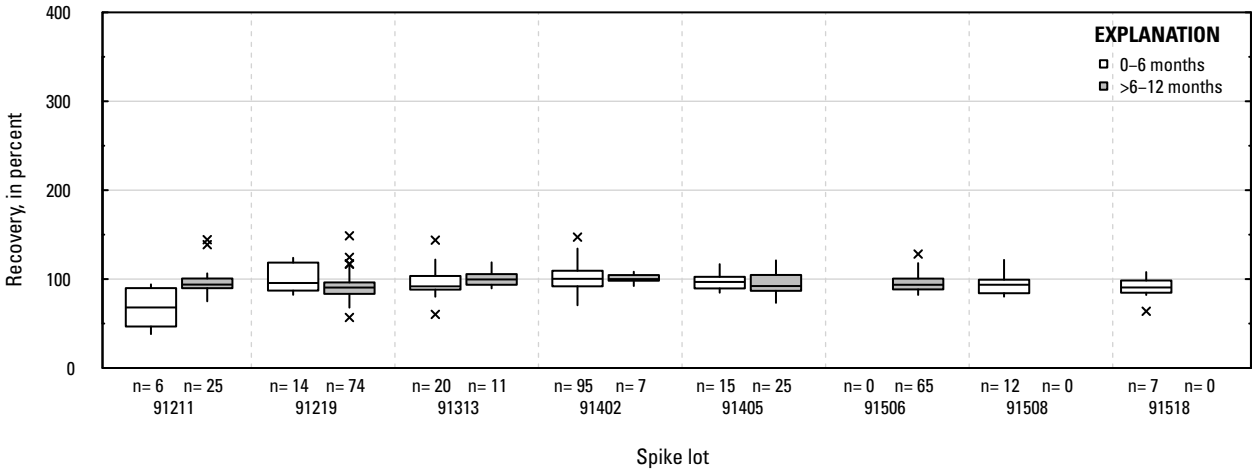
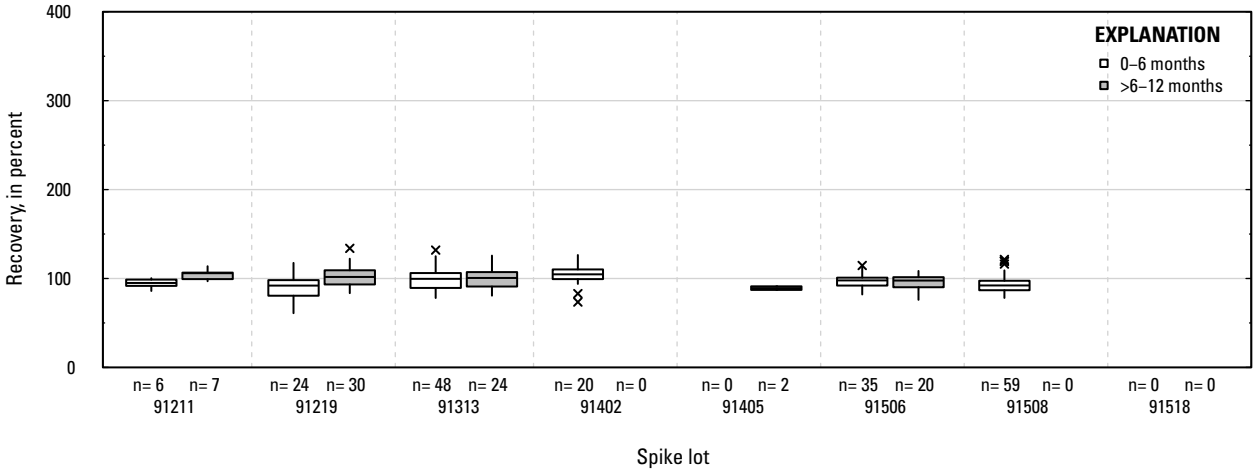
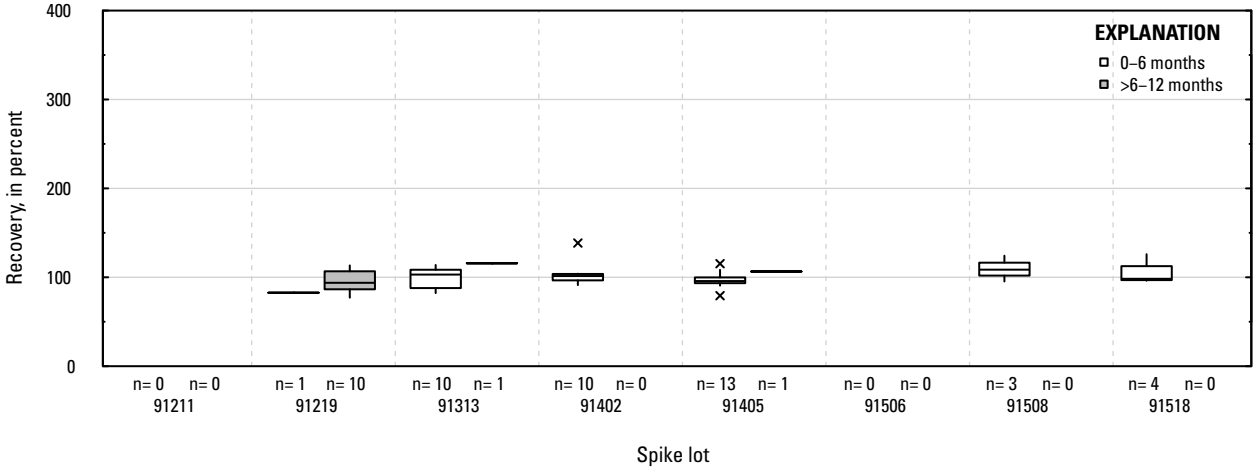


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

VZ. **Sulfosulfuron ethyl sulfone: laboratory reagent spikes**



WA. **Sulfosulfuron ethyl sulfone: groundwater field matrix spikes**



WB. **Sulfosulfuron ethyl sulfone: surface water field matrix spikes**

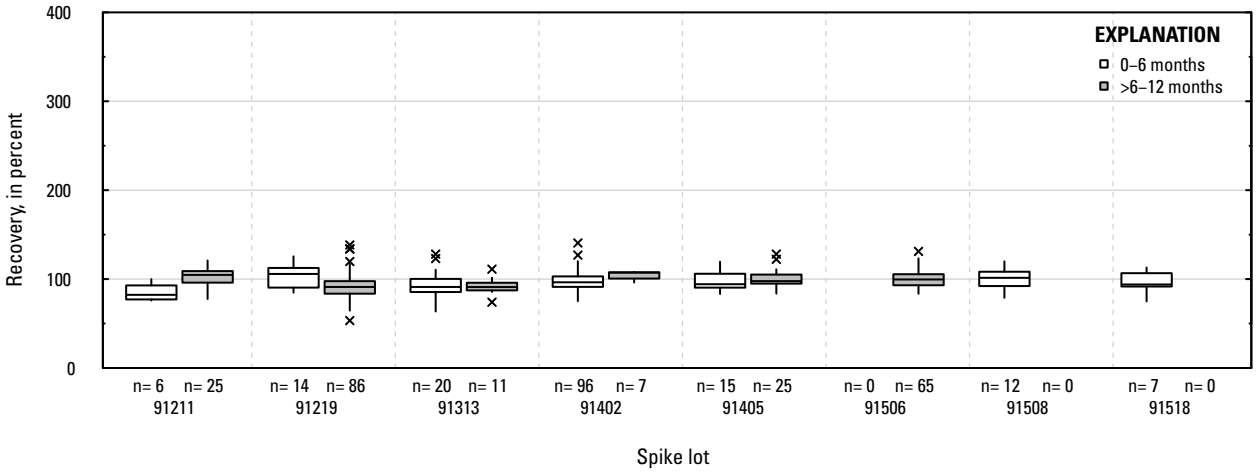
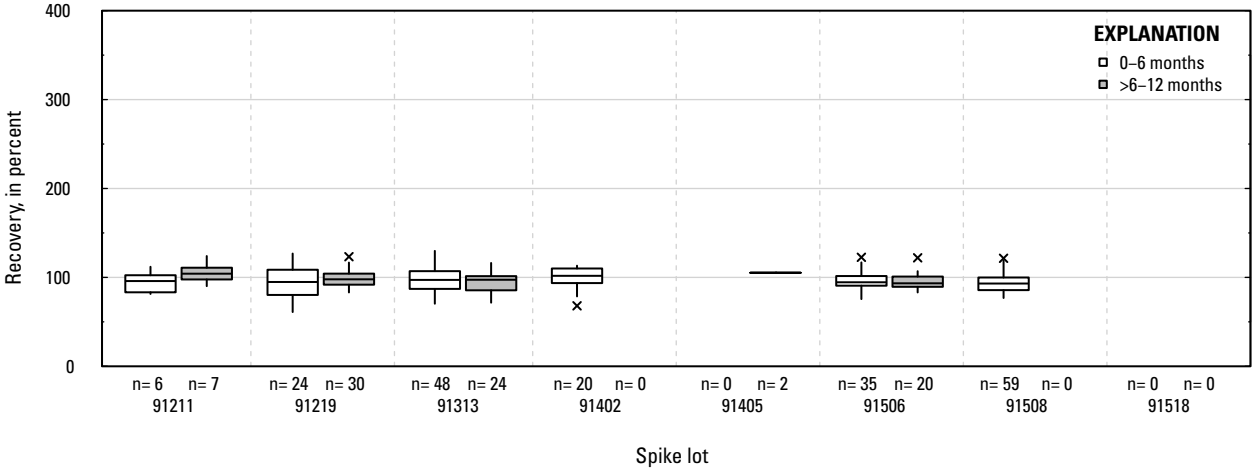
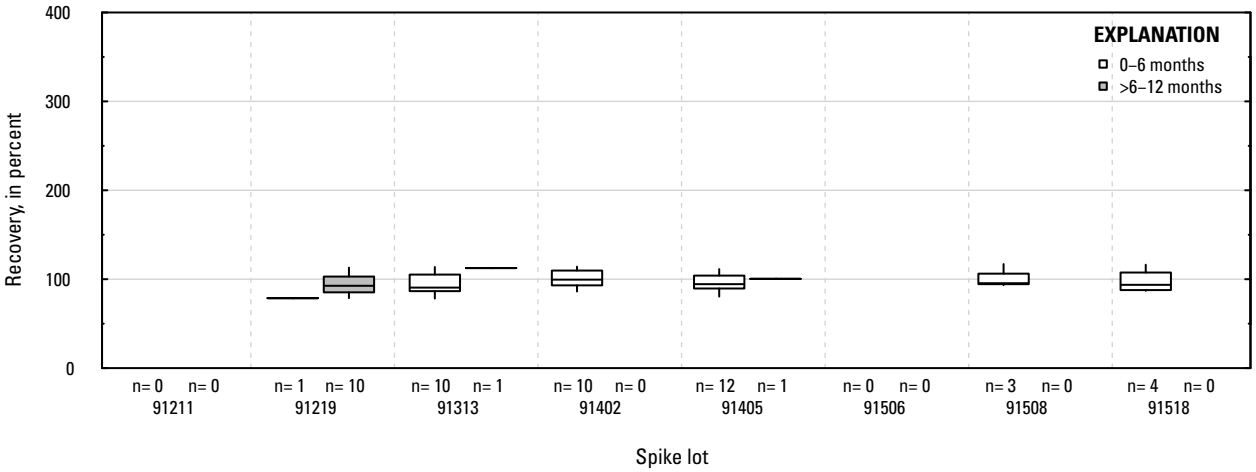


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

WC. **Tebuconazole: laboratory reagent spikes**



WD. **Tebuconazole: groundwater field matrix spikes**



WE. **Tebuconazole: surface water field matrix spikes**

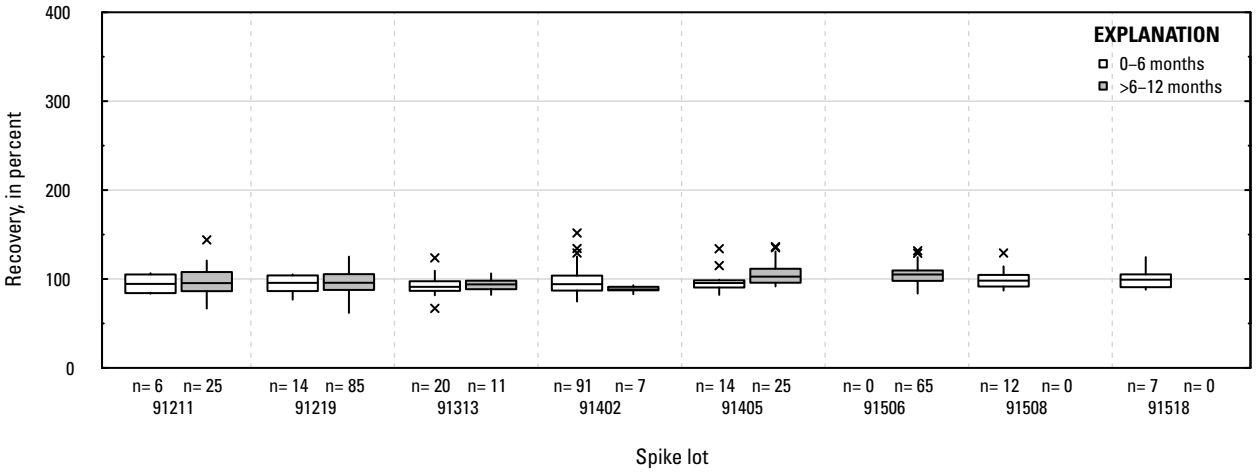
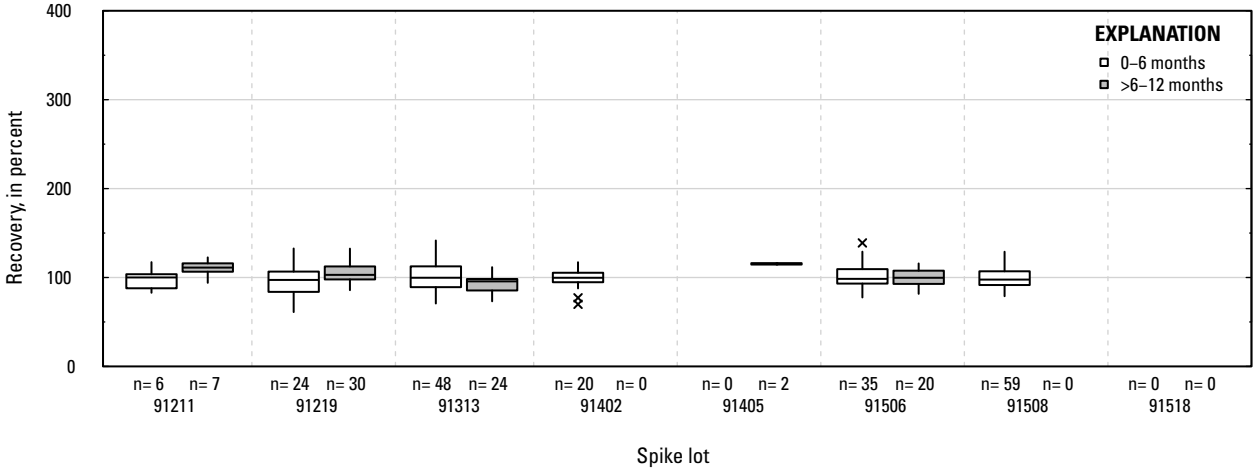
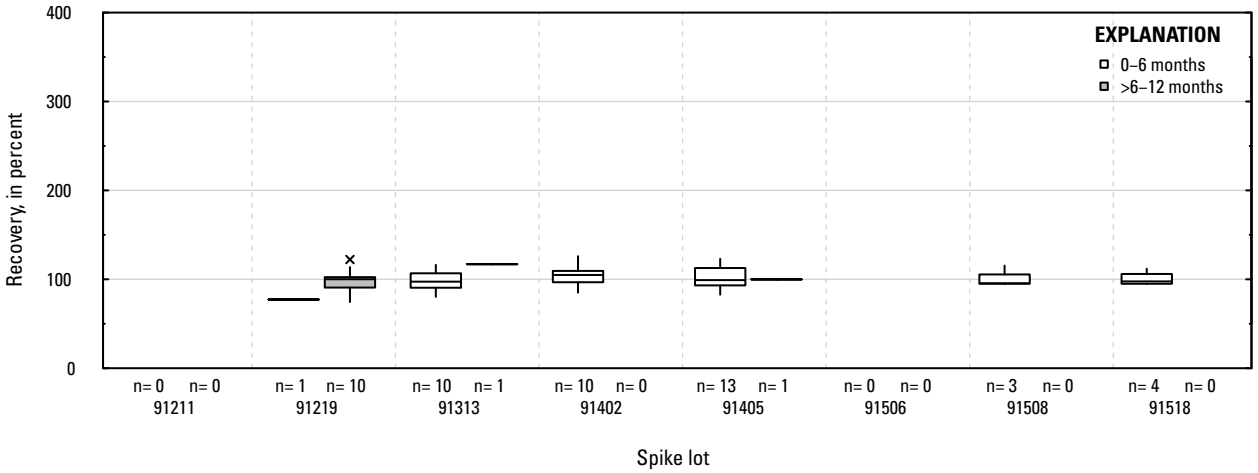


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

WF. **Tebufenozide: laboratory reagent spikes**



WG. **Tebufenozide: groundwater field matrix spikes**



WH. **Tebufenozide: surface water field matrix spikes**

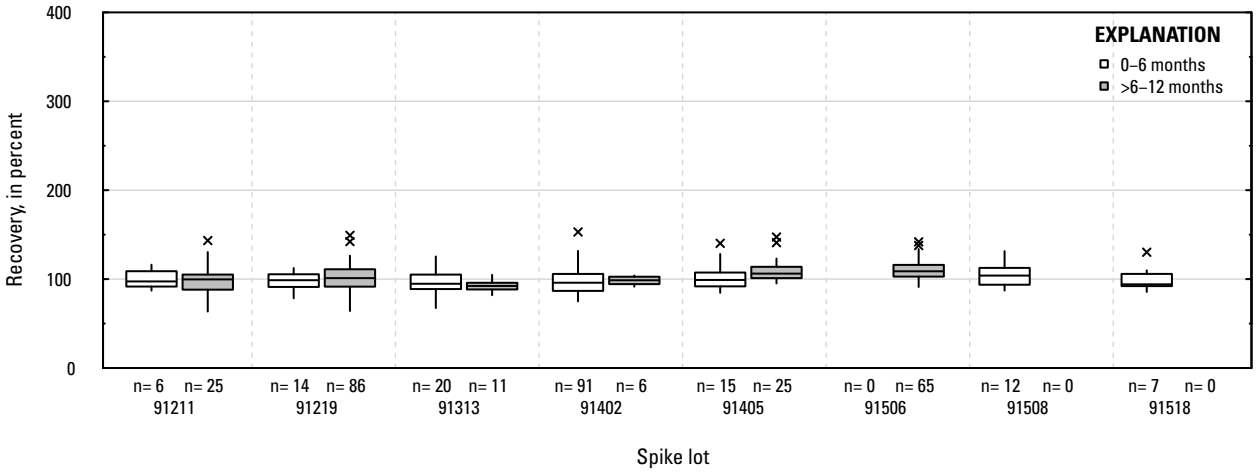
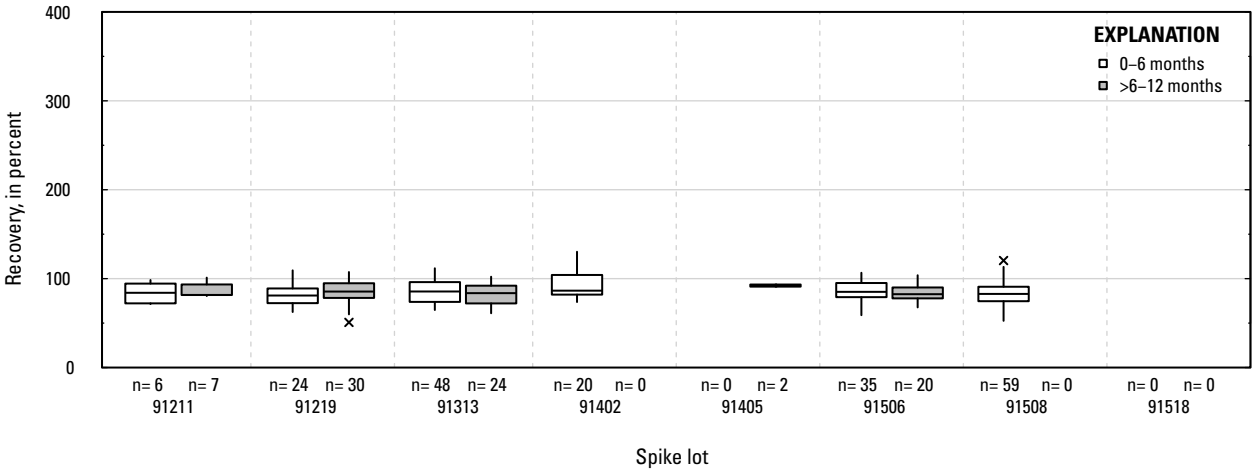
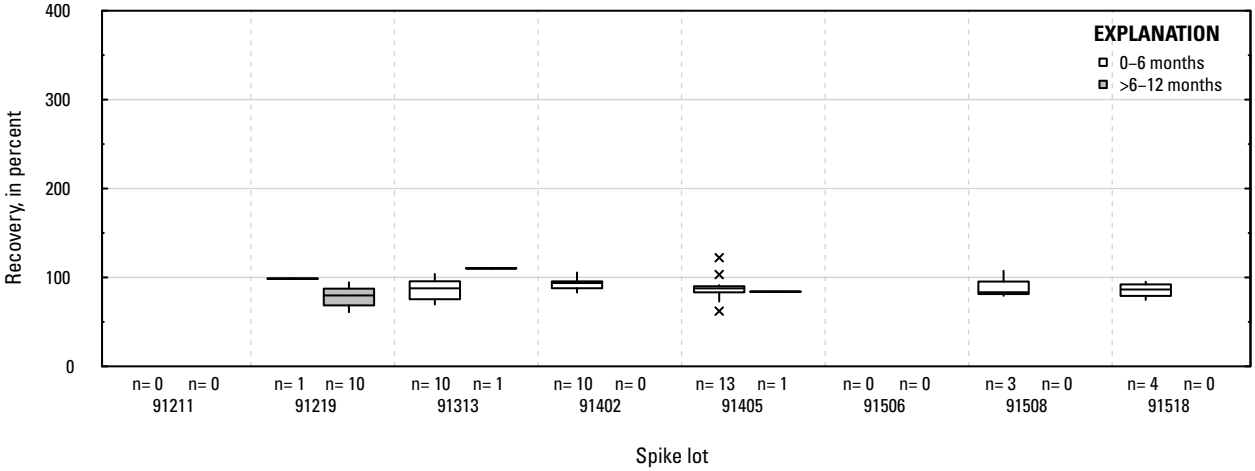


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

WI. **Tebupirimphos: laboratory reagent spikes**



WJ. **Tebupirimphos: groundwater field matrix spikes**



WK. **Tebupirimphos: surface water field matrix spikes**

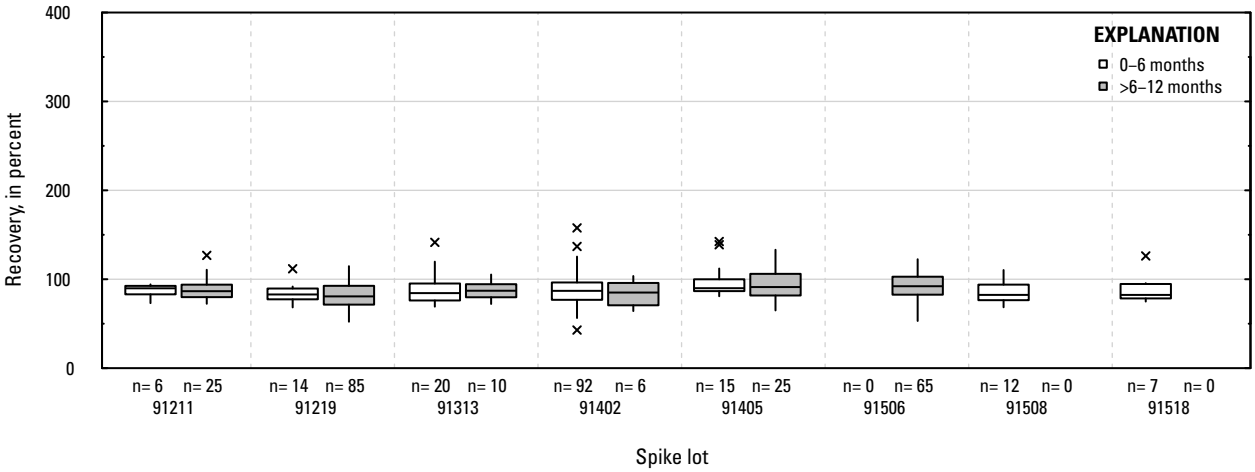
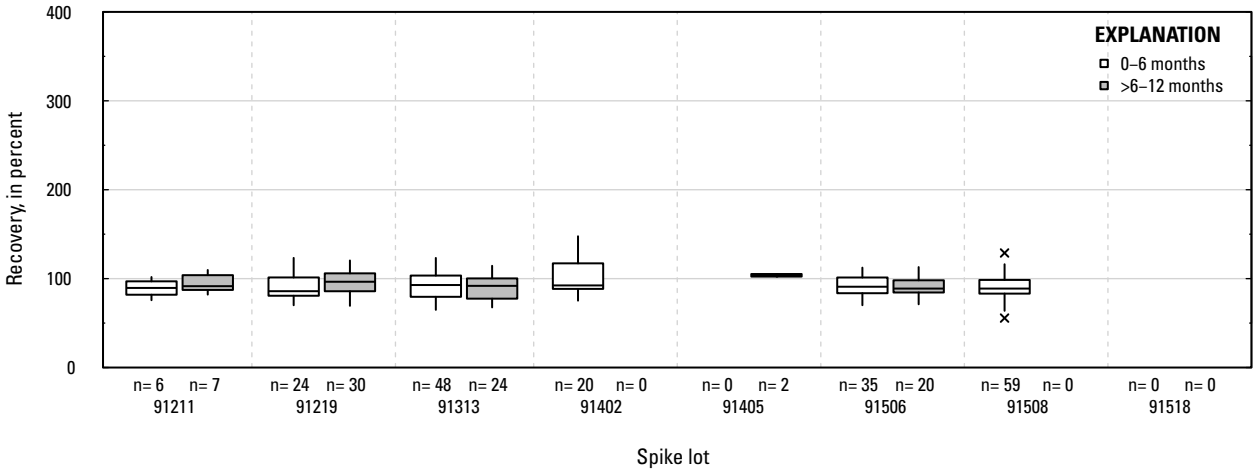
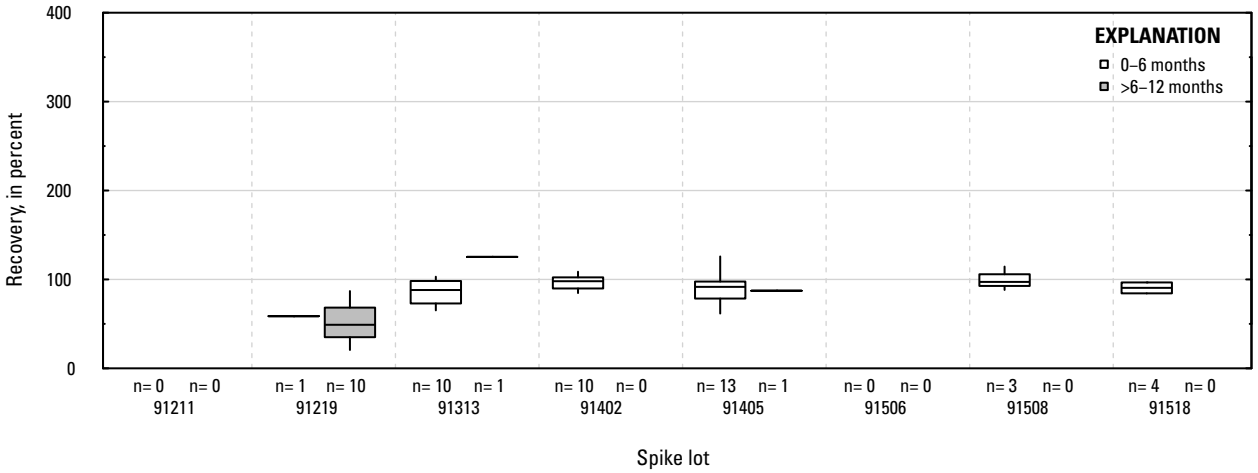


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

WL. **Tebupirimfos oxon: laboratory reagent spikes**



WM. **Tebupirimfos oxon: groundwater field matrix spikes**



WN. **Tebupirimfos oxon: surface water field matrix spikes**

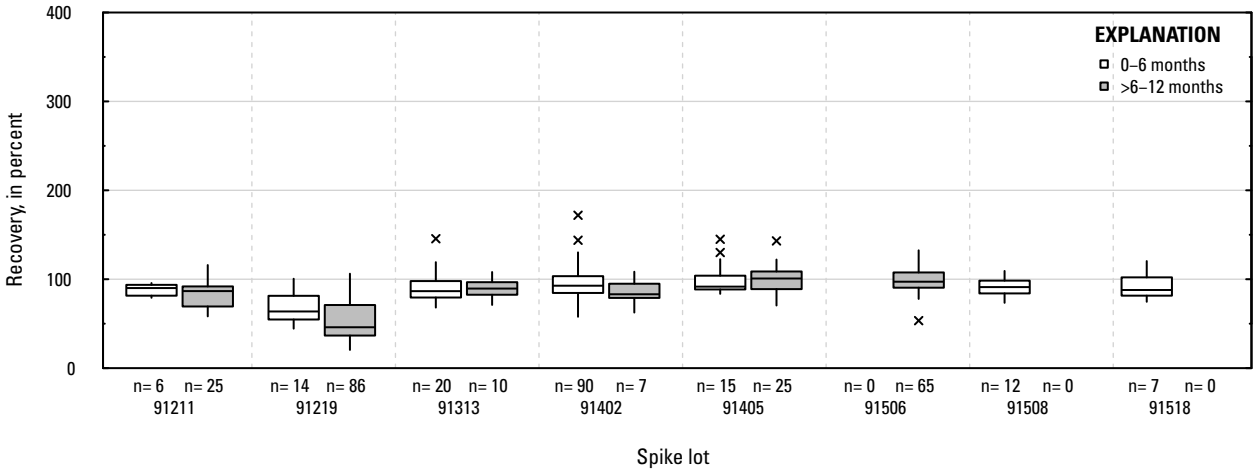
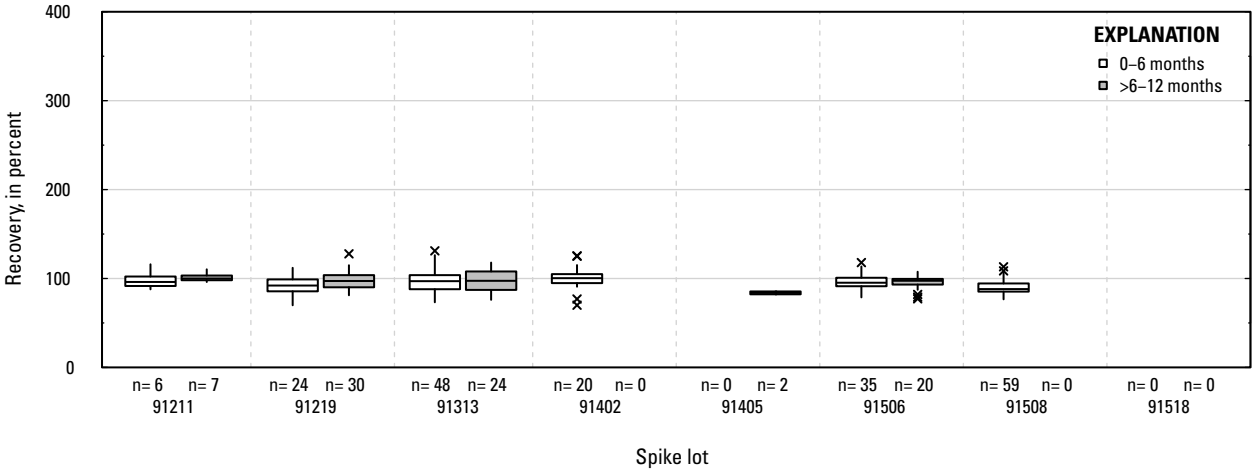
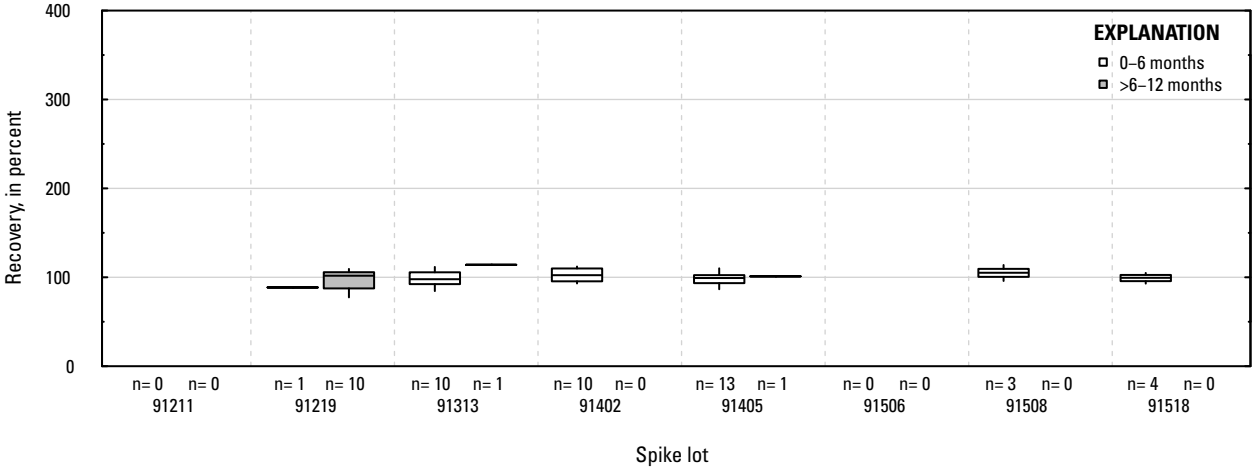


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

WO. **Tebuthiuron: laboratory reagent spikes**



WP. **Tebuthiuron: groundwater field matrix spikes**



WQ. **Tebuthiuron: surface water field matrix spikes**

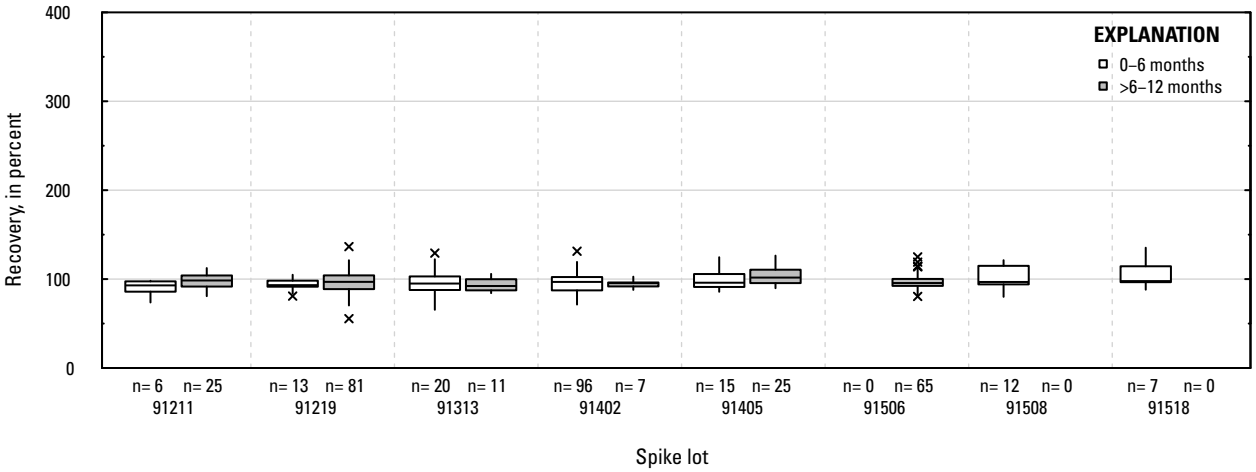
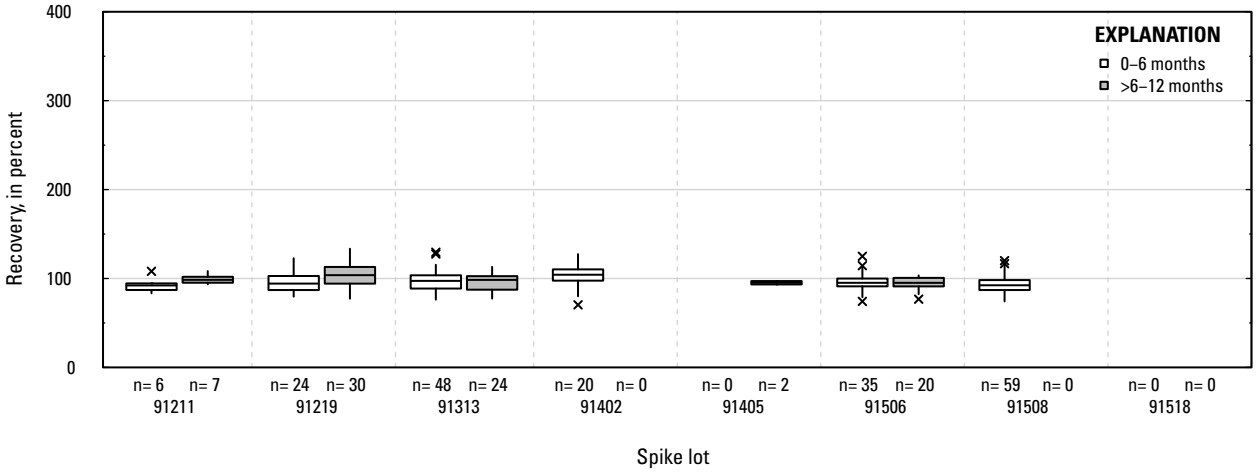
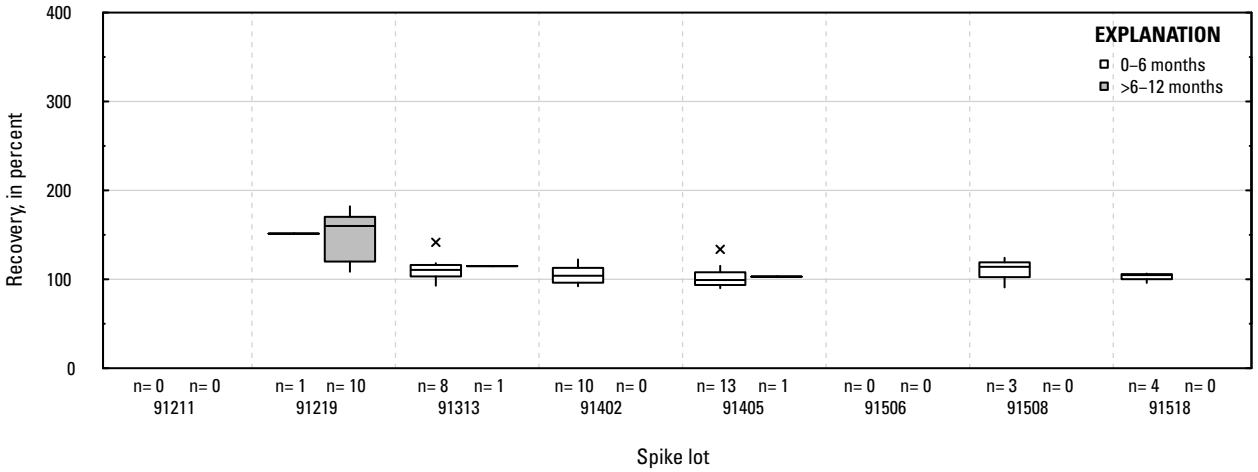


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

WR. **Tebuthiuron TP 104: laboratory reagent spikes**



WS. **Tebuthiuron TP 104: groundwater field matrix spikes**



WT. **Tebuthiuron TP 104: surface water field matrix spikes**

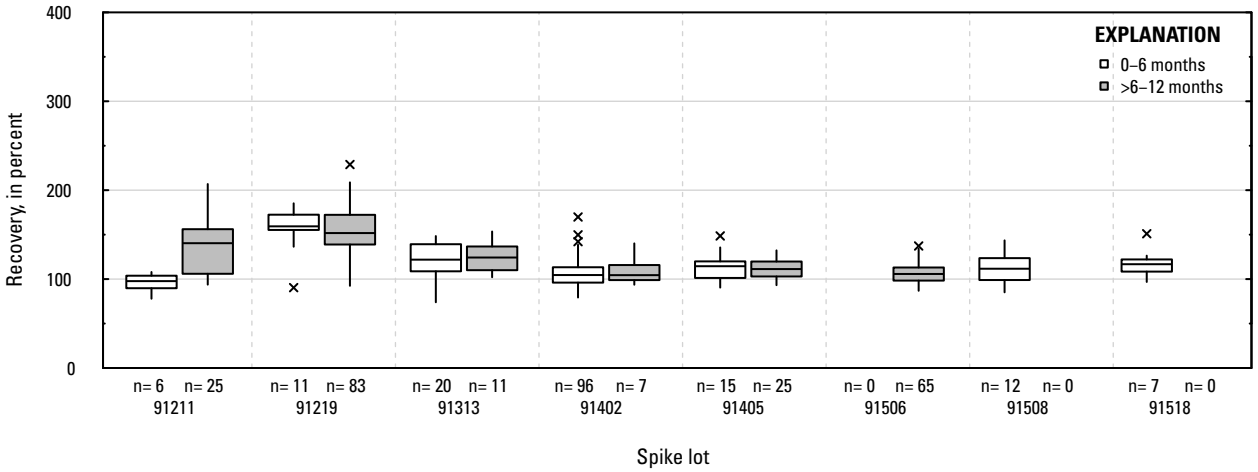
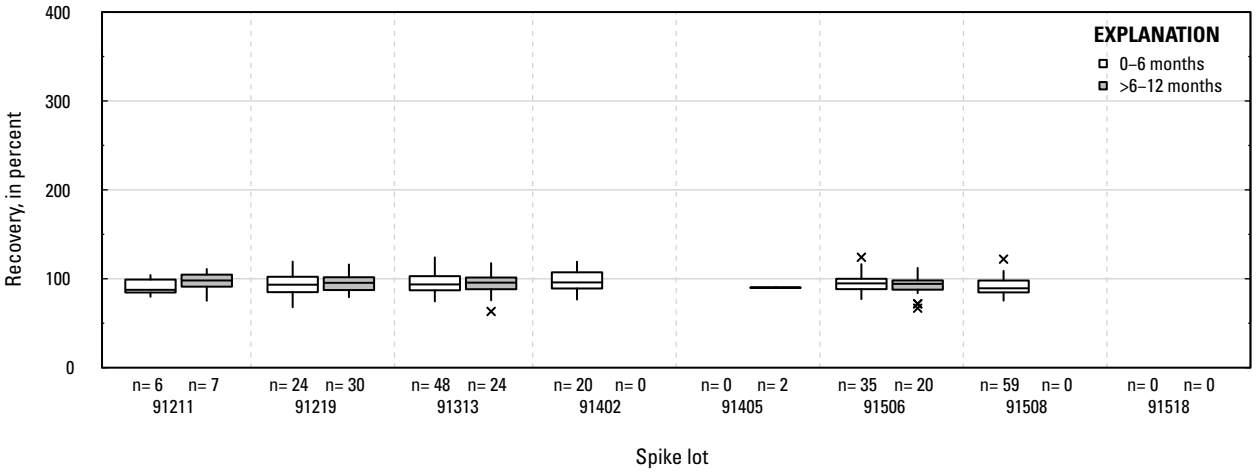
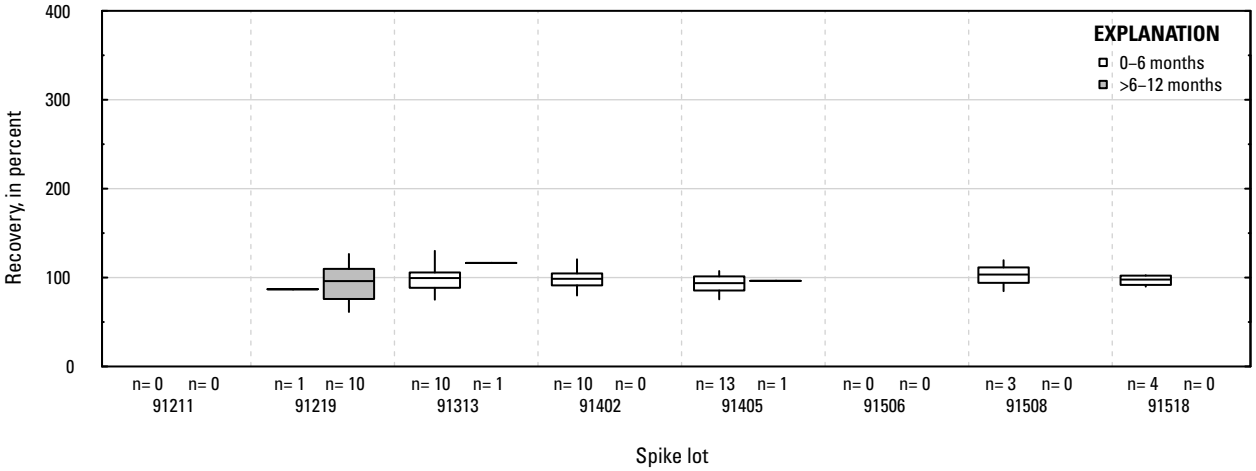


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

WU. **Tebuthiuron Transformation Product 106: laboratory reagent spikes**



WV. **Tebuthiuron Transformation Product 106: groundwater field matrix spikes**



WW. **Tebuthiuron Transformation Product 106: surface water field matrix spikes**

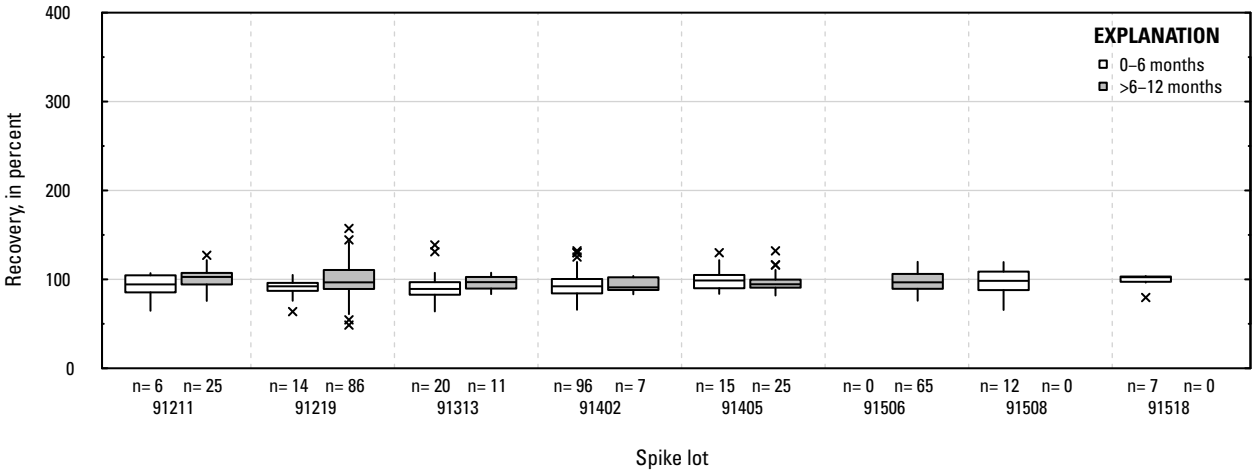
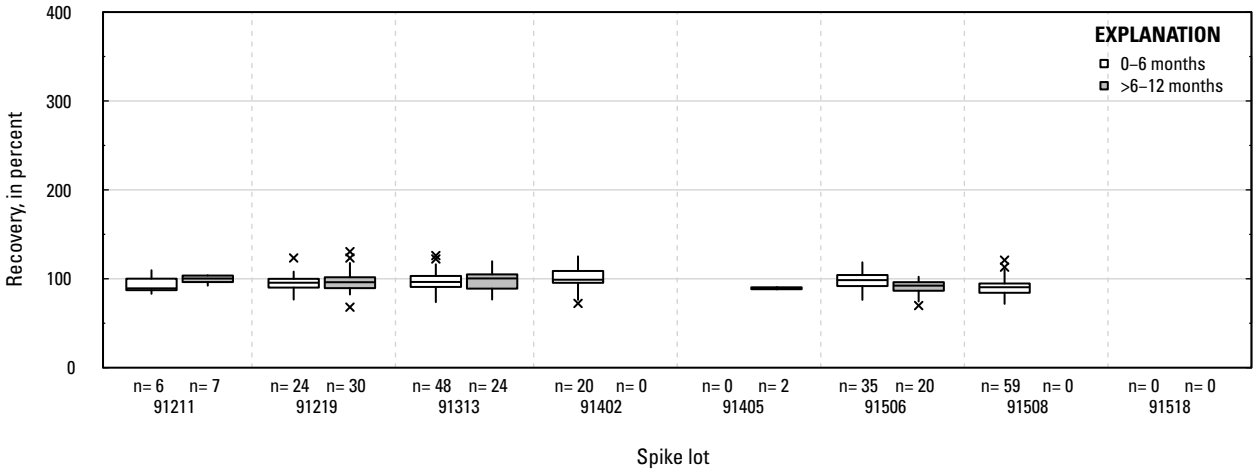
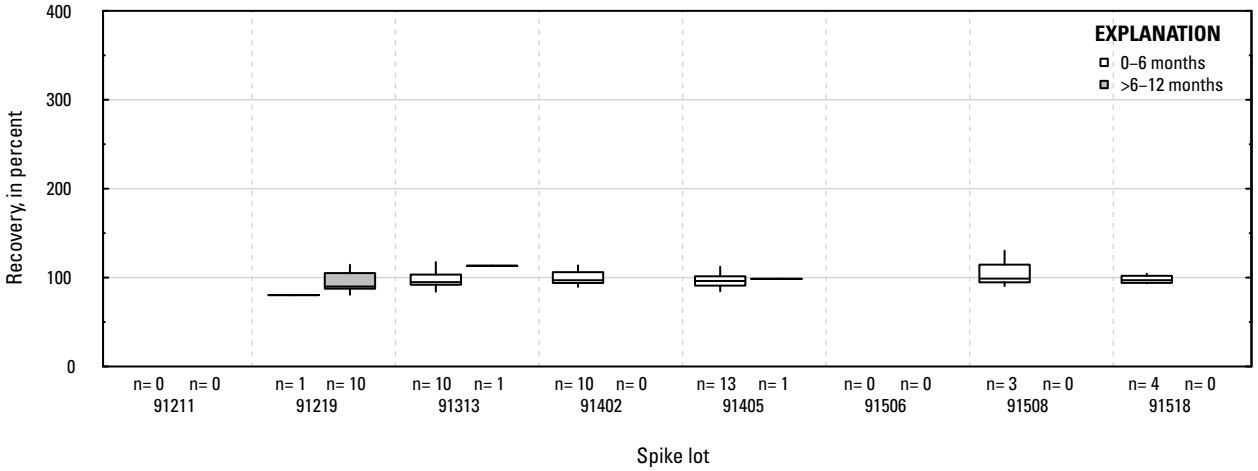


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

WX. **Tebuthiuron TP el108: laboratory reagent spikes**



WY. **Tebuthiuron TP el108: groundwater field matrix spikes**



WZ. **Tebuthiuron TP el108: surface water field matrix spikes**

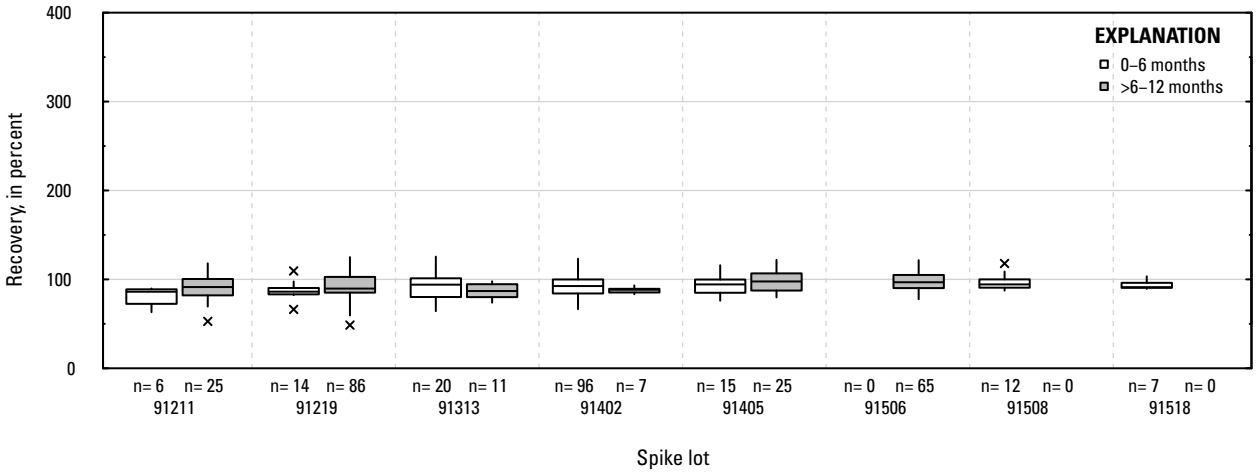
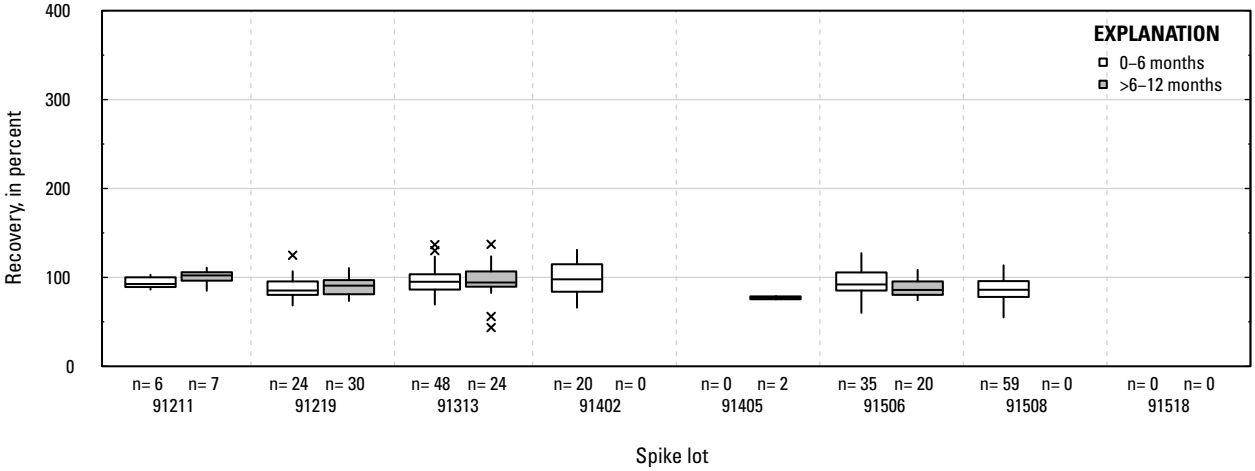
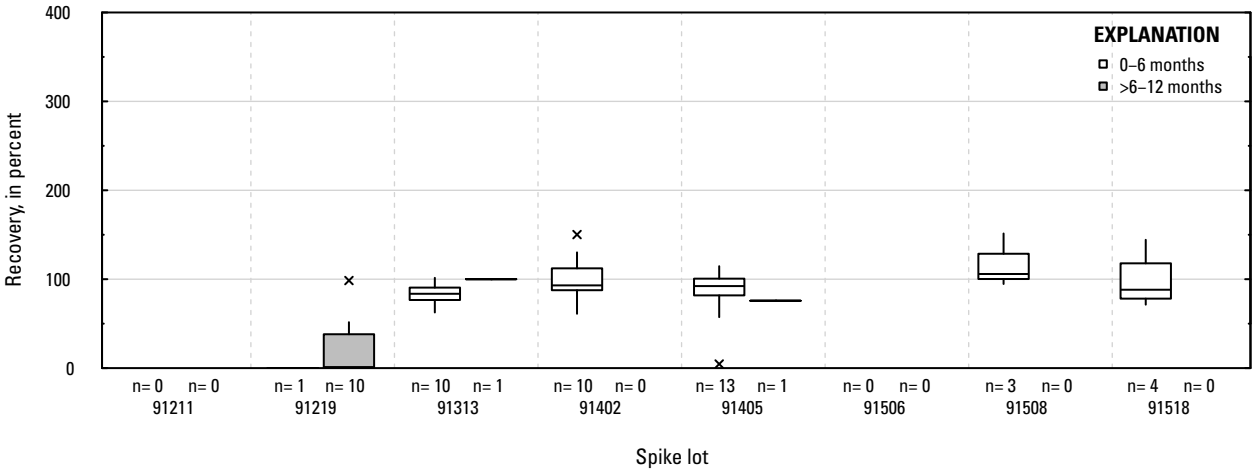


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

XA. **Tebuthiuron TP 109 (OH): laboratory reagent spikes**



XB. **Tebuthiuron TP 109 (OH): groundwater field matrix spikes**



XC. **Tebuthiuron TP 109 (OH): surface water field matrix spikes**

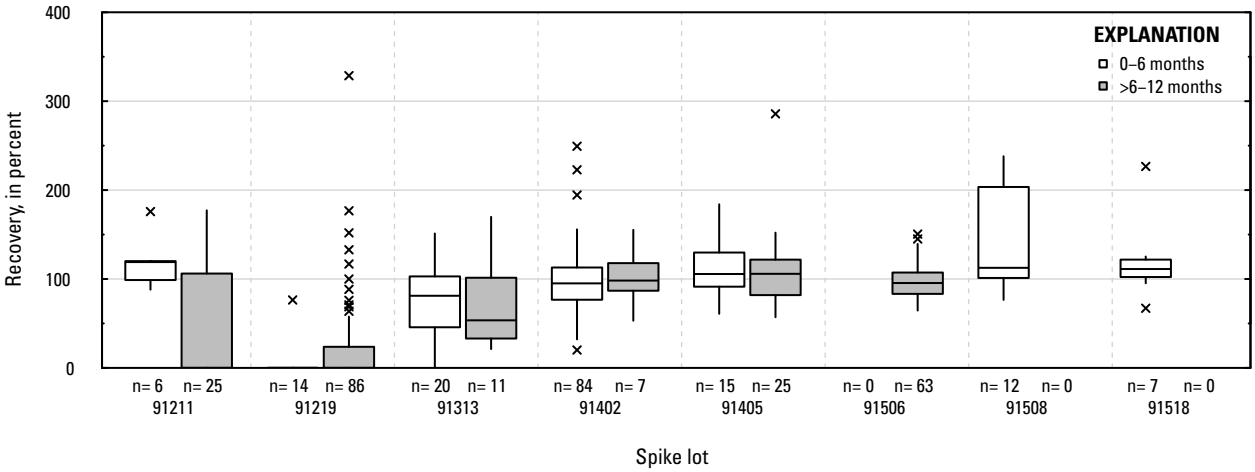
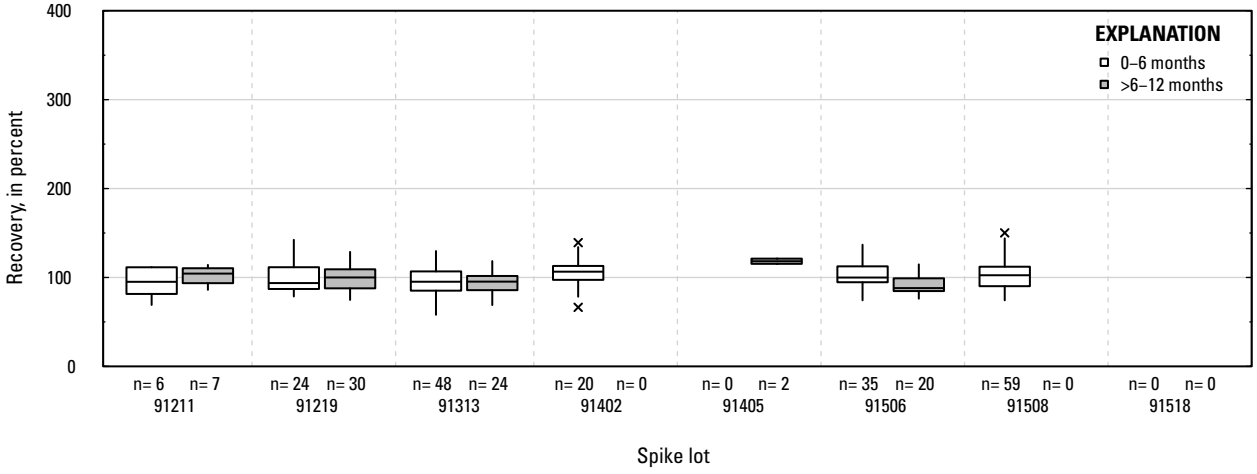
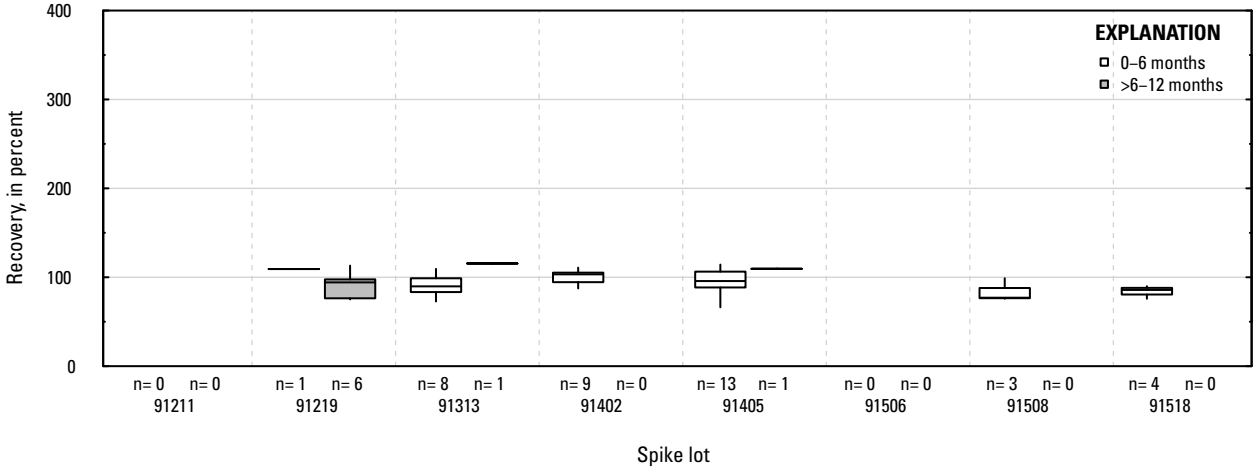


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

XD. **Terbacil: laboratory reagent spikes**



XE. **Terbacil: groundwater field matrix spikes**



XF. **Terbacil: surface water field matrix spikes**

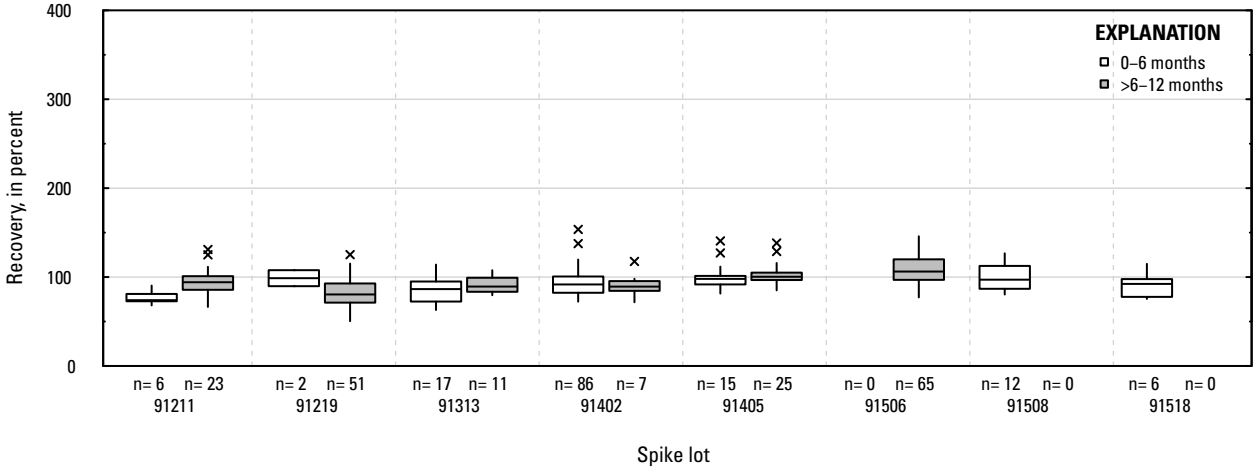
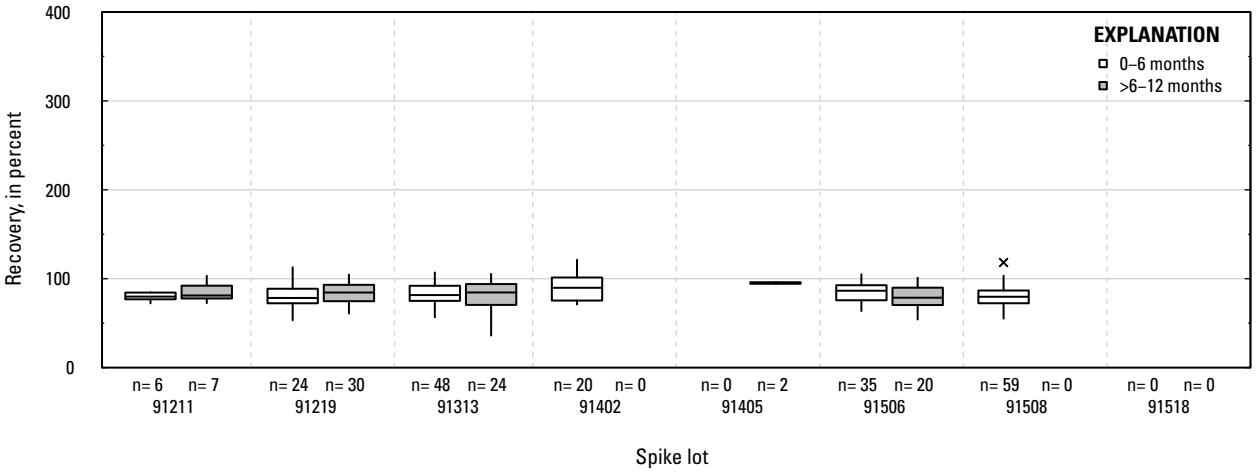
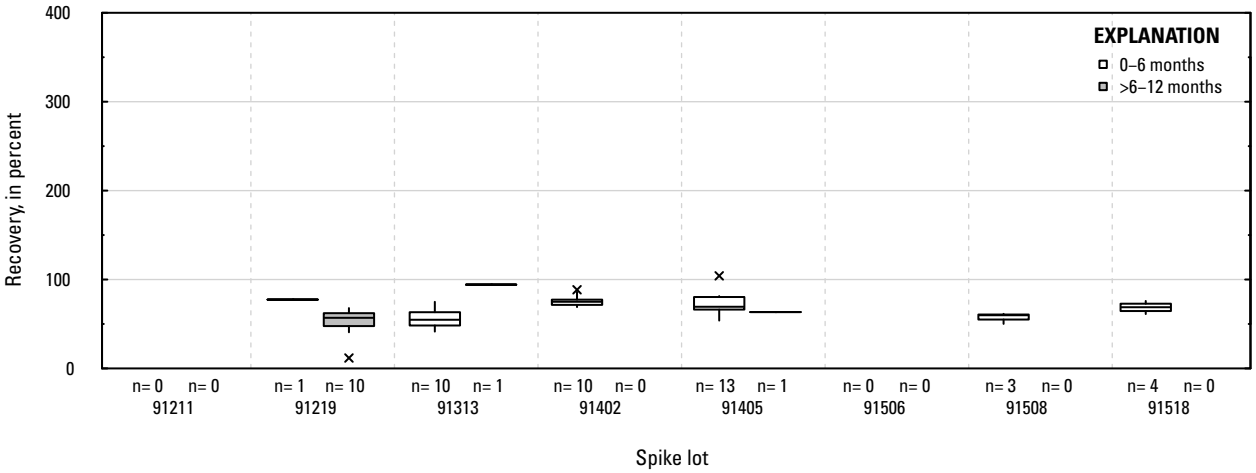


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

XG. **Terbufos: laboratory reagent spikes**



XH. **Terbufos: groundwater field matrix spikes**



XI. **Terbufos: surface water field matrix spikes**

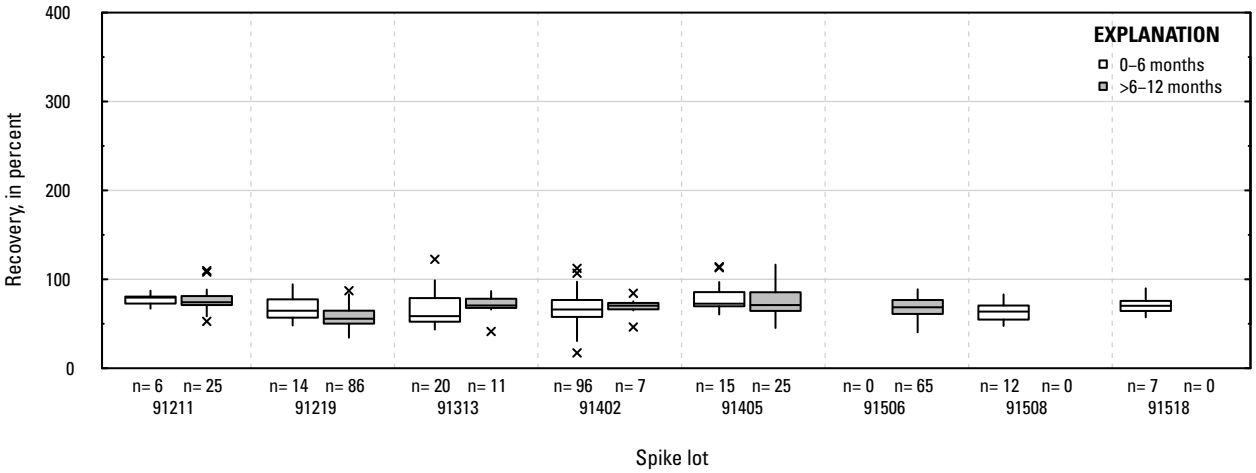
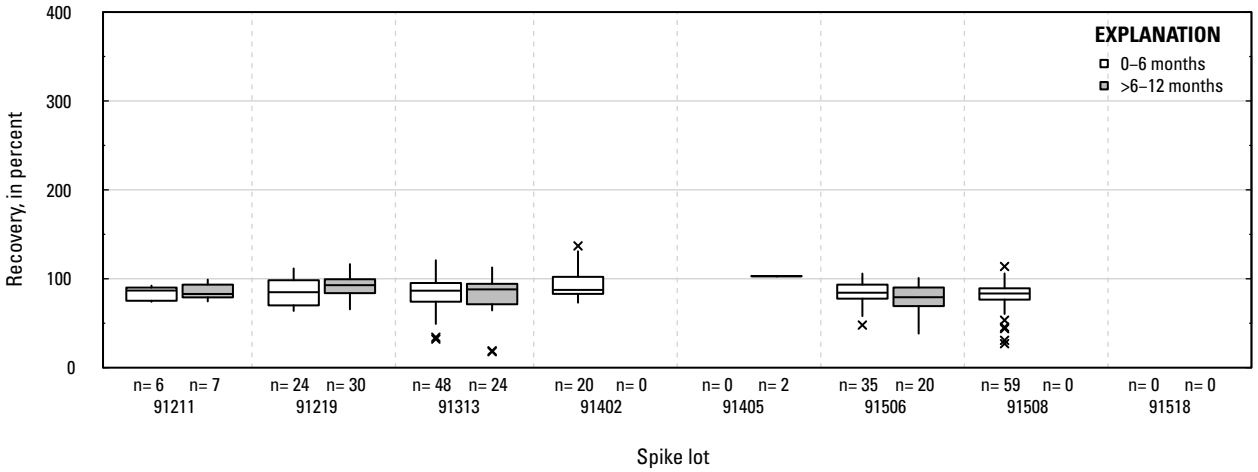
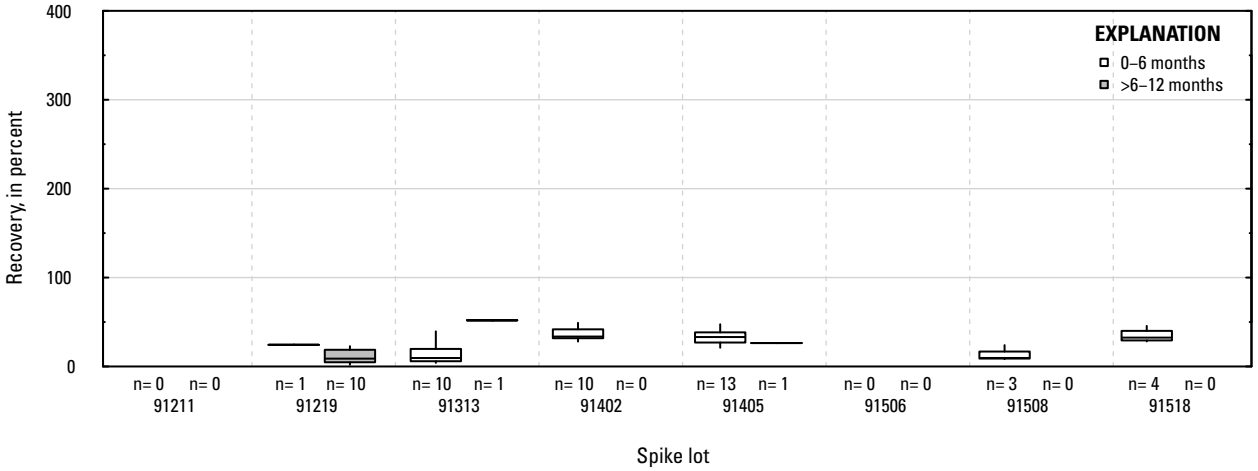


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

XJ. **Terbufos oxon: laboratory reagent spikes**



XK. **Terbufos oxon: groundwater field matrix spikes**



XL. **Terbufos oxon: surface water field matrix spikes**

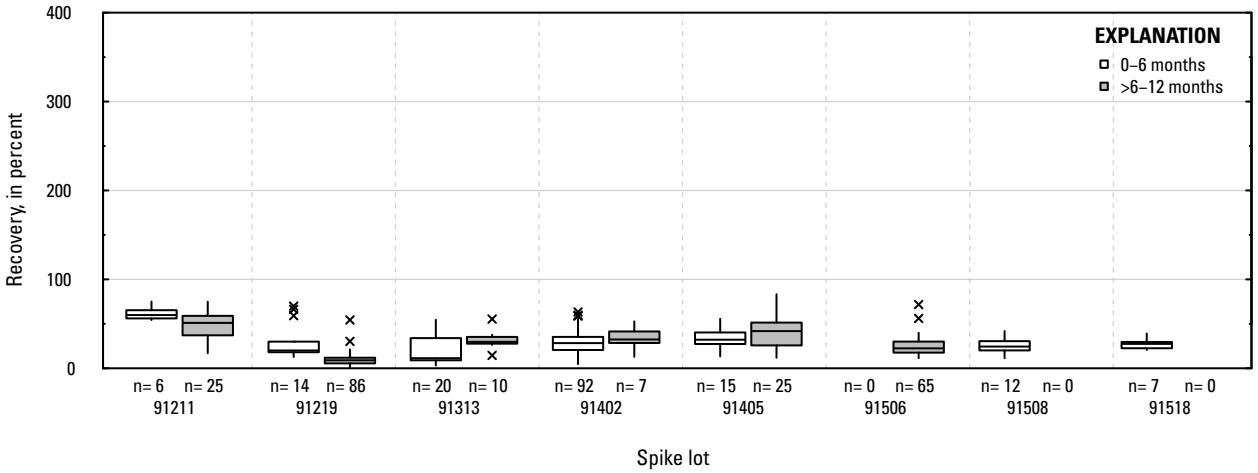
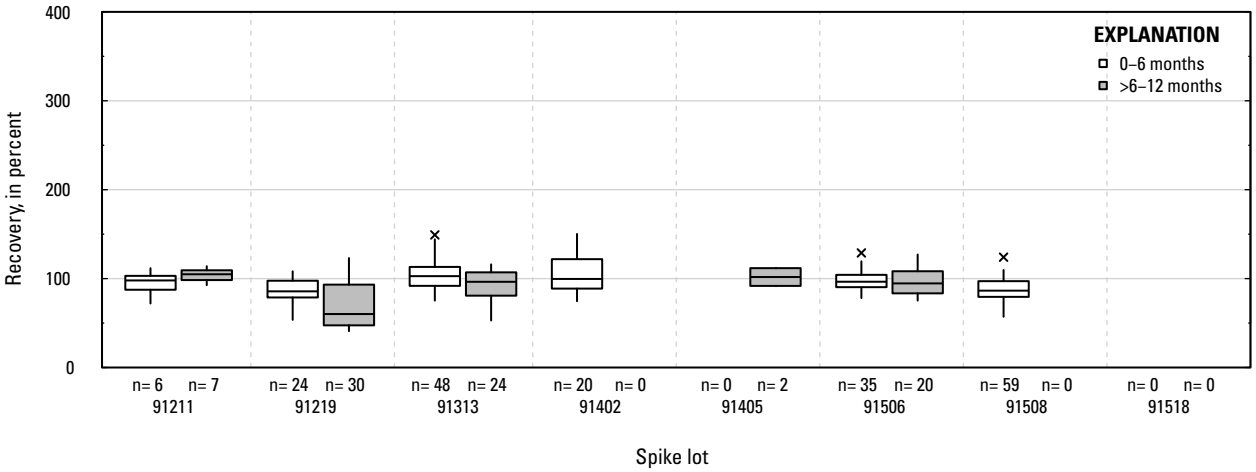
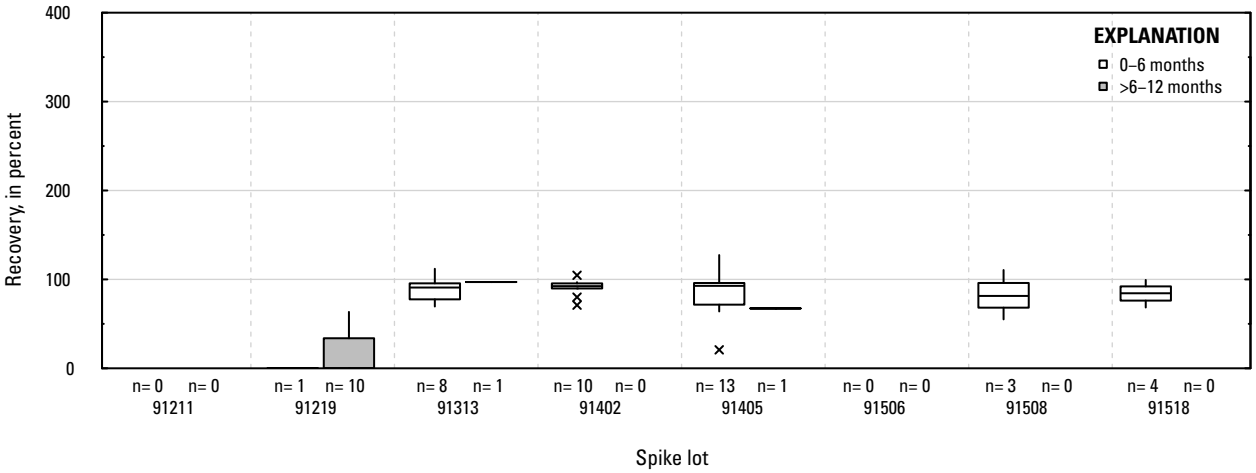


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

XM. **Terbufos oxon sulfone: laboratory reagent spikes**



XN. **Terbufos oxon sulfone: groundwater field matrix spikes**



XO. **Terbufos oxon sulfone: surface water field matrix spikes**

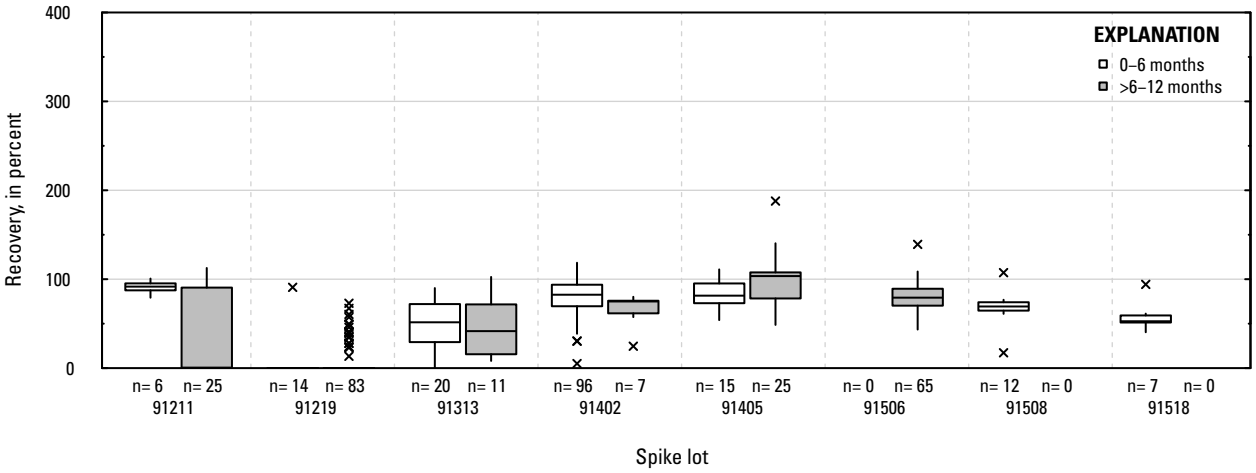
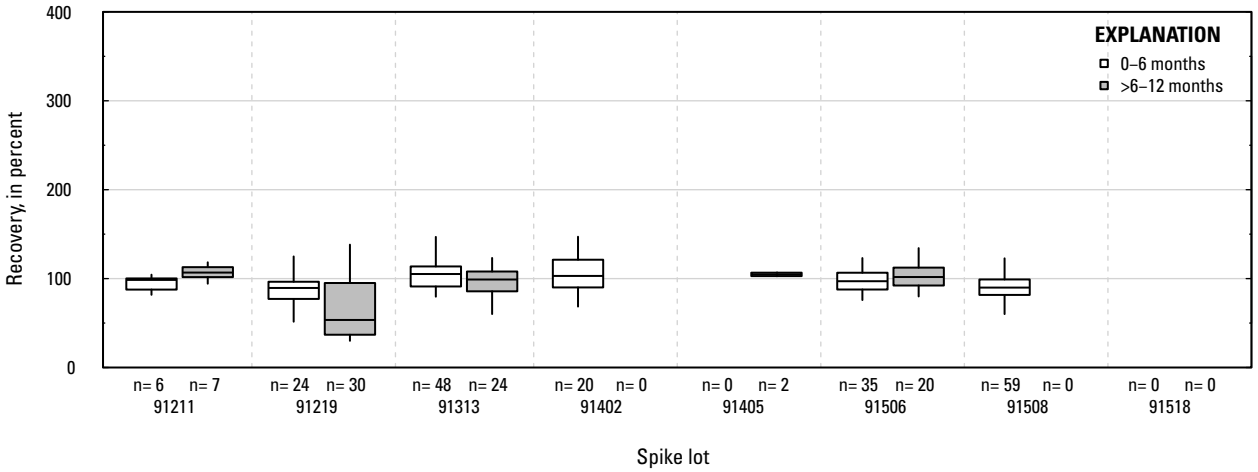
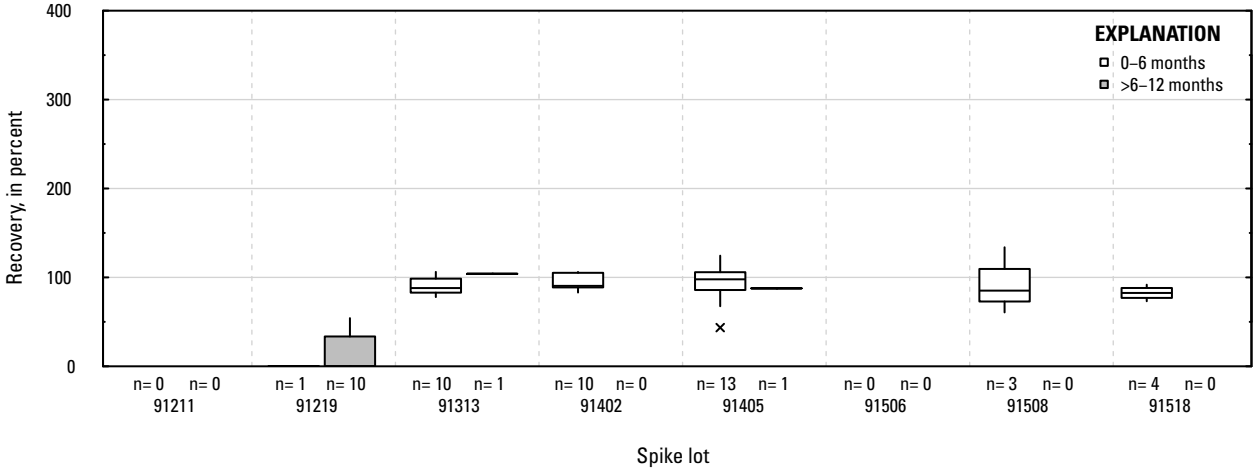


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

XP. **Terbufos oxon sulfoxide: laboratory reagent spikes**



XQ. **Terbufos oxon sulfoxide: groundwater field matrix spikes**



XR. **Terbufos oxon sulfoxide: surface water field matrix spikes**

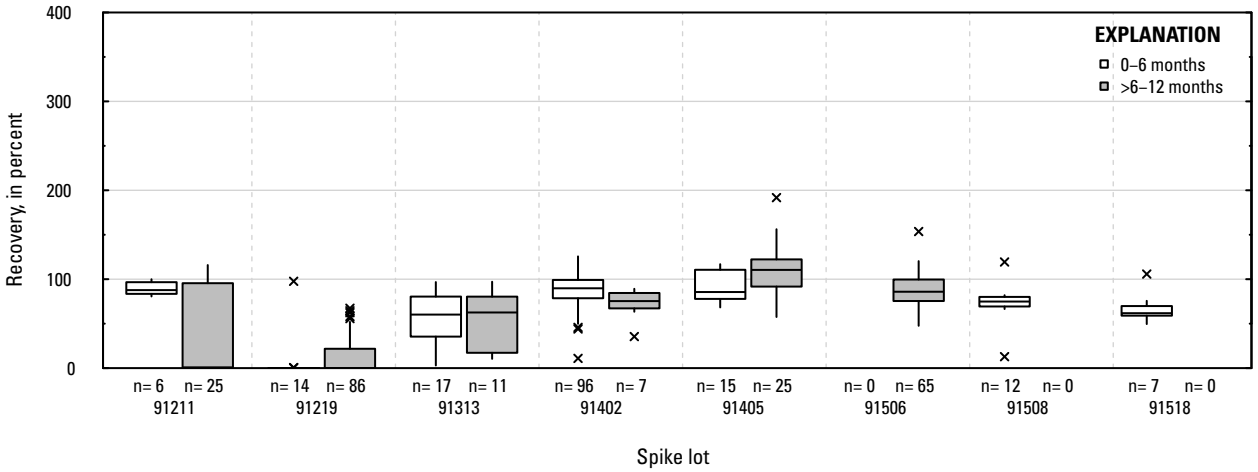
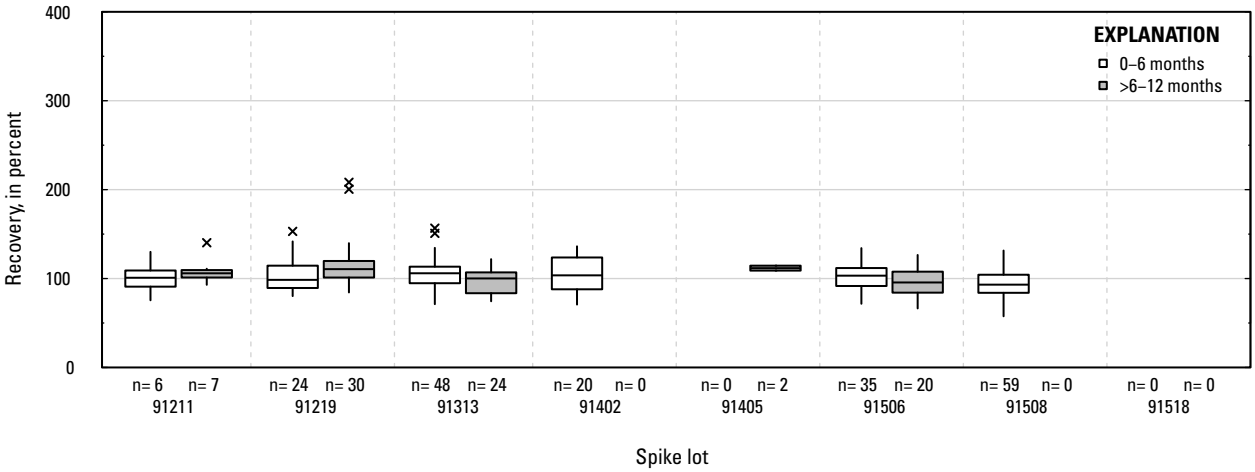
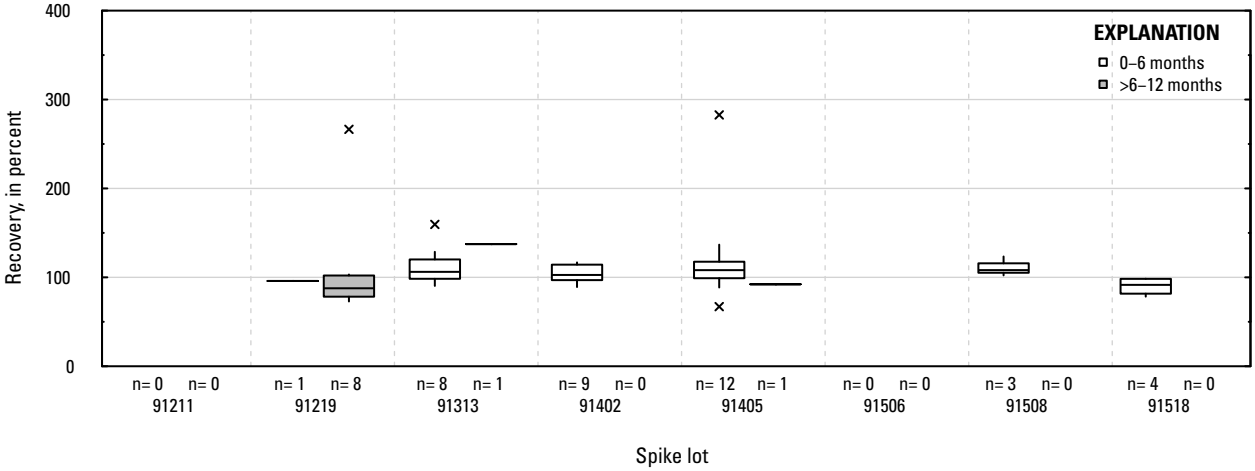


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

XS. **Terbufos sulfone: laboratory reagent spikes**



XT. **Terbufos sulfone: groundwater field matrix spikes**



XU. **Terbufos sulfone: surface water field matrix spikes**

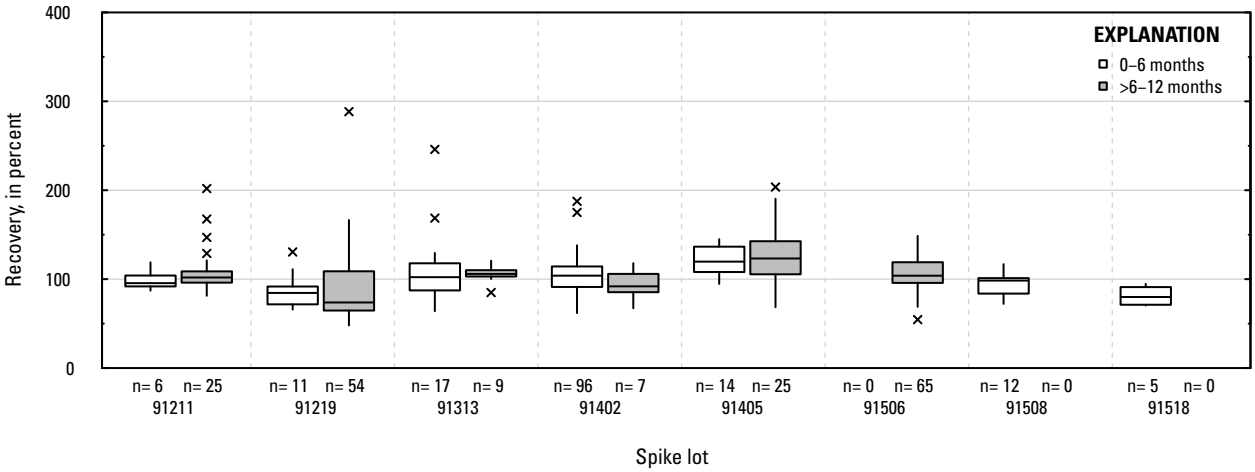
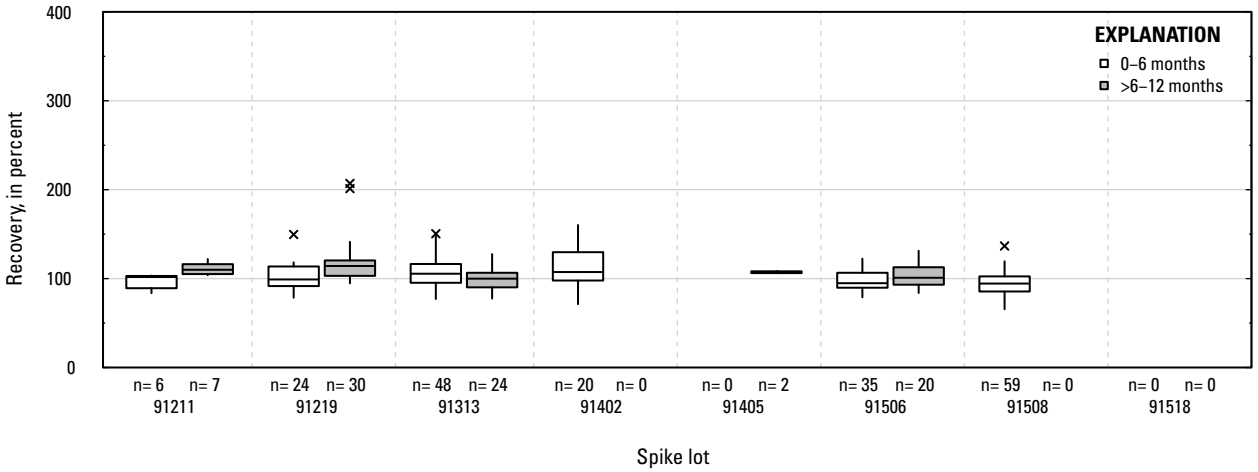
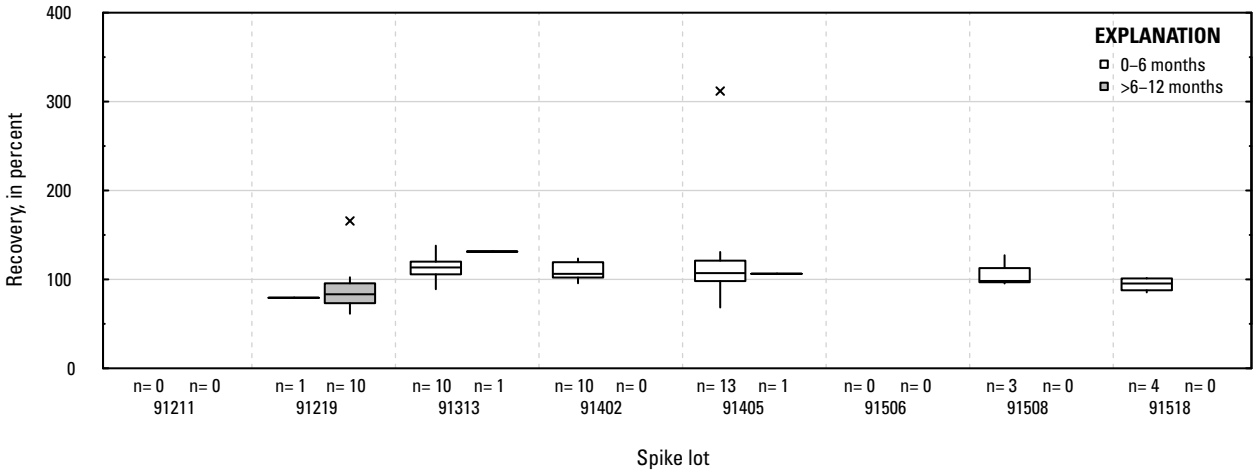


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

XV. **Terbufos sulfoxide: laboratory reagent spikes**



XW. **Terbufos sulfoxide: groundwater field matrix spikes**



XX. **Terbufos sulfoxide: surface water field matrix spikes**

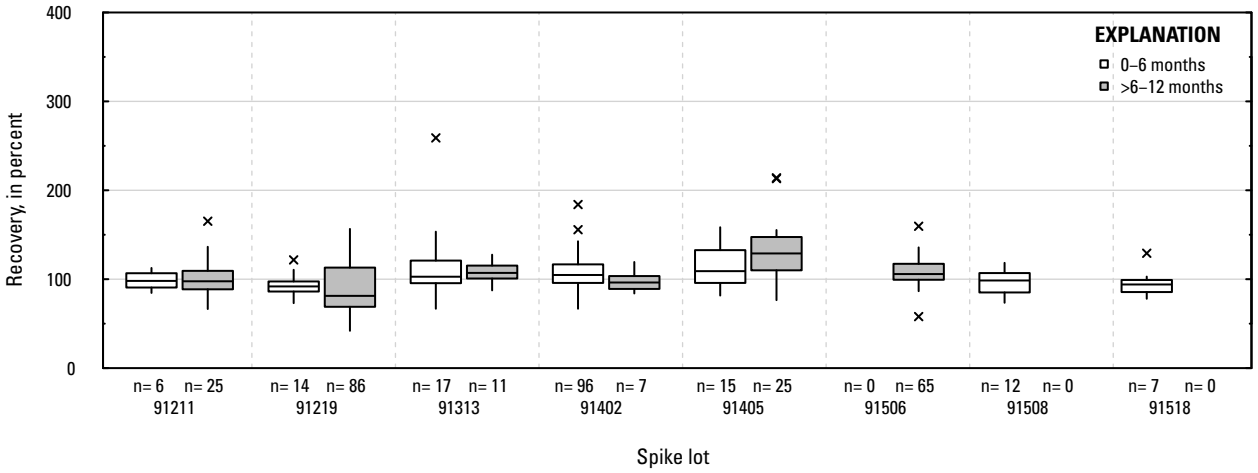
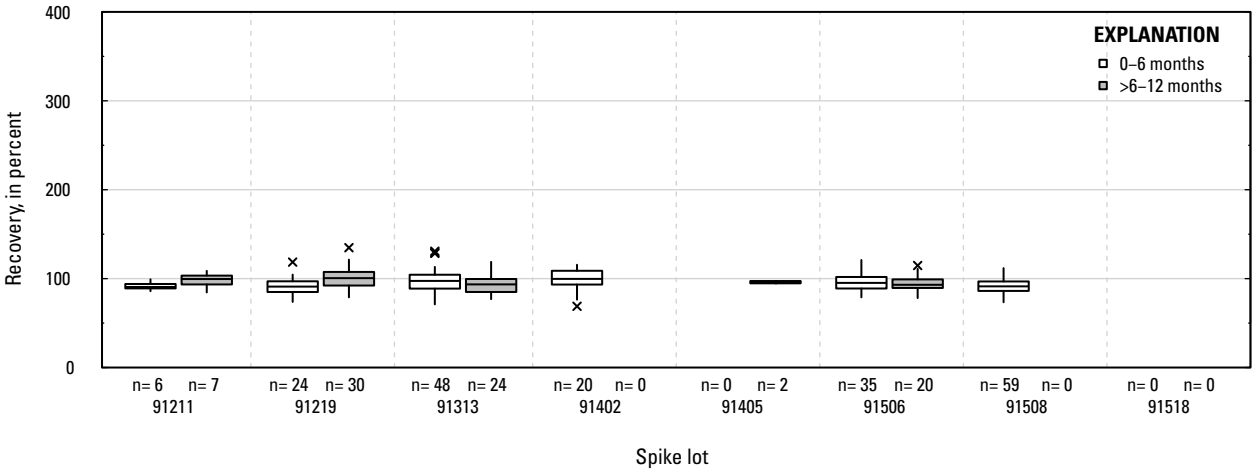
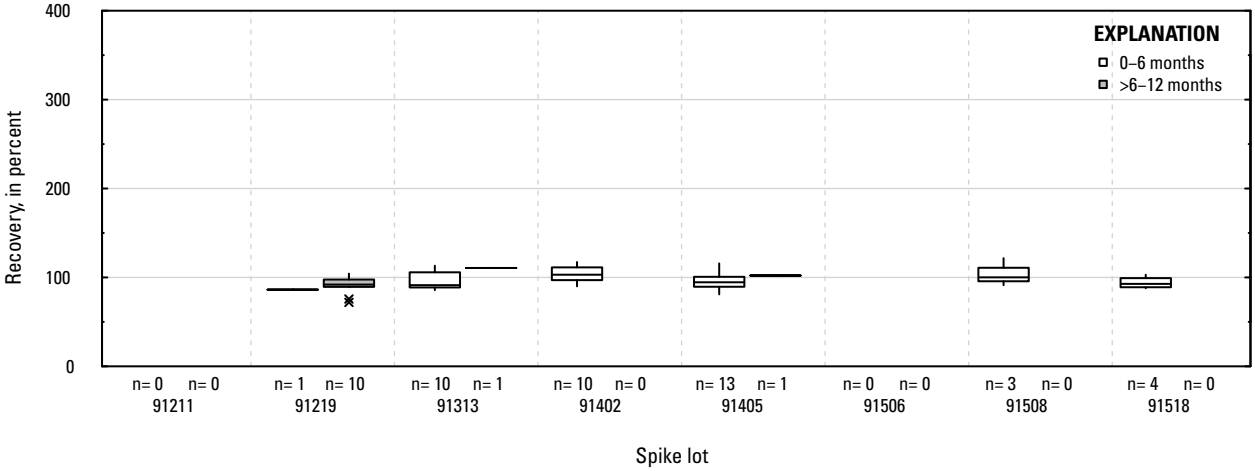


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

XY. **Terbuthylazine: laboratory reagent spikes**



XZ. **Terbuthylazine: groundwater field matrix spikes**



YA. **Terbuthylazine: surface water field matrix spikes**

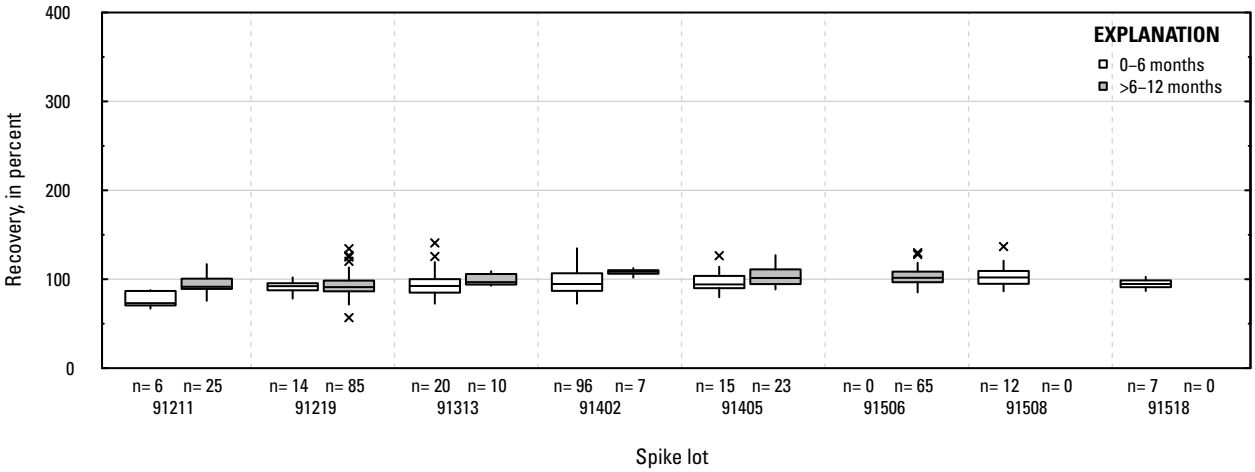
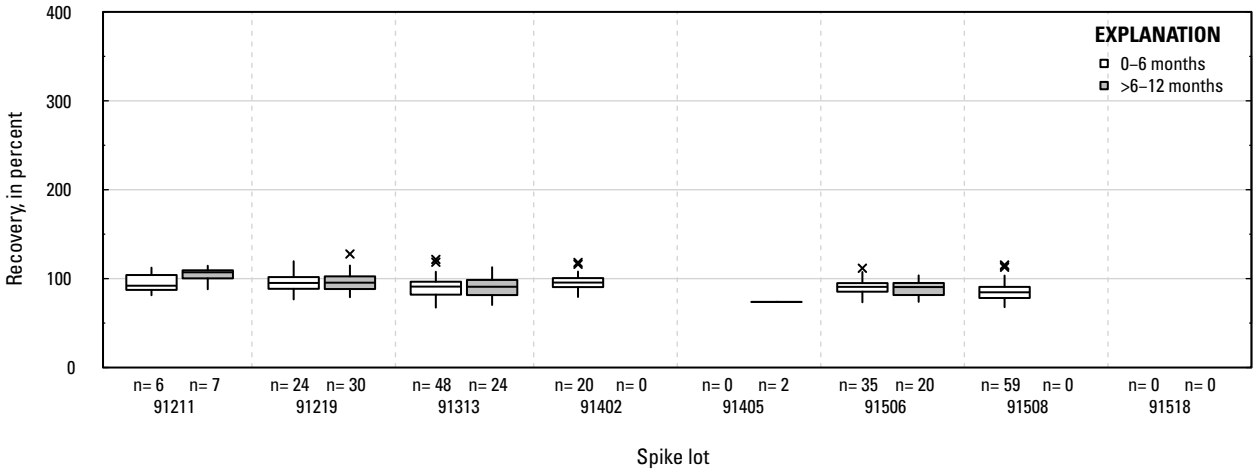
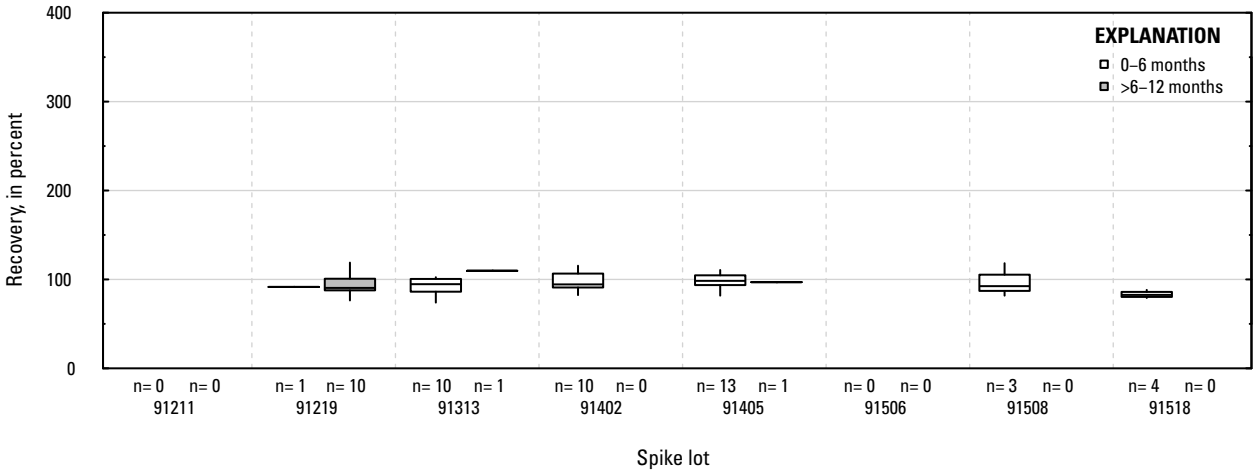


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

YB. **Tetraconazole: laboratory reagent spikes**



YC. **Tetraconazole: groundwater field matrix spikes**



YD. **Tetraconazole: surface water field matrix spikes**

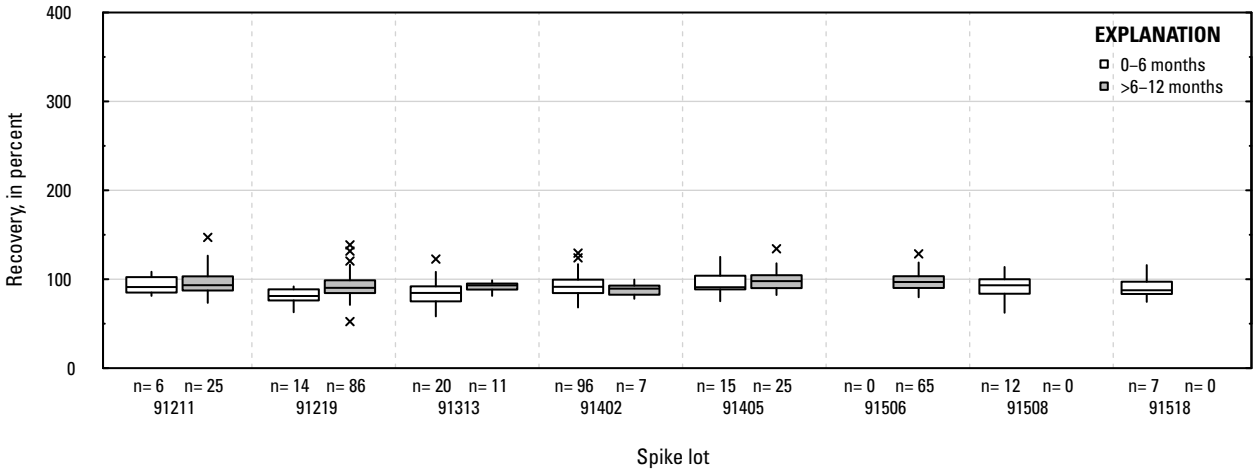
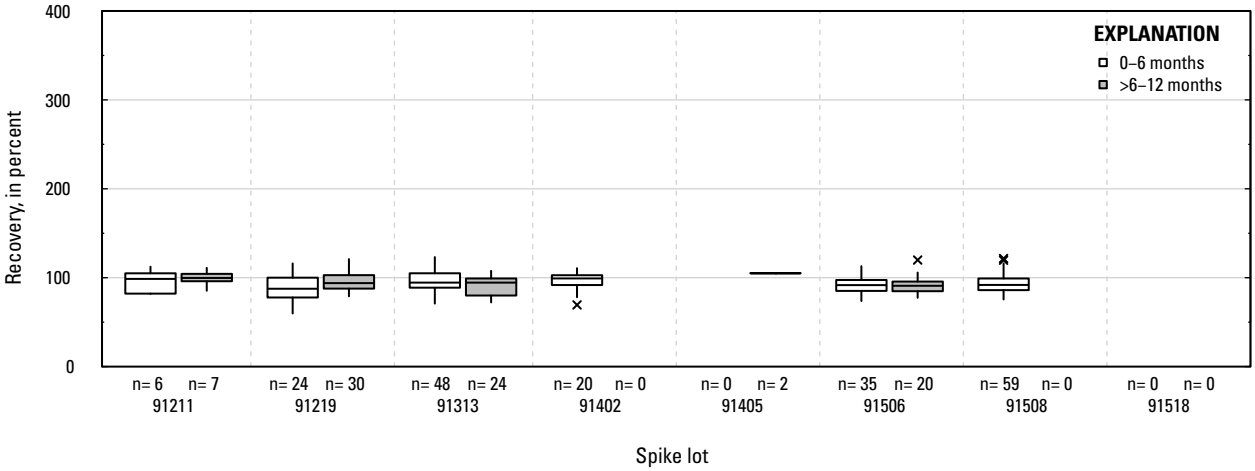
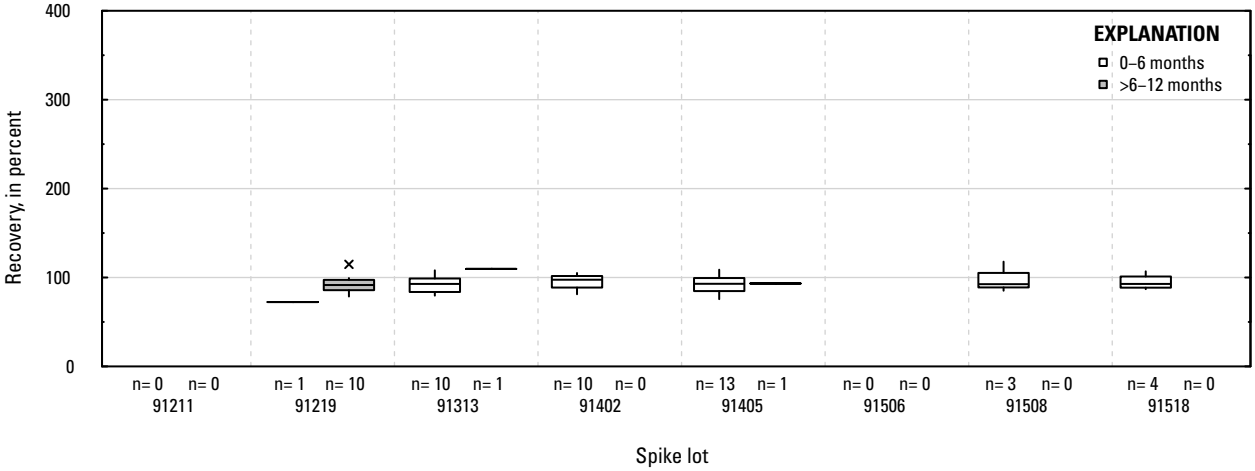


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

YE. **Thiobencarb: laboratory reagent spikes**



YF. **Thiobencarb: groundwater field matrix spikes**



YG. **Thiobencarb: surface water field matrix spikes**

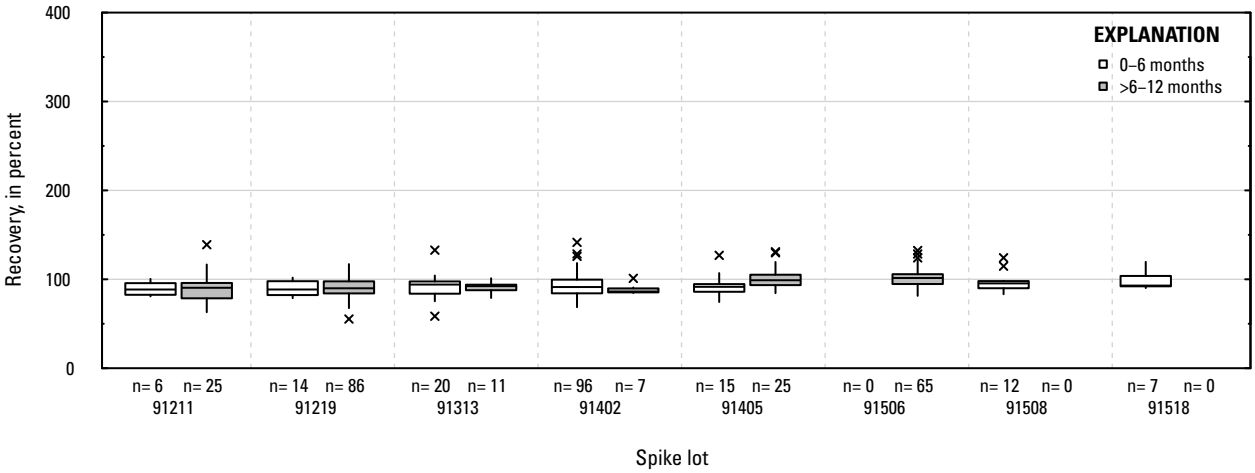
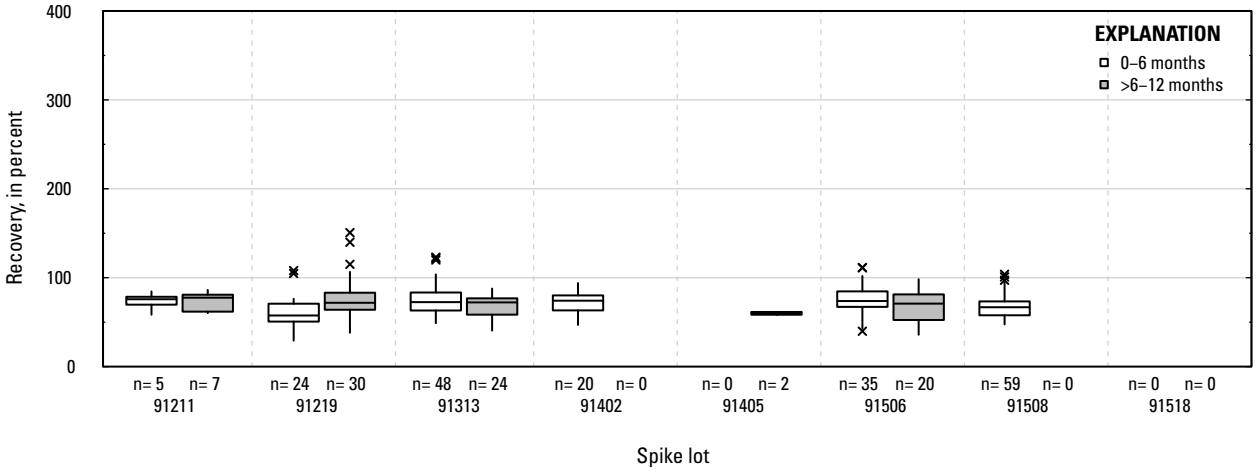
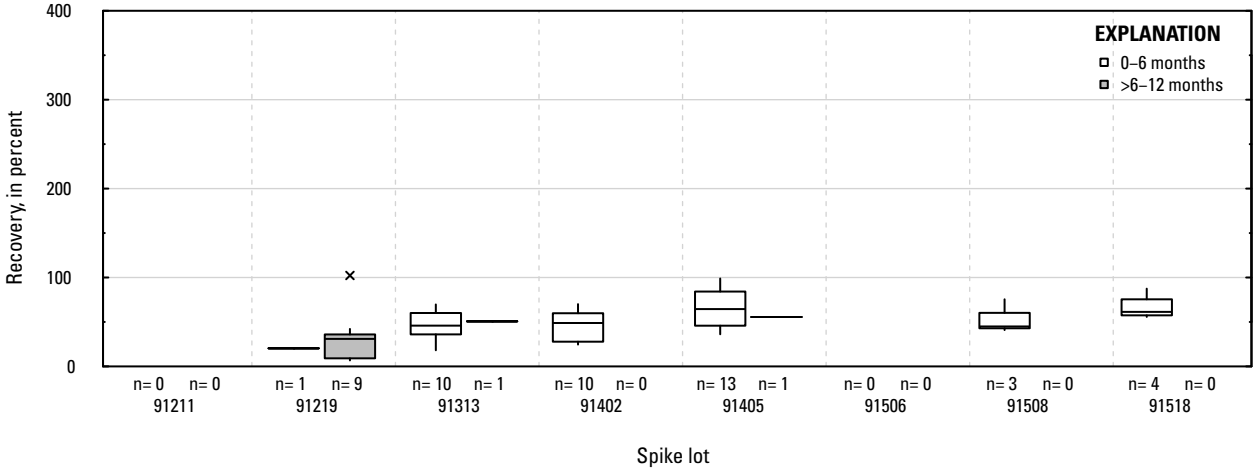


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

YH. **trans–Permethrin: laboratory reagent spikes**



YI. **trans–Permethrin: groundwater field matrix spikes**



YJ. **trans–Permethrin: surface water field matrix spikes**

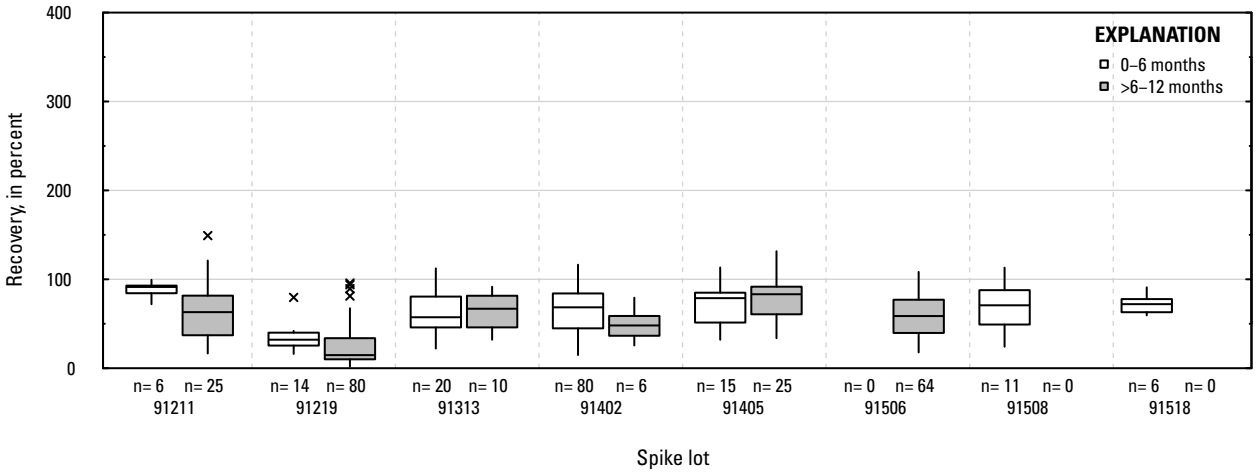
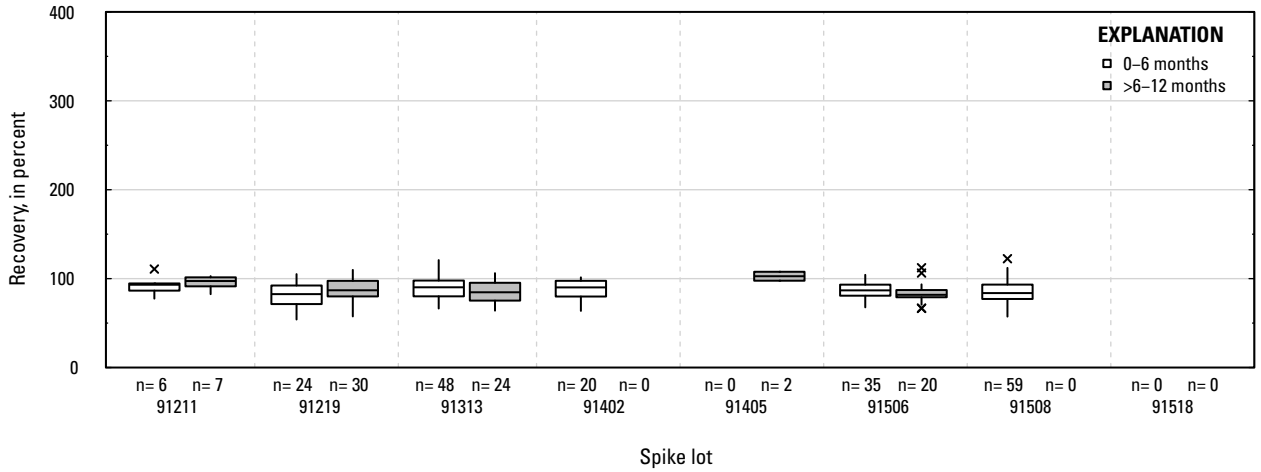
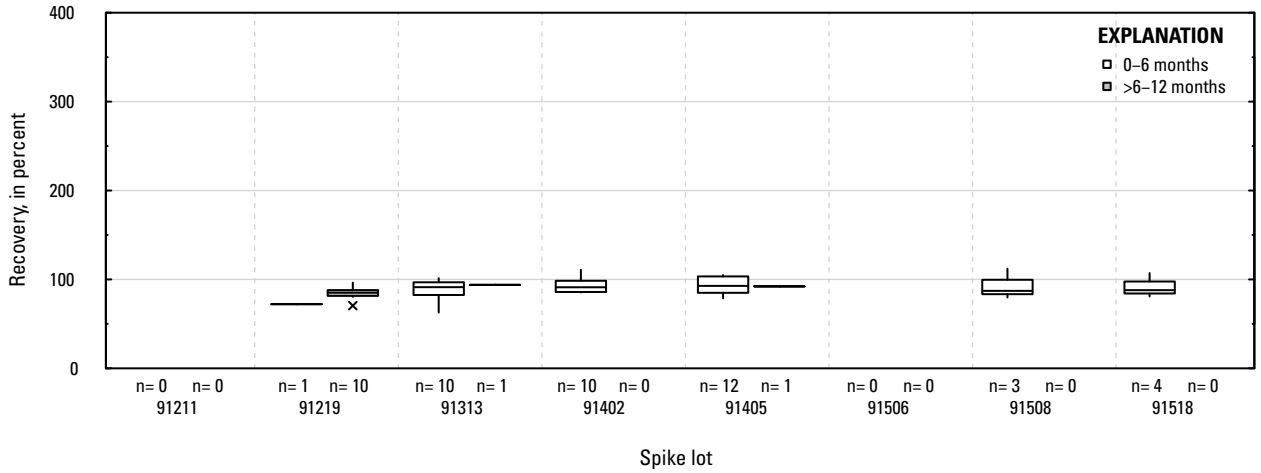


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

YK. **Triallate: laboratory reagent spikes**



YL. **Triallate: groundwater field matrix spikes**



YM. **Triallate: surface water field matrix spikes**

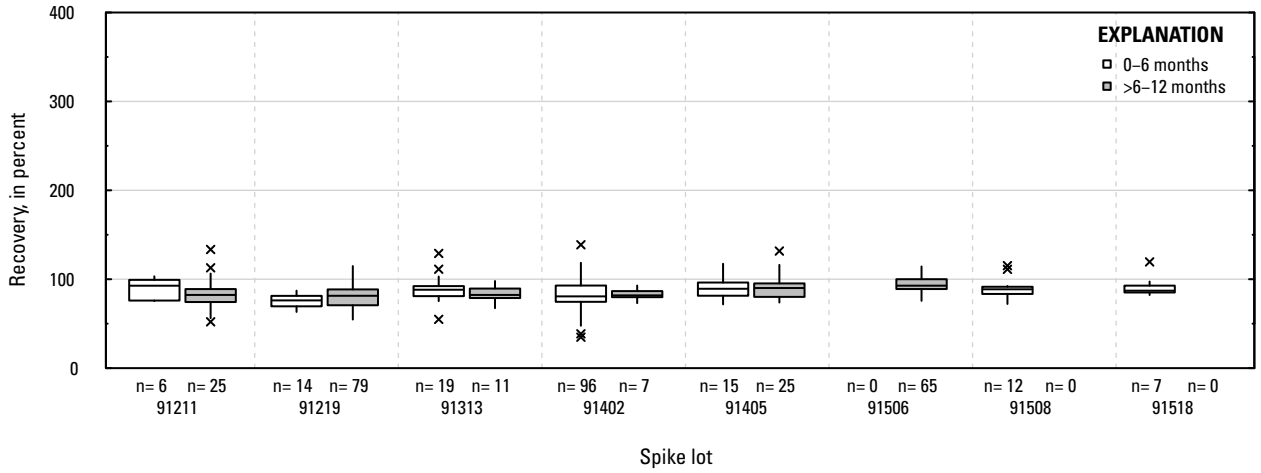
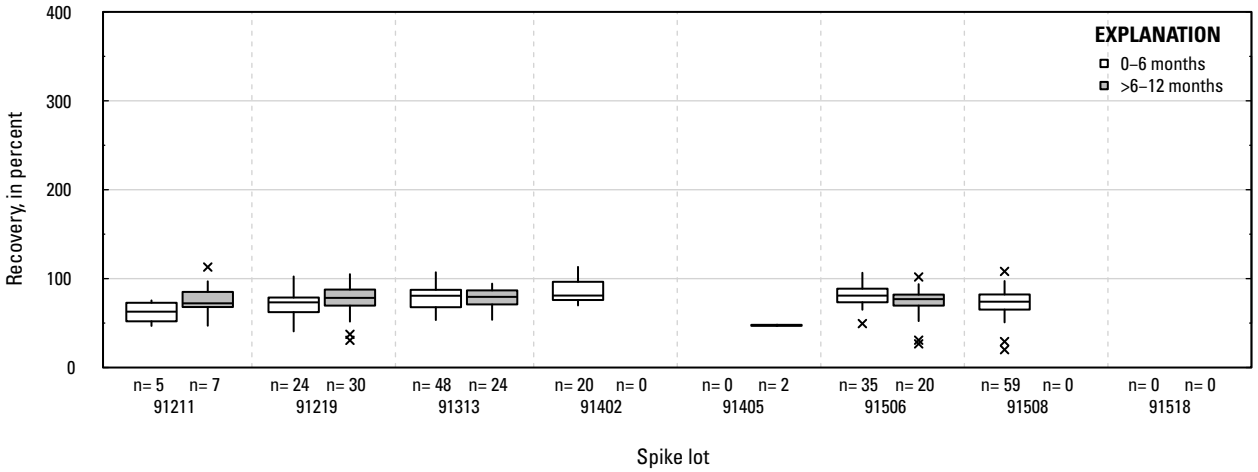
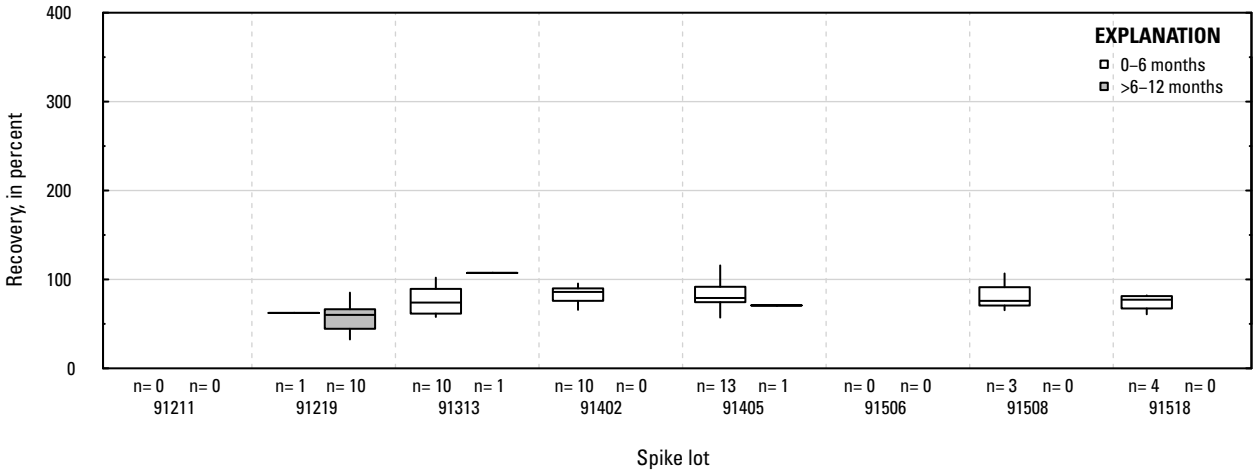


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

YN. **Tribufos: laboratory reagent spikes**



YO. **Tribufos: groundwater field matrix spikes**



YP. **Tribufos: surface water field matrix spikes**

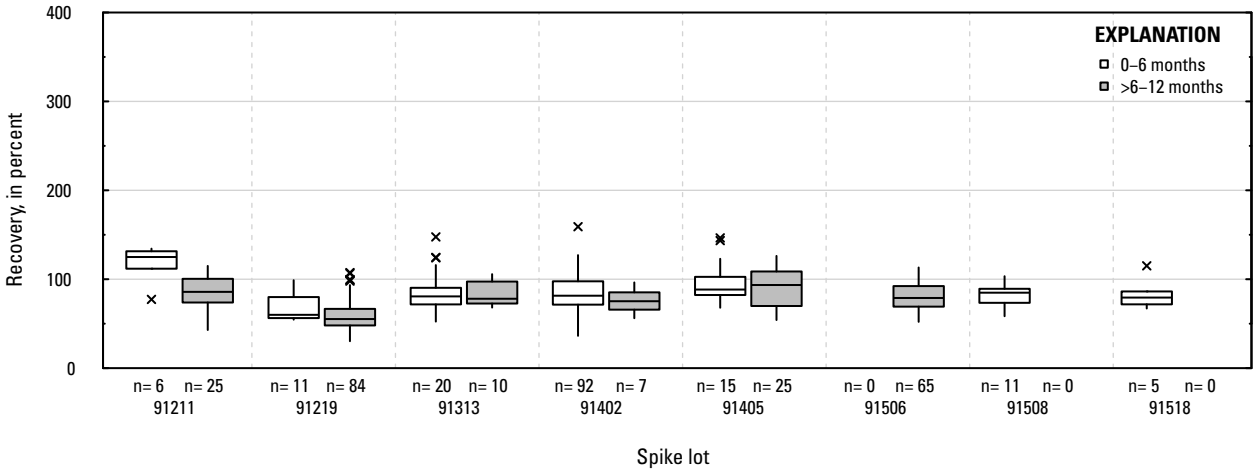
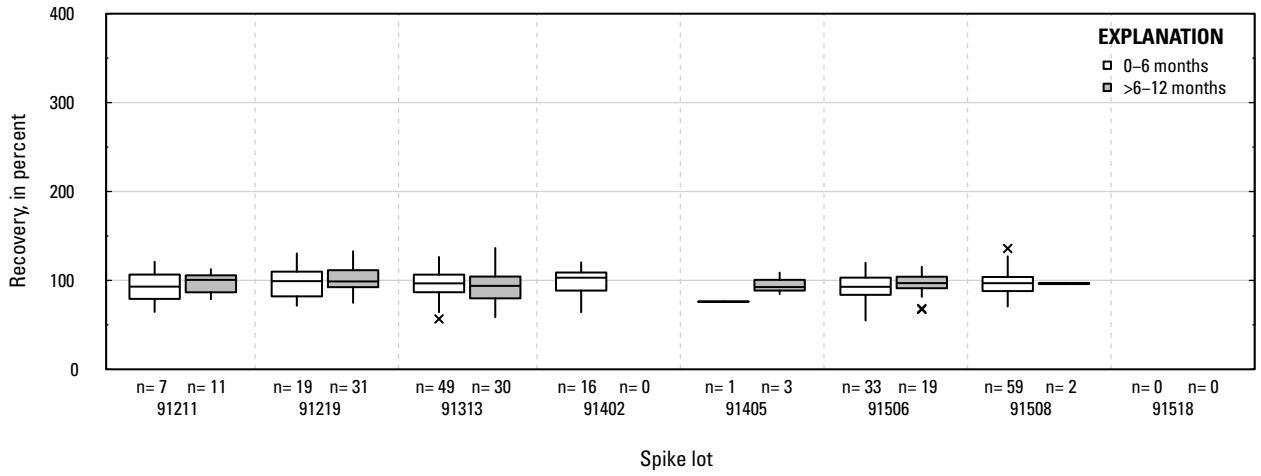
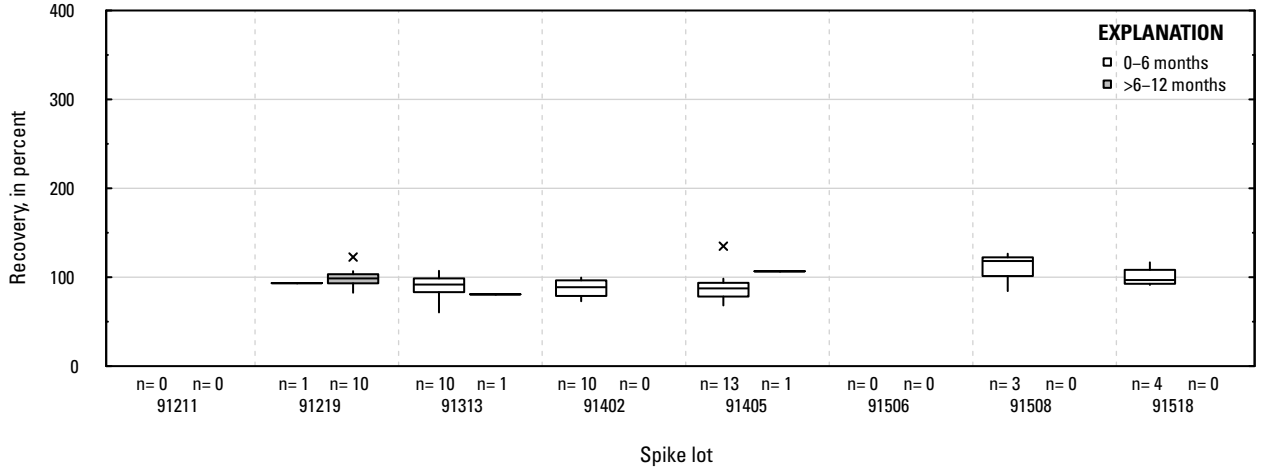


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

YQ. **Triclopyr: laboratory reagent spikes**



YR. **Triclopyr: groundwater field matrix spikes**



YS. **Triclopyr: surface water field matrix spikes**

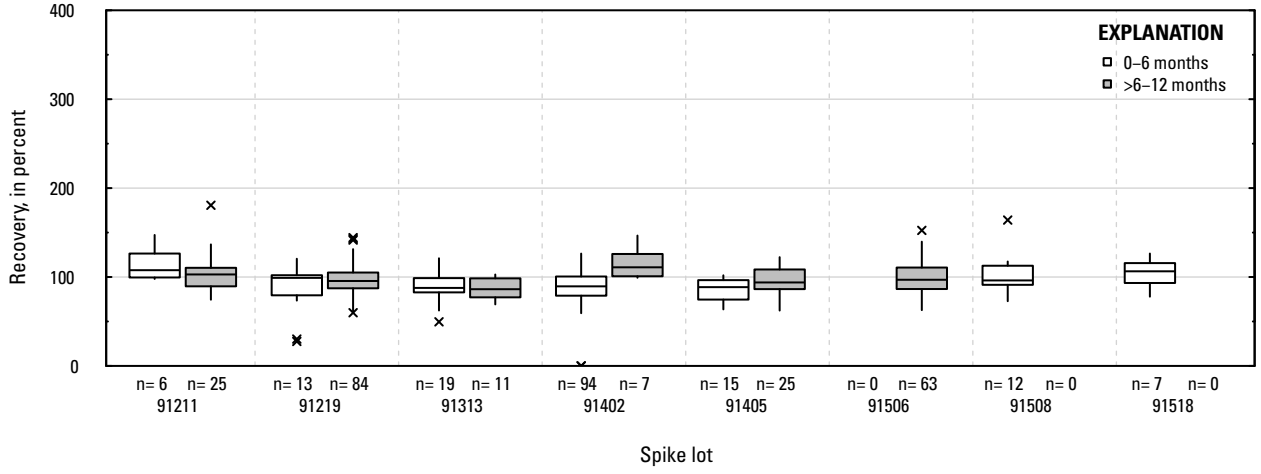
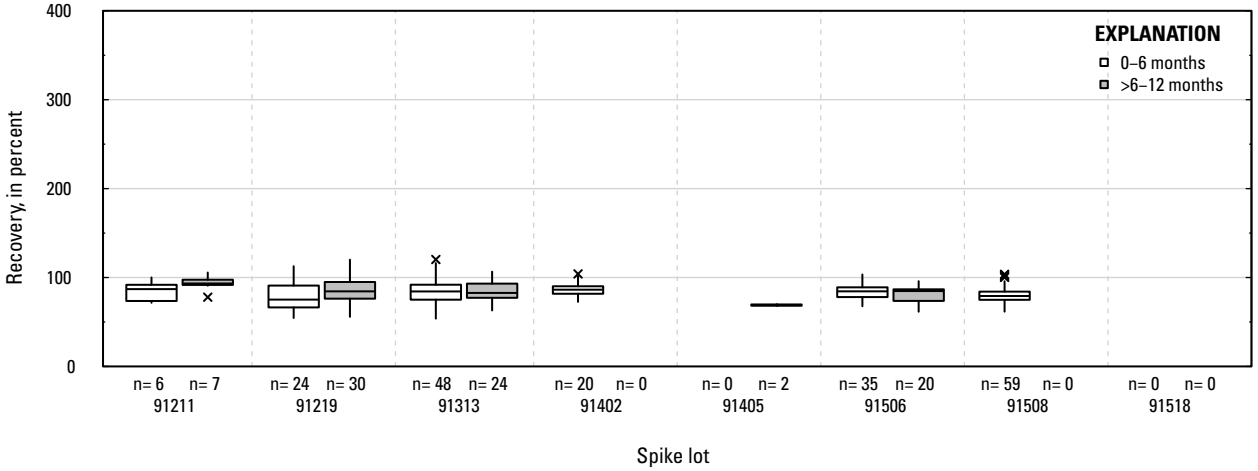
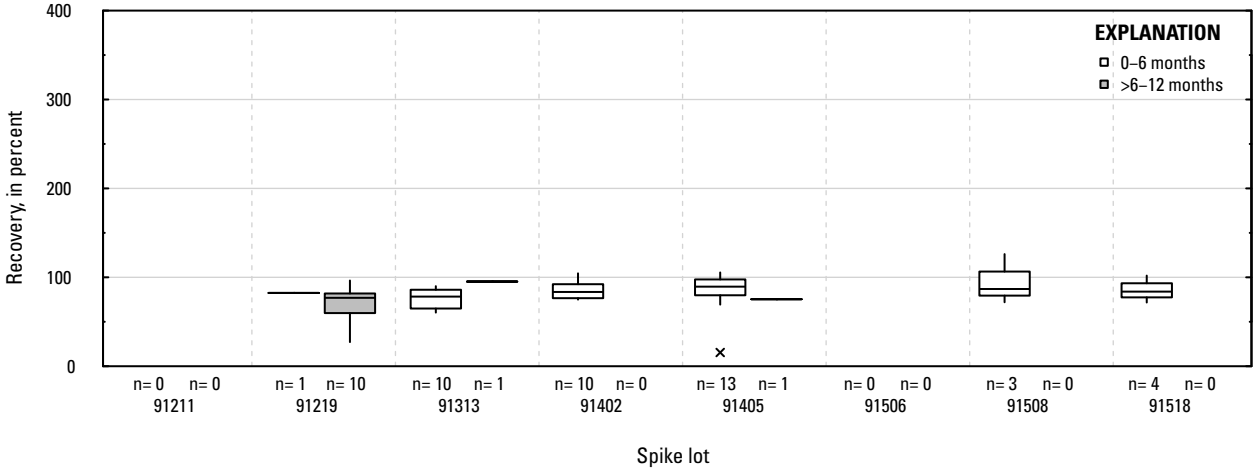


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

YT. **Trifloxystrobin: laboratory reagent spikes**



YU. **Trifloxystrobin: groundwater field matrix spikes**



YV. **Trifloxystrobin: surface water field matrix spikes**

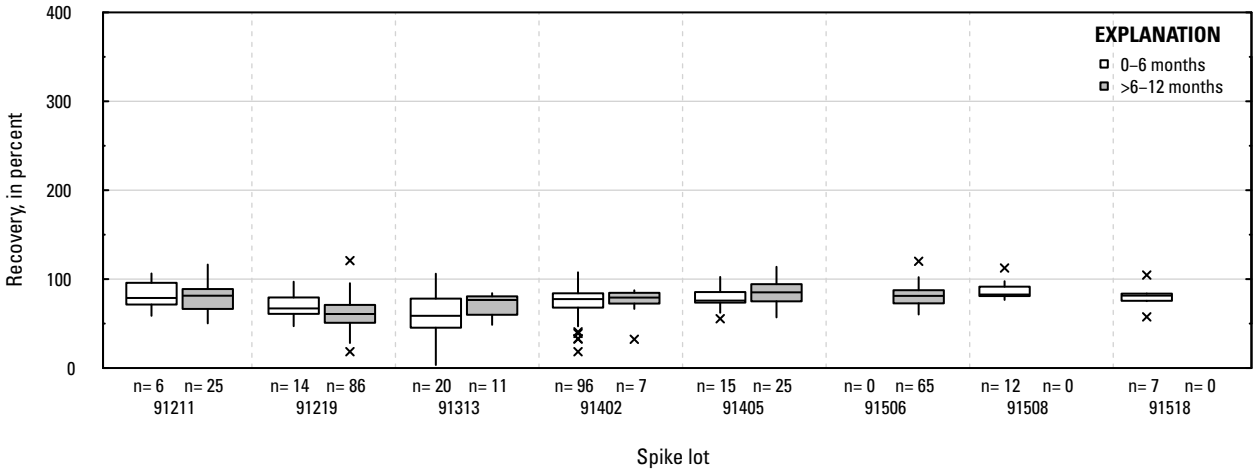
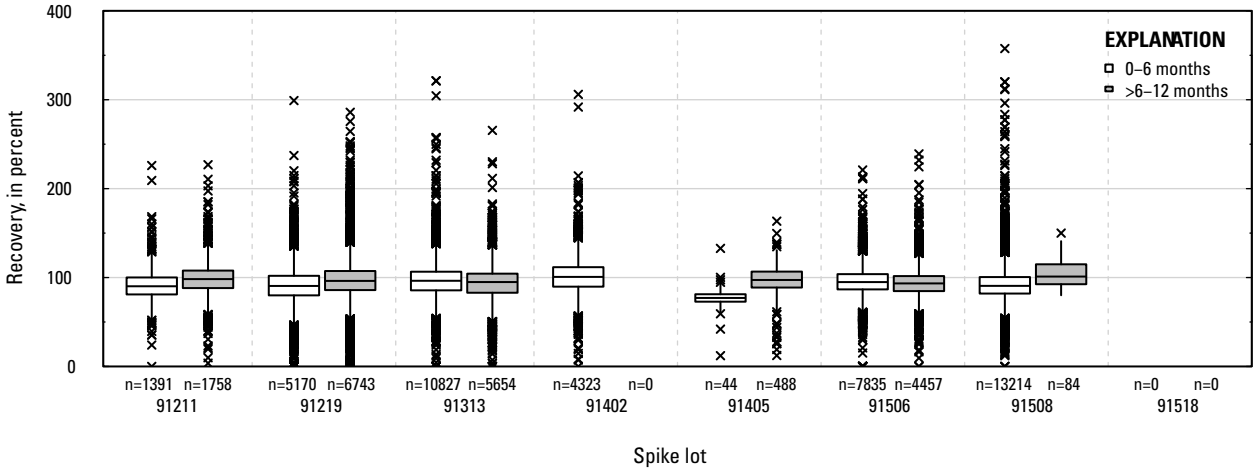
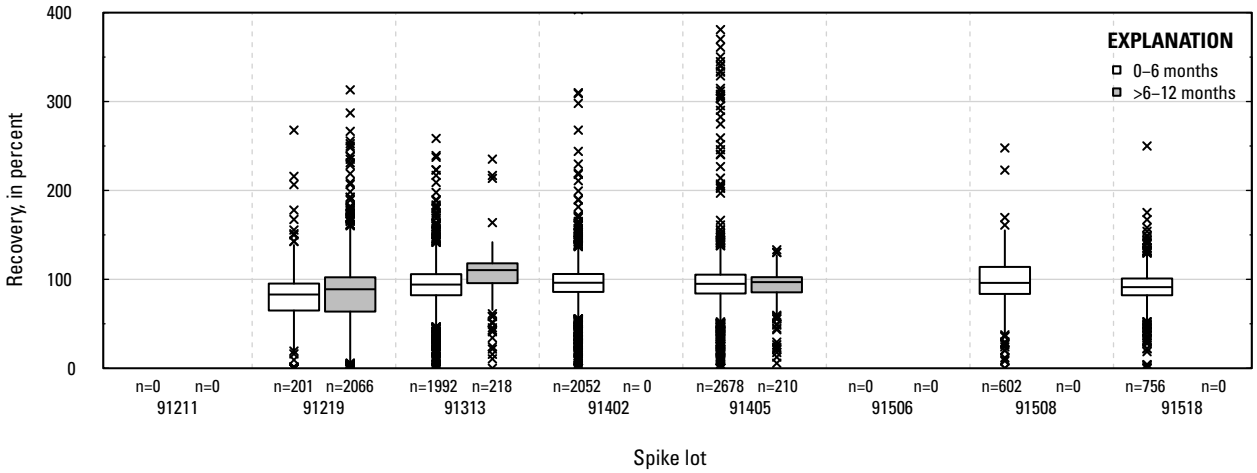


Figure 1–1. Distributions of recovery for individual pesticides in schedule 2437 by matrix, spike lot, and spike lot age. Recovery values larger than 400 percent are not shown.—Continued

A. **Laboratory reagent spikes**



B. **Groundwater field matrix spikes**



C. **Surface water field matrix spikes**

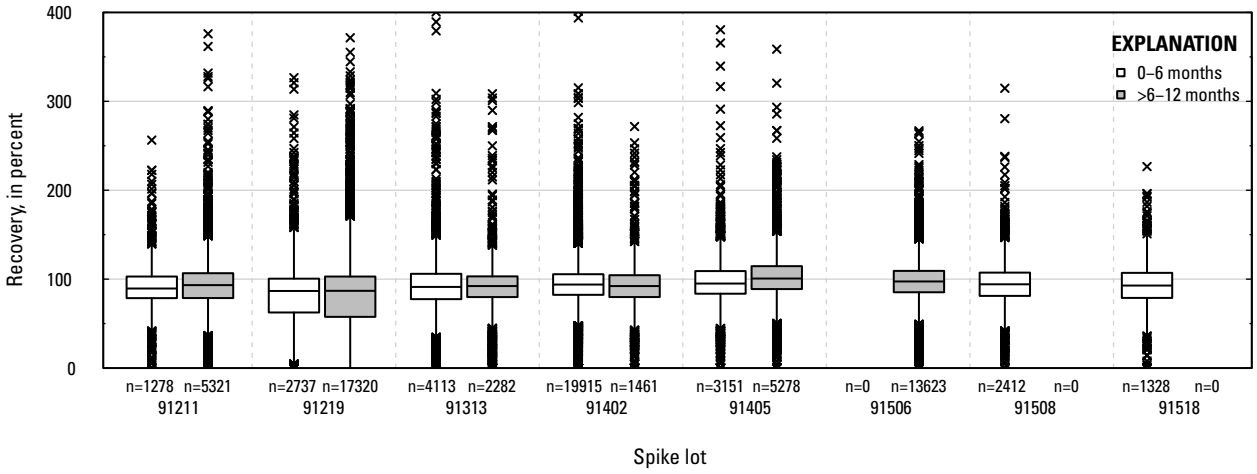
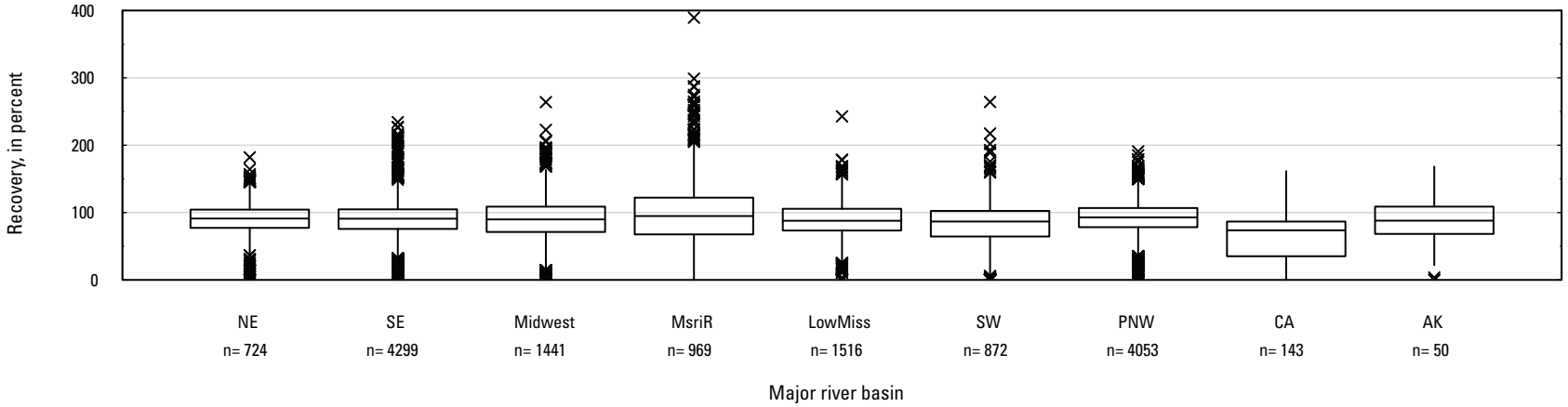


Figure 1–2. Distributions of recovery for schedule 2437 pesticides by spike lot, and spike lot age, pooled by matrix. Recovery values larger than 400 percent are not shown.

A. **Organophosphate**



B. **Carbamate and thiocarbamate**

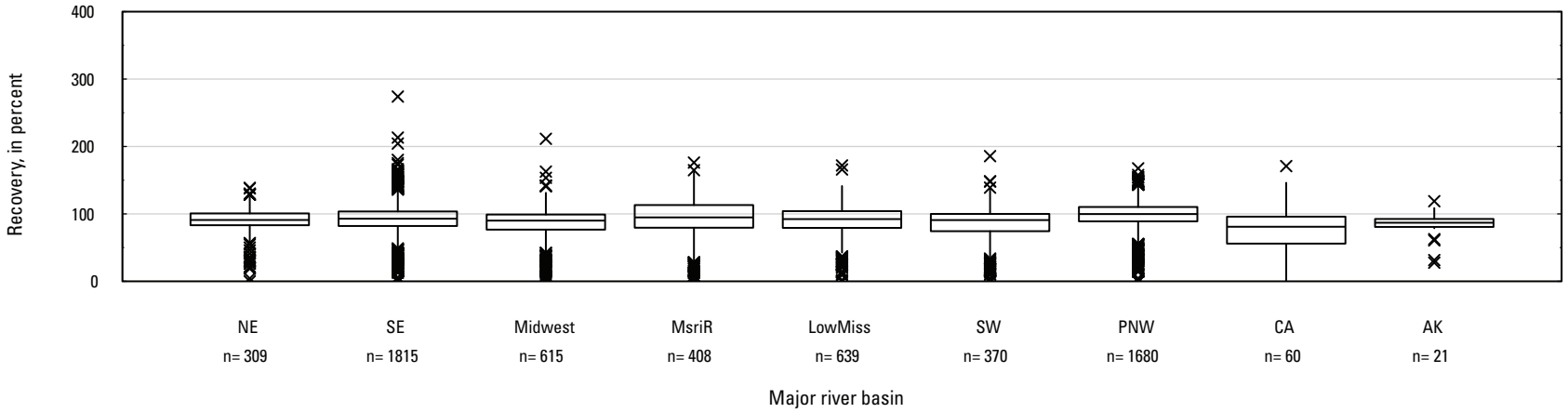
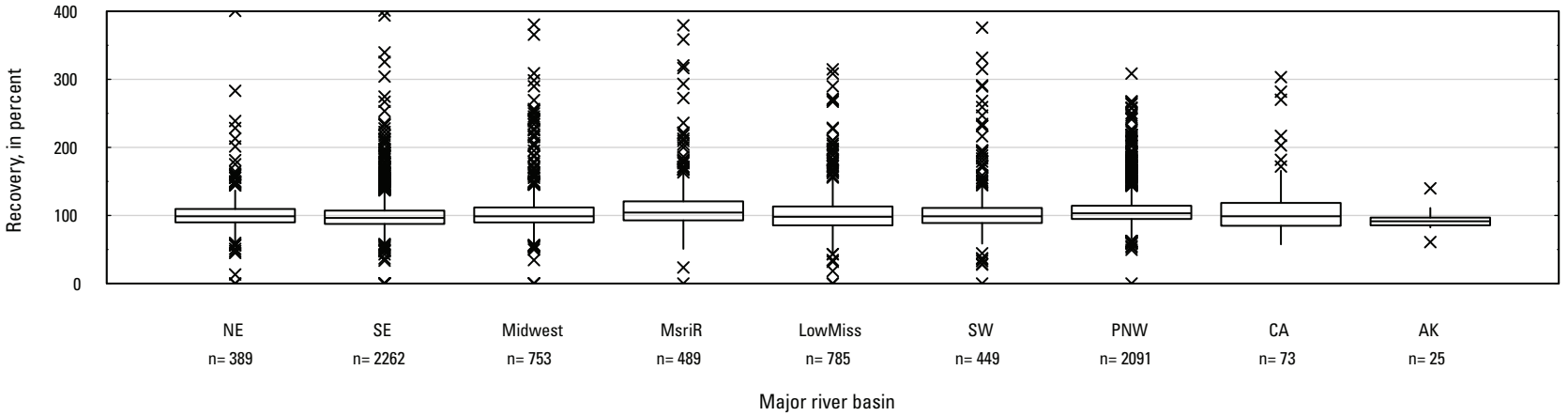


Figure 1–3. Distributions of recovery for pesticides in schedule 2437 in surface waterby analytical method group and Major River Basin. Recovery values larger than 400 percent are not shown.

C. **Triazine**



D. **Sulfonylurea and urea**

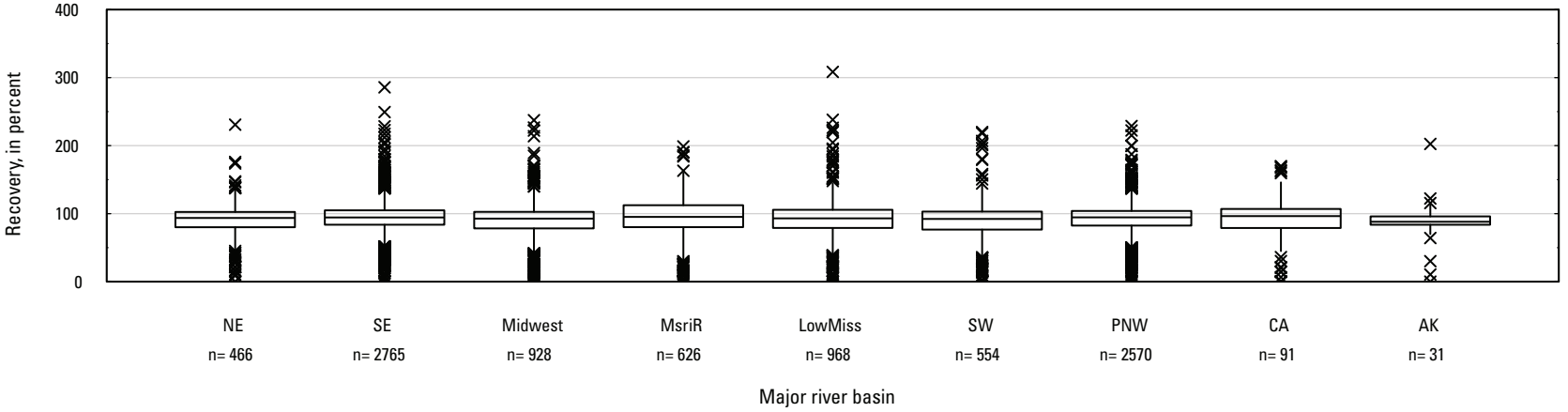
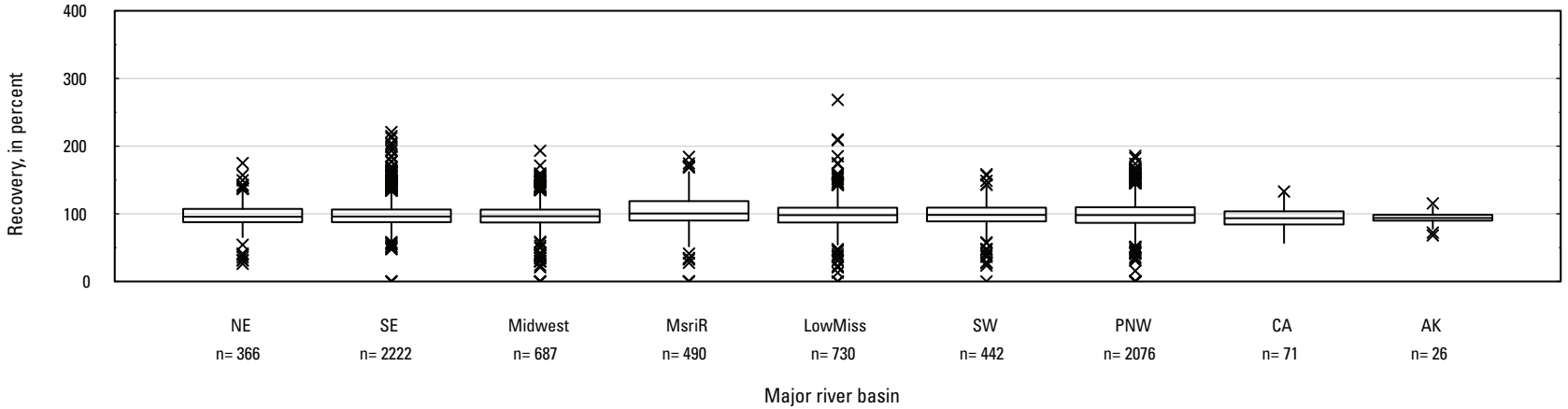


Figure 1–3. Distributions of recovery for pesticides in schedule 2437 in surface waterby analytical method group and Major River Basin. Recovery values larger than 400 percent are not shown. —Continued

E. **Acetanilide and amide**



F. **Pyrethroid, organochlorine and phenylpyrazine**

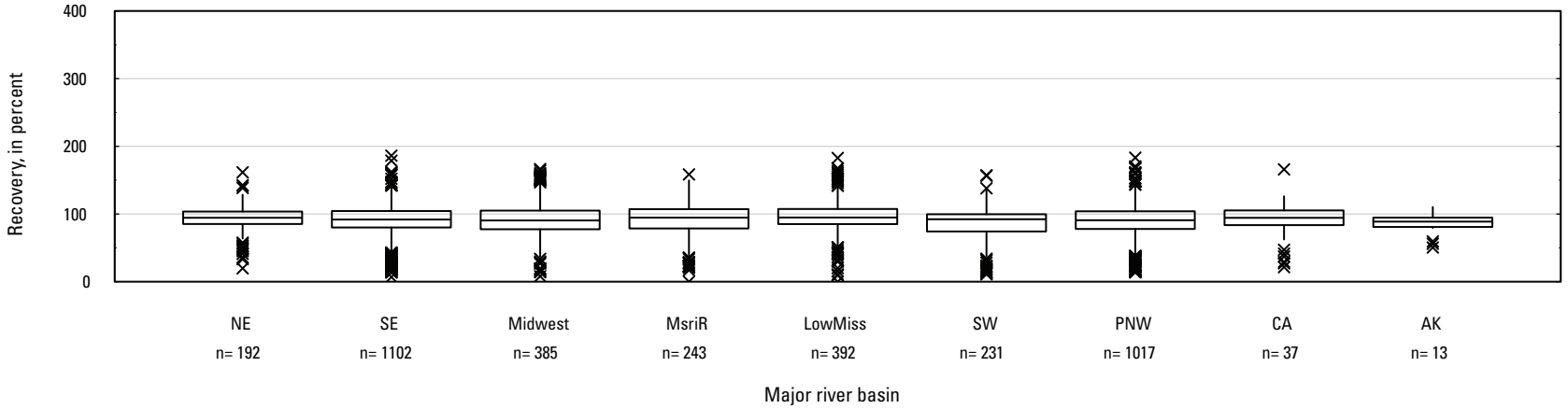
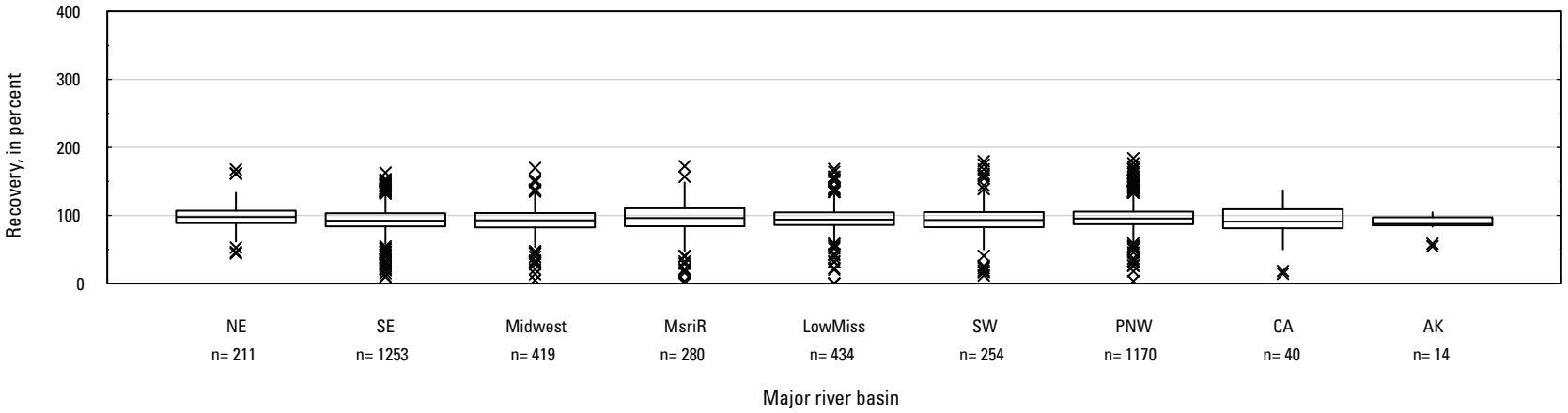


Figure 1–3. Distributions of recovery for pesticides in schedule 2437 in surface waterby analytical method group and Major River Basin. Recovery values larger than 400 percent are not shown. —Continued

G. **Fungicide**



H. **Acid**

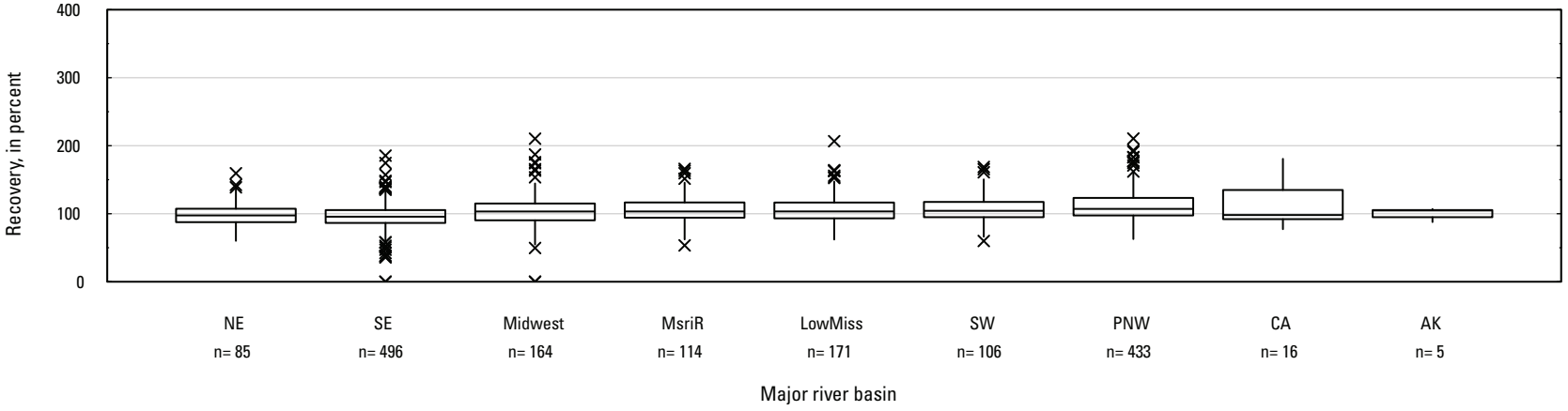


Figure 1–3. Distributions of recovery for pesticides in schedule 2437 in surface waterby analytical method group and Major River Basin. Recovery values larger than 400 percent are not shown. —Continued

I. **Miscellaneous**

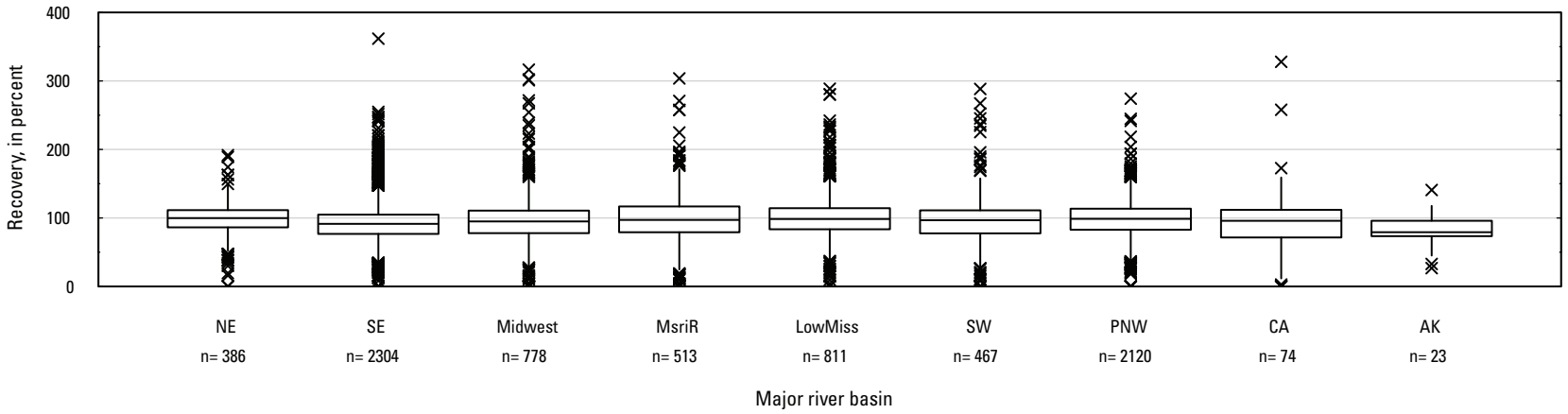


Figure 1–3. Distributions of recovery for pesticides in schedule 2437 in surface waterby analytical method group and Major River Basin. Recovery values larger than 400 percent are not shown. —Continued

Table 1–2. Pesticides that have at least one result reported with a value qualifier code (VQC) of "m."

Pcode	Pesticide Name
61679	Flumetsulam
65067	Bifenthrin
65093	Oxyfluorfen
68236	Diazinon oxon
68498	1H-1,2,4-Triazole
68508	3-Hydroxycarbofuran
68536	Asulam
68545	Butralin
68548	Carbendazim
68551	Chlorosulfonamide acid
68560	Dacthal monoacid
68517	Dicamba
68602	Fenbutatin oxide
68611	2-(1-Hydroxyethyl)-6-methylaniline
68613	Hexazinone Transformation Product D
68638	Lactofen
68654	Naled
68655	Novaluron
68871	Alachlor sulfonic acid

For additional information contact:

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https://water.usgs.gov/nawqa/

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