



# BACKGROUND WATER QUALITY STATISTICAL CERTIFICATION

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for Compliance with the Coal Combustion Residuals  
(CCR) Rule

Erickson Power Station

*Lansing Board of Water & Light*

November 19, 2020

*Revised March 8, 2024*



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## Table of Abbreviations and Acronyms

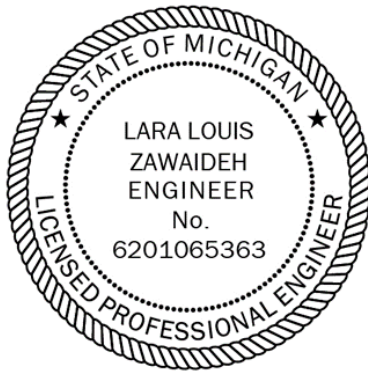
| Abbreviation | Definition                                                  |
|--------------|-------------------------------------------------------------|
| BDL          | below detection limits                                      |
| BTV          | background threshold value                                  |
| CCR          | Coal Combustion Residuals                                   |
| COI          | constituent of interest                                     |
| EDD          | electronic data deliverable                                 |
| EGLE         | Michigan Department of Environment, Great Lakes, and Energy |
| EPA          | Environmental Protection Agency                             |
| MDL          | method detection limit                                      |
| ND           | non-detects                                                 |
| SOP          | Standard Operating Procedure                                |
| SSI          | statistically significant increase                          |
| TDS          | Total Dissolved Solids                                      |
| TSS          | Total Suspended Solids                                      |
| UPL          | upper prediction limit                                      |

# Certification

## Background Water Quality Statistical Certification for Compliance with the Coal Combustion Residuals Rule

I hereby certify to the best of my knowledge that the selected statistical method is appropriate for evaluating the groundwater monitoring data for the CCR management area.

I am duly licensed Professional Engineer under the laws of the State of Michigan.



Lara Louis Zawaideh, PE ENV SP

Michigan PE License: 6201065363

License Renewal Date: 02/03/2026

**Lara Zawaideh** Digitally signed by Lara Zawaideh  
Date: 2024.03.08 12:21:41 -05'00'

# 1.0 Introduction

The U.S. Environmental Protection Agency's (EPA's) final Coal Combustion Residuals (CCR) Rule establishes a comprehensive set of requirements for the management and disposal of CCR (or coal ash) in landfills and surface impoundments by electric utilities. The former Erickson Power Station ("Erickson" or "Site"), located in Delta Township, Eaton County, Michigan (**Figure 1**), is owned and operated by Lansing Board of Water and Light (BWL). Erickson Station was permanently shut down November 2022. During active operations, a single coal-fired generator was capable of producing 165 megawatts of electricity and CCR was stored in dewatering tanks (hydro-bins). After the majority of the CCR was removed from the waste stream at the hydro-bins, flow was discharged into three CCR impoundments in sequence: the Forebay, Retention Basin, and Clear Water Pond (CWP)(**Figure 2**). The plant pipelines were washed down and CCR waste disposal ceased to the CCR impoundments on December 29, 2022. The non-CCR stormwater flows to the impoundments ceased January 3, 2023. A 33-acre impoundment was physically closed by removal of CCR in 2014 is now referred to as the Former Impoundment (**Figure 2**). The three CCR impoundments are subject to the CCR Rule. Part §257.93 of the Rule requires that a certification be obtained from a professional engineer describing the statistical method selected to evaluate the groundwater monitoring data at the facility.

The objective of this report is to document the selection of the statistical method for each Appendix III and IV constituent of interest (COI) for each CCR facility. At Erickson, groundwater monitoring has been conducted to collect eight rounds of background sampling plus the initial detection monitoring as specified under CCR Rule Part §257.94. The water quality data collected from the monitoring wells located upgradient of the CCR unit has been compiled and statistically analyzed to develop the original background threshold values (BTVs) for the impoundments that were documented in the original version of this report issued November 19, 2020.

The objective of this report is to document the selection of the statistical method for each constituent of interest (COI). The water quality data collected from the monitoring wells located upgradient of the CCR unit has been compiled and statistically analyzed to update the background threshold values (BTVs) for the impoundments. The original version of this report issued November 19, 2020. This update reflects a recalculation of the BTVs for the glacial aquifer for the impoundments at the former Erickson to include more data into the background data set from the upgradient wells as a result of continued monitoring over time and includes data from between April 2020 and February 2023. Additionally, the background analysis for the glacial aquifer was expanded to include data from newer upgradient wells, MW-11 and MW-12, sampled between February 2022 and February 2023. As the project has progressed, BWL is evaluating the potential for migration of groundwater exceedances, and has therefore begun evaluating the deeper bedrock aquifer. Because of the lithologic difference between the glacial and bedrock aquifers beneath the site, which affects the groundwater quality, separate BTVs were developed for the glacial aquifer and the bedrock aquifer. Background values were developed for the bedrock aquifer from newer upgradient bedrock wells, MW-11B and MW-12B, from sampling conducted between March 2022 and December 2022.

This background water quality report documents the background sample events and describes the statistics performed to develop the BTVs.

## 2.0 Facility Description

The former Erickson Power Station (Erickson or Site) is an electrical power generation facility located at 3725 South Canal Road in Delta Township, Eaton County, Michigan, owned and operated by Lansing Board of Water & Light (BWL) (Figure 1). Erickson was retired from operations on November 27, 2022. During active operations, a single coal-fired generator was capable of producing 165 megawatts of electricity and CCR was stored in dewatering tanks (hydro-bins). After the majority of the CCR was removed from the waste stream at the hydro-bins, flow was discharged into three CCR impoundments in sequence: the Forebay, Retention Basin, and Clear Water Pond (CWP) (Figure 2). The plant pipelines were washed down and CCR waste disposal ceased to the CCR impoundments on December 29, 2022. The non-CCR stormwater flows to the impoundments ceased January 3, 2023. CCR materials were removed from the impoundments and disposed of at Granger Wood Street Landfill and verification efforts commenced. Through mid-November 2023, approximately 64,000 cubic yards of material (ash, liner, and CCR impacted riprap) have been removed of and disposed of offsite from the three impoundments. Verification was performed through visual, photographic, soil sampling, and laboratory analytical testing. Visual verification was performed in August 2023. Sampling was performed for the CWP in July 2023. Ash removal verification efforts for the Forebay, Retention Basin, and CWP are expected to be finalized in February 2024.

### 2.1 Hydrogeology

The three CCR impoundments are in areas underlain with unconsolidated clay, silt, sand, and gravel of glacial origin which rest upon approximately 10,000 feet of consolidated bedrock sediments composed of limestone, shale, siltstone, salt, and gypsum. Depth to the uppermost aquifer under the impoundments is determined to be approximately 6 to 20 feet below surface. Given the bedrock surface between 36 and 61 feet below surface, the upper glacial aquifer thickness at the site is approximately between 16 and 47 feet thick. The groundwater flow direction directly in the glacial aquifer under the impoundments is east and does not vary with seasonality. To the east of the impoundments at the wetland groundwater turns to the north, following the topography along the Carrier Creek watershed. Groundwater flow in the bedrock aquifer is similar to that of the glacial aquifer, however the contours are slightly different. The lithology is different between the shallow glacial and deeper bedrock aquifers beneath the site, which affects the groundwater quality. Therefore, separate BTVs were developed for the glacial aquifer and the bedrock aquifer.

### 2.2 Monitoring Well Network

The monitoring system for the CCR impoundments includes the following wells (Figure 2):

- Glacial background (upgradient wells): MW-1, MW-4, MW-11, and MW-12.
- Glacial downgradient compliance wells: MW-2, MW-5, MW-6, and MW-14.

### 2.2.1 Additional Wells

The groundwater monitoring system includes additional wells installed to evaluate groundwater further downgradient of the impoundments in response to identification of concentrations of constituents at statistically significant levels (SSLs) over groundwater protection standards (GPS) in the impoundment waste boundary wells. These wells installed for plume delineation are referred to as nature and extent wells or perimeter/characterization wells: **(Figure 2)**:

- Glacial downgradient wells to evaluate extent of GPS exceedances: MW-3, MW-7, MW-7C, MW-8, MW-9, MW-10, MW-13, MW-15, MW-16A, MW-16B, MW-100A, and MW-100B.
- Bedrock background (upgradient) wells: MW-11B, and MW-12B.
- Bedrock downgradient wells: MW-7B, MW-16C, MW-16D, MW-100C, and MW-100D.

The operation and monitoring of the CCR units are described further in the Groundwater Monitoring System Certification for Erickson Station (HDR, 2023).



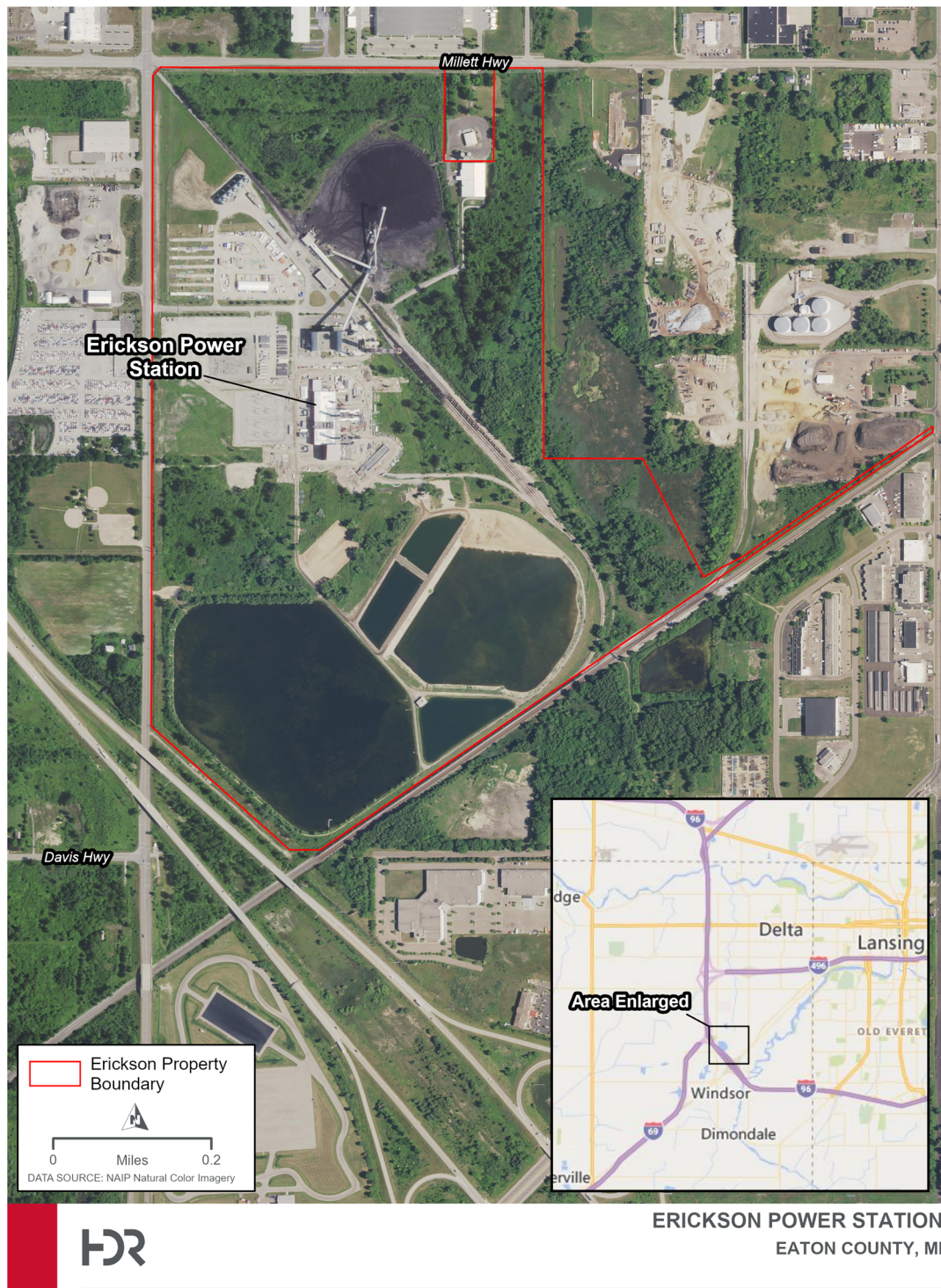
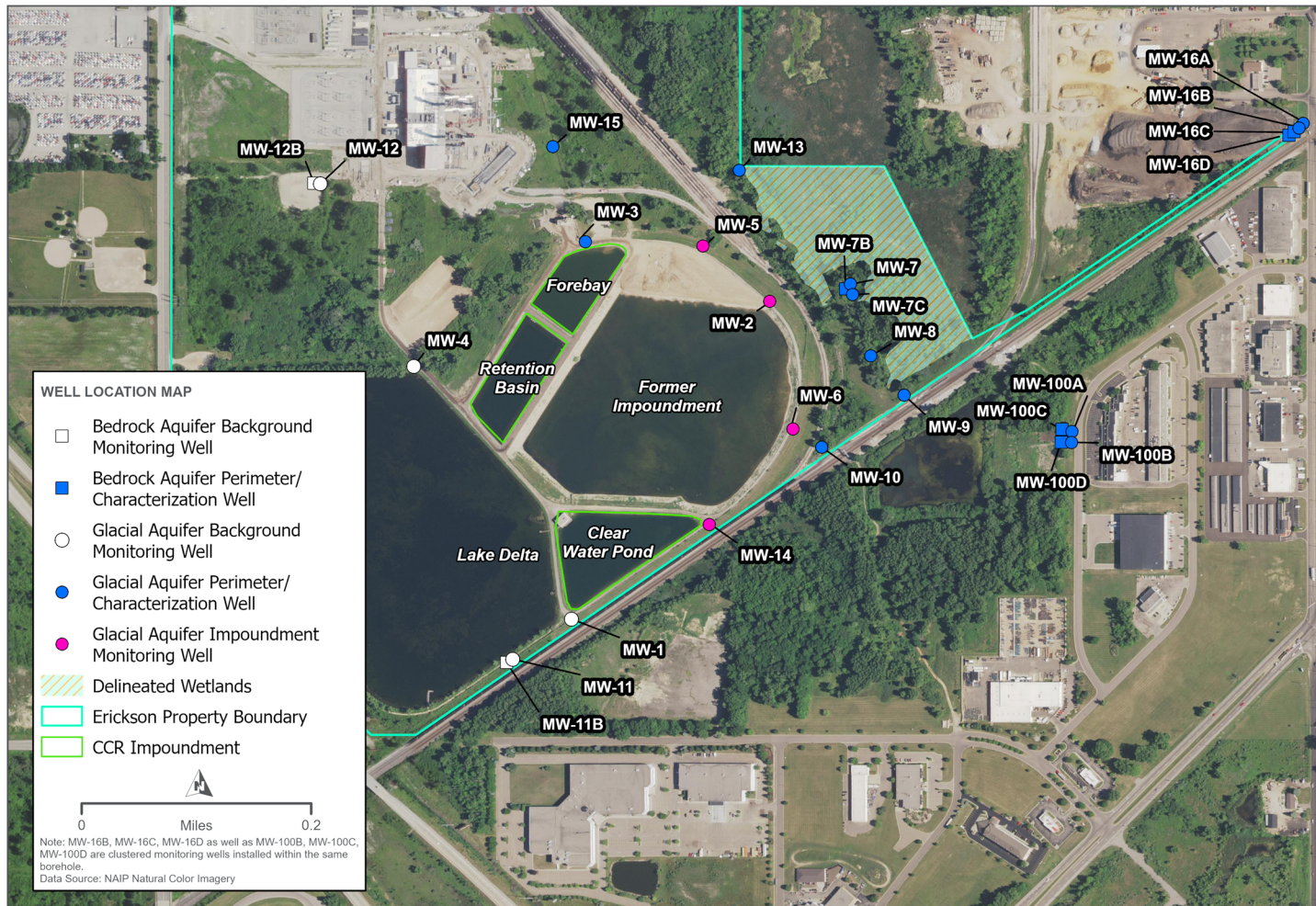


Figure 1. Vicinity Map for Erickson Power Station





ERICKSON POWER STATION  
EATON COUNTY, MI

Figure 2. Erickson Power Station – CCR Unit and Monitoring Well Location Map



## 3.0 Monitoring Methods

### 3.1 Monitoring Frequency

#### 3.1.1 Glacial Aquifer

Groundwater sampling events occurred between April 2020 and February 2023. Each round of sampling has included a sample collected from the glacial aquifer background wells for the impoundments at Erickson (MW-1 and MW-4). Data was collected from background wells MW-1 and MW-4 on the following dates:

- |                   |                      |                    |
|-------------------|----------------------|--------------------|
| ✓ April 28, 2020  | ✓ September 15, 2020 | ✓ January 27, 2021 |
| ✓ May 26, 2020    | ✓ September 28, 2020 | ✓ August 3, 2021   |
| ✓ June 23, 2020   | ✓ October 12, 2020   | ✓ February 1, 2022 |
| ✓ July 21, 2020   | ✓ October 19, 2020   | ✓ August 2, 2022   |
| ✓ August 18, 2020 | ✓ November 6, 2020   | ✓ February 7, 2023 |

Additionally, as stipulated in the CCR Rule, eight background groundwater sampling events were completed to for MW-11 and MW-12, added to the network on February 17, 2022. After installation and development, sampling was conducted on a five-week frequency. Data was collected from background wells MW-11 and MW-12 on the following dates:

- |                     |                      |                    |
|---------------------|----------------------|--------------------|
| ✓ February 23, 2022 | ✓ July 13, 2022      | ✓ February 9, 2023 |
| ✓ March 30, 2022    | ✓ August 17, 2022    |                    |
| ✓ May 4, 2022       | ✓ September 21, 2022 |                    |
| ✓ June 8, 2022      | ✓ October 26, 2022   |                    |

This Background Memorandum presents the updated background values calculated from the data collected from all four of the background glacial wells.

#### 3.1.2 Bedrock Aquifer

As stipulated in the CCR Rule, eight background groundwater sampling events for bedrock aquifer wells were completed between March 2022 and February 2023. This update to the Background Memorandum presents the statistics developed for the bedrock aquifer from the eight events, completed on the following dates:

- |                   |                      |                    |
|-------------------|----------------------|--------------------|
| ✓ April 28, 2022  | ✓ September 15, 2022 | ✓ February 9, 2023 |
| ✓ June 2, 2022    | ✓ October 20, 2022   |                    |
| ✓ July 7, 2022    | ✓ November 22, 2022  |                    |
| ✓ August 11, 2022 | ✓ December 27, 2022  |                    |

### 3.2 Water Levels and Sample Collection

Water levels were recorded for each of the monitoring wells when groundwater quality samples were collected. Groundwater sample collection protocols followed the Groundwater Sample Collection Standard Operating Procedure (SOP) (HDR, 2020). Water samples were delivered under Chain of Custody to Merit Laboratories, Inc, in Lansing, Michigan. Only the upgradient wells are discussed in this report, for update and development of BTVs.

### 3.3 Analytical Testing

Groundwater samples were analyzed for the parameters shown in **Error! Reference source not found.**, which include all of the parameters in Appendices III and IV of CCR Rule Part §257 and Total Suspended Solids (TSS). In addition to the parameters listed in **Error! Reference source not found.**, on occasion, samples were analyzed for general water quality parameters including alkalinity, magnesium, potassium, and sodium.

| Table 1. Constituents of Interest |                              |
|-----------------------------------|------------------------------|
| Appendix III Constituents         | Appendix IV Constituents     |
| Boron                             | Antimony                     |
| Calcium                           | Arsenic                      |
| Chloride                          | Barium                       |
| Fluoride                          | Beryllium                    |
| pH                                | Cadmium                      |
| Sulfate                           | Chromium                     |
| Total Dissolved Solids (TDS)      | Cobalt                       |
|                                   | Fluoride                     |
|                                   | Lead                         |
|                                   | Lithium                      |
|                                   | Mercury                      |
|                                   | Molybdenum                   |
|                                   | Selenium                     |
| <b>Additional Parameters</b>      | Thallium                     |
| Total Suspended Solids (TSS)      | Radium-226 and -228 combined |

## 4.0 Data Validation and Data Management

Data validation and data management tasks were performed per the Data Management and Statistical Procedures Plan for Compliance with the Coal Combustion Residuals Rule (HDR, 2023). Data validation was conducted to eliminate data that did not meet validation criteria and designate a data qualifier for data quality limitation discovered.

## 5.0 Water Levels and Flow Direction

Water levels were measured in the monitoring wells during each sample event. The potentiometric water contours for October 2023 are displayed in **Appendix A**, which illustrate

the groundwater wells chosen for development of BTVs for the site are located upgradient of the CCR units. Groundwater flow under the impoundments at Erickson are generally west to east.

## 6.0 Evaluation of Background Water Quality Data

The background analyses detailed in the section below pertain to samples collected from the background wells for the impoundments at Erickson.

### 6.1 Changes Since Previous Evaluation

Background water quality data for the Erickson impoundments were previously evaluated in the Statistical Methods Certification dated November 19, 2020. This section summarizes the changes that have occurred since then and discusses the potential effects of these changes.

#### 6.1.1 Glacial Aquifer

Background threshold values for the glacial aquifer at Erickson were previously established using pooled data from wells MW-1 and MW-4 between April 2020 and October 2020. The data was updated to include data collected at these wells through February 2023 and data collected from wells MW-11 and MW-12, located upgradient of the impoundments installed February 17, 2022 (Section 3.1.1).

#### 6.1.2 Bedrock Aquifer

Background threshold values for the bedrock aquifer were developed using pooled data from MW-11B and MW-12B between March and February 2023.

### 6.2 Constituents

#### 6.2.1 Glacial Aquifer

The statistical analysis for the glacial aquifer pertains to the samples pooled from background monitoring wells MW-1, MW-4, MW-11, and MW-12 for constituents listed in Appendix III and IV of the CCR Rule. Outliers for this dataset were identified, however all values were used for the purposes of calculating the BTVs for this aquifer. Outliers are further discussed in **Section 6.3** below.

The number of samples for each constituent of interest ranges between 48 and 50 samples for the descriptive analysis of the background monitoring well results. Only non-filtered Appendix III and Appendix IV sample results were utilized for the statistical analysis. Supplemental parameters such as TSS, temperature, magnesium, potassium, and sodium were not analyzed.

Reporting units, number of observations, number of non-detects (NDs), and percentage of NDs below detection limits (BDL) for each constituent are listed in **Error! Reference source not found..**

| Table 2. Constituents – Glacial Aquifer (MW-1, MW-4, MW-11, MW-12) |      |    |         |       |
|--------------------------------------------------------------------|------|----|---------|-------|
| Constituent                                                        | Unit | n  | No. NDs | % NDs |
| Appendix III                                                       |      |    |         |       |
| Boron                                                              | mg/L | 48 | 0       | 0%    |
| Calcium                                                            | mg/L | 48 | 0       | 0%    |

|                        |       |    |    |      |
|------------------------|-------|----|----|------|
| Chloride               | mg/L  | 48 | 0  | 0%   |
| Fluoride               | mg/L  | 48 | 48 | 100% |
| Sulfate                | mg/L  | 48 | 9  | 19%  |
| Total Dissolved Solids | mg/L  | 48 | 0  | 0%   |
| pH, Field              | su    | 50 | 0  | 0%   |
| <b>Appendix IV</b>     |       |    |    |      |
| Fluoride               | mg/L  | 50 | 50 | 100% |
| Antimony               | mg/L  | 50 | 50 | 100% |
| Arsenic                | mg/L  | 50 | 3  | 6.0% |
| Barium                 | mg/L  | 50 | 0  | 0%   |
| Beryllium              | mg/L  | 50 | 50 | 100% |
| Cadmium                | mg/L  | 50 | 50 | 100% |
| Chromium               | mg/L  | 50 | 49 | 98%  |
| Cobalt                 | mg/L  | 50 | 50 | 100% |
| Lead                   | mg/L  | 50 | 50 | 100% |
| Lithium                | mg/L  | 50 | 11 | 22%  |
| Mercury                | mg/L  | 50 | 50 | 100% |
| Molybdenum             | mg/L  | 50 | 38 | 76%  |
| Radium-226/228         | pCi/L | 50 | 0  | 0%   |
| Selenium               | mg/L  | 50 | 50 | 100% |
| Thallium               | mg/L  | 50 | 50 | 100% |

### 6.2.2 Bedrock Aquifer

The statistical analysis for the bedrock aquifer pertains to samples collected from background monitoring wells MW-11B and MW-12B between March 2022 and February 2023 for constituents listed in Appendix III and IV of the CCR Rule. No outliers were identified for the purpose of calculating the BTVs for this aquifer.

A total of 18 samples were included for the descriptive analysis of the background monitoring well results for the monitored constituents. Only non-filtered Appendix III and Appendix IV sample results were utilized for the statistical analysis. Supplemental parameters such as TSS, temperature, magnesium, potassium, and sodium were not analyzed.

Reporting units, number of observations, number of non-detects (NDs), and percentage of NDs below detection limits (BDL) for each constituent are listed in **Error! Reference source not found.3**.

| <b>Table 3. Constituents – Bedrock Aquifer (MW-11B, MW-12B)</b> |             |          |                 |              |
|-----------------------------------------------------------------|-------------|----------|-----------------|--------------|
| <b>Constituent</b>                                              | <b>Unit</b> | <b>n</b> | <b>No. BDLs</b> | <b>% BDL</b> |
| <b>Appendix III</b>                                             |             |          |                 |              |
| Boron                                                           | mg/L        | 18       | 0               | 0%           |
| Calcium                                                         | mg/L        | 18       | 0               | 0%           |
| Chloride                                                        | mg/L        | 18       | 18              | 100%         |
| Fluoride                                                        | mg/L        | 18       | 18              | 100%         |
| Sulfate                                                         | mg/L        | 18       | 18              | 100%         |

|                        |       |    |    |      |
|------------------------|-------|----|----|------|
| Total Dissolved Solids | mg/L  | 18 | 0  | 0%   |
| pH, Field              | su    | 18 | 0  | 0%   |
| <b>Appendix IV</b>     |       |    |    |      |
| Fluoride               | mg/L  | 18 | 18 | 100% |
| Antimony               | mg/L  | 18 | 18 | 100% |
| Arsenic                | mg/L  | 18 | 9  | 50%  |
| Barium                 | mg/L  | 18 | 0  | 0%   |
| Beryllium              | mg/L  | 18 | 18 | 100% |
| Cadmium                | mg/L  | 18 | 18 | 100% |
| Chromium               | mg/L  | 18 | 18 | 100% |
| Cobalt                 | mg/L  | 18 | 18 | 100% |
| Lead                   | mg/L  | 18 | 18 | 100% |
| Lithium                | mg/L  | 18 | 0  | 0%   |
| Mercury                | mg/L  | 18 | 17 | 94%  |
| Molybdenum             | mg/L  | 18 | 13 | 72%  |
| Radium-226/228         | pCi/L | 18 | 0  | 0%   |
| Selenium               | mg/L  | 18 | 18 | 100% |
| Thallium               | mg/L  | 18 | 18 | 100% |

### 6.3 Outliers

Outliers are values that are not representative of the population from which they are sampled. The data sets were screened for outliers using the Dixon's outlier test or Rosner's outlier test; the Dixon's test is used for sample sizes smaller than 25 and the Rosner's outlier test is used for sample sizes 25 and above. Both tests are conducted with NDs excluded and using a significance level of 1 percent.

Quality control conducted on the sampling protocols and laboratory results did not indicate reasons for the noted concentration of the outliers on the dates they were sampled. No unusual weather or anthropogenic activity occurred which could explain the higher concentrations.

For the purposes of estimating background field conditions, all values will be used for constituents flagged in the outlier tests except for one outlier detected for pH of 7.87 su on October 19, 2022. This value was not representative of pH field conditions measured on other dates and was therefore filtered from subsequent analysis. As the sample sizes per well are small (approximately 8 to 15), from a statistical perspective, the variability in the concentrations of these constituents will change as additional samples are obtained, approaching the true underlying variability of concentrations in groundwater in the vicinity of the background well. With the site pooling of wells to represent background field conditions, the samples when aggregated can have statistical outliers due to the differences in well (i.e., spatial) variability, and the fact that the pooled sample distribution is less likely to follow a normal distribution. While Sections 6.3.1 and 6.3.2 display the outlier analysis findings, the values flagged as statistical outliers are valid concentrations from the vicinity of the groundwater well from where they are sampled. All values were retained in the dataset to calculate background, except for the one outlier for pH of 7.87 su on October 19, 2022. The distributions for constituents flagged



in the outlier tests will continue to be monitored as sampling events are added to the background.

### 6.3.1 Glacial Aquifer

In the analysis of glacial monitoring wells, sulfate, pH, arsenic, barium, iron, and nickel had outliers. Outliers were identified for sulfate on nine dates from MW-12, for pH on October 19, 2020 from MW-4, for arsenic on nine dates from MW-1, for barium on nine dates from MW-12, and for nickel on October 26, 2022 from MW-11. Identified outliers are detailed in **Table 4** and plots for each data set containing an outlier are included in **Figure 3** to **Figure 6** below.

| Table 4. Outliers at the 1% Significance Level – Glacial |      |    |         |       |            |       |
|----------------------------------------------------------|------|----|---------|-------|------------|-------|
| Constituent                                              | Unit | n  | No. NDs | % NDs | Date       | Value |
| Appendix III                                             |      |    |         |       |            |       |
| Sulfate                                                  | mg/L | 48 | 9       | 19%   | 2/23/2022  | 344   |
| Sulfate                                                  | mg/L | 48 | 9       | 19%   | 3/30/2022  | 308   |
| Sulfate                                                  | mg/L | 48 | 9       | 18%   | 5/4/2022   | 283   |
| Sulfate                                                  | mg/L | 48 | 9       | 18%   | 8/17/2022  | 256   |
| Sulfate                                                  | mg/L | 48 | 9       | 19%   | 9/21/2022  | 255   |
| Sulfate                                                  | mg/L | 48 | 9       | 19%   | 6/8/2022   | 254   |
| Sulfate                                                  | mg/L | 48 | 9       | 19%   | 10/26/2022 | 252   |
| Sulfate                                                  | mg/L | 48 | 9       | 19%   | 7/13/2022  | 250   |
| Sulfate                                                  | mg/L | 48 | 9       | 19%   | 2/9/2023   | 207   |
| pH, Field                                                | su   | 50 | 0       | 0%    | 19/10/2020 | 7.87  |
| Appendix IV                                              |      |    |         |       |            |       |
| Arsenic                                                  | mg/L | 50 | 3       | 6%    | 8/17/2022  | 0.021 |
| Arsenic                                                  | mg/L | 50 | 3       | 6%    | 9/21/2022  | 0.021 |
| Arsenic                                                  | mg/L | 50 | 3       | 6%    | 5/4/2022   | 0.02  |
| Arsenic                                                  | mg/L | 50 | 3       | 6%    | 10/26/2022 | 0.02  |
| Arsenic                                                  | mg/L | 50 | 3       | 6%    | 7/13/2022  | 0.019 |
| Arsenic                                                  | mg/L | 50 | 3       | 6%    | 2/23/2022  | 0.018 |
| Arsenic                                                  | mg/L | 50 | 3       | 6%    | 3/30/2022  | 0.018 |
| Arsenic                                                  | mg/L | 50 | 3       | 6%    | 6/8/2022   | 0.018 |
| Arsenic                                                  | mg/L | 50 | 3       | 6%    | 2/9/2023   | 0.017 |
| Barium                                                   | mg/L | 50 | 0       | 0%    | 10/26/2022 | 0.057 |
| Barium                                                   | mg/L | 50 | 0       | 0%    | 2/9/2023   | 0.058 |
| Barium                                                   | mg/L | 50 | 0       | 0%    | 6/8/2022   | 0.064 |
| Barium                                                   | mg/L | 50 | 0       | 0%    | 8/17/2022  | 0.064 |
| Barium                                                   | mg/L | 50 | 0       | 0%    | 9/21/2022  | 0.064 |
| Barium                                                   | mg/L | 50 | 0       | 0%    | 7/13/2022  | 0.067 |
| Barium                                                   | mg/L | 50 | 0       | 0%    | 2/23/2022  | 0.069 |
| Barium                                                   | mg/L | 50 | 0       | 0%    | 5/4/2022   | 0.07  |
| Barium                                                   | mg/L | 50 | 0       | 0%    | 3/30/2022  | 0.074 |

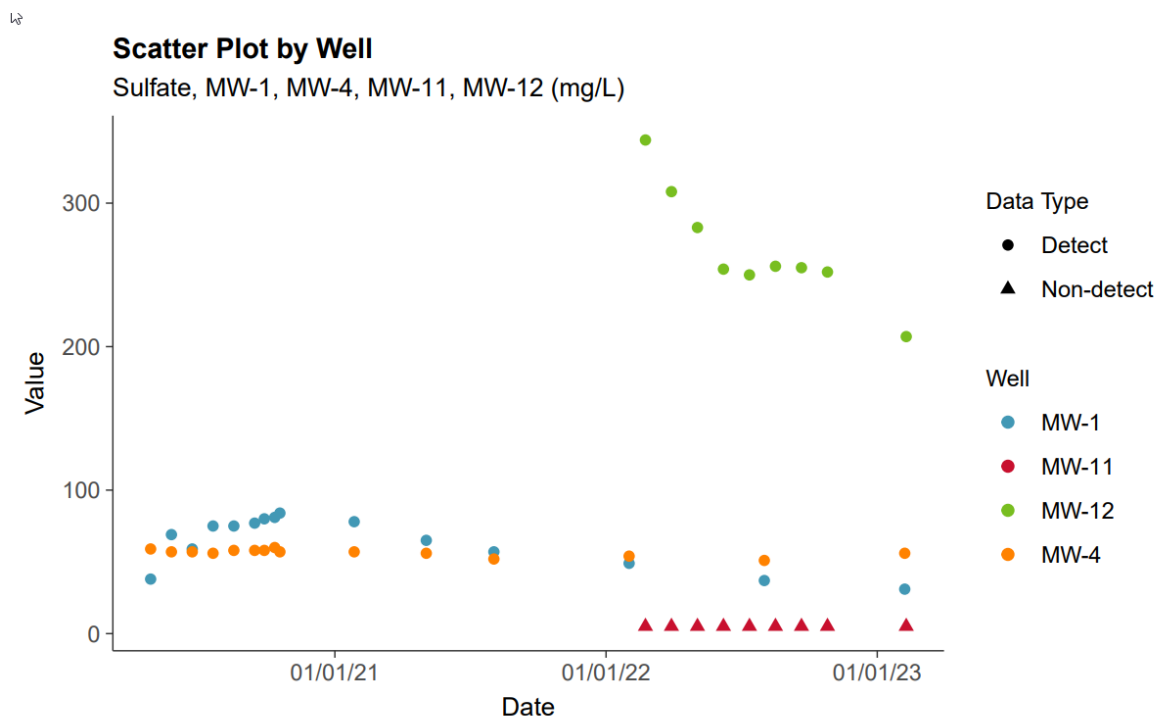


Figure 3. Scatter Plot by Well, Sulfate, MW-1, MW-4, MW-11 and MW-12

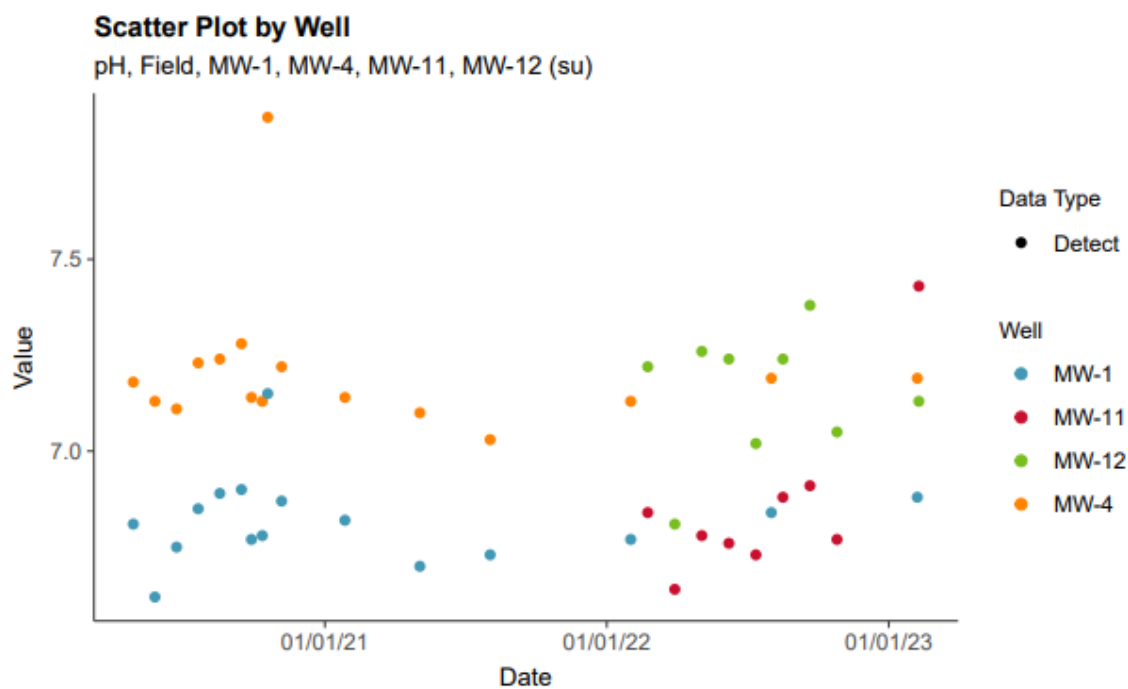


Figure 4. Scatter Plot by Well, pH (Field), MW-1, MW-4, MW-11 and MW-12

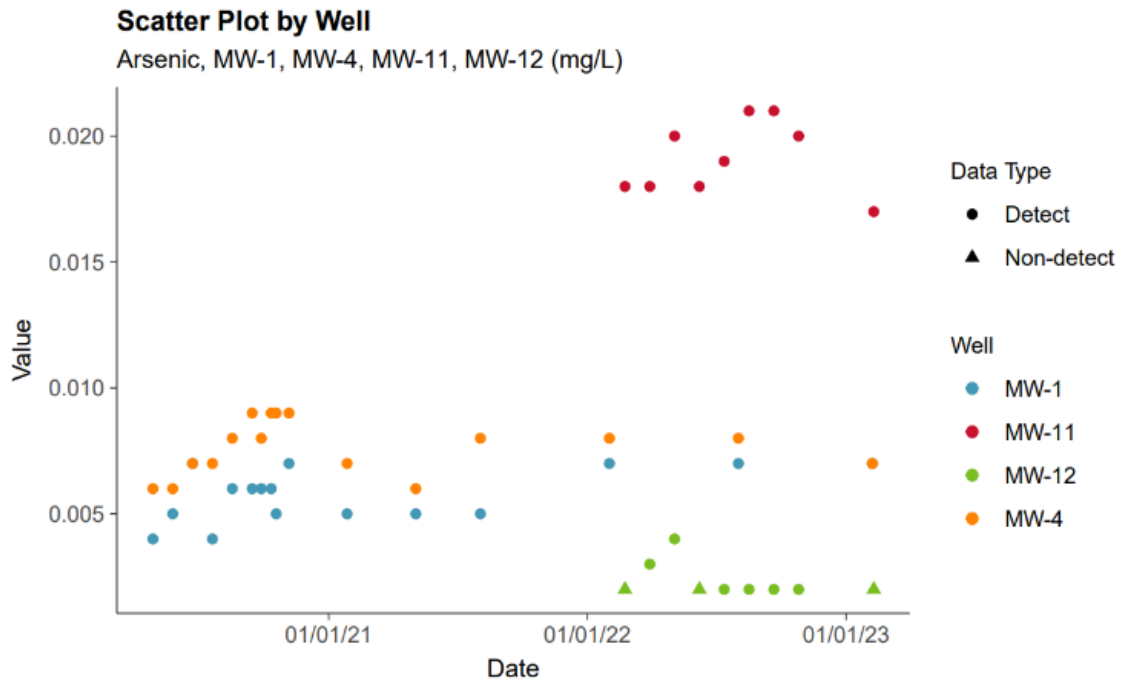


Figure 5. Scatter Plot by Well, Arsenic, MW-1, MW-4, MW-11 and MW-12

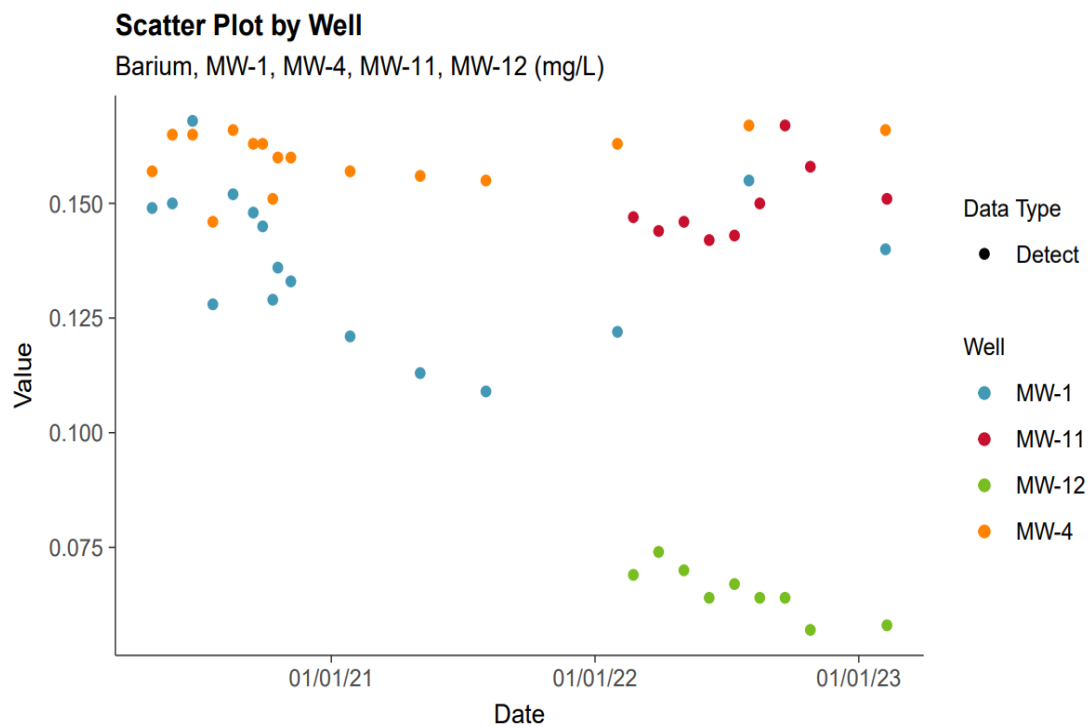


Figure 6. Scatter Plot by Well, Barium, MW-1, MW-4, MW-11 and MW-12

### **6.3.2 Bedrock Aquifer**

In the analysis, no outliers were detected for any constituents of interest at MW-11B or MW-12B.

## **6.4 Data Distributions**

Groundwater data were fit to known distribution models using goodness-of-fit (GOF) tests. GOF tests were not conducted on data sets with less than four detected values due to insufficient data. For purposes of estimating background concentration levels, nonparametric methods will be used on data sets with less than four detected values or more than 50 percent non-detects.

### **6.4.1 Glacial Aquifer**

Appendix III constituents, boron, calcium, fluoride, sulfate, and field pH will be analyzed using nonparametric methods. Chloride and total dissolved solids are best described with a normal and gamma distributions respectively. All Appendix IV constituents will be analyzed with nonparametric methods. All Part 115 constituents will be analyzed with nonparametric methods. Except for iron, all Part 115 constituents had nondetects over 50%. Additional sampling rounds are needed to determine if these constituents' data sets are better described using parametric distributions such as normal, lognormal, or gamma.

### **6.4.2 Bedrock Aquifer**

All Appendix III constituents, with the exception of pH (field), will be analyzed using nonparametric methods. The constituent pH (field) is best described using a normal distribution. The Appendix IV constituents, fluoride, antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, mercury, molybdenum, selenium, and thallium, all had 50% or greater nondetects. These constituents and all other Appendix IV constituents, except lithium and radium-226/228, will be analyzed using nonparametric methods. Lithium and radium-226/228 are best described with a normal distribution. All Part 115 constituents will be analyzed using nonparametric methods.

## **6.5 Seasonality**

Temporal variability in groundwater samples can be due to seasonal effects (i.e., seasonality) or temporal effects (i.e., autocorrelation or trends). 40 C.F.R. § 257.93(g)(6) requires that, if necessary, the statistical method must include procedures to control or correct for seasonal as well as temporal correlation in the data.

Groundwater data may exhibit predictable recurring increases and decreases in concentrations, termed seasonality. Constituents are analyzed for seasonality using the Kruskal-Wallis, ANOVA, and log-transformed ANOVA tests.

### **6.5.1 Glacial Aquifer**

The glacial data contains constituents with 10 winter samples, 10 spring samples, 16 summer samples, and 12-14 fall samples. A minimum of eight sampling events per season is recommended to test for seasonal differences but at least twenty sampling events per season are recommended to de-seasonalize the data. Constituents will continue to be analyzed for

seasonality as additional sampling is conducted to determine if samples are affected by seasonality, and de-seasonalized if necessary, as additional sampling events become available. Of the groups that have sufficient sampling events to detect seasonality, radium-226/228 is identified as having seasonal trends at the 1% confidence level.

### **6.5.2 Bedrock Aquifer**

The bedrock data contain 3 winter samples, 4 spring samples, 5 summer samples, and 6 fall samples. The sample sizes per season at the combined wells do not allow for accurate statistical analysis of seasonality; a minimum of eight sampling events (that is, eight distinct dates) per season is recommended to test for seasonal differences but at least twenty sampling events per season are recommended in order to de-seasonalize the data. Constituents will be analyzed for seasonality as additional sampling is conducted in order to determine if samples are affected by seasonality.

## **6.6 Autocorrelation**

Autocorrelation occurs when values of a single variable data set are correlated over successive (i.e., lagged) time intervals. A minimum of at least fifty samples is recommended for autocorrelation tests using conventional estimators to perform well in assessing the test statistic's probability value. Constituents will be analyzed for autocorrelation as additional sampling is conducted.

## **6.7 Trends**

A key assumption for hypothesis testing is that sample data are stationary through time, free of any trends. Constituents that follow a parametric distribution and do not demonstrate seasonality were analyzed for trends within the data set using a lognormal Maximum Likelihood Estimate (MLE) regression. The Mann-Kendall test and Theil-Sen slope was used to analyze linear trends for constituents that could not be fit to any of the three tested distributions. The Mann-Kendall test is suitable for data sets with no seasonality and only one unique MDL.

Results for both parametric and nonparametric trend tests are reported in **Table 5** and **Table 6**. Constituents with more 50% or more non-detects are not tested for trends given limited information in the datasets. For those datasets with less than 50% non-detects and are best described using nonparametric distribution assumptions, only those datasets with one unique MDL value are tested using the Mann-Kendall test given the test's assumptions. For parametric tests, the "Slope" column contains the MLE slope on a log-linear scale with respect to time (measured in days), and the "p-value" column contains the p-value associated with that slope. For nonparametric tests, the "Slope" column contains the Theil-Sen slope estimator, and the "p-value" column contains the p-value from the Mann-Kendall test. The "Trend" column indicates upward or downward trends when the p-value is below 1%.

### **6.7.1 Glacial Aquifer**

At the 1% significance level, no upward trends were identified for any constituents of interest.

| Table 5. Trend Tests at the 1% Significance Level – Glacial Aquifer |       |    |         |       |               |            |          |       |
|---------------------------------------------------------------------|-------|----|---------|-------|---------------|------------|----------|-------|
| Constituent                                                         | Unit  | n  | No. BDL | % BDL | Method        | Slope      | p-value  | Trend |
| <b>Appendix III</b>                                                 |       |    |         |       |               |            |          |       |
| Boron                                                               | mg/L  | 48 | 0       | 0%    | MK            | 0          | 0.795    | ↔     |
| Calcium                                                             | mg/L  | 48 | 0       | 0%    | MK            | -0.00210   | 0.831    | ↔     |
| Chloride                                                            | mg/L  | 48 | 0       | 0%    | Lognormal MLE | 0.0000991  | 0.134    | ↔     |
| Sulfate                                                             | mg/L  | 48 | 9       | 19%   | MK            | -0.00917   | 0.189    | ↔     |
| Total Dissolved Solids                                              | mg/L  | 48 | 0       | 0%    | Lognormal MLE | 0.000157   | 0.128    | ↔     |
| pH, Field                                                           | su    | 50 | 0       | 0%    | MK            | 0.0000381  | 0.598    | ↔     |
| <b>Appendix IV</b>                                                  |       |    |         |       |               |            |          |       |
| Arsenic                                                             | mg/L  | 50 | 8       | 15%   | MK            | 0          | 0.473    | ↔     |
| Barium                                                              | mg/L  | 50 | 3       | 0%    | MK            | -0.0000274 | 0.007    | ↓     |
| Radium-226/228                                                      | pCi/L | 50 | 0       | 0%    | MK            | 0.000602   | 0.165    | ↔     |
| Radium-226/228                                                      | pCi/L | 46 | 0       | 0%    | MK            | 0.000543   | 0.319605 | ↔     |

### 6.7.2 Bedrock Aquifer

At the 1% significance level, no upward trends were identified for any constituents of interest.

| Table 6. Trend Tests at the 1% Significance Level – Bedrock Aquifer |       |    |         |       |               |             |         |       |
|---------------------------------------------------------------------|-------|----|---------|-------|---------------|-------------|---------|-------|
| Constituent                                                         | Unit  | n  | No. BDL | % BDL | Method        | Slope       | p-value | Trend |
| <b>Appendix III</b>                                                 |       |    |         |       |               |             |         |       |
| Boron                                                               | mg/L  | 18 | 0       | 0%    | MK            | 0.000288    | 0.649   | ↔     |
| Calcium                                                             | mg/L  | 18 | 0       | 0%    | MK            | 0.0144      | 0.053   | ↔     |
| Total Dissolved Solids                                              | mg/L  | 18 | 0       | 0%    | MK            | -0.0881     | 0.011   | ↔     |
| pH, Field                                                           | su    | 18 | 0       | 0%    | Lognormal MLE | -0.000176   | 0.015   | ↔     |
| <b>Appendix IV</b>                                                  |       |    |         |       |               |             |         |       |
| Barium                                                              | mg/L  | 18 | 0       | 0%    | MK            | -0.00000166 | 0.819   | ↔     |
| Lithium                                                             | mg/L  | 18 | 0       | 0%    | Lognormal MLE | -0.000141   | 0.778   | ↔     |
| Radium-226/228                                                      | pCi/L | 18 | 0       | 0%    | Lognormal MLE | 0.00360     | 0.011   | ↔     |

## 6.8 Spatial Variability

An assumption when deriving background groundwater quality is that concentrations of constituents measured at the background wells over time when pooled represent an estimate of overall well field conditions for those constituents. This assumption implies the variability of the



concentrations per well is comparable and the values are independent of each other. A means to test this assumption is to study the spatial variability of the observations across the wells.

Spatial variability exists when the distribution or pattern of concentrations changes between well locations, either from natural or anthropogenic factors. To evaluate the potential for spatial variability in background wells, time series plots of concentrations were used for each constituent at each well (**Appendix C – Background Wells MW-11B and MW-12B & Appendix D Background Wells MW-1, -4, -11, -12**). Visual cues from the observed variability of concentrations across the wells per constituent were corroborated using both parametric and nonparametric ANOVA tests where appropriate that tested if differences in mean or median concentrations were statistically significant.

As reported below, spatial variability was detected in both the bedrock and glacial datasets. However, in cases where spatial variability was detected, nonparametric methods were used to calculate the background threshold values. Nonparametric methods avoid the use of erroneous assumptions regarding the underlying distribution that may arise when samples from wells with spatial variability are pooled. In cases where parametric methods were still used (glacial: chloride, molybdenum, total dissolved solids; bedrock: pH (field), lithium, radium-226/228), the averages across wells were not meaningfully different, and the range and variability of the pooled data were well approximated by a parametric distribution. For these reasons, further analysis to mitigate the impact of spatial variabilities such as redefining the background well network or sequestering sets of sampling events from analysis were not conducted.

#### **6.8.1 Glacial Aquifer**

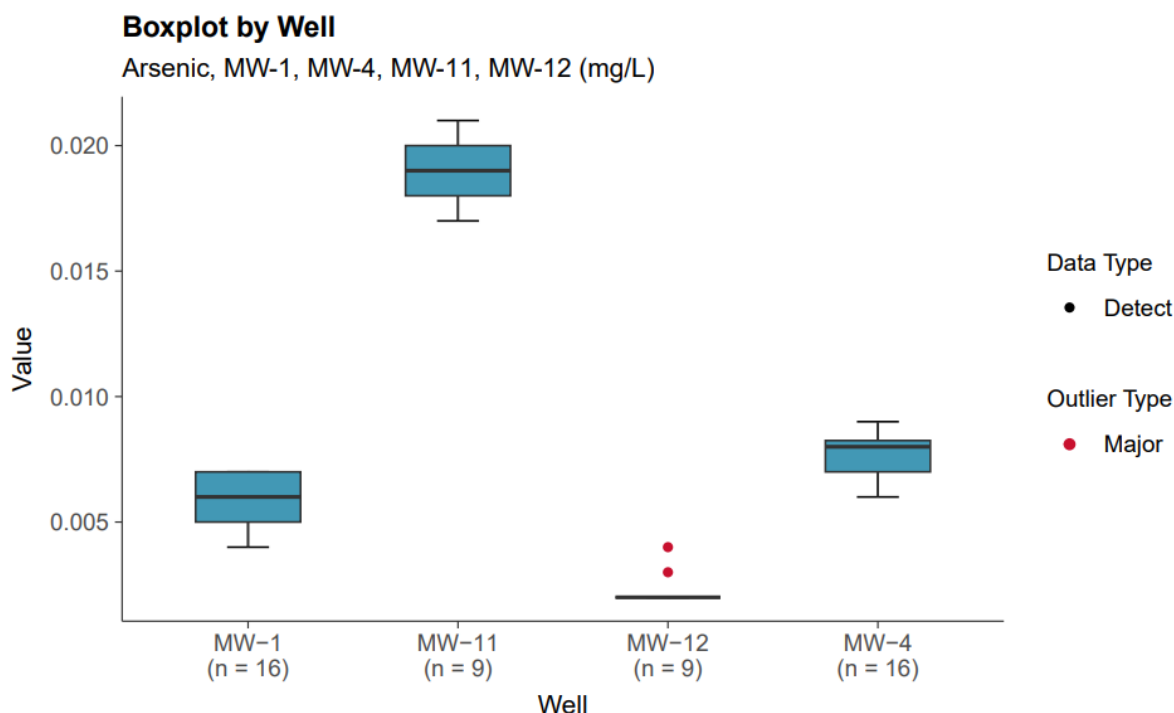
Spatial variability was present in the data for 12 of the 27 constituents at the 1% level of significance based on the Kruskal-Wallis test for differences in medians (**Appendix C – Background Wells MW-11B and MW-12B, Table 8**). Potential spatial variability between background wells MW-1, MW-4, MW-11, and MW-12 was identified for twelve (12) constituents (boron, calcium, chloride, sulfate, total dissolved solids, pH (Field), arsenic, barium, lithium, molybdenum, iron, and nickel).

The constituents with a high level of nondetects that had sufficient detected data from which to test spatial variability were molybdenum (76%) and nickel (80%). Based solely on detected data, spatial variability was not noted at the 1% level of significance for either molybdenum or nickel. The constituents, fluoride, antimony, beryllium, cadmium, cobalt, mercury, selenium, thallium, copper, silver, and vanadium had 100% of their values as nondetects. Finally, chromium had over 90% of their values as nondetects and hence had insufficient detected data on which to test for spatial variability.

**Figure 7** demonstrates an example of a constituent with 6% nondetects, arsenic, that exhibited spatial variability across the wells.

While statistically different well averages for the aforementioned constituents are flagged using the Kruskal-Wallis test at the 1% level of significance, the sample concentrations are approximately within an order of magnitude of each other and reflect the natural variability of the

concentrations for the constituents of interest across the background field area (see **Appendix E Background Wells MW-1, MW-4, MW-11 and MW-12, Scatter Plots**).



**Figure 7. Boxplot by Well, Arsenic, MW-1, MW-4, MW-11 and MW-12**

### 6.8.2 Bedrock Aquifer

The nonparametric ANOVA Kruskal-Wallis test including nondetects was the appropriate test to reference as pooling the data across the two wells yielded samples that could not be clearly described by parametric distributions. Spatial variability was present in the data for 8 of the 27 constituents at the 1% level of significance based on the Kruskal-Wallis test for differences in medians (**Appendix – B Background Wells MW-11B and MW-12B , Table 8**). Potential spatial variability between background wells MW-11B and MW-12B was identified for eight constituents (boron, calcium, total dissolved solids, pH (Field), arsenic, barium, lithium, iron). The remaining constituents that did not have evidence of spatial variability consistently had over half the observations as nondetects.

The constituents with a high level of nondetects that had sufficient detected data from which to test spatial variability were arsenic (50%) and molybdenum (72%). Based solely on detected data, spatial variability was not noted at the 1% level of significance for either arsenic or molybdenum. The constituents chloride, fluoride, sulfate, antimony, beryllium, cadmium, chromium, cobalt, lead, selenium, thallium, copper, silver, vanadium had 100% of their values as nondetects. Nickel, zinc, and mercury each had over 90% nondetects.

**Figure 8** demonstrates an example of a constituent with 100% detected data, boron, that exhibited spatial variability across the wells. While statistically different well averages for the

aforementioned constituents are flagged using the Kruskal-Wallis test at the 1% level of significance, the sample concentrations are approximately within an order of magnitude of each other and reflect the natural variability of the concentrations for the constituents of interest across the background field area (see **Appendix D Background Wells MW-11B, MW-12B, Scatter Plots**).

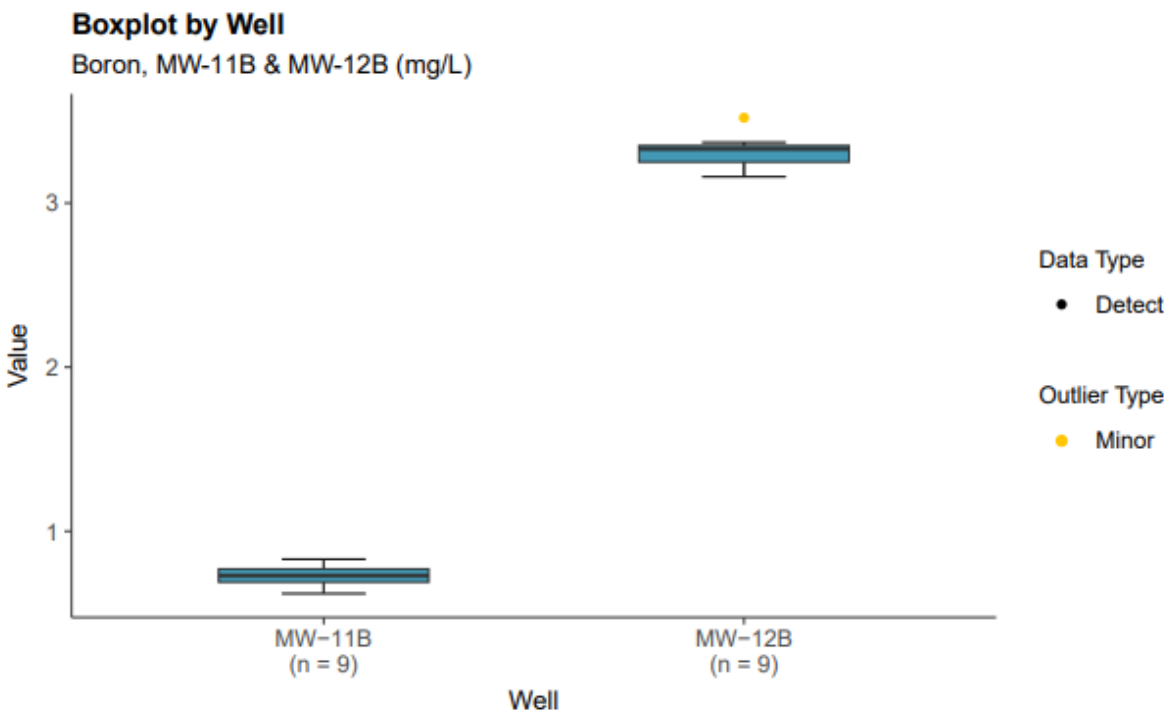


Figure 8. Boxplot by Well, Boron, MW-11B and MW-12B

## 6.9 Summary of Statistical Analysis

**Table 7** and **Error! Reference source not found.** contain key summaries of the outlier tests, distribution tests, and trend tests for each constituent. A “√” symbol denotes that the constituent was flagged by the indicated test. Additional sampling is necessary to determine the validity of outlier samples, distributional assumptions, and stationarity assumptions.

| Table 7. Summary of Statistical Analysis – Glacial Aquifer |          |               |       |
|------------------------------------------------------------|----------|---------------|-------|
| Constituent                                                | Outliers | Nonparametric | Trend |
| <b>Appendix III</b>                                        |          |               |       |
| Boron                                                      |          | ✓             |       |
| Calcium                                                    |          | ✓             |       |
| Chloride                                                   |          |               |       |
| Fluoride                                                   |          | ✓             |       |
| Sulfate                                                    | ✓        | ✓             |       |
| Total Dissolved Solids                                     |          |               |       |
| pH, Field                                                  | ✓        | ✓             |       |
| <b>Appendix IV</b>                                         |          |               |       |
| Fluoride                                                   |          | ✓             |       |
| Antimony                                                   |          | ✓             |       |
| Arsenic                                                    | ✓        | ✓             |       |
| Barium                                                     | ✓        | ✓             | ✓     |
| Beryllium                                                  |          | ✓             |       |
| Cadmium                                                    |          | ✓             |       |
| Chromium                                                   |          | ✓             |       |
| Cobalt                                                     |          | ✓             |       |
| Lead                                                       |          | ✓             |       |
| Lithium                                                    |          |               |       |
| Mercury                                                    |          | ✓             |       |
| Molybdenum                                                 |          | ✓             |       |
| Radium-226/228                                             |          | ✓             |       |
| Selenium                                                   |          | ✓             |       |
| Thallium                                                   |          | ✓             |       |
| Selenium                                                   |          | ✓             |       |
| Thallium                                                   |          | ✓             |       |

✓Constituent was flagged during statistical analysis

| Table 8. Summary of Statical Analysis – Bedrock Aquifer |          |               |       |
|---------------------------------------------------------|----------|---------------|-------|
| Constituent                                             | Outliers | Nonparametric | Trend |
| <b>Appendix III</b>                                     |          |               |       |
| Boron                                                   |          | ✓             |       |
| Calcium                                                 |          | ✓             |       |
| Chloride                                                |          | ✓             |       |
| Fluoride                                                |          | ✓             |       |
| Sulfate                                                 |          | ✓             |       |
| Total Dissolved Solids                                  |          | ✓             |       |
| pH, Field                                               |          |               |       |
| <b>Appendix IV</b>                                      |          |               |       |
| Fluoride                                                |          | ✓             |       |
| Antimony                                                |          | ✓             |       |
| Arsenic                                                 |          | ✓             |       |
| Barium                                                  |          | ✓             |       |
| Beryllium                                               |          | ✓             |       |
| Cadmium                                                 |          | ✓             |       |
| Chromium                                                |          | ✓             |       |
| Cobalt                                                  |          | ✓             |       |
| Lead                                                    |          | ✓             |       |
| Lithium                                                 |          |               |       |
| Mercury                                                 |          | ✓             |       |
| Molybdenum                                              |          | ✓             |       |
| Radium-226/228                                          |          |               |       |
| Selenium                                                |          | ✓             |       |
| Thallium                                                |          | ✓             |       |

✓Constituent was flagged during statistical analysis

## 6.10 Detection Monitoring Background Threshold Values

Background threshold values (BTVs) were estimated to represent background concentration levels for future use in evaluating whether downgradient samples exhibit statistically significant increases (SSIs) during detection monitoring. The BTVs are the upper prediction limits (UPLs) of the background data, which are one of the statistical methods specified under 40 C.F.R. § 257.93(f)(3) for evaluating groundwater monitoring data. The number of verification samples and the significance levels associated with each UPL are chosen such that the site-wide false positive rate over all comparisons is no more than 10 percent and such that the power of each test exceeds the EPA Reference Power Curve (ERPC) at either 3 standard deviations above background, 4 standard deviations above background, or both.

Note that for pH, both the UPL and the lower prediction limit (LPL) are of interest as pH values above the UPL or below the LPL at the downgradient wells can be considered statistically significant.

For constituents that do not have any detected values, the maximum MDL is chosen as the BTV and the double quantification rule (DQR) is used to evaluate whether there is an SSI; that is, an SSI is registered for a downgradient well-constituent pair if there are two consecutive detections above the BTV. These constituents are excluded from the determination of target false positive rates.

**Error! Reference source not found.** and **Error! Reference source not found.** contain the estimated UPLs for Appendix III constituents for bedrock and glacial sediment layers. These UPLs are used during detection monitoring of the CCR Rule's implementation.

### 6.10.1 Glacial Aquifer

The number of retests and the rank of the order statistic for nonparametric UPLs are chosen such that the significance level does not exceed the per-constituent false positive rate of 0.0174, and such that the test power exceeds the EPA Reference Power Curve (ERPC) at either 3 standard deviations (SDs) above background, 4 SDs above background, or both. The maximum per-constituent false positive rate is computed based on a site-wide false positive rate of 10% subdivided across six constituents with at least one detected sample.

For parametric (normal, lognormal, or gamma) UPLs, the number of retests and the value of the K factor are chosen such that the significance level does not exceed the per-test false positive rate of 0.00110, and such that the test power exceeds the ERPC at either 3 SDs above background, 4 SDs above background, or both. The maximum per-test false positive rate is computed based on a site-wide false positive rate of 10% subdivided across six constituents and 16 downgradient wells.

**Table 9** contains the estimated UPLs for Appendix III constituents for glacial sediment layers. These UPLs are used during detection monitoring of the CCR Rule's implementation.

| Table 9. Background Threshold Values for Detection Monitoring – Glacial Aquifer |      |    |         |       |                          |                             |           |
|---------------------------------------------------------------------------------|------|----|---------|-------|--------------------------|-----------------------------|-----------|
| Constituent                                                                     | Unit | n  | No. BDL | % BDL | Recommended distribution | No. of verification samples | BTV (UPL) |
| <b>Appendix III</b>                                                             |      |    |         |       |                          |                             |           |
| Boron                                                                           | mg/L | 48 | 0       | 0%    | Nonparametric            | 2                           | 0.440     |
| Calcium                                                                         | mg/L | 48 | 0       | 0%    | Nonparametric            | 2                           | 173       |
| Chloride                                                                        | mg/L | 48 | 0       | 0%    | Normal                   | 0                           | 106       |
| Fluoride                                                                        | mg/L | 48 | 48      | 100%  | Nonparametric            | 2                           | 1.00*     |
| Sulfate                                                                         | mg/L | 48 | 9       | 19%   | Nonparametric            | 2                           | 283       |
| Total Dissolved Solids                                                          | mg/L | 48 | 0       | 0%    | Gamma                    | 0                           | 1,605     |
| pH, Field, LPL                                                                  | su   | 49 | 0       | 0%    | Nonparametric            | 2                           | 6.70      |
| pH, Field, UPL                                                                  | su   | 49 | 0       | 0%    | Nonparametric            | 2                           | 7.28      |

\*Constituent is 100% non-detects. Double Quantification Rule (DQR) is recommended for determining if an exceedance has occurred.

### 6.10.2 Bedrock Aquifer

The number of retests and the rank of the order statistic for nonparametric UPLs are chosen such that the significance level does not exceed the per-constituent false positive rate of 0.0259, and such that the test power exceeds the EPA Reference Power Curve (ERPC) at either 3 standard deviations (SDs) above background, 4 SDs above background, or both. The maximum per-constituent false positive rate is computed based on a site-wide false positive rate of 10% subdivided across the four constituents that had at least one detected sample.

For parametric (normal, lognormal, or gamma) UPLs, the number of retests and the value of the K factor are chosen such that the significance level does not exceed the per-test false positive rate of 0.0053, and such that the test power exceeds the ERPC at either 3 SDs above background, 4 SDs above background, or both. The maximum per-test false positive rate is computed based on a site-wide false positive rate of 10% subdivided across four constituents and five downgradient wells.

**Table 10** contains the estimated UPLs for Appendix III constituents for bedrock sediment layers. These UPLs are used during detection monitoring of the CCR Rule's implementation.

| Table 10. Background Threshold Values for Detection Monitoring – Bedrock Aquifer |      |    |         |       |                          |                             |           |
|----------------------------------------------------------------------------------|------|----|---------|-------|--------------------------|-----------------------------|-----------|
| Constituent                                                                      | Unit | n  | No. BDL | % BDL | Recommended distribution | No. of verification samples | BTV (UPL) |
| <b>Appendix III</b>                                                              |      |    |         |       |                          |                             |           |
| Boron                                                                            | mg/L | 18 | 0       | 0%    | Nonparametric            | 2                           | 3.52      |
| Calcium                                                                          | mg/L | 18 | 0       | 0%    | Nonparametric            | 2                           | 69.6      |
| Chloride                                                                         | mg/L | 18 | 18      | 100%  | Nonparametric            | 2                           | 5.0*      |
| Fluoride                                                                         | mg/L | 18 | 18      | 100%  | Nonparametric            | 2                           | 1.0*      |
| Sulfate                                                                          | mg/L | 18 | 18      | 100%  | Nonparametric            | 2                           | 5.0*      |
| Total Dissolved Solids                                                           | mg/L | 18 | 0       | 0%    | Nonparametric            | 2                           | 380       |
| pH, Field, LPL                                                                   | su   | 18 | 0       | 0%    | Normal                   | 0                           | 6.52      |
| pH, Field, UPL                                                                   | su   | 18 | 0       | 0%    | Normal                   | 0                           | 8.47      |



\*Constituent is 100% non-detects. Double Quantification Rule (DQR) is recommended for determining if an exceedance has occurred.

## 6.11 Assessment Monitoring Background Threshold Values

For the purpose of estimating background threshold values (BTVs) to represent background concentration levels and for future use in evaluating whether samples selected from downgradient wells exhibit statistically significant increases (SSIs) during assessment monitoring, all background samples per constituent from background wells in their respective aquifer were used.

### 6.11.1 Glacial Aquifer

The number of retests and the rank of the order statistic for nonparametric UPLs are chosen such that the significance level does not exceed the per-constituent false positive rate of 0.0105, and such that the test power exceeds the EPA Reference Power Curve (ERPC) at either 3 standard deviations (SDs) above background, 4 SDs above background, or both. The maximum per-constituent false positive rate is computed based on a site-wide false positive rate of 10% subdivided across ten constituents with at least one detected value.

For parametric (normal, lognormal, or gamma) UPLs, the number of retests and the value of the K factor are chosen such that the significance level does not exceed the per-test false positive rate of 0.0021, and such that the test power exceeds the ERPC at either 3 SDs above background, 4 SDs above background, or both. The maximum per-test false positive rate is computed based on a site-wide false positive rate of 10% subdivided across ten constituents and five downgradient wells.

| Table 11. Background Threshold Values for Assessment Monitoring – Glacial Aquifer |       |    |     |       |                          |                             |           |
|-----------------------------------------------------------------------------------|-------|----|-----|-------|--------------------------|-----------------------------|-----------|
| Constituent                                                                       | Units | n  | NDs | % NDs | Recommended Distribution | No. of Verification Samples | BTV (UPL) |
| <b>Appendix III</b>                                                               |       |    |     |       |                          |                             |           |
| Boron                                                                             | mg/L  | 48 | 0   | 0%    | Nonparametric            | 2                           | 0.450     |
| Calcium                                                                           | mg/L  | 48 | 0   | 0%    | Nonparametric            | 2                           | 180       |
| Chloride                                                                          | mg/L  | 48 | 0   | 0%    | Normal                   | 1                           | 92.9      |
| Fluoride                                                                          | mg/L  | 48 | 48  | 100%  | Nonparametric            | 2                           | 1.00*     |
| Sulfate                                                                           | mg/L  | 48 | 9   | 18%   | Nonparametric            | 2                           | 308       |
| Total Dissolved Solids                                                            | mg/L  | 48 | 0   | 0%    | Gamma                    | 1                           | 1,233     |
| pH, Field, LPL                                                                    | su    | 49 | 0   | 0%    | Nonparametric            | 2                           | 6.64      |
| pH, Field, UPL                                                                    | su    | 49 | 0   | 0%    | Nonparametric            | 2                           | 7.38      |
| <b>Appendix IV</b>                                                                |       |    |     |       |                          |                             |           |
| Fluoride                                                                          | mg/L  | 50 | 50  | 100%  | Nonparametric            | 2                           | 1.00*     |
| Antimony                                                                          | mg/L  | 50 | 50  | 100%  | Nonparametric            | 2                           | 0.00500*  |
| Arsenic                                                                           | mg/L  | 50 | 3   | 6.0%  | Nonparametric            | 2                           | 0.0210    |
| Barium                                                                            | mg/L  | 50 | 0   | 0.0%  | Nonparametric            | 2                           | 0.167     |
| Beryllium                                                                         | mg/L  | 50 | 50  | 100%  | Nonparametric            | 2                           | 0.00100*  |
| Cadmium                                                                           | mg/L  | 50 | 50  | 100%  | Nonparametric            | 2                           | 0.00500*  |
| Chromium                                                                          | mg/L  | 50 | 49  | 98.0% | Nonparametric            | 2                           | 0.00500   |
| Cobalt                                                                            | mg/L  | 50 | 50  | 100%  | Nonparametric            | 2                           | 0.00500*  |

|                |       |    |    |       |               |   |           |
|----------------|-------|----|----|-------|---------------|---|-----------|
| Lead           | mg/L  | 50 | 50 | 100%  | Nonparametric | 2 | 0.00300*  |
| Lithium        | mg/L  | 50 | 11 | 22.0% | Nonparametric | 2 | 0.0390    |
| Mercury        | mg/L  | 50 | 50 | 100%  | Nonparametric | 2 | 0.000200* |
| Molybdenum     | mg/L  | 50 | 38 | 76.0% | Nonparametric | 2 | 0.0230    |
| Radium-226/228 | pCi/L | 50 | 0  | 0.0%  | Nonparametric | 2 | 4.03      |
| Selenium       | mg/L  | 50 | 50 | 100%  | Nonparametric | 2 | 0.00500*  |
| Thallium       | mg/L  | 50 | 50 | 100%  | Nonparametric | 2 | 0.00200*  |

\*Constituent is 100% non-detects. Double Quantification Rule (DQR) is recommended for determining if an exceedance has occurred.

### 6.11.2 Bedrock Aquifer

The number of retests and the rank of the order statistic for nonparametric UPLs are chosen such that the significance level does not exceed the per-constituent false positive rate of 0.0105, and such that the test power exceeds the EPA Reference Power Curve (ERPC) at either 3 standard deviations (SDs) above background, 4 SDs above background, or both. The maximum per-constituent false positive rate is computed based on a site-wide false positive rate of 10% subdivided across ten constituents with at least one detected value.

For parametric (normal, lognormal, or gamma) UPLs, the number of retests and the value of the K factor are chosen such that the significance level does not exceed the per-test false positive rate of 0.0021, and such that the test power exceeds the ERPC at either 3 SDs above background, 4 SDs above background, or both. The maximum per-test false positive rate is computed based on a site-wide false positive rate of 10% subdivided across ten constituents and five downgradient wells.

| Table 12. Background Threshold Values for Assessment Monitoring – Bedrock Aquifer |       |    |     |       |                          |                             |           |
|-----------------------------------------------------------------------------------|-------|----|-----|-------|--------------------------|-----------------------------|-----------|
| Constituent                                                                       | Units | n  | NDs | % NDs | Recommended Distribution | No. of Verification Samples | BTV (UPL) |
| <b>Appendix III</b>                                                               |       |    |     |       |                          |                             |           |
| Boron                                                                             | mg/L  | 18 | 0   | 0%    | Nonparametric            | 2                           | 3.52      |
| Calcium                                                                           | mg/L  | 18 | 0   | 0%    | Nonparametric            | 2                           | 69.6      |
| Chloride                                                                          | mg/L  | 18 | 18  | 100%  | Nonparametric            | 2                           | 5.00*     |
| Fluoride                                                                          | mg/L  | 18 | 18  | 100%  | Nonparametric            | 2                           | 1.00*     |
| Sulfate                                                                           | mg/L  | 18 | 18  | 100%  | Nonparametric            | 2                           | 5.00*     |
| Total Dissolved Solids                                                            | mg/L  | 18 | 0   | 0%    | Nonparametric            | 2                           | 380       |
| pH, Field, LPL                                                                    | su    | 18 | 0   | 0%    | Normal                   | 1                           | 6.40      |
| pH, Field, UPL                                                                    | su    | 18 | 0   | 0%    | Normal                   | 1                           | 8.59      |
| <b>Appendix IV</b>                                                                |       |    |     |       |                          |                             |           |
| Fluoride                                                                          | mg/L  | 18 | 18  | 100%  | Nonparametric            | 2                           | 1.00*     |
| Antimony                                                                          | mg/L  | 18 | 18  | 100%  | Nonparametric            | 2                           | 0.00500*  |
| Arsenic                                                                           | mg/L  | 18 | 9   | 50%   | Nonparametric            | 2                           | 0.00900   |
| Barium                                                                            | mg/L  | 18 | 0   | 0%    | Nonparametric            | 2                           | 0.0810    |
| Beryllium                                                                         | mg/L  | 18 | 18  | 100%  | Nonparametric            | 2                           | 0.00100*  |
| Cadmium                                                                           | mg/L  | 18 | 18  | 100%  | Nonparametric            | 2                           | 0.000500* |

|                |       |    |    |      |               |   |          |
|----------------|-------|----|----|------|---------------|---|----------|
| Chromium       | mg/L  | 18 | 18 | 100% | Nonparametric | 2 | 0.00500* |
| Cobalt         | mg/L  | 18 | 18 | 100% | Nonparametric | 2 | 0.00500* |
| Lead           | mg/L  | 18 | 18 | 100% | Nonparametric | 2 | 0.00300* |
| Lithium        | mg/L  | 18 | 0  | 0%   | Normal        | 1 | 0.0495   |
| Mercury        | mg/L  | 18 | 17 | 94%  | Nonparametric | 2 | 0.000200 |
| Molybdenum     | mg/L  | 18 | 13 | 72%  | Nonparametric | 2 | 0.0110   |
| Radium-226/228 | pCi/L | 18 | 0  | 0%   | Normal        | 1 | 4.18     |
| Selenium       | mg/L  | 18 | 18 | 100% | Nonparametric | 2 | 0.0500*  |
| Thallium       | mg/L  | 18 | 18 | 100% | Nonparametric | 2 | 0.00200* |

\*Constituent is 100% non-detects. Double Quantification Rule (DQR) is recommended for determining if an exceedance has occurred.

## 6.12 Groundwater Protection Standards for Assessment Monitoring

The Unified Guidance has recommended that the upper tolerance limit (UTL) be used as a fixed value similar to a groundwater protection standard for constituents for which MCLs have not been established (USEPA, 2009). 40 C.F.R. § 257.95(h) requires that if no standard exists, then the background concentration is used. As such, UTLs are used during development of the Groundwater Protection Standard for the assessment monitoring program.

UTLs are estimated using a coverage proportion of 95% and a confidence level of 95%. However, nonparametric rank-based UTLs are unable to achieve both 95% coverage and 95% confidence when the sample size is below 60. In this case, nonparametric UTLs are chosen to maximize coverage while maintaining a 95% confidence level, as recommended by the Unified Guidance.

**Table 13** and **Table 14** contain the estimated UTLs for Appendix IV constituents for glacial and bedrock sediment layers, respectively.

| Table 13. Upper Tolerance Limits with 95% Coverage and 95% Confidence – Glacial Aquifer |      |    |         |       |                          |          |
|-----------------------------------------------------------------------------------------|------|----|---------|-------|--------------------------|----------|
| Constituent                                                                             | Unit | n  | No. BDL | % BDL | Recommended distribution | UTL      |
| <b>Appendix IV</b>                                                                      |      |    |         |       |                          |          |
| Fluoride                                                                                | mg/L | 50 | 50      | 100%  | Nonparametric            | 1.00*    |
| Antimony                                                                                | mg/L | 50 | 50      | 100%  | Nonparametric            | 0.00500* |
| Arsenic                                                                                 | mg/L | 50 | 3       | 6%    | Nonparametric            | 0.0210   |
| Barium                                                                                  | mg/L | 50 | 0       | 0%    | Nonparametric            | 0.168    |
| Beryllium                                                                               | mg/L | 50 | 50      | 100%  | Nonparametric            | 0.00100* |
| Cadmium                                                                                 | mg/L | 50 | 50      | 100%  | Nonparametric            | 0.00500* |
| Chromium                                                                                | mg/L | 50 | 49      | 98%   | Nonparametric            | 0.00500  |
| Cobalt                                                                                  | mg/L | 50 | 50      | 100%  | Nonparametric            | 0.00500* |
| Lead                                                                                    | mg/L | 50 | 50      | 100%  | Nonparametric            | 0.00300* |
| Lithium                                                                                 | mg/L | 50 | 11      | 22%   | Nonparametric            | 0.0410   |

|                |       |    |    |      |               |           |
|----------------|-------|----|----|------|---------------|-----------|
| Mercury        | mg/L  | 50 | 50 | 100% | Nonparametric | 0.000200* |
| Molybdenum     | mg/L  | 50 | 38 | 76%  | Nonparametric | 0.0240    |
| Radium-226/228 | pCi/L | 50 | 0  | 0%   | Nonparametric | 5.00      |
| Selenium       | mg/L  | 50 | 50 | 100% | Nonparametric | 0.00500*  |
| Thallium       | mg/L  | 50 | 50 | 100% | Nonparametric | 0.00200*  |

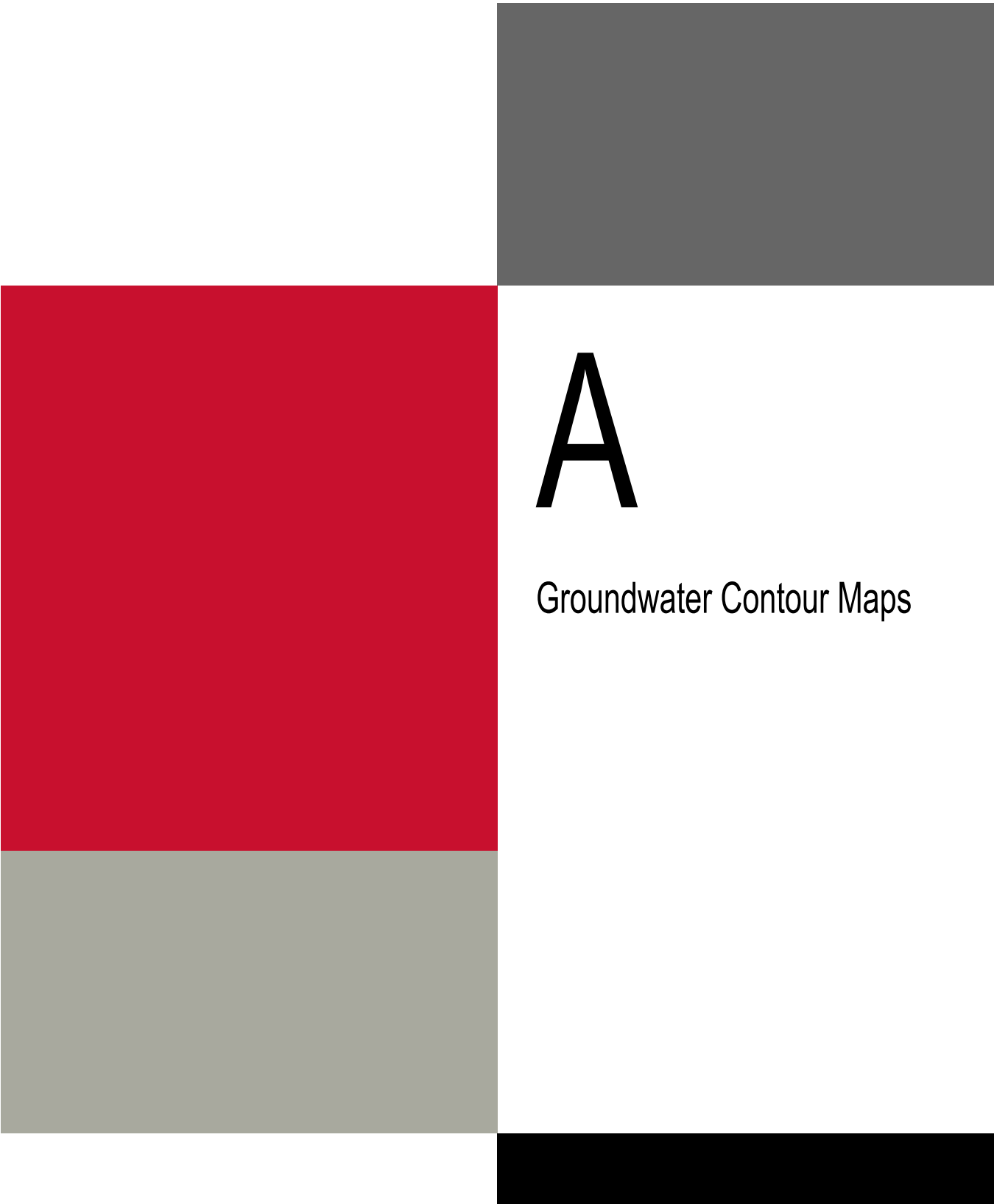
\*Constituent is 100% non-detects, so the maximum detection limit is chosen as the UTL.

| <b>Table 14. Upper Tolerance Limits with 95% Coverage and 95% Confidence – Bedrock Aquifer</b> |             |          |                |              |                                 |            |
|------------------------------------------------------------------------------------------------|-------------|----------|----------------|--------------|---------------------------------|------------|
| <b>Constituent</b>                                                                             | <b>Unit</b> | <b>n</b> | <b>No. BDL</b> | <b>% BDL</b> | <b>Recommended distribution</b> | <b>UTL</b> |
| <b>Appendix IV</b>                                                                             |             |          |                |              |                                 |            |
| Fluoride                                                                                       | mg/L        | 18       | 18             | 100%         | Nonparametric                   | 1.00*      |
| Antimony                                                                                       | mg/L        | 18       | 18             | 100%         | Nonparametric                   | 0.00500*   |
| Arsenic                                                                                        | mg/L        | 18       | 9              | 50%          | Nonparametric                   | 0.00900    |
| Barium                                                                                         | mg/L        | 18       | 0              | 0%           | Nonparametric                   | 0.0810     |
| Beryllium                                                                                      | mg/L        | 18       | 18             | 100%         | Nonparametric                   | 0.00100*   |
| Cadmium                                                                                        | mg/L        | 18       | 18             | 100%         | Nonparametric                   | 0.000500*  |
| Chromium                                                                                       | mg/L        | 18       | 18             | 100%         | Nonparametric                   | 0.00500*   |
| Cobalt                                                                                         | mg/L        | 18       | 18             | 100%         | Nonparametric                   | 0.00500*   |
| Lead                                                                                           | mg/L        | 18       | 18             | 100%         | Nonparametric                   | 0.00300*   |
| Lithium                                                                                        | mg/L        | 18       | 0              | 0%           | Normal                          | 0.0510     |
| Mercury                                                                                        | mg/L        | 18       | 17             | 94%          | Nonparametric                   | 0.000200   |
| Molybdenum                                                                                     | mg/L        | 18       | 13             | 72%          | Nonparametric                   | 0.0110     |
| Radium-226/228                                                                                 | pCi/L       | 18       | 0              | 0%           | Normal                          | 4.42       |
| Selenium                                                                                       | mg/L        | 18       | 18             | 100%         | Nonparametric                   | 0.00500*   |
| Thallium                                                                                       | mg/L        | 18       | 18             | 100%         | Nonparametric                   | 0.00200*   |

\*Constituent is 100% non-detects, so the maximum detection limit is chosen as the UTL.

## 7.0 References

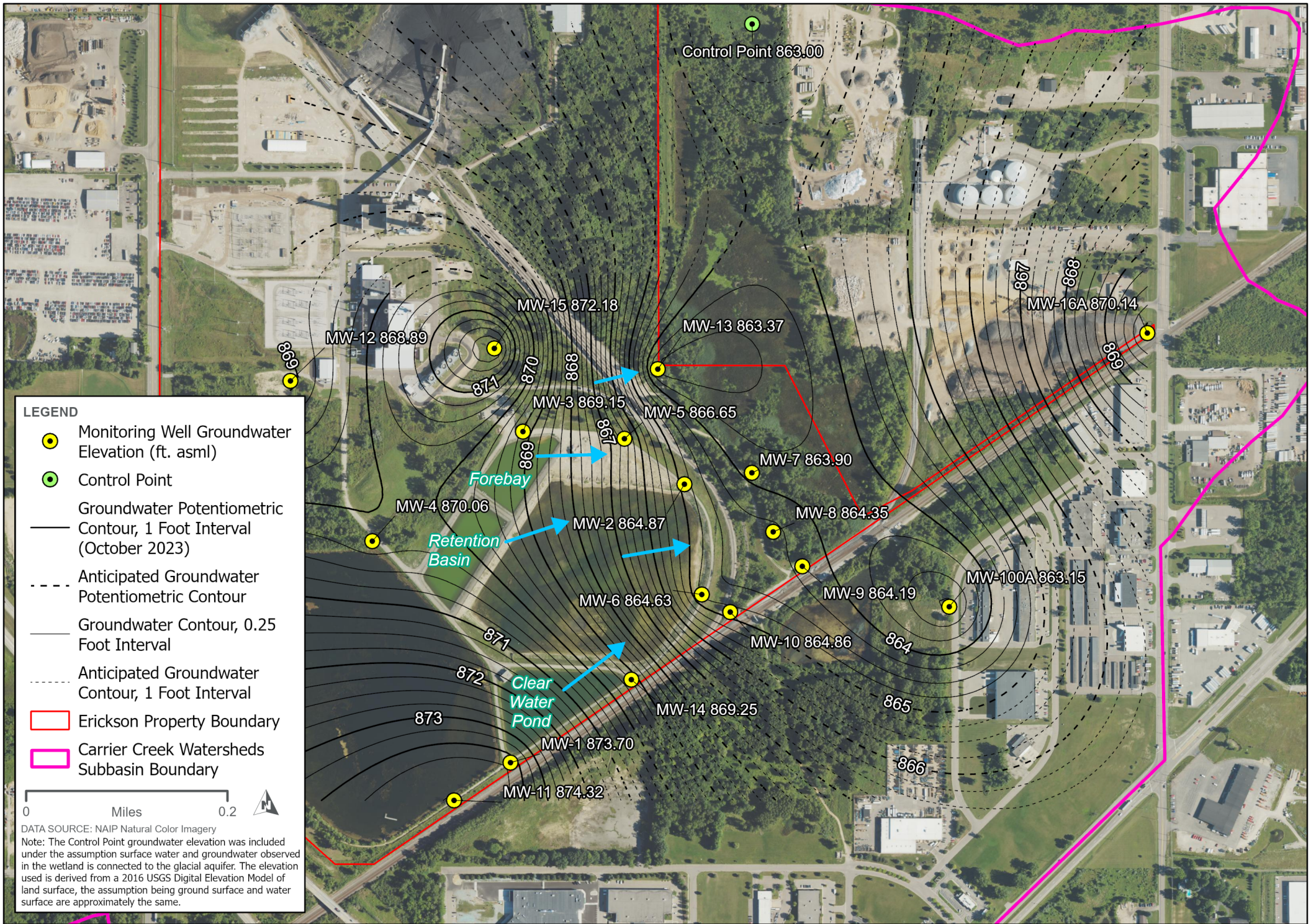
U.S. Environmental Protection Agency (USEPA), 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Unified Guidance. Office of Resource Conservation and Recovery, Program Implementation and Information Division, USEPA, EPA 530/R-09-007, 2009.

A decorative graphic consisting of several overlapping rectangles. A large red rectangle is on the left. A dark gray rectangle is at the top right. A light gray rectangle is at the bottom left. A black rectangle is at the bottom right. The letter 'A' is positioned to the right of the red rectangle.

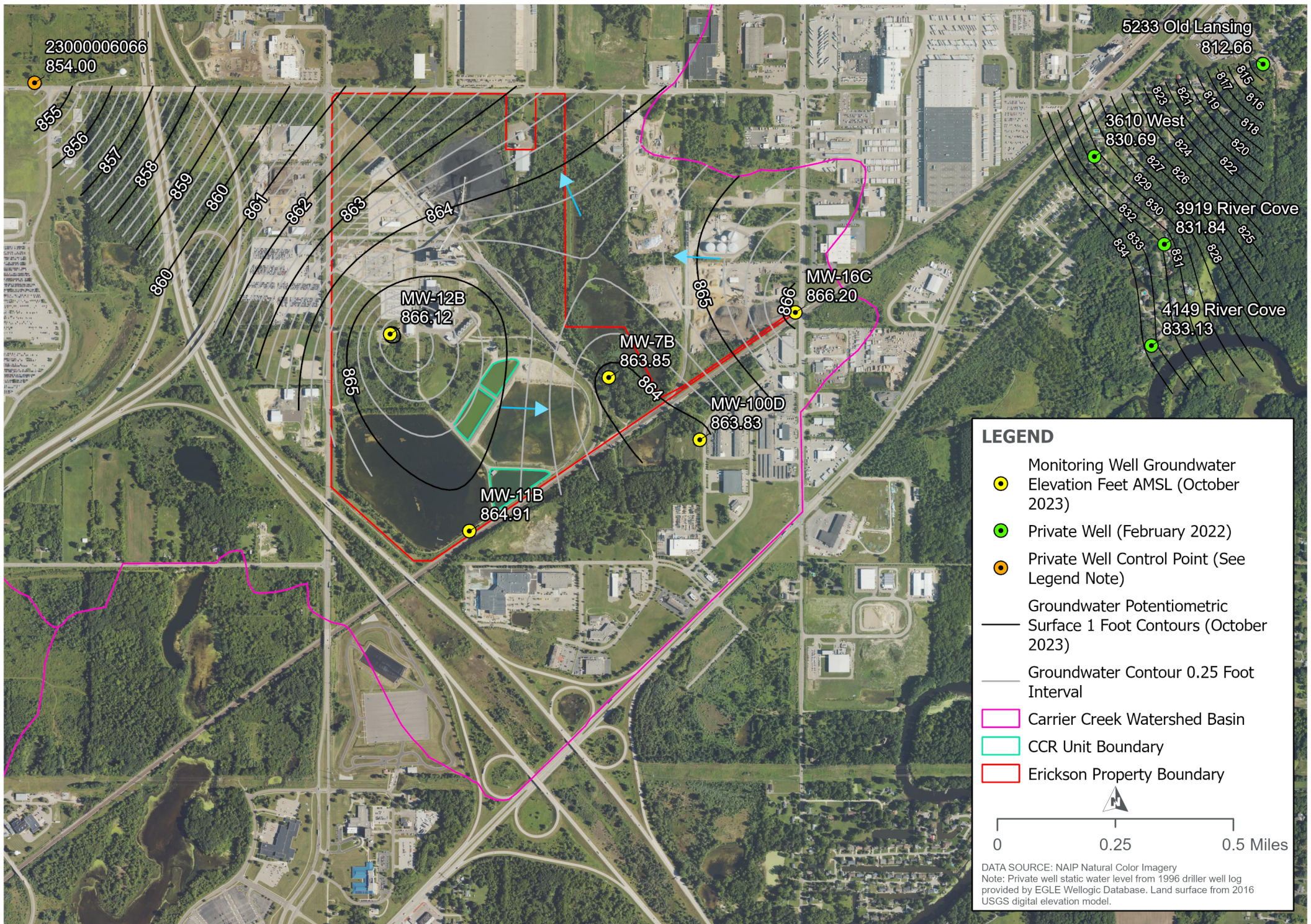
A

## Groundwater Contour Maps













# B

Erickson BWL Bedrock  
Background Tables

| ID   | Well            | Constituent Type | Constituent            | Unit  | n  | No. NDs | % NDs | Date Range               | Distributions Fit <sup>a</sup> | Recommended Distribution | Mean     | Median   | Minimum  | Maximum  | SD      | CV     | MAD/0.675 | Skewness | Kurtosis |
|------|-----------------|------------------|------------------------|-------|----|---------|-------|--------------------------|--------------------------------|--------------------------|----------|----------|----------|----------|---------|--------|-----------|----------|----------|
| 1_01 | MW-11B & MW-12B | Appendix III     | Boron                  | mg/L  | 18 | 0       | 0%    | 2022-03-08 to 2023-02-09 | Nonparametric                  | Nonparametric            | 2.02     | 2.0      | 0.620    | 3.52     | 1.34    | 0.661  | 1.91      | 0.00524  | -2.24    |
| 1_02 | MW-11B & MW-12B | Appendix III     | Calcium                | mg/L  | 18 | 0       | 0%    | 2022-03-08 to 2023-02-09 | Nonparametric                  | Nonparametric            | 45.1     | 43.3     | 21.5     | 69.6     | 20.8    | 0.460  | 29.7      | 0.0126   | -2.21    |
| 1_03 | MW-11B & MW-12B | Appendix III     | Chloride               | mg/L  | 18 | 18      | 100%  | 2022-03-08 to 2023-02-09 |                                | Nonparametric            | 4.82     | 5.00     | 1.70     | 5.00     | 0.778   | 0.161  | 0         | -4.24    | 18.0     |
| 1_04 | MW-11B & MW-12B | Appendix III     | Fluoride               | mg/L  | 18 | 18      | 100%  | 2022-03-08 to 2023-02-09 |                                | Nonparametric            | 0.972    | 1.00     | 0.500    | 1.00     | 0.118   | 0.121  | 0         | -4.24    | 18.0     |
| 1_05 | MW-11B & MW-12B | Appendix III     | Sulfate                | mg/L  | 18 | 18      | 100%  | 2022-03-08 to 2023-02-09 |                                | Nonparametric            | 4.87     | 5.00     | 2.58     | 5.00     | 0.570   | 0.117  | 0         | -4.24    | 18.0     |
| 1_06 | MW-11B & MW-12B | Appendix III     | Total Dissolved Solids | mg/L  | 18 | 0       | 0%    | 2022-03-08 to 2023-02-09 | Nonparametric                  | Nonparametric            | 333      | 332      | 292      | 380      | 35.9    | 0.108  | 47.4      | 0.0721   | -2.03    |
| 1_07 | MW-11B & MW-12B | Appendix III     | pH, Field              | su    | 18 | 0       | 0%    | 2022-03-08 to 2023-02-09 | Gamma; Lognormal; Normal       | Normal                   | 7.50     | 7.50     | 7.10     | 8.00     | 0.270   | 0.0360 | 0.289     | 0.383    | -0.701   |
| 2_04 | MW-11B & MW-12B | Appendix IV      | Fluoride               | mg/L  | 18 | 18      | 100%  | 2022-03-08 to 2023-02-09 |                                | Nonparametric            | 0.972    | 1.00     | 0.500    | 1.00     | 0.118   | 0.121  | 0         | -4.24    | 18.0     |
| 2_08 | MW-11B & MW-12B | Appendix IV      | Antimony               | mg/L  | 18 | 18      | 100%  | 2022-03-08 to 2023-02-09 |                                | Nonparametric            | 0.00500  | 0.00500  | 0.00500  | 0.00500  | 0       | 0      | 0         | NA       | NA       |
| 2_09 | MW-11B & MW-12B | Appendix IV      | Arsenic                | mg/L  | 18 | 9       | 50%   | 2022-03-08 to 2023-02-09 | Gamma; Lognormal; Normal       | Nonparametric            | 0.00439  | 0.00250  | 0.00200  | 0.00900  | 0.00285 | 0.650  | 0.000741  | 0.584    | -1.53    |
| 2_10 | MW-11B & MW-12B | Appendix IV      | Barium                 | mg/L  | 18 | 0       | 0%    | 2022-03-08 to 2023-02-09 | Nonparametric                  | Nonparametric            | 0.0466   | 0.0435   | 0.0230   | 0.0810   | 0.0219  | 0.470  | 0.0274    | 0.130    | -1.99    |
| 2_11 | MW-11B & MW-12B | Appendix IV      | Beryllium              | mg/L  | 18 | 18      | 100%  | 2022-03-08 to 2023-02-09 |                                | Nonparametric            | 0.00100  | 0.00100  | 0.00100  | 0.00100  | 0       | 0      | 0         | NA       | NA       |
| 2_12 | MW-11B & MW-12B | Appendix IV      | Cadmium                | mg/L  | 18 | 18      | 100%  | 2022-03-08 to 2023-02-09 |                                | Nonparametric            | 0.000500 | 0.000500 | 0.000500 | 0.000500 | 0       | 0      | 0         | NA       | NA       |
| 2_13 | MW-11B & MW-12B | Appendix IV      | Chromium               | mg/L  | 18 | 18      | 100%  | 2022-03-08 to 2023-02-09 |                                | Nonparametric            | 0.00500  | 0.00500  | 0.00500  | 0.00500  | 0       | 0      | 0         | NA       | NA       |
| 2_14 | MW-11B & MW-12B | Appendix IV      | Cobalt                 | mg/L  | 18 | 18      | 100%  | 2022-03-08 to 2023-02-09 |                                | Nonparametric            | 0.00500  | 0.00500  | 0.00500  | 0.00500  | 0       | 0      | 0         | NA       | NA       |
| 2_15 | MW-11B & MW-12B | Appendix IV      | Lead                   | mg/L  | 18 | 18      | 100%  | 2022-03-08 to 2023-02-09 |                                | Nonparametric            | 0.00300  | 0.00300  | 0.00300  | 0.00300  | 0       | 0      | 0         | NA       | NA       |
| 2_16 | MW-11B & MW-12B | Appendix IV      | Lithium                | mg/L  | 18 | 0       | 0%    | 2022-03-08 to 2023-02-09 | Gamma; Lognormal; Normal       | Normal                   | 0.0337   | 0.0340   | 0.0240   | 0.0430   | 0.00704 | 0.209  | 0.0104    | -0.123   | -1.74    |
| 2_17 | MW-11B & MW-12B | Appendix IV      | Mercury                | mg/L  | 18 | 17      | 94%   | 2022-03-08 to 2023-02-09 |                                | Nonparametric            | 0.000200 | 0.000200 | 0.000200 | 0.000200 | 0       | 0      | 0         | NA       | NA       |
| 2_18 | MW-11B & MW-12B | Appendix IV      | Molybdenum             | mg/L  | 18 | 13      | 72%   | 2022-03-08 to 2023-02-09 | Gamma; Lognormal; Normal       | Nonparametric            | 0.00561  | 0.00500  | 0.00500  | 0.0110   | 0.00150 | 0.267  | 0         | 3.11     | 10.5     |
| 2_20 | MW-11B & MW-12B | Appendix IV      | Radium-226/228         | pCi/L | 18 | 0       | 0%    | 2022-03-08 to 2023-02-09 | Gamma; Lognormal; Normal       | Normal                   | 1.68     | 1.34     | 0.380    | 4.14     | 1.12    | 0.666  | 0.932     | 0.921    | -0.0395  |
| 2_22 | MW-11B & MW-12B | Appendix IV      | Selenium               | mg/L  | 18 | 18      | 100%  | 2022-03-08 to 2023-02-09 |                                | Nonparametric            | 0.00500  | 0.00500  | 0.00500  | 0.00500  | 0       | 0      | 0         | NA       | NA       |
| 2_23 | MW-11B & MW-12B | Appendix IV      | Thallium               | mg/L  | 18 | 18      | 100%  | 2022-03-08 to 2023-02-09 |                                | Nonparametric            | 0.00200  | 0.00200  | 0.00200  | 0.00200  | 0       | 0      | 0         | NA       | NA       |

<sup>a</sup> Non-detects are excluded from goodness-of-fit tests.

Table 2: Summary Statistics, Non-Detects Excluded

| ID   | Well            | Constituent Type | Constituent            | Unit  | n  | No. NDs | % NDs | Date Range               | Distributions Fit        | Recommended Distribution | Mean     | Median   | Minimum  | Maximum  | SD      | CV     | MAD/0.675 | Skewness | Kurtosis |
|------|-----------------|------------------|------------------------|-------|----|---------|-------|--------------------------|--------------------------|--------------------------|----------|----------|----------|----------|---------|--------|-----------|----------|----------|
| 1_01 | MW-11B & MW-12B | Appendix III     | Boron                  | mg/L  | 18 | 0       | 0%    | 2022-03-08 to 2023-02-09 | Nonparametric            | Nonparametric            | 2.02     | 2.0      | 0.620    | 3.52     | 1.34    | 0.661  | 1.91      | 0.00524  | -2.24    |
| 1_02 | MW-11B & MW-12B | Appendix III     | Calcium                | mg/L  | 18 | 0       | 0%    | 2022-03-08 to 2023-02-09 | Nonparametric            | Nonparametric            | 45.1     | 43.3     | 21.5     | 69.6     | 20.8    | 0.460  | 29.7      | 0.0126   | -2.21    |
| 1_06 | MW-11B & MW-12B | Appendix III     | Total Dissolved Solids | mg/L  | 18 | 0       | 0%    | 2022-03-08 to 2023-02-09 | Nonparametric            | Nonparametric            | 333      | 332      | 292      | 380      | 35.9    | 0.108  | 47.4      | 0.0721   | -2.03    |
| 1_07 | MW-11B & MW-12B | Appendix III     | pH, Field              | su    | 18 | 0       | 0%    | 2022-03-08 to 2023-02-09 | Gamma; Lognormal; Normal | Normal                   | 7.50     | 7.50     | 7.10     | 8.00     | 0.270   | 0.0360 | 0.289     | 0.383    | -0.701   |
| 2_09 | MW-11B & MW-12B | Appendix IV      | Arsenic                | mg/L  | 18 | 9       | 50%   | 2022-03-08 to 2023-02-09 | Gamma; Lognormal; Normal | Nonparametric            | 0.00678  | 0.00700  | 0.00300  | 0.00900  | 0.00211 | 0.311  | 0.00148   | -0.861   | -0.275   |
| 2_10 | MW-11B & MW-12B | Appendix IV      | Barium                 | mg/L  | 18 | 0       | 0%    | 2022-03-08 to 2023-02-09 | Nonparametric            | Nonparametric            | 0.0466   | 0.0435   | 0.0230   | 0.0810   | 0.0219  | 0.470  | 0.0274    | 0.130    | -1.99    |
| 2_16 | MW-11B & MW-12B | Appendix IV      | Lithium                | mg/L  | 18 | 0       | 0%    | 2022-03-08 to 2023-02-09 | Gamma; Lognormal; Normal | Normal                   | 0.0337   | 0.0340   | 0.0240   | 0.0430   | 0.00704 | 0.209  | 0.0104    | -0.123   | -1.74    |
| 2_17 | MW-11B & MW-12B | Appendix IV      | Mercury                | mg/L  | 18 | 17      | 94%   | 2022-03-08 to 2023-02-09 |                          | Nonparametric            | 0.000200 | 0.000200 | 0.000200 | 0.000200 | NA      | NA     | 0         | NA       | NA       |
| 2_18 | MW-11B & MW-12B | Appendix IV      | Molybdenum             | mg/L  | 18 | 13      | 72%   | 2022-03-08 to 2023-02-09 | Gamma; Lognormal; Normal | Nonparametric            | 0.00720  | 0.00700  | 0.00500  | 0.0110   | 0.00228 | 0.317  | 0.00148   | 1.49     | 2.82     |
| 2_20 | MW-11B & MW-12B | Appendix IV      | Radium-226/228         | pCi/L | 18 | 0       | 0%    | 2022-03-08 to 2023-02-09 | Gamma; Lognormal; Normal | Normal                   | 1.68     | 1.34     | 0.380    | 4.14     | 1.12    | 0.666  | 0.932     | 0.921    | -0.0395  |

| ID   | Well            | Constituent Type | Constituent            | Unit  | n  | No. NDs | % NDs | Normal |         |            |         | Lognormal |         |            |         | Gamma |                  |       |                  | Log-SD (NDs excl.) | ProUCL Distributions Fit | Recommended Distribution |
|------|-----------------|------------------|------------------------|-------|----|---------|-------|--------|---------|------------|---------|-----------|---------|------------|---------|-------|------------------|-------|------------------|--------------------|--------------------------|--------------------------|
|      |                 |                  |                        |       |    |         |       | S-W    |         | Lilliefors |         | S-W       |         | Lilliefors |         | K-S   |                  | A-D   |                  |                    |                          |                          |
|      |                 |                  |                        |       |    |         |       | Stat.  | p-Value | Stat.      | p-Value | Stat.     | p-Value | Stat.      | p-Value | Stat. | p-Value          | Stat. | p-Value          |                    |                          |                          |
| 1_01 | MW-11B & MW-12B | Appendix III     | Boron                  | mg/L  | 18 | 0       | 0%    | 0.698  | 0.000   | 0.314      | 0.000   | 0.711     | 0.000   | 0.318      | 0.000   | 0.320 | < 0.01           | 2.623 | < 0.01           | 0.786              | Nonparametric            | Nonparametric            |
| 1_02 | MW-11B & MW-12B | Appendix III     | Calcium                | mg/L  | 18 | 0       | 0%    | 0.726  | 0.000   | 0.318      | 0.000   | 0.733     | 0.000   | 0.306      | 0.000   | 0.317 | < 0.01           | 2.437 | < 0.01           | 0.496              | Nonparametric            | Nonparametric            |
| 1_03 | MW-11B & MW-12B | Appendix III     | Chloride               | mg/L  | 18 | 18      | 100%  | NA     | NA      | NA         | NA      | NA        | NA      | NA         | NA      | NA    |                  | NA    |                  | NA                 |                          | Nonparametric            |
| 1_04 | MW-11B & MW-12B | Appendix III     | Fluoride               | mg/L  | 18 | 18      | 100%  | NA     | NA      | NA         | NA      | NA        | NA      | NA         | NA      | NA    |                  | NA    |                  | NA                 |                          | Nonparametric            |
| 1_05 | MW-11B & MW-12B | Appendix III     | Sulfate                | mg/L  | 18 | 18      | 100%  | NA     | NA      | NA         | NA      | NA        | NA      | NA         | NA      | NA    |                  | NA    |                  | NA                 |                          | Nonparametric            |
| 1_06 | MW-11B & MW-12B | Appendix III     | Total Dissolved Solids | mg/L  | 18 | 0       | 0%    | 0.803  | 0.002   | 0.259      | 0.002   | 0.802     | 0.002   | 0.251      | 0.004   | 0.260 | < 0.01           | 1.645 | < 0.01           | 0.108              | Nonparametric            | Nonparametric            |
| 1_07 | MW-11B & MW-12B | Appendix III     | pH, Field              | su    | 18 | 0       | 0%    | 0.957  | 0.541   | 0.126      | 0.636   | 0.960     | 0.596   | 0.122      | 0.682   | 0.127 | >= 0.10          | 0.263 | >= 0.10          | 0.036              | Gamma; Lognormal; Normal | Normal                   |
| 2_04 | MW-11B & MW-12B | Appendix IV      | Fluoride               | mg/L  | 18 | 18      | 100%  | NA     | NA      | NA         | NA      | NA        | NA      | NA         | NA      | NA    |                  | NA    |                  | NA                 |                          | Nonparametric            |
| 2_08 | MW-11B & MW-12B | Appendix IV      | Antimony               | mg/L  | 18 | 18      | 100%  | NA     | NA      | NA         | NA      | NA        | NA      | NA         | NA      | NA    |                  | NA    |                  | NA                 |                          | Nonparametric            |
| 2_09 | MW-11B & MW-12B | Appendix IV      | Arsenic                | mg/L  | 18 | 9       | 50%   | 0.896  | 0.231   | 0.209      | 0.311   | 0.836     | 0.052   | 0.258      | 0.084   | 0.249 | >= 0.10          | 0.606 | >= 0.10          | 0.379              | Gamma; Lognormal; Normal | Nonparametric            |
| 2_10 | MW-11B & MW-12B | Appendix IV      | Barium                 | mg/L  | 18 | 0       | 0%    | 0.783  | 0.001   | 0.302      | 0.000   | 0.768     | 0.001   | 0.286      | 0.000   | 0.299 | < 0.01           | 2.030 | < 0.01           | 0.499              | Nonparametric            | Nonparametric            |
| 2_11 | MW-11B & MW-12B | Appendix IV      | Beryllium              | mg/L  | 18 | 18      | 100%  | NA     | NA      | NA         | NA      | NA        | NA      | NA         | NA      | NA    |                  | NA    |                  | NA                 |                          | Nonparametric            |
| 2_12 | MW-11B & MW-12B | Appendix IV      | Cadmium                | mg/L  | 18 | 18      | 100%  | NA     | NA      | NA         | NA      | NA        | NA      | NA         | NA      | NA    |                  | NA    |                  | NA                 |                          | Nonparametric            |
| 2_13 | MW-11B & MW-12B | Appendix IV      | Chromium               | mg/L  | 18 | 18      | 100%  | NA     | NA      | NA         | NA      | NA        | NA      | NA         | NA      | NA    |                  | NA    |                  | NA                 |                          | Nonparametric            |
| 2_14 | MW-11B & MW-12B | Appendix IV      | Cobalt                 | mg/L  | 18 | 18      | 100%  | NA     | NA      | NA         | NA      | NA        | NA      | NA         | NA      | NA    |                  | NA    |                  | NA                 |                          | Nonparametric            |
| 2_15 | MW-11B & MW-12B | Appendix IV      | Lead                   | mg/L  | 18 | 18      | 100%  | NA     | NA      | NA         | NA      | NA        | NA      | NA         | NA      | NA    |                  | NA    |                  | NA                 |                          | Nonparametric            |
| 2_16 | MW-11B & MW-12B | Appendix IV      | Lithium                | mg/L  | 18 | 0       | 0%    | 0.878  | 0.024   | 0.173      | 0.167   | 0.875     | 0.021   | 0.187      | 0.095   | 0.189 | 0.05 <= p < 0.10 | 0.891 | 0.01 <= p < 0.05 | 0.216              | Gamma; Lognormal; Normal | Normal                   |
| 2_17 | MW-11B & MW-12B | Appendix IV      | Mercury                | mg/L  | 18 | 17      | 94%   | NA     | NA      | NA         | NA      | NA        | NA      | NA         | NA      | NA    |                  | NA    |                  | NA                 |                          | Nonparametric            |
| 2_18 | MW-11B & MW-12B | Appendix IV      | Molybdenum             | mg/L  | 18 | 13      | 72%   | 0.860  | 0.228   | 0.335      | 0.069   | 0.924     | 0.555   | 0.289      | 0.182   | 0.306 | >= 0.10          | 0.389 | >= 0.10          | 0.292              | Gamma; Lognormal; Normal | Nonparametric            |
| 2_20 | MW-11B & MW-12B | Appendix IV      | Radium-226/228         | pCi/L | 18 | 0       | 0%    | 0.905  | 0.070   | 0.184      | 0.109   | 0.966     | 0.720   | 0.108      | 0.835   | 0.099 | >= 0.10          | 0.206 | >= 0.10          | 0.714              | Gamma; Lognormal; Normal | Normal                   |
| 2_22 | MW-11B & MW-12B | Appendix IV      | Selenium               | mg/L  | 18 | 18      | 100%  | NA     | NA      | NA         | NA      | NA        | NA      | NA         | NA      | NA    |                  | NA    |                  | NA                 |                          | Nonparametric            |
| 2_23 | MW-11B & MW-12B | Appendix IV      | Thallium               | mg/L  | 18 | 18      | 100%  | NA     | NA      | NA         | NA      | NA        | NA      | NA         | NA      | NA    |                  | NA    |                  | NA                 |                          | Nonparametric            |

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 4: Autocorrelation Tests, Non-Detects Excluded

| ID   | Well            | Constituent Type | Constituent            | Unit  | n  | No. NDs | % NDs | Autocorrelation | Box-Ljung p-value | Sig. |
|------|-----------------|------------------|------------------------|-------|----|---------|-------|-----------------|-------------------|------|
| 1_01 | MW-11B & MW-12B | Appendix III     | Boron                  | mg/L  | 18 | 0       | 0%    | -0.653          | 0.003             | **   |
| 1_02 | MW-11B & MW-12B | Appendix III     | Calcium                | mg/L  | 18 | 0       | 0%    | -0.534          | 0.014             | *    |
| 1_06 | MW-11B & MW-12B | Appendix III     | Total Dissolved Solids | mg/L  | 18 | 0       | 0%    | -0.433          | 0.046             | *    |
| 1_07 | MW-11B & MW-12B | Appendix III     | pH, Field              | su    | 18 | 0       | 0%    | 0.246           | 0.258             |      |
| 2_09 | MW-11B & MW-12B | Appendix IV      | Arsenic                | mg/L  | 18 | 9       | 50%   | 0.495           | 0.081             |      |
| 2_10 | MW-11B & MW-12B | Appendix IV      | Barium                 | mg/L  | 18 | 0       | 0%    | -0.689          | 0.002             | **   |
| 2_16 | MW-11B & MW-12B | Appendix IV      | Lithium                | mg/L  | 18 | 0       | 0%    | -0.687          | 0.002             | **   |
| 2_17 | MW-11B & MW-12B | Appendix IV      | Mercury                | mg/L  | 18 | 17      | 94%   | NA              | NA                |      |
| 2_18 | MW-11B & MW-12B | Appendix IV      | Molybdenum             | mg/L  | 18 | 13      | 72%   | -0.367          | 0.277             |      |
| 2_20 | MW-11B & MW-12B | Appendix IV      | Radium-226/228         | pCi/L | 18 | 0       | 0%    | 0.171           | 0.431             |      |

\*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05





| ID   | Well            | Constituent Type | Constituent            | Unit  | % NDs | Full        |        |        |      |       |                |       |           |        | Without Non-Detects |        |      |       |                |         |           |       |   |       |    |       |    |
|------|-----------------|------------------|------------------------|-------|-------|-------------|--------|--------|------|-------|----------------|-------|-----------|--------|---------------------|--------|------|-------|----------------|---------|-----------|-------|---|-------|----|-------|----|
|      |                 |                  |                        |       |       | Sample Size |        |        |      |       | p-Value        |       |           |        | Sample Size         |        |      |       |                | p-Value |           |       |   |       |    |       |    |
|      |                 |                  |                        |       |       | Winter      | Spring | Summer | Fall | Total | Kruskal-Wallis | ANOVA | Log ANOVA | Winter | Spring              | Summer | Fall | Total | Kruskal-Wallis | ANOVA   | Log ANOVA |       |   |       |    |       |    |
| 1_01 | MW-11B & MW-12B | Appendix III     | Boron                  | mg/L  | 0%    | 3           | 4      | 5      | 6    | 18    | 0.953          | 0.797 | 0.817     | 3      | 4                   | 5      | 6    | 18    | 0.953          | 0.797   | 0.817     |       |   |       |    |       |    |
| 1_02 | MW-11B & MW-12B | Appendix III     | Calcium                | mg/L  | 0%    | 3           | 4      | 5      | 6    | 18    | 0.154          | 0.605 | 0.562     | 3      | 4                   | 5      | 6    | 18    | 0.154          | 0.605   | 0.562     |       |   |       |    |       |    |
| 1_03 | MW-11B & MW-12B | Appendix III     | Chloride               | mg/L  | 100%  | 3           | 4      | 5      | 6    | 18    | 0.572          | 0.612 | 0.612     | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        |       |   |       |    |       |    |
| 1_04 | MW-11B & MW-12B | Appendix III     | Fluoride               | mg/L  | 100%  | 3           | 4      | 5      | 6    | 18    | 0.457          | 0.493 | 0.493     | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        |       |   |       |    |       |    |
| 1_05 | MW-11B & MW-12B | Appendix III     | Sulfate                | mg/L  | 100%  | 3           | 4      | 5      | 6    | 18    | 0.572          | 0.612 | 0.612     | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        |       |   |       |    |       |    |
| 1_06 | MW-11B & MW-12B | Appendix III     | Total Dissolved Solids | mg/L  | 0%    | 3           | 4      | 5      | 6    | 18    | 0.126          | 0.456 | 0.466     | 3      | 4                   | 5      | 6    | 18    | 0.126          | 0.456   | 0.466     |       |   |       |    |       |    |
| 1_07 | MW-11B & MW-12B | Appendix III     | pH, Field              | su    | 0%    | 3           | 4      | 5      | 6    | 18    | 0.039          | *     | 0.005     | **     | 0.006               | **     | 3    | 4     | 5              | 6       | 18        | 0.039 | * | 0.005 | ** | 0.006 | ** |
| 2_04 | MW-11B & MW-12B | Appendix IV      | Fluoride               | mg/L  | 100%  | 3           | 4      | 5      | 6    | 18    | 0.457          | 0.493 | 0.493     | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        |       |   |       |    |       |    |
| 2_08 | MW-11B & MW-12B | Appendix IV      | Antimony               | mg/L  | 100%  | 3           | 4      | 5      | 6    | 18    | NA             | 0.343 | 0.343     | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        |       |   |       |    |       |    |
| 2_09 | MW-11B & MW-12B | Appendix IV      | Arsenic                | mg/L  | 50%   | 3           | 4      | 5      | 6    | 18    | 0.530          | 0.429 | 0.440     | 2      | 1                   | 3      | 3    | 9     | 0.372          | 0.249   | 0.140     |       |   |       |    |       |    |
| 2_10 | MW-11B & MW-12B | Appendix IV      | Barium                 | mg/L  | 0%    | 3           | 4      | 5      | 6    | 18    | 0.916          | 0.890 | 0.861     | 3      | 4                   | 5      | 6    | 18    | 0.916          | 0.890   | 0.861     |       |   |       |    |       |    |
| 2_11 | MW-11B & MW-12B | Appendix IV      | Beryllium              | mg/L  | 100%  | 3           | 4      | 5      | 6    | 18    | NA             | 0.343 | 0.343     | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        |       |   |       |    |       |    |
| 2_12 | MW-11B & MW-12B | Appendix IV      | Cadmium                | mg/L  | 100%  | 3           | 4      | 5      | 6    | 18    | NA             | 0.343 | 0.343     | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        |       |   |       |    |       |    |
| 2_13 | MW-11B & MW-12B | Appendix IV      | Chromium               | mg/L  | 100%  | 3           | 4      | 5      | 6    | 18    | NA             | 0.343 | 0.343     | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        |       |   |       |    |       |    |
| 2_14 | MW-11B & MW-12B | Appendix IV      | Cobalt                 | mg/L  | 100%  | 3           | 4      | 5      | 6    | 18    | NA             | 0.343 | 0.343     | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        |       |   |       |    |       |    |
| 2_15 | MW-11B & MW-12B | Appendix IV      | Lead                   | mg/L  | 100%  | 3           | 4      | 5      | 6    | 18    | NA             | 0.343 | 0.343     | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        |       |   |       |    |       |    |
| 2_16 | MW-11B & MW-12B | Appendix IV      | Lithium                | mg/L  | 0%    | 3           | 4      | 5      | 6    | 18    | 0.604          | 0.689 | 0.600     | 3      | 4                   | 5      | 6    | 18    | 0.604          | 0.689   | 0.600     |       |   |       |    |       |    |
| 2_17 | MW-11B & MW-12B | Appendix IV      | Mercury                | mg/L  | 94%   | 3           | 4      | 5      | 6    | 18    | NA             | 0.343 | 0.343     | 0      | 0                   | 0      | 1    | 1     | NA             | NA      | NA        |       |   |       |    |       |    |
| 2_18 | MW-11B & MW-12B | Appendix IV      | Molybdenum             | mg/L  | 72%   | 3           | 4      | 5      | 6    | 18    | 0.578          | 0.511 | 0.539     | 0      | 1                   | 3      | 1    | 5     | 0.325          | 0.128   | 0.221     |       |   |       |    |       |    |
| 2_20 | MW-11B & MW-12B | Appendix IV      | Radium-226/228         | pCi/L | 0%    | 3           | 4      | 5      | 6    | 18    | 0.149          | 0.084 | 0.192     | 3      | 4                   | 5      | 6    | 18    | 0.149          | 0.084   | 0.192     |       |   |       |    |       |    |
| 2_22 | MW-11B & MW-12B | Appendix IV      | Selenium               | mg/L  | 100%  | 3           | 4      | 5      | 6    | 18    | NA             | 0.343 | 0.343     | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        |       |   |       |    |       |    |
| 2_23 | MW-11B & MW-12B | Appendix IV      | Thallium               | mg/L  | 100%  | 3           | 4      | 5      | 6    | 18    | NA             | 0.343 | 0.343     | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        |       |   |       |    |       |    |

\*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05

| ID   | Well            | Constituent Type | Constituent            | Unit  | % NDs | Full        |        |       |                |       |       |           |       |     | Without Non-Detects |        |       |                |       |       |           |       |     |
|------|-----------------|------------------|------------------------|-------|-------|-------------|--------|-------|----------------|-------|-------|-----------|-------|-----|---------------------|--------|-------|----------------|-------|-------|-----------|-------|-----|
|      |                 |                  |                        |       |       | Sample Size |        |       | p-Value        |       |       |           |       |     | Sample Size         |        |       | p-Value        |       |       |           |       |     |
|      |                 |                  |                        |       |       | MW-11B      | MW-12B | Total | Kruskal-Wallis | ANOVA |       | Log ANOVA |       |     | MW-11B              | MW-12B | Total | Kruskal-Wallis | ANOVA |       | Log ANOVA |       |     |
| 1_01 | MW-11B & MW-12B | Appendix III     | Boron                  | mg/L  | 0%    | 9           | 9      | 18    | 0.000          | ***   | 0.000 | ***       | 0.000 | *** | 9                   | 9      | 18    | 0.000          | ***   | 0.000 | ***       | 0.000 | *** |
| 1_02 | MW-11B & MW-12B | Appendix III     | Calcium                | mg/L  | 0%    | 9           | 9      | 18    | 0.000          | ***   | 0.000 | ***       | 0.000 | *** | 9                   | 9      | 18    | 0.000          | ***   | 0.000 | ***       | 0.000 | *** |
| 1_03 | MW-11B & MW-12B | Appendix III     | Chloride               | mg/L  | 100%  | 9           | 9      | 18    | 0.317          |       | 0.332 |           | 0.332 |     | NA                  | NA     | NA    | NA             |       | NA    |           | NA    |     |
| 1_04 | MW-11B & MW-12B | Appendix III     | Fluoride               | mg/L  | 100%  | 9           | 9      | 18    | 0.317          |       | 0.332 |           | 0.332 |     | NA                  | NA     | NA    | NA             |       | NA    |           | NA    |     |
| 1_05 | MW-11B & MW-12B | Appendix III     | Sulfate                | mg/L  | 100%  | 9           | 9      | 18    | 0.317          |       | 0.332 |           | 0.332 |     | NA                  | NA     | NA    | NA             |       | NA    |           | NA    |     |
| 1_06 | MW-11B & MW-12B | Appendix III     | Total Dissolved Solids | mg/L  | 0%    | 9           | 9      | 18    | 0.000          | ***   | 0.000 | ***       | 0.000 | *** | 9                   | 9      | 18    | 0.000          | ***   | 0.000 | ***       | 0.000 | *** |
| 1_07 | MW-11B & MW-12B | Appendix III     | pH, Field              | su    | 0%    | 9           | 9      | 18    | 0.004          | **    | 0.005 | **        | 0.004 | **  | 9                   | 9      | 18    | 0.004          | **    | 0.005 | **        | 0.004 | **  |
| 2_04 | MW-11B & MW-12B | Appendix IV      | Fluoride               | mg/L  | 100%  | 9           | 9      | 18    | 0.317          |       | 0.332 |           | 0.332 |     | NA                  | NA     | NA    | NA             |       | NA    |           | NA    |     |
| 2_08 | MW-11B & MW-12B | Appendix IV      | Antimony               | mg/L  | 100%  | 9           | 9      | 18    | NA             |       | 0.332 |           | 0.332 |     | NA                  | NA     | NA    | NA             |       | NA    |           | NA    |     |
| 2_09 | MW-11B & MW-12B | Appendix IV      | Arsenic                | mg/L  | 50%   | 9           | 9      | 18    | 0.000          | ***   | 0.000 | ***       | 0.000 | *** | 9                   | 0      | 9     | NA             |       | NA    |           | NA    |     |
| 2_10 | MW-11B & MW-12B | Appendix IV      | Barium                 | mg/L  | 0%    | 9           | 9      | 18    | 0.000          | ***   | 0.000 | ***       | 0.000 | *** | 9                   | 9      | 18    | 0.000          | ***   | 0.000 | ***       | 0.000 | *** |
| 2_11 | MW-11B & MW-12B | Appendix IV      | Beryllium              | mg/L  | 100%  | 9           | 9      | 18    | NA             |       | 0.332 |           | 0.332 |     | NA                  | NA     | NA    | NA             |       | NA    |           | NA    |     |
| 2_12 | MW-11B & MW-12B | Appendix IV      | Cadmium                | mg/L  | 100%  | 9           | 9      | 18    | NA             |       | 0.332 |           | 0.332 |     | NA                  | NA     | NA    | NA             |       | NA    |           | NA    |     |
| 2_13 | MW-11B & MW-12B | Appendix IV      | Chromium               | mg/L  | 100%  | 9           | 9      | 18    | NA             |       | 0.332 |           | 0.332 |     | NA                  | NA     | NA    | NA             |       | NA    |           | NA    |     |
| 2_14 | MW-11B & MW-12B | Appendix IV      | Cobalt                 | mg/L  | 100%  | 9           | 9      | 18    | NA             |       | 0.332 |           | 0.332 |     | NA                  | NA     | NA    | NA             |       | NA    |           | NA    |     |
| 2_15 | MW-11B & MW-12B | Appendix IV      | Lead                   | mg/L  | 100%  | 9           | 9      | 18    | NA             |       | 0.332 |           | 0.332 |     | NA                  | NA     | NA    | NA             |       | NA    |           | NA    |     |
| 2_16 | MW-11B & MW-12B | Appendix IV      | Lithium                | mg/L  | 0%    | 9           | 9      | 18    | 0.000          | ***   | 0.000 | ***       | 0.000 | *** | 9                   | 9      | 18    | 0.000          | ***   | 0.000 | ***       | 0.000 | *** |
| 2_17 | MW-11B & MW-12B | Appendix IV      | Mercury                | mg/L  | 94%   | 9           | 9      | 18    | NA             |       | 0.332 |           | 0.332 |     | 0                   | 1      | 1     | NA             |       | NA    |           | NA    |     |
| 2_18 | MW-11B & MW-12B | Appendix IV      | Molybdenum             | mg/L  | 72%   | 9           | 9      | 18    | 0.363          |       | 0.881 |           | 0.942 |     | 4                   | 1      | 5     | 0.147          |       | 0.021 | *         | 0.049 | *   |
| 2_20 | MW-11B & MW-12B | Appendix IV      | Radium-226/228         | pCi/L | 0%    | 9           | 9      | 18    | 0.038          | *     | 0.117 |           | 0.042 | *   | 9                   | 9      | 18    | 0.038          | *     | 0.117 |           | 0.042 | *   |
| 2_22 | MW-11B & MW-12B | Appendix IV      | Selenium               | mg/L  | 100%  | 9           | 9      | 18    | NA             |       | 0.332 |           | 0.332 |     | NA                  | NA     | NA    | NA             |       | NA    |           | NA    |     |
| 2_23 | MW-11B & MW-12B | Appendix IV      | Thallium               | mg/L  | 100%  | 9           | 9      | 18    | NA             |       | 0.332 |           | 0.332 |     | NA                  | NA     | NA    | NA             |       | NA    |           | NA    |     |

\*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05

Table 9: Trend Tests: Lognormal MLE and MK

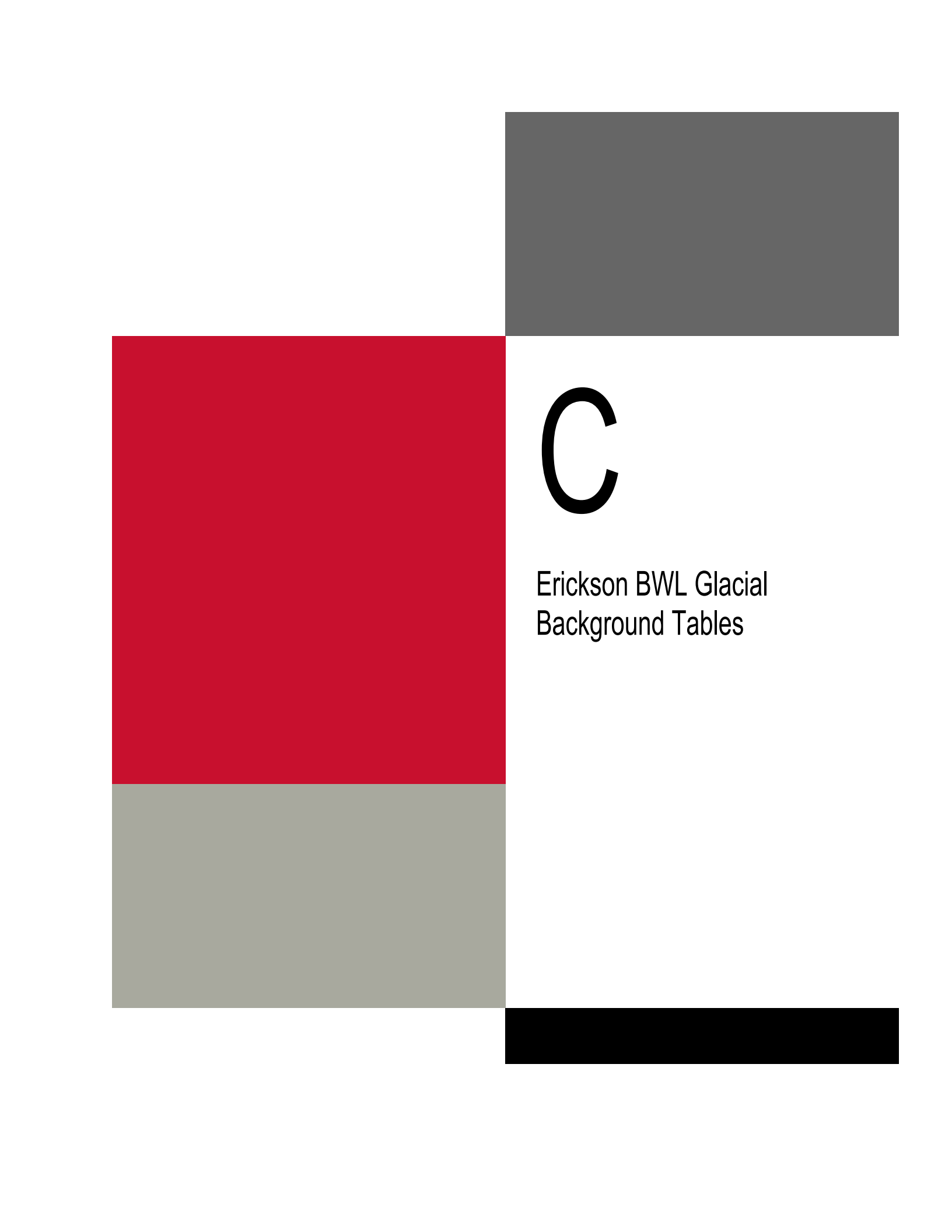
| ID   | Well            | Constituent Type | Constituent            | Unit  | n  | No. NDs | % NDs | Type          | Method        | Slope       | p-value | Trend |
|------|-----------------|------------------|------------------------|-------|----|---------|-------|---------------|---------------|-------------|---------|-------|
| 1_01 | MW-11B & MW-12B | Appendix III     | Boron                  | mg/L  | 18 | 0       | 0%    | Nonparametric | MK            | 0.000288    | 0.649   | ↔     |
| 1_02 | MW-11B & MW-12B | Appendix III     | Calcium                | mg/L  | 18 | 0       | 0%    | Nonparametric | MK            | 0.0144      | 0.053   | ↔     |
| 1_06 | MW-11B & MW-12B | Appendix III     | Total Dissolved Solids | mg/L  | 18 | 0       | 0%    | Nonparametric | MK            | -0.0881     | 0.011   | ↔     |
| 1_07 | MW-11B & MW-12B | Appendix III     | pH, Field              | su    | 18 | 0       | 0%    | Parametric    | Lognormal MLE | -0.000176   | 0.015   | ↔     |
| 2_10 | MW-11B & MW-12B | Appendix IV      | Barium                 | mg/L  | 18 | 0       | 0%    | Nonparametric | MK            | -0.00000166 | 0.819   | ↔     |
| 2_16 | MW-11B & MW-12B | Appendix IV      | Lithium                | mg/L  | 18 | 0       | 0%    | Parametric    | Lognormal MLE | -0.000141   | 0.778   | ↔     |
| 2_20 | MW-11B & MW-12B | Appendix IV      | Radium-226/228         | pCi/L | 18 | 0       | 0%    | Parametric    | Lognormal MLE | 0.00360     | 0.011   | ↔     |

Table 10: Trend Tests: Piecewise Linear-Linear

| ID   | Well            | Constituent Type | Constituent            | Unit  | n  | No. NDs | % NDs | Line 1          |         |       | Line 2      |         |       | Break 1    | R-Squared | Overall Trend |
|------|-----------------|------------------|------------------------|-------|----|---------|-------|-----------------|---------|-------|-------------|---------|-------|------------|-----------|---------------|
|      |                 |                  |                        |       |    |         |       | Slope           | p-Value | Trend | Slope       | p-Value | Trend |            |           |               |
| 1_01 | MW-11B & MW-12B | Appendix III     | Boron                  | mg/L  | 18 | 0       | 0%    | -0.0282         | 0.610   | ↔     | -0.000807   | 0.843   | ↔     | 2022-04-27 | 0.082     | ↔             |
| 1_02 | MW-11B & MW-12B | Appendix III     | Calcium                | mg/L  | 18 | 0       | 0%    | 0.457           | 0.442   | ↔     | 0.0274      | 0.688   | ↔     | 2022-04-28 | 0.116     | ↔             |
| 1_03 | MW-11B & MW-12B | Appendix III     | Chloride               | mg/L  | 18 | 18      | 100%  | -0.000000000156 | 1.000   | ↔     | -0.00200    | 0.534   | ↔     | 2022-06-05 | 0.050     | ↔             |
| 1_04 | MW-11B & MW-12B | Appendix III     | Fluoride               | mg/L  | 18 | 18      | 100%  | -0.000946       | 0.344   | ↔     | 0.000754    | 0.248   | ↔     | 2022-08-10 | 0.148     | ↔             |
| 1_05 | MW-11B & MW-12B | Appendix III     | Sulfate                | mg/L  | 18 | 18      | 100%  | 0.000000000212  | 1.000   | ↔     | -0.00147    | 0.534   | ↔     | 2022-06-05 | 0.050     | ↔             |
| 1_06 | MW-11B & MW-12B | Appendix III     | Total Dissolved Solids | mg/L  | 18 | 0       | 0%    | -0.924          | 0.507   | ↔     | -0.0775     | 0.455   | ↔     | 2022-04-27 | 0.195     | ↔             |
| 1_07 | MW-11B & MW-12B | Appendix III     | pH, Field              | su    | 18 | 0       | 0%    | -0.00550        | 0.043   | ↔     | 0.000255    | 0.775   | ↔     | 2022-07-06 | 0.501     | ↔             |
| 2_04 | MW-11B & MW-12B | Appendix IV      | Fluoride               | mg/L  | 18 | 18      | 100%  | -0.000946       | 0.344   | ↔     | 0.000754    | 0.248   | ↔     | 2022-08-10 | 0.148     | ↔             |
| 2_09 | MW-11B & MW-12B | Appendix IV      | Arsenic                | mg/L  | 18 | 9       | 50%   | 0.0000273       | 0.181   | ↔     | -0.00000287 | 0.866   | ↔     | 2022-08-11 | 0.202     | ↔             |
| 2_10 | MW-11B & MW-12B | Appendix IV      | Barium                 | mg/L  | 18 | 0       | 0%    | 0.000586        | 0.357   | ↔     | -0.0000140  | 0.847   | ↔     | 2022-04-28 | 0.096     | ↔             |
| 2_16 | MW-11B & MW-12B | Appendix IV      | Lithium                | mg/L  | 18 | 0       | 0%    | -0.000189       | 0.354   | ↔     | 0.00000807  | 0.729   | ↔     | 2022-05-01 | 0.104     | ↔             |
| 2_18 | MW-11B & MW-12B | Appendix IV      | Molybdenum             | mg/L  | 18 | 13      | 72%   | 0.0000321       | 0.265   | ↔     | -0.00000837 | 0.111   | ↔     | 2022-05-19 | 0.233     | ↔             |
| 2_20 | MW-11B & MW-12B | Appendix IV      | Radium-226/228         | pCi/L | 18 | 0       | 0%    | -0.00191        | 0.767   | ↔     | 0.0142      | 0.021   | ↔     | 2022-08-31 | 0.445     | ↔             |

Table 11: Trend Tests: Piecewise Linear-Linear-Linear

| ID   | Well            | Constituent Type | Constituent    | Unit  | n  | No. NDs | % NDs | Line 1    |         |       | Line 2     |         |       | Line 3     |         |       | Break 1    | Break 2    | R-Squared | Overall Trend |
|------|-----------------|------------------|----------------|-------|----|---------|-------|-----------|---------|-------|------------|---------|-------|------------|---------|-------|------------|------------|-----------|---------------|
|      |                 |                  |                |       |    |         |       | Slope     | p-Value | Trend | Slope      | p-Value | Trend | Slope      | p-Value | Trend |            |            |           |               |
| 1_03 | MW-11B & MW-12B | Appendix III     | Chloride       | mg/L  | 18 | 18      | 100%  | 0.00204   | 0.643   | ↔     | -0.0216    | 0.130   | ↔     | 0.0198     | 0.345   | ↔     | 2022-09-06 | 2022-11-22 | 0.392     | ↔             |
| 1_04 | MW-11B & MW-12B | Appendix III     | Fluoride       | mg/L  | 18 | 18      | 100%  | -0.00136  | 0.134   | ↔     | 0.00238    | 0.478   | ↔     | -0.000330  | 0.822   | ↔     | 2022-08-11 | 2022-10-21 | 0.239     | ↔             |
| 2_04 | MW-11B & MW-12B | Appendix IV      | Fluoride       | mg/L  | 18 | 18      | 100%  | -0.00136  | 0.134   | ↔     | 0.00238    | 0.478   | ↔     | -0.000330  | 0.822   | ↔     | 2022-08-11 | 2022-10-21 | 0.239     | ↔             |
| 2_10 | MW-11B & MW-12B | Appendix IV      | Barium         | mg/L  | 18 | 0       | 0%    | 0.000745  | 0.280   | ↔     | -0.000215  | 0.932   | ↔     | 0.0000147  | 0.876   | ↔     | 2022-04-28 | 2022-06-21 | 0.114     | ↔             |
| 2_18 | MW-11B & MW-12B | Appendix IV      | Molybdenum     | mg/L  | 18 | 13      | 72%   | 0.0000370 | 0.227   | ↔     | -0.0000123 | 0.168   | ↔     | 0.00000530 | 0.903   | ↔     | 2022-05-19 | 2022-11-25 | 0.271     | ↔             |
| 2_20 | MW-11B & MW-12B | Appendix IV      | Radium-226/228 | pCi/L | 18 | 0       | 0%    | 0.0281    | 0.273   | ↔     | -0.0118    | 0.486   | ↔     | 0.0144     | 0.011   | ↔     | 2022-04-29 | 2022-08-10 | 0.529     | ↔             |



# C

Erickson BWL Glacial  
Background Tables

Table 1: Summary Statistics, Non-Detects Included

| ID   | Well                     | Constituent Type | Constituent            | Unit  | n  | No. NDs | % NDs | Date Range               | Distributions Fit <sup>a</sup> | Recommended Distribution | Mean     | Median   | Minimum  | Maximum  | SD       | CV     | MAD/0.675 | Skewness | Kurtosis |
|------|--------------------------|------------------|------------------------|-------|----|---------|-------|--------------------------|--------------------------------|--------------------------|----------|----------|----------|----------|----------|--------|-----------|----------|----------|
| 1_01 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Boron                  | mg/L  | 48 | 0       | 0%    | 2020-04-28 to 2023-02-09 | Nonparametric                  | Nonparametric            | 0.181    | 0.145    | 0.0500   | 0.480    | 0.134    | 0.740  | 0.119     | 0.781    | -0.660   |
| 1_02 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Calcium                | mg/L  | 48 | 0       | 0%    | 2020-04-28 to 2023-02-09 | Nonparametric                  | Nonparametric            | 139      | 144      | 98.4     | 185      | 24.3     | 0.174  | 23.7      | -0.249   | -1.12    |
| 1_03 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Chloride               | mg/L  | 48 | 0       | 0%    | 2020-04-28 to 2023-02-09 | Gamma; Lognormal; Normal       | Normal                   | 67.8     | 68.0     | 44.0     | 94.0     | 10.9     | 0.161  | 8.89      | 0.122    | 0.341    |
| 1_04 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Fluoride               | mg/L  | 48 | 48      | 100%  | 2020-04-28 to 2023-02-09 |                                | Nonparametric            | 1.00     | 1.00     | 1.00     | 1.00     | 0        | 0      | 0         | NA       | NA       |
| 1_05 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Sulfate                | mg/L  | 48 | 9       | 19%   | 2020-04-28 to 2023-02-09 | Nonparametric                  | Nonparametric            | 88.6     | 57.5     | 5.00     | 344      | 91.5     | 1.03   | 29.6      | 1.51     | 1.07     |
| 1_06 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Total Dissolved Solids | mg/L  | 48 | 0       | 0%    | 2020-04-28 to 2023-02-09 | Gamma; Lognormal               | Gamma                    | 722      | 667      | 368      | 1140     | 193      | 0.267  | 167       | 0.762    | -0.284   |
| 1_07 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | pH, Field              | su    | 49 | 0       | 0%    | 2020-04-28 to 2023-02-09 | Nonparametric                  | Nonparametric            | 6.99     | 7.02     | 6.62     | 7.43     | 0.214    | 0.0306 | 0.296     | 0.0872   | -1.24    |
| 2_04 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Fluoride               | mg/L  | 50 | 50      | 100%  | 2020-04-28 to 2023-02-09 |                                | Nonparametric            | 1.00     | 1.00     | 1.00     | 1.00     | 0        | 0      | 0         | NA       | NA       |
| 2_08 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Antimony               | mg/L  | 50 | 50      | 100%  | 2020-04-28 to 2023-02-09 |                                | Nonparametric            | 0.00500  | 0.00500  | 0.00500  | 0.00500  | 0        | 0      | 0         | NA       | NA       |
| 2_09 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Arsenic                | mg/L  | 50 | 3       | 6%    | 2020-04-28 to 2023-02-09 | Nonparametric                  | Nonparametric            | 0.00814  | 0.00700  | 0.00200  | 0.0210   | 0.00560  | 0.688  | 0.00296   | 1.24     | 0.433    |
| 2_10 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Barium                 | mg/L  | 50 | 0       | 0%    | 2020-04-28 to 2023-02-09 | Nonparametric                  | Nonparametric            | 0.134    | 0.147    | 0.0570   | 0.168    | 0.0353   | 0.264  | 0.0222    | -1.22    | 0.0721   |
| 2_11 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Beryllium              | mg/L  | 50 | 50      | 100%  | 2020-04-28 to 2023-02-09 |                                | Nonparametric            | 0.00100  | 0.00100  | 0.00100  | 0.00100  | 0        | 0      | 0         | NA       | NA       |
| 2_13 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Cadmium                | mg/L  | 50 | 50      | 100%  | 2020-04-28 to 2023-02-09 |                                | Nonparametric            | 0.000590 | 0.000500 | 0.000500 | 0.00500  | 0.000636 | 1.08   | 0         | 7.07     | 50.0     |
| 2_15 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Chromium               | mg/L  | 50 | 49      | 98%   | 2020-04-28 to 2023-02-09 |                                | Nonparametric            | 0.00500  | 0.00500  | 0.00500  | 0.00500  | 0        | 0      | 0         | NA       | NA       |
| 2_16 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Cobalt                 | mg/L  | 50 | 50      | 100%  | 2020-04-28 to 2023-02-09 |                                | Nonparametric            | 0.00500  | 0.00500  | 0.00500  | 0.00500  | 0        | 0      | 0         | NA       | NA       |
| 2_18 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Lead                   | mg/L  | 50 | 50      | 100%  | 2020-04-28 to 2023-02-09 |                                | Nonparametric            | 0.00300  | 0.00300  | 0.00300  | 0.00300  | 0        | 0      | 0         | NA       | NA       |
| 2_19 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Lithium                | mg/L  | 50 | 11      | 22%   | 2020-04-28 to 2023-02-09 | Nonparametric                  | Nonparametric            | 0.0176   | 0.0135   | 0.00500  | 0.0410   | 0.0111   | 0.629  | 0.0126    | 0.601    | -0.918   |
| 2_21 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Mercury                | mg/L  | 50 | 50      | 100%  | 2020-04-28 to 2023-02-09 |                                | Nonparametric            | 0.000200 | 0.000200 | 0.000200 | 0.000200 | 0        | 0      | 0         | NA       | NA       |
| 2_22 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Molybdenum             | mg/L  | 50 | 38      | 76%   | 2020-04-28 to 2023-02-09 | Gamma; Lognormal; Normal       | Nonparametric            | 0.00718  | 0.00500  | 0.00500  | 0.0240   | 0.00484  | 0.675  | 0         | 2.28     | 4.39     |
| 2_25 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Radium-226/228         | pCi/L | 50 | 0       | 0%    | 2020-04-28 to 2023-02-09 | Nonparametric                  | Nonparametric            | 1.43     | 1.20     | 0        | 5.00     | 1.07     | 0.747  | 0.924     | 1.26     | 1.58     |
| 2_27 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Selenium               | mg/L  | 50 | 50      | 100%  | 2020-04-28 to 2023-02-09 |                                | Nonparametric            | 0.00500  | 0.00500  | 0.00500  | 0.00500  | 0        | 0      | 0         | NA       | NA       |
| 2_29 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Thallium               | mg/L  | 50 | 50      | 100%  | 2020-04-28 to 2023-02-09 |                                | Nonparametric            | 0.00200  | 0.00200  | 0.00200  | 0.00200  | 0        | 0      | 0         | NA       | NA       |

<sup>a</sup> Non-detects are excluded from goodness-of-fit tests.

Table 2: Summary Statistics, Non-Detects Excluded

| ID   | Well                     | Constituent Type | Constituent            | Unit  | n  | No. NDs | % NDs | Date Range               | Distributions Fit        | Recommended Distribution | Mean    | Median  | Minimum | Maximum | SD      | CV     | MAD/0.675 | Skewness | Kurtosis |
|------|--------------------------|------------------|------------------------|-------|----|---------|-------|--------------------------|--------------------------|--------------------------|---------|---------|---------|---------|---------|--------|-----------|----------|----------|
| 1_01 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Boron                  | mg/L  | 48 | 0       | 0%    | 2020-04-28 to 2023-02-09 | Nonparametric            | Nonparametric            | 0.181   | 0.145   | 0.0500  | 0.480   | 0.134   | 0.740  | 0.119     | 0.781    | -0.660   |
| 1_02 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Calcium                | mg/L  | 48 | 0       | 0%    | 2020-04-28 to 2023-02-09 | Nonparametric            | Nonparametric            | 139     | 144     | 98.4    | 185     | 24.3    | 0.174  | 23.7      | -0.249   | -1.12    |
| 1_03 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Chloride               | mg/L  | 48 | 0       | 0%    | 2020-04-28 to 2023-02-09 | Gamma; Lognormal; Normal | Normal                   | 67.8    | 68.0    | 44.0    | 94.0    | 10.9    | 0.161  | 8.89      | 0.122    | 0.341    |
| 1_05 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Sulfate                | mg/L  | 48 | 9       | 19%   | 2020-04-28 to 2023-02-09 | Nonparametric            | Nonparametric            | 108     | 59.0    | 31.0    | 344     | 91.2    | 0.844  | 14.8      | 1.42     | 0.413    |
| 1_06 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Total Dissolved Solids | mg/L  | 48 | 0       | 0%    | 2020-04-28 to 2023-02-09 | Gamma; Lognormal         | Gamma                    | 722     | 667     | 368     | 1140    | 193     | 0.267  | 167       | 0.762    | -0.284   |
| 1_07 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | pH, Field              | su    | 49 | 0       | 0%    | 2020-04-28 to 2023-02-09 | Nonparametric            | Nonparametric            | 6.99    | 7.02    | 6.62    | 7.43    | 0.214   | 0.0306 | 0.296     | 0.0872   | -1.24    |
| 2_09 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Arsenic                | mg/L  | 50 | 3       | 6%    | 2020-04-28 to 2023-02-09 | Nonparametric            | Nonparametric            | 0.00853 | 0.00700 | 0.00200 | 0.0210  | 0.00555 | 0.651  | 0.00296   | 1.23     | 0.309    |
| 2_10 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Barium                 | mg/L  | 50 | 0       | 0%    | 2020-04-28 to 2023-02-09 | Nonparametric            | Nonparametric            | 0.134   | 0.147   | 0.0570  | 0.168   | 0.0353  | 0.264  | 0.0222    | -1.22    | 0.0721   |
| 2_15 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Chromium               | mg/L  | 50 | 49      | 98%   | 2020-04-28 to 2023-02-09 |                          | Nonparametric            | 0.00500 | 0.00500 | 0.00500 | 0.00500 | NA      | NA     | 0         | NA       | NA       |
| 2_19 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Lithium                | mg/L  | 50 | 11      | 22%   | 2020-04-28 to 2023-02-09 | Nonparametric            | Nonparametric            | 0.0207  | 0.0210  | 0.00500 | 0.0410  | 0.0105  | 0.505  | 0.0163    | 0.354    | -1.13    |
| 2_22 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Molybdenum             | mg/L  | 50 | 38      | 76%   | 2020-04-28 to 2023-02-09 | Gamma; Lognormal; Normal | Nonparametric            | 0.0141  | 0.0135  | 0.00500 | 0.0240  | 0.00601 | 0.427  | 0.00593   | 0.195    | -0.586   |
| 2_25 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Radium-226/228         | pCi/L | 50 | 0       | 0%    | 2020-04-28 to 2023-02-09 | Nonparametric            | Nonparametric            | 1.43    | 1.20    | 0       | 5.00    | 1.07    | 0.747  | 0.924     | 1.26     | 1.58     |



| ID   | Well                     | Constituent Type | Constituent            | Unit  | n  | No. NDs | % NDs | Normal |         | Lognormal  |         |       |         | Gamma      |         |       |                  | Log-SD (NDs excl.) | ProUCL Distributions Fit | Recommended Distribution |                          |               |
|------|--------------------------|------------------|------------------------|-------|----|---------|-------|--------|---------|------------|---------|-------|---------|------------|---------|-------|------------------|--------------------|--------------------------|--------------------------|--------------------------|---------------|
|      |                          |                  |                        |       |    |         |       | S-W    |         | Lilliefors |         | S-W   |         | Lilliefors |         | K-S   |                  |                    |                          |                          | A-D                      |               |
|      |                          |                  |                        |       |    |         |       | Stat.  | p-Value | Stat.      | p-Value | Stat. | p-Value | Stat.      | p-Value | Stat. | p-Value          |                    |                          |                          | Stat.                    | p-Value       |
| 1_01 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Boron                  | mg/L  | 48 | 0       | 0%    | 0.840  | 0.000   | 0.233      | 0.000   | 0.870 | 0.000   | 0.211      | 0.000   | 0.227 | < 0.01           | 2.534              | < 0.01                   | 0.775                    | Nonparametric            | Nonparametric |
| 1_02 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Calcium                | mg/L  | 48 | 0       | 0%    | 0.926  | 0.005   | 0.154      | 0.006   | 0.906 | 0.001   | 0.161      | 0.003   | 0.159 | < 0.01           | 1.918              | < 0.01                   | 0.182                    | Nonparametric            | Nonparametric |
| 1_03 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Chloride               | mg/L  | 48 | 0       | 0%    | 0.976  | 0.410   | 0.120      | 0.082   | 0.967 | 0.191   | 0.100      | 0.263   | 0.103 | >= 0.10          | 0.527              | >= 0.10                  | 0.165                    | Gamma; Lognormal; Normal | Normal        |
| 1_04 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Fluoride               | mg/L  | 48 | 48      | 100%  | NA     | NA      | NA         | NA      | NA    | NA      | NA         | NA      | NA    |                  | NA                 |                          | NA                       |                          | Nonparametric |
| 1_05 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Sulfate                | mg/L  | 48 | 9       | 19%   | 0.677  | 0.000   | 0.373      | 0.000   | 0.796 | 0.000   | 0.262      | 0.000   | 0.312 | < 0.01           | 4.729              | < 0.01                   | 0.678                    | Nonparametric            | Nonparametric |
| 1_06 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Total Dissolved Solids | mg/L  | 48 | 0       | 0%    | 0.897  | 0.000   | 0.144      | 0.014   | 0.934 | 0.010   | 0.115      | 0.116   | 0.121 | 0.05 <= p < 0.10 | 1.361              | < 0.01                   | 0.258                    | Gamma; Lognormal         | Gamma         |
| 1_07 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | pH, Field              | su    | 49 | 0       | 0%    | 0.937  | 0.011   | 0.147      | 0.010   | 0.937 | 0.011   | 0.150      | 0.007   | 0.151 | < 0.01           | 1.418              | < 0.01                   | 0.031                    | Nonparametric            | Nonparametric |
| 2_04 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Fluoride               | mg/L  | 50 | 50      | 100%  | NA     | NA      | NA         | NA      | NA    | NA      | NA         | NA      | NA    |                  | NA                 |                          | NA                       |                          | Nonparametric |
| 2_08 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Antimony               | mg/L  | 50 | 50      | 100%  | NA     | NA      | NA         | NA      | NA    | NA      | NA         | NA      | NA    |                  | NA                 |                          | NA                       |                          | Nonparametric |
| 2_09 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Arsenic                | mg/L  | 50 | 3       | 6%    | 0.798  | 0.000   | 0.275      | 0.000   | 0.921 | 0.004   | 0.158      | 0.005   | 0.194 | < 0.01           | 1.931              | < 0.01                   | 0.627                    | Nonparametric            | Nonparametric |
| 2_10 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Barium                 | mg/L  | 50 | 0       | 0%    | 0.785  | 0.000   | 0.231      | 0.000   | 0.719 | 0.000   | 0.268      | 0.000   | 0.259 | < 0.01           | 5.444              | < 0.01                   | 0.336                    | Nonparametric            | Nonparametric |
| 2_11 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Beryllium              | mg/L  | 50 | 50      | 100%  | NA     | NA      | NA         | NA      | NA    | NA      | NA         | NA      | NA    |                  | NA                 |                          | NA                       |                          | Nonparametric |
| 2_13 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Cadmium                | mg/L  | 50 | 50      | 100%  | NA     | NA      | NA         | NA      | NA    | NA      | NA         | NA      | NA    |                  | NA                 |                          | NA                       |                          | Nonparametric |
| 2_15 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Chromium               | mg/L  | 50 | 49      | 98%   | NA     | NA      | NA         | NA      | NA    | NA      | NA         | NA      | NA    |                  | NA                 |                          | NA                       |                          | Nonparametric |
| 2_16 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Cobalt                 | mg/L  | 50 | 50      | 100%  | NA     | NA      | NA         | NA      | NA    | NA      | NA         | NA      | NA    |                  | NA                 |                          | NA                       |                          | Nonparametric |
| 2_18 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Lead                   | mg/L  | 50 | 50      | 100%  | NA     | NA      | NA         | NA      | NA    | NA      | NA         | NA      | NA    |                  | NA                 |                          | NA                       |                          | Nonparametric |
| 2_19 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Lithium                | mg/L  | 50 | 11      | 22%   | 0.922  | 0.010   | 0.157      | 0.017   | 0.930 | 0.018   | 0.145      | 0.037   | 0.156 | 0.01 <= p < 0.05 | 0.979              | 0.01 <= p < 0.05         | 0.557                    | Nonparametric            | Nonparametric |
| 2_21 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Mercury                | mg/L  | 50 | 50      | 100%  | NA     | NA      | NA         | NA      | NA    | NA      | NA         | NA      | NA    |                  | NA                 |                          | NA                       |                          | Nonparametric |
| 2_22 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Molybdenum             | mg/L  | 50 | 38      | 76%   | 0.965  | 0.849   | 0.106      | 0.969   | 0.938 | 0.469   | 0.181      | 0.338   | 0.153 | >= 0.10          | 0.231              | >= 0.10                  | 0.487                    | Gamma; Lognormal; Normal | Nonparametric |
| 2_25 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Radium-226/228         | pCi/L | 50 | 0       | 0%    | 0.895  | 0.000   | 0.142      | 0.014   | NA    | NA      | NA         | NA      | NA    |                  | NA                 |                          | NA                       | Nonparametric            | Nonparametric |
| 2_27 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Selenium               | mg/L  | 50 | 50      | 100%  | NA     | NA      | NA         | NA      | NA    | NA      | NA         | NA      | NA    |                  | NA                 |                          | NA                       |                          | Nonparametric |
| 2_29 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Thallium               | mg/L  | 50 | 50      | 100%  | NA     | NA      | NA         | NA      | NA    | NA      | NA         | NA      | NA    |                  | NA                 |                          | NA                       |                          | Nonparametric |

Note: p-values above 0.05 suggest a fit to the tested distribution; a distribution passes its GOF test when at least one of the two p-values is above 0.05.

Table 4: Autocorrelation Tests, Non-Detects Excluded

| ID   | Well                     | Constituent Type | Constituent            | Unit  | n  | No. NDs | % NDs | Autocorrelation | Box-Ljung p-value | Sig. |
|------|--------------------------|------------------|------------------------|-------|----|---------|-------|-----------------|-------------------|------|
| 1_01 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Boron                  | mg/L  | 48 | 0       | 0%    | -0.714          | 0.000             | ***  |
| 1_02 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Calcium                | mg/L  | 48 | 0       | 0%    | -0.695          | 0.000             | ***  |
| 1_03 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Chloride               | mg/L  | 48 | 0       | 0%    | -0.344          | 0.014             | *    |
| 1_05 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Sulfate                | mg/L  | 48 | 9       | 19%   | 0.575           | 0.000             | ***  |
| 1_06 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Total Dissolved Solids | mg/L  | 48 | 0       | 0%    | -0.365          | 0.009             | **   |
| 1_07 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | pH, Field              | su    | 49 | 0       | 0%    | -0.531          | 0.000             | ***  |
| 2_09 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Arsenic                | mg/L  | 50 | 3       | 6%    | -0.286          | 0.043             | *    |
| 2_10 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Barium                 | mg/L  | 50 | 0       | 0%    | -0.230          | 0.093             |      |
| 2_15 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Chromium               | mg/L  | 50 | 49      | 98%   | NA              | NA                |      |
| 2_19 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Lithium                | mg/L  | 50 | 11      | 22%   | -0.474          | 0.002             | **   |
| 2_22 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Molybdenum             | mg/L  | 50 | 38      | 76%   | 0.554           | 0.030             | *    |
| 2_25 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Radium-226/228         | pCi/L | 50 | 0       | 0%    | 0.118           | 0.392             |      |

\*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05

Table 5: Outlier Counts by Date

| Date       | Count |
|------------|-------|
| 2022-02-23 | 3     |
| 2022-03-30 | 3     |
| 2022-05-04 | 3     |
| 2022-06-08 | 3     |
| 2022-07-13 | 3     |
| 2022-08-17 | 3     |
| 2022-09-21 | 3     |
| 2022-10-26 | 3     |
| 2023-02-09 | 3     |

Table 6: Outliers Identified at the 1% Significance Level, Non-Detects Excluded

| ID   | Well  | Constituent Type | Constituent | Unit | n  | No. NDs | % NDs | No. Detects | Date       | Value  |
|------|-------|------------------|-------------|------|----|---------|-------|-------------|------------|--------|
| 1_05 | MW-12 | Appendix III     | Sulfate     | mg/L | 48 | 9       | 19%   | 39          | 2022-02-23 | 344    |
| 1_05 | MW-12 | Appendix III     | Sulfate     | mg/L | 48 | 9       | 19%   | 39          | 2022-03-30 | 308    |
| 1_05 | MW-12 | Appendix III     | Sulfate     | mg/L | 48 | 9       | 19%   | 39          | 2022-05-04 | 283    |
| 1_05 | MW-12 | Appendix III     | Sulfate     | mg/L | 48 | 9       | 19%   | 39          | 2022-08-17 | 256    |
| 1_05 | MW-12 | Appendix III     | Sulfate     | mg/L | 48 | 9       | 19%   | 39          | 2022-09-21 | 255    |
| 1_05 | MW-12 | Appendix III     | Sulfate     | mg/L | 48 | 9       | 19%   | 39          | 2022-06-08 | 254    |
| 1_05 | MW-12 | Appendix III     | Sulfate     | mg/L | 48 | 9       | 19%   | 39          | 2022-10-26 | 252    |
| 1_05 | MW-12 | Appendix III     | Sulfate     | mg/L | 48 | 9       | 19%   | 39          | 2022-07-13 | 250    |
| 1_05 | MW-12 | Appendix III     | Sulfate     | mg/L | 48 | 9       | 19%   | 39          | 2023-02-09 | 207    |
| 2_09 | MW-11 | Appendix IV      | Arsenic     | mg/L | 50 | 3       | 6%    | 47          | 2022-08-17 | 0.0210 |
| 2_09 | MW-11 | Appendix IV      | Arsenic     | mg/L | 50 | 3       | 6%    | 47          | 2022-09-21 | 0.0210 |
| 2_09 | MW-11 | Appendix IV      | Arsenic     | mg/L | 50 | 3       | 6%    | 47          | 2022-05-04 | 0.0200 |
| 2_09 | MW-11 | Appendix IV      | Arsenic     | mg/L | 50 | 3       | 6%    | 47          | 2022-10-26 | 0.0200 |
| 2_09 | MW-11 | Appendix IV      | Arsenic     | mg/L | 50 | 3       | 6%    | 47          | 2022-07-13 | 0.0190 |
| 2_09 | MW-11 | Appendix IV      | Arsenic     | mg/L | 50 | 3       | 6%    | 47          | 2022-02-23 | 0.0180 |
| 2_09 | MW-11 | Appendix IV      | Arsenic     | mg/L | 50 | 3       | 6%    | 47          | 2022-03-30 | 0.0180 |
| 2_09 | MW-11 | Appendix IV      | Arsenic     | mg/L | 50 | 3       | 6%    | 47          | 2022-06-08 | 0.0180 |
| 2_09 | MW-11 | Appendix IV      | Arsenic     | mg/L | 50 | 3       | 6%    | 47          | 2023-02-09 | 0.0170 |
| 2_10 | MW-12 | Appendix IV      | Barium      | mg/L | 50 | 0       | 0%    | 50          | 2022-10-26 | 0.0570 |
| 2_10 | MW-12 | Appendix IV      | Barium      | mg/L | 50 | 0       | 0%    | 50          | 2023-02-09 | 0.0580 |
| 2_10 | MW-12 | Appendix IV      | Barium      | mg/L | 50 | 0       | 0%    | 50          | 2022-06-08 | 0.0640 |
| 2_10 | MW-12 | Appendix IV      | Barium      | mg/L | 50 | 0       | 0%    | 50          | 2022-08-17 | 0.0640 |
| 2_10 | MW-12 | Appendix IV      | Barium      | mg/L | 50 | 0       | 0%    | 50          | 2022-09-21 | 0.0640 |
| 2_10 | MW-12 | Appendix IV      | Barium      | mg/L | 50 | 0       | 0%    | 50          | 2022-07-13 | 0.0670 |
| 2_10 | MW-12 | Appendix IV      | Barium      | mg/L | 50 | 0       | 0%    | 50          | 2022-02-23 | 0.0690 |
| 2_10 | MW-12 | Appendix IV      | Barium      | mg/L | 50 | 0       | 0%    | 50          | 2022-05-04 | 0.0700 |
| 2_10 | MW-12 | Appendix IV      | Barium      | mg/L | 50 | 0       | 0%    | 50          | 2022-03-30 | 0.0740 |

| ID   | Well                     | Constituent Type | Constituent            | Unit  | % NDs | Full        |        |        |      |       |                |       |           |    |       |        | Without Non-Detects |        |      |       |                |         |           |       |       |       |    |
|------|--------------------------|------------------|------------------------|-------|-------|-------------|--------|--------|------|-------|----------------|-------|-----------|----|-------|--------|---------------------|--------|------|-------|----------------|---------|-----------|-------|-------|-------|----|
|      |                          |                  |                        |       |       | Sample Size |        |        |      |       | p-Value        |       |           |    |       |        | Sample Size         |        |      |       |                | p-Value |           |       |       |       |    |
|      |                          |                  |                        |       |       | Winter      | Spring | Summer | Fall | Total | Kruskal-Wallis | ANOVA | Log ANOVA |    |       | Winter | Spring              | Summer | Fall | Total | Kruskal-Wallis | ANOVA   | Log ANOVA |       |       |       |    |
| 1_01 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Boron                  | mg/L  | 0%    | 10          | 10     | 16     | 12   | 48    | 0.704          | NA    | 0.787     | NA | 0.899 | NA     | 10                  | 10     | 16   | 12    | 48             | 0.704   | NA        | 0.787 | 0.899 | NA    |    |
| 1_02 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Calcium                | mg/L  | 0%    | 10          | 10     | 16     | 12   | 48    | 0.932          | NA    | 0.943     | NA | 0.952 | NA     | 10                  | 10     | 16   | 12    | 48             | 0.932   | NA        | 0.943 | 0.952 | NA    |    |
| 1_03 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Chloride               | mg/L  | 0%    | 10          | 10     | 16     | 12   | 48    | 0.570          | NA    | 0.720     | NA | 0.764 | NA     | 10                  | 10     | 16   | 12    | 48             | 0.570   | NA        | 0.720 | 0.764 | NA    |    |
| 1_04 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Fluoride               | mg/L  | 100%  | 10          | 10     | 16     | 12   | 48    | NA             | NA    | 0.290     | NA | NA    | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        | NA    | NA    | NA    |    |
| 1_05 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Sulfate                | mg/L  | 19%   | 10          | 10     | 16     | 12   | 48    | 0.569          | NA    | 0.995     | NA | 0.986 | NA     | 8                   | 8      | 13   | 10    | 39             | 0.386   | NA        | 0.990 | 0.979 | NA    |    |
| 1_06 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Total Dissolved Solids | mg/L  | 0%    | 10          | 10     | 16     | 12   | 48    | 0.899          | NA    | 0.972     | NA | 0.968 | NA     | 10                  | 10     | 16   | 12    | 48             | 0.899   | NA        | 0.972 | 0.968 | NA    |    |
| 1_07 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | pH, Field              | su    | 0%    | 10          | 10     | 16     | 13   | 49    | 0.379          | NA    | 0.406     | NA | 0.397 | NA     | 10                  | 10     | 16   | 13    | 49             | 0.379   | NA        | 0.406 | 0.397 | NA    |    |
| 2_04 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Fluoride               | mg/L  | 100%  | 10          | 10     | 16     | 14   | 50    | NA             | NA    | 0.266     | NA | NA    | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        | NA    | NA    | NA    |    |
| 2_08 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Antimony               | mg/L  | 100%  | 10          | 10     | 16     | 14   | 50    | NA             | NA    | 0.266     | NA | 0.266 | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        | NA    | NA    | NA    |    |
| 2_09 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Arsenic                | mg/L  | 6%    | 10          | 10     | 16     | 14   | 50    | 0.634          | NA    | 0.989     | NA | 0.980 | NA     | 8                   | 10     | 15   | 14    | 47             | 0.390   | NA        | 0.930 | 0.777 | NA    |    |
| 2_10 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Barium                 | mg/L  | 0%    | 10          | 10     | 16     | 14   | 50    | 0.915          | NA    | 0.948     | NA | 0.966 | NA     | 10                  | 10     | 16   | 14    | 50             | 0.915   | NA        | 0.948 | 0.966 | NA    |    |
| 2_11 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Beryllium              | mg/L  | 100%  | 10          | 10     | 16     | 14   | 50    | NA             | NA    | 0.266     | NA | 0.266 | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        | NA    | NA    | NA    |    |
| 2_13 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Cadmium                | mg/L  | 100%  | 10          | 10     | 16     | 14   | 50    | 0.261          | NA    | 0.266     | NA | 0.266 | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        | NA    | NA    | NA    |    |
| 2_15 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Chromium               | mg/L  | 98%   | 10          | 10     | 16     | 14   | 50    | NA             | NA    | 0.266     | NA | 0.266 | NA     | 0                   | 0      | 1    | 0     | 1              | NA      | NA        | NA    | NA    | NA    |    |
| 2_16 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Cobalt                 | mg/L  | 100%  | 10          | 10     | 16     | 14   | 50    | NA             | NA    | 0.266     | NA | 0.266 | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        | NA    | NA    | NA    |    |
| 2_18 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Lead                   | mg/L  | 100%  | 10          | 10     | 16     | 14   | 50    | NA             | NA    | 0.266     | NA | 0.266 | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        | NA    | NA    | NA    |    |
| 2_19 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Lithium                | mg/L  | 22%   | 10          | 10     | 16     | 14   | 50    | 0.714          | NA    | 0.645     | NA | 0.849 | NA     | 9                   | 6      | 12   | 12    | 39             | 0.665   | NA        | 0.639 | 0.748 | NA    |    |
| 2_21 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Mercury                | mg/L  | 100%  | 10          | 10     | 16     | 14   | 50    | NA             | NA    | 0.266     | NA | 0.266 | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        | NA    | NA    | NA    |    |
| 2_22 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Molybdenum             | mg/L  | 76%   | 10          | 10     | 16     | 14   | 50    | 0.875          | NA    | 0.649     | NA | 0.842 | NA     | 3                   | 2      | 4    | 3     | 12             | 0.097   | NA        | 0.032 | *     | 0.142 | NA |
| 2_25 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Radium-226/228         | pCi/L | 0%    | 10          | 10     | 16     | 14   | 50    | 0.196          | NA    | 0.113     | NA | NA    | NA     | 10                  | 10     | 16   | 14    | 50             | 0.196   | NA        | 0.113 | NA    | NA    |    |
| 2_27 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Selenium               | mg/L  | 100%  | 10          | 10     | 16     | 14   | 50    | NA             | NA    | 0.266     | NA | 0.266 | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        | NA    | NA    | NA    |    |
| 2_29 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Thallium               | mg/L  | 100%  | 10          | 10     | 16     | 14   | 50    | NA             | NA    | 0.266     | NA | 0.266 | NA     | NA                  | NA     | NA   | NA    | NA             | NA      | NA        | NA    | NA    | NA    |    |

\*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05

| ID   | Well                     | Constituent Type | Constituent            | Unit  | % NDs | Full        |       |       |      |         |                |       |           |      |       | Without Non-Detects |      |       |                |         |           |       |     |       |     |       |     |
|------|--------------------------|------------------|------------------------|-------|-------|-------------|-------|-------|------|---------|----------------|-------|-----------|------|-------|---------------------|------|-------|----------------|---------|-----------|-------|-----|-------|-----|-------|-----|
|      |                          |                  |                        |       |       | Sample Size |       |       |      | p-Value |                |       |           |      |       | Sample Size         |      |       |                | p-Value |           |       |     |       |     |       |     |
|      |                          |                  |                        |       |       | MW-1        | MW-11 | MW-12 | MW-4 | Total   | Kruskal-Wallis | ANOVA | Log ANOVA | MW-1 | MW-11 | MW-12               | MW-4 | Total | Kruskal-Wallis | ANOVA   | Log ANOVA |       |     |       |     |       |     |
| 1_01 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Boron                  | mg/L  | 0%    | 15          | 9     | 9     | 15   | 48      | 0.000          | ***   | 0.000     | ***  | 0.000 | ***                 | 15   | 9     | 9              | 15      | 48        | 0.000 | *** | 0.000 | *** | 0.000 | *** |
| 1_02 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Calcium                | mg/L  | 0%    | 15          | 9     | 9     | 15   | 48      | 0.000          | ***   | 0.000     | ***  | 0.000 | ***                 | 15   | 9     | 9              | 15      | 48        | 0.000 | *** | 0.000 | *** | 0.000 | *** |
| 1_03 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Chloride               | mg/L  | 0%    | 15          | 9     | 9     | 15   | 48      | 0.000          | ***   | 0.000     | ***  | 0.000 | ***                 | 15   | 9     | 9              | 15      | 48        | 0.000 | *** | 0.000 | *** | 0.000 | *** |
| 1_04 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Fluoride               | mg/L  | 100%  | 15          | 9     | 9     | 15   | 48      | NA             |       | 0.545     |      | NA    |                     | NA   | NA    | NA             | NA      | NA        | NA    |     | NA    |     | NA    |     |
| 1_05 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Sulfate                | mg/L  | 19%   | 15          | 9     | 9     | 15   | 48      | 0.000          | ***   | 0.000     | ***  | 0.000 | ***                 | 15   | 0     | 9              | 15      | 39        | 0.000 | *** | 0.000 | *** | 0.000 | *** |
| 1_06 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Total Dissolved Solids | mg/L  | 0%    | 15          | 9     | 9     | 15   | 48      | 0.000          | ***   | 0.000     | ***  | 0.000 | ***                 | 15   | 9     | 9              | 15      | 48        | 0.000 | *** | 0.000 | *** | 0.000 | *** |
| 1_07 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | pH, Field              | su    | 0%    | 16          | 9     | 9     | 15   | 49      | 0.000          | ***   | 0.000     | ***  | 0.000 | ***                 | 16   | 9     | 9              | 15      | 49        | 0.000 | *** | 0.000 | *** | 0.000 | *** |
| 2_04 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Fluoride               | mg/L  | 100%  | 16          | 9     | 9     | 16   | 50      | NA             |       | 0.560     |      | NA    |                     | NA   | NA    | NA             | NA      | NA        | NA    |     | NA    |     | NA    |     |
| 2_08 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Antimony               | mg/L  | 100%  | 16          | 9     | 9     | 16   | 50      | NA             |       | 0.560     |      | 0.560 |                     | NA   | NA    | NA             | NA      | NA        | NA    |     | NA    |     | NA    |     |
| 2_09 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Arsenic                | mg/L  | 6%    | 16          | 9     | 9     | 16   | 50      | 0.000          | ***   | 0.000     | ***  | 0.000 | ***                 | 16   | 9     | 6              | 16      | 47        | 0.000 | *** | 0.000 | *** | 0.000 | *** |
| 2_10 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Barium                 | mg/L  | 0%    | 16          | 9     | 9     | 16   | 50      | 0.000          | ***   | 0.000     | ***  | 0.000 | ***                 | 16   | 9     | 9              | 16      | 50        | 0.000 | *** | 0.000 | *** | 0.000 | *** |
| 2_11 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Beryllium              | mg/L  | 100%  | 16          | 9     | 9     | 16   | 50      | NA             |       | 0.560     |      | 0.560 |                     | NA   | NA    | NA             | NA      | NA        | NA    |     | NA    |     | NA    |     |
| 2_13 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Cadmium                | mg/L  | 100%  | 16          | 9     | 9     | 16   | 50      | 0.207          |       | 0.209     |      | 0.209 |                     | NA   | NA    | NA             | NA      | NA        | NA    |     | NA    |     | NA    |     |
| 2_15 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Chromium               | mg/L  | 98%   | 16          | 9     | 9     | 16   | 50      | NA             |       | 0.560     |      | 0.560 |                     | 0    | 1     | 0              | 0       | 1         | NA    |     | NA    |     | NA    |     |
| 2_16 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Cobalt                 | mg/L  | 100%  | 16          | 9     | 9     | 16   | 50      | NA             |       | 0.560     |      | 0.560 |                     | NA   | NA    | NA             | NA      | NA        | NA    |     | NA    |     | NA    |     |
| 2_18 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Lead                   | mg/L  | 100%  | 16          | 9     | 9     | 16   | 50      | NA             |       | 0.560     |      | 0.560 |                     | NA   | NA    | NA             | NA      | NA        | NA    |     | NA    |     | NA    |     |
| 2_19 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Lithium                | mg/L  | 22%   | 16          | 9     | 9     | 16   | 50      | 0.000          | ***   | 0.000     | ***  | 0.000 | ***                 | 16   | 1     | 9              | 13      | 39        | 0.000 | *** | 0.000 | *** | 0.000 | *** |
| 2_21 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Mercury                | mg/L  | 100%  | 16          | 9     | 9     | 16   | 50      | NA             |       | 0.560     |      | 0.560 |                     | NA   | NA    | NA             | NA      | NA        | NA    |     | NA    |     | NA    |     |
| 2_22 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Molybdenum             | mg/L  | 76%   | 16          | 9     | 9     | 16   | 50      | 0.000          | ***   | 0.000     | ***  | 0.000 | ***                 | 0    | 1     | 9              | 2       | 12        | 0.044 | *   | 0.026 | *   | 0.004 | **  |
| 2_25 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Radium-226/228         | pCi/L | 0%    | 16          | 9     | 9     | 16   | 50      | 0.074          |       | 0.135     |      | NA    |                     | 16   | 9     | 9              | 16      | 50        | 0.074 |     | 0.135 |     | NA    |     |
| 2_27 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Selenium               | mg/L  | 100%  | 16          | 9     | 9     | 16   | 50      | NA             |       | 0.560     |      | 0.560 |                     | NA   | NA    | NA             | NA      | NA        | NA    |     | NA    |     | NA    |     |
| 2_29 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Thallium               | mg/L  | 100%  | 16          | 9     | 9     | 16   | 50      | NA             |       | 0.560     |      | 0.560 |                     | NA   | NA    | NA             | NA      | NA        | NA    |     | NA    |     | NA    |     |

\*\*\* p < 0.001, \*\* p < 0.01, \* p < 0.05

Table 9: Trend Tests: Lognormal MLE and MK

| ID   | Well                     | Constituent Type | Constituent            | Unit  | n  | No. NDs | % NDs | Type          | Method        | Slope      | p-value | Trend |
|------|--------------------------|------------------|------------------------|-------|----|---------|-------|---------------|---------------|------------|---------|-------|
| 1_01 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Boron                  | mg/L  | 48 | 0       | 0%    | Nonparametric | MK            | 0          | 0.795   | ↔     |
| 1_02 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Calcium                | mg/L  | 48 | 0       | 0%    | Nonparametric | MK            | -0.00210   | 0.831   | ↔     |
| 1_03 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Chloride               | mg/L  | 48 | 0       | 0%    | Parametric    | Lognormal MLE | 0.0000991  | 0.134   | ↔     |
| 1_05 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Sulfate                | mg/L  | 48 | 9       | 19%   | Nonparametric | MK            | -0.00917   | 0.189   | ↔     |
| 1_06 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Total Dissolved Solids | mg/L  | 48 | 0       | 0%    | Parametric    | Lognormal MLE | 0.000157   | 0.128   | ↔     |
| 1_07 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | pH, Field              | su    | 49 | 0       | 0%    | Nonparametric | MK            | 0.0000493  | 0.495   | ↔     |
| 2_09 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Arsenic                | mg/L  | 50 | 3       | 6%    | Nonparametric | MK            | 0          | 0.473   | ↔     |
| 2_10 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Barium                 | mg/L  | 50 | 0       | 0%    | Nonparametric | MK            | -0.0000274 | 0.007   | ↓     |
| 2_25 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Radium-226/228         | pCi/L | 50 | 0       | 0%    | Nonparametric | MK            | 0.000602   | 0.165   | ↔     |

Table 10: Trend Tests: Piecewise Linear-Linear

| ID   | Well                     | Constituent Type | Constituent            | Unit  | n  | No. NDs | % NDs | Line 1     |         |       | Line 2     |         |       | Break 1    | R-Squared | Overall Trend |
|------|--------------------------|------------------|------------------------|-------|----|---------|-------|------------|---------|-------|------------|---------|-------|------------|-----------|---------------|
|      |                          |                  |                        |       |    |         |       | Slope      | p-Value | Trend | Slope      | p-Value | Trend |            |           |               |
| 1_01 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Boron                  | mg/L  | 48 | 0       | 0%    | -0.000297  | 0.448   | ↔     | 0.0000265  | 0.852   | ↔     | 2021-05-03 | 0.071     | ↔             |
| 1_02 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Calcium                | mg/L  | 48 | 0       | 0%    | 0.0124     | 0.285   | ↔     | -0.101     | 0.993   | ↔     | 2022-10-26 | 0.029     | ↔             |
| 1_03 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Chloride               | mg/L  | 48 | 0       | 0%    | -0.0380    | 0.374   | ↔     | 0.0171     | 0.071   | ↔     | 2020-12-28 | 0.103     | ↔             |
| 1_05 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Sulfate                | mg/L  | 48 | 9       | 19%   | 0.107      | 0.098   | ↔     | -0.160     | 0.544   | ↔     | 2022-05-08 | 0.084     | ↔             |
| 1_06 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Total Dissolved Solids | mg/L  | 48 | 0       | 0%    | 0.201      | 0.026   | ↔     | -1.38      | 0.988   | ↔     | 2022-10-26 | 0.112     | ↔             |
| 1_07 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | pH, Field              | su    | 49 | 0       | 0%    | -0.0000191 | 0.846   | ↔     | 0.122      | 0.253   | ↔     | 2023-02-06 | 0.082     | ↔             |
| 2_09 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Arsenic                | mg/L  | 50 | 3       | 6%    | 0.00000556 | 0.033   | ↔     | -0.0000240 | 0.993   | ↔     | 2022-10-26 | 0.095     | ↔             |
| 2_10 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Barium                 | mg/L  | 50 | 0       | 0%    | -0.0000612 | 0.009   | ↓     | 0.0000541  | 0.567   | ↔     | 2022-05-19 | 0.211     | ↔             |
| 2_19 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Lithium                | mg/L  | 50 | 11      | 22%   | -0.0000206 | 0.225   | ↔     | 0.0000101  | 0.593   | ↔     | 2021-11-08 | 0.096     | ↔             |
| 2_22 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Molybdenum             | mg/L  | 50 | 38      | 76%   | 0.00000942 | 0.003   | ↑     | -0.0000148 | 0.248   | ↔     | 2022-05-16 | 0.233     | ↔             |
| 2_25 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Radium-226/228         | pCi/L | 50 | 0       | 0%    | 0.00301    | 0.314   | ↔     | -0.000607  | 0.589   | ↔     | 2021-05-03 | 0.082     | ↔             |

Table 11: Trend Tests: Piecewise Linear-Linear-Linear

| ID   | Well                     | Constituent Type | Constituent | Unit | n  | No. NDs | % NDs | Line 1       |         |       | Line 2         |         |       | Line 3      |         |       | Break 1    | Break 2    | R-Squared | Overall Trend |
|------|--------------------------|------------------|-------------|------|----|---------|-------|--------------|---------|-------|----------------|---------|-------|-------------|---------|-------|------------|------------|-----------|---------------|
|      |                          |                  |             |      |    |         |       | Slope        | p-Value | Trend | Slope          | p-Value | Trend | Slope       | p-Value | Trend |            |            |           |               |
| 1_02 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Calcium     | mg/L | 48 | 0       | 0%    | -0.0515      | 0.608   | ↔     | 0.0383         | 0.467   | ↔     | -0.0313     | 0.575   | ↔     | 2020-12-10 | 2022-03-25 | 0.041     | ↔             |
| 1_03 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | Chloride    | mg/L | 48 | 0       | 0%    | -0.0286      | 0.064   | ↔     | 0.750          | 0.098   | ↔     | -0.0373     | 0.088   | ↔     | 2022-01-17 | 2022-02-23 | 0.286     | ↔             |
| 1_07 | MW-1, MW-4, MW-11, MW-12 | Appendix III     | pH, Field   | su   | 49 | 0       | 0%    | 0.000953     | 0.698   | ↔     | -0.000221      | 0.293   | ↔     | 0.000789    | 0.154   | ↔     | 2020-08-15 | 2022-03-30 | 0.088     | ↔             |
| 2_09 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Arsenic     | mg/L | 50 | 3       | 6%    | 0.000000651  | 0.940   | ↔     | 0.0000491      | 0.616   | ↔     | -0.00000875 | 0.538   | ↔     | 2022-01-07 | 2022-04-10 | 0.105     | ↔             |
| 2_10 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Barium      | mg/L | 50 | 0       | 0%    | 0.000161     | 0.892   | ↔     | -0.0000630     | 0.017   | ↔     | 0.0000541   | 0.575   | ↔     | 2020-05-26 | 2022-05-15 | 0.212     | ↔             |
| 2_13 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Cadmium     | mg/L | 50 | 50      | 100%  | 0.0000000192 | 0.999   | ↔     | -0.00000000481 | 0.988   | ↔     | 0.0000110   | 0.970   | ↔     | 2020-06-29 | 2022-10-27 | 0.240     | ↔             |
| 2_19 | MW-1, MW-4, MW-11, MW-12 | Appendix IV      | Lithium     | mg/L | 50 | 11      | 22%   | 0.0000349    | 0.528   | ↔     | -0.0000760     | 0.403   | ↔     | 0.00000690  | 0.551   | ↔     | 2020-10-03 | 2021-03-22 | 0.131     | ↔             |





D

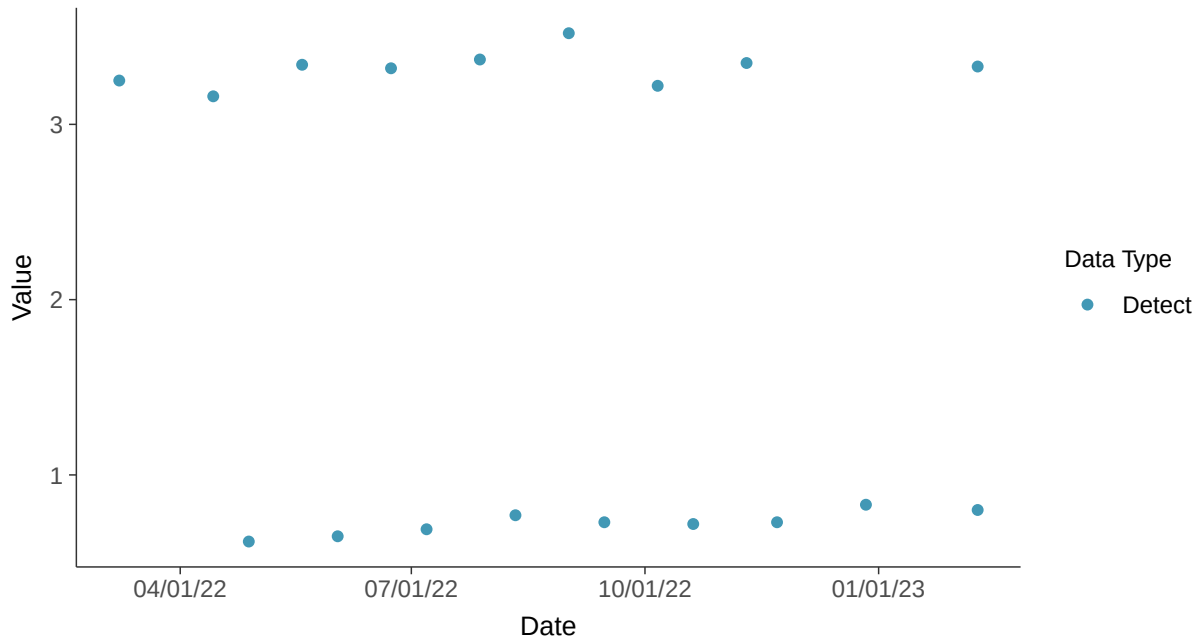
Erickson BWL Bedrock  
Background Plots

## Appendix III: Boron, MW-11B & MW-12B

ID: 1\_01

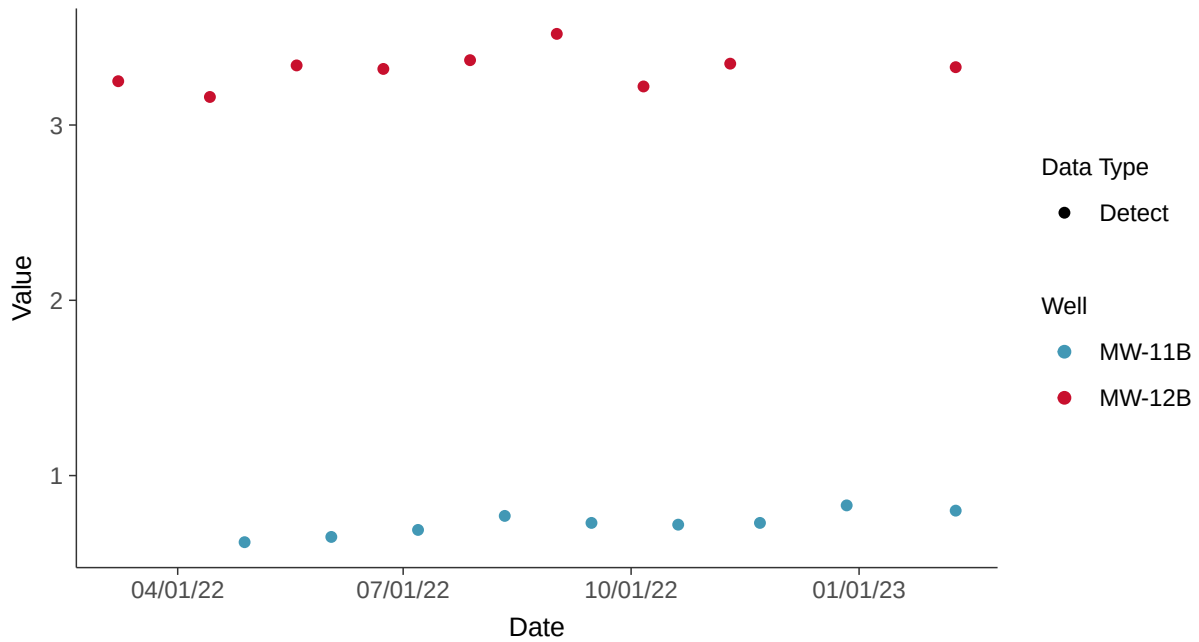
### Scatter Plot

Boron, MW-11B & MW-12B (mg/L)



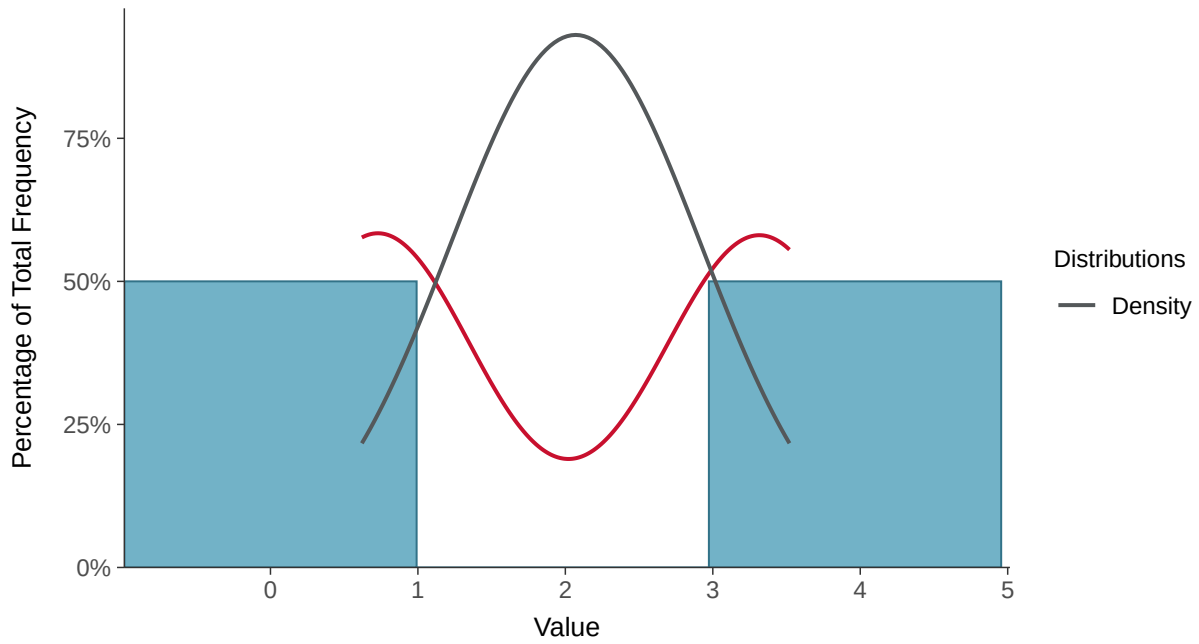
### Scatter Plot by Well

Boron, MW-11B & MW-12B (mg/L)



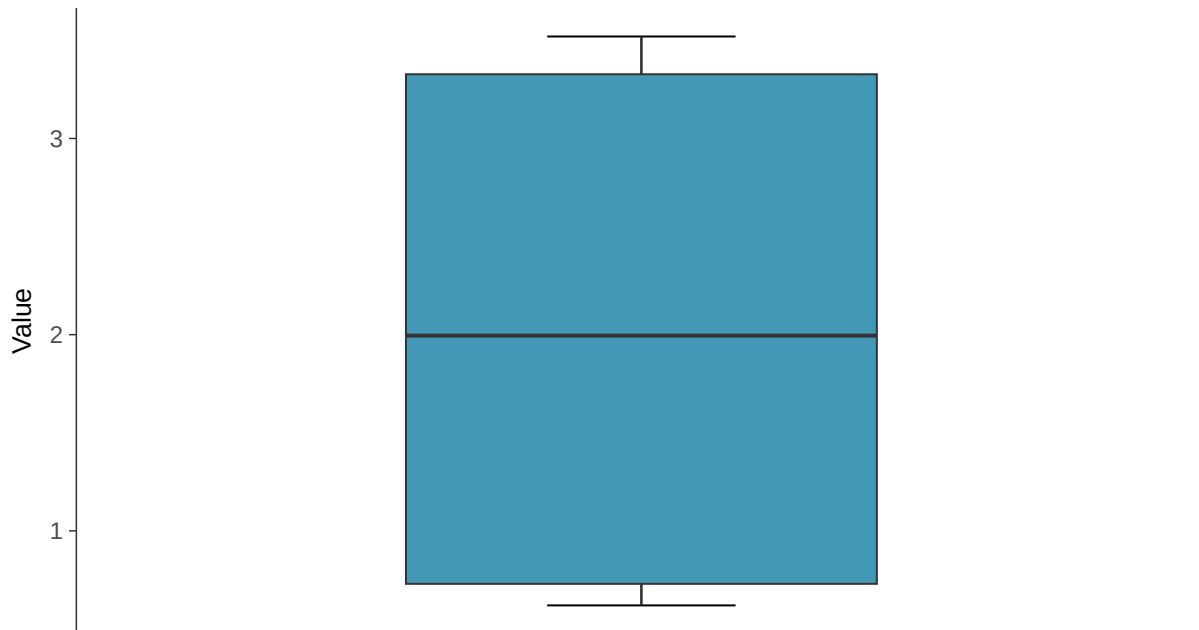
### Histogram

Boron, MW-11B & MW-12B (mg/L)



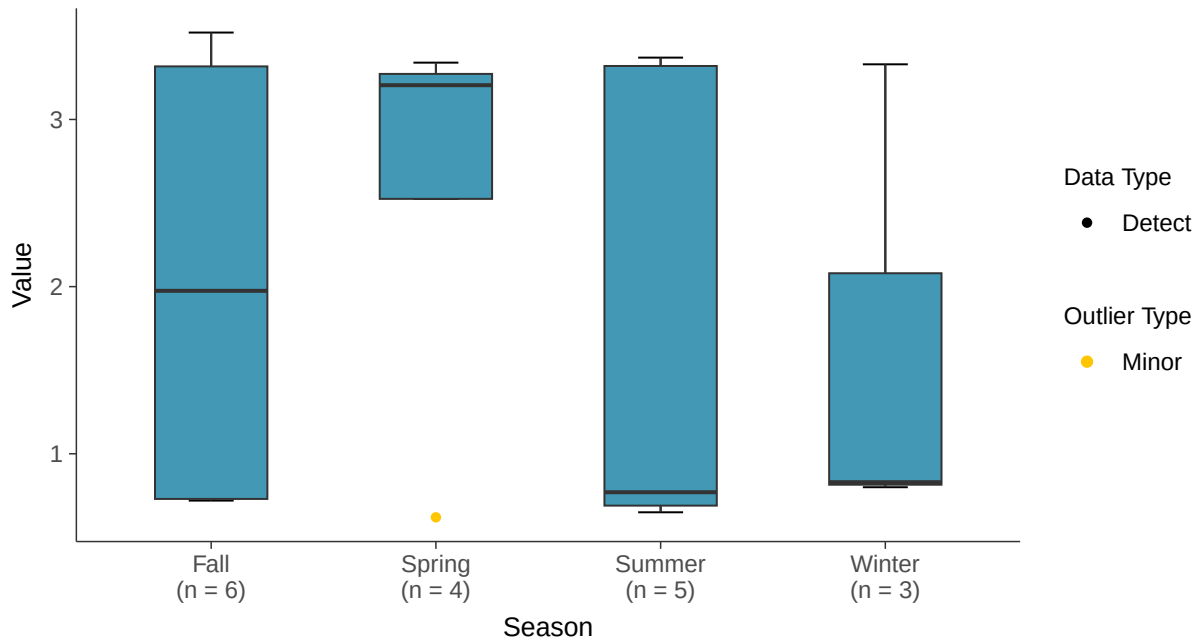
### Boxplot

Boron, MW-11B & MW-12B (mg/L)



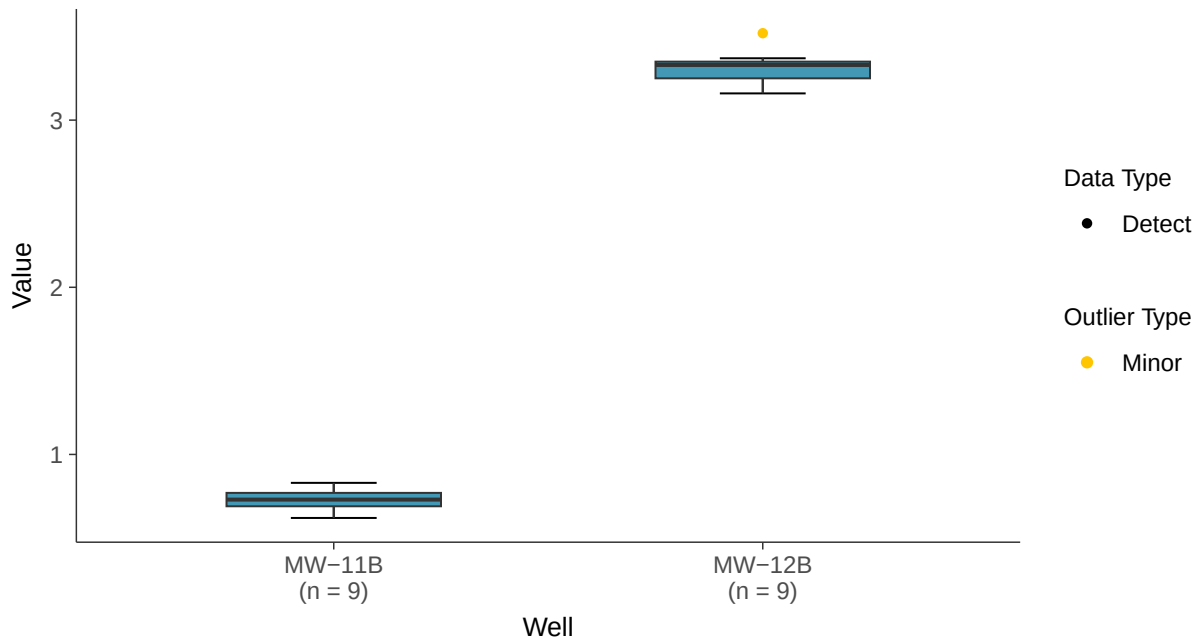
### Boxplot by Season

Boron, MW-11B & MW-12B (mg/L)



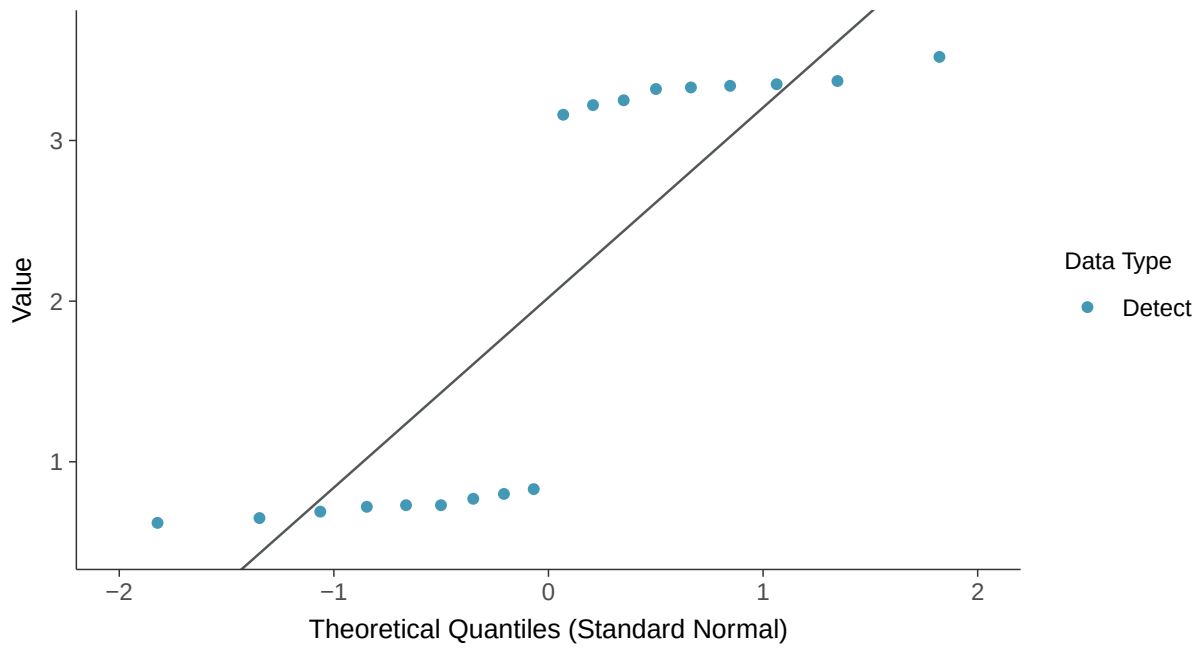
### Boxplot by Well

Boron, MW-11B & MW-12B (mg/L)



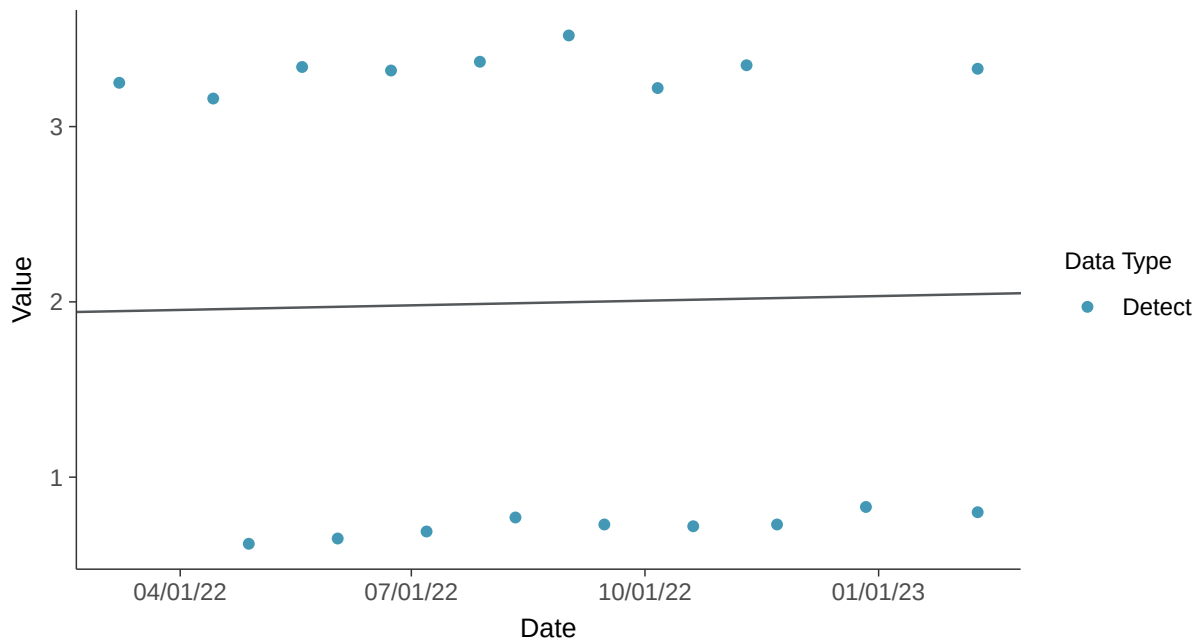
### Normal Q-Q plot

Boron, MW-11B & MW-12B (mg/L)



### Trend Regression: Mann-Kendall/Theil-Sen Estimate

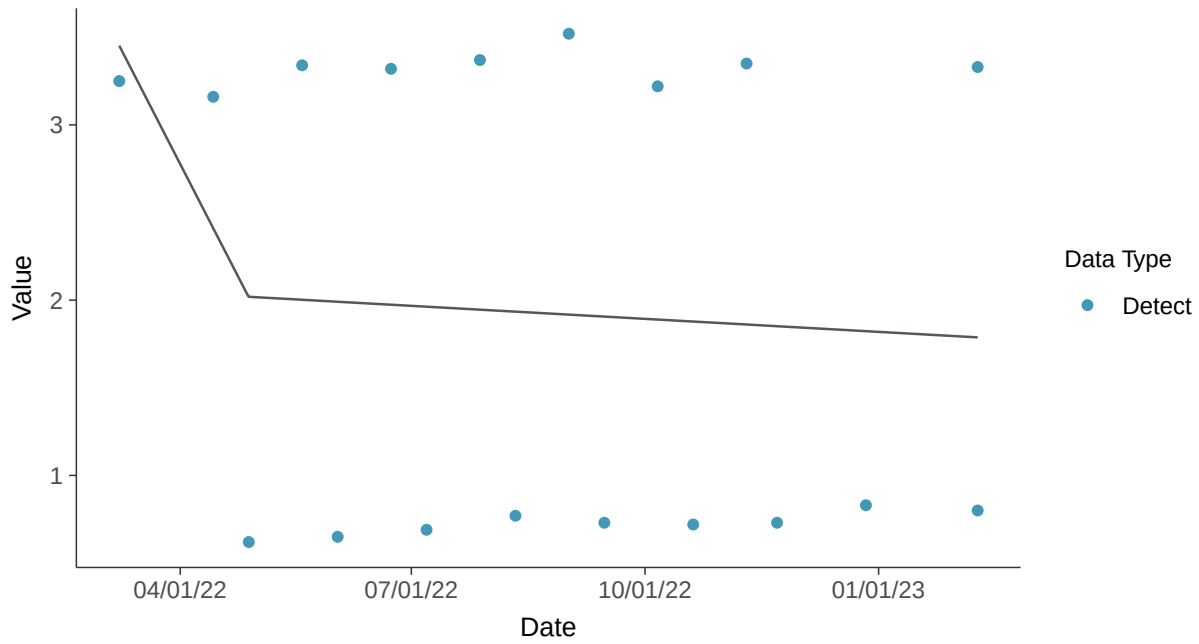
Boron, MW-11B & MW-12B (mg/L)





### Trend Regression: Piecewise Linear-Linear

Boron, MW-11B & MW-12B (mg/L)

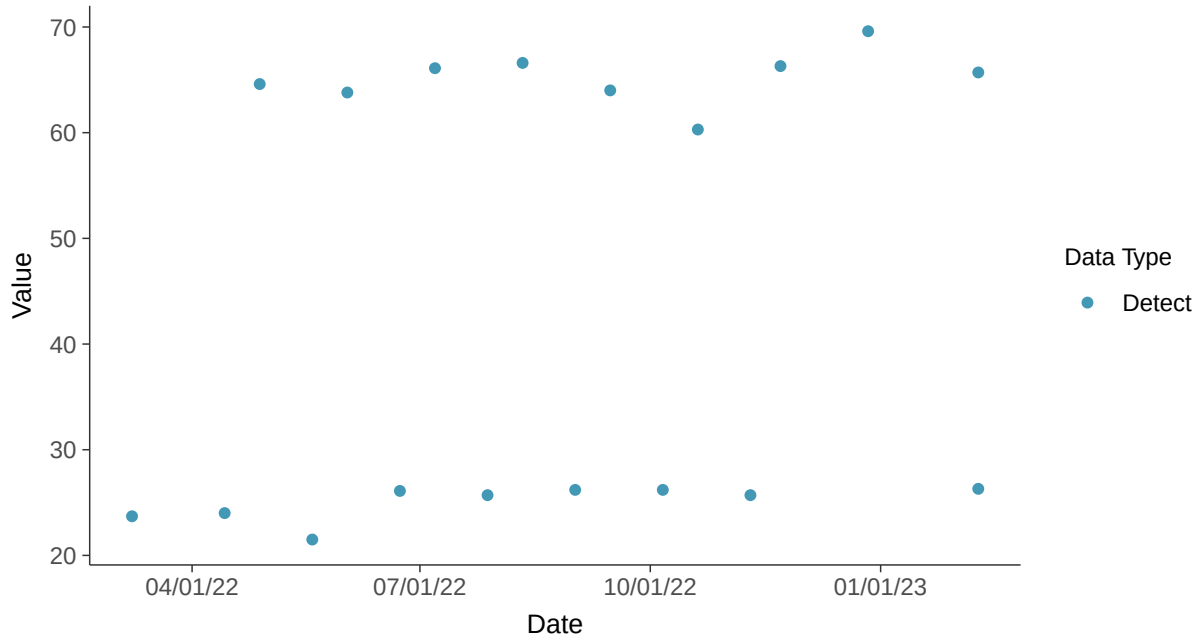


## Appendix III: Calcium, MW-11B & MW-12B

ID: 1\_02

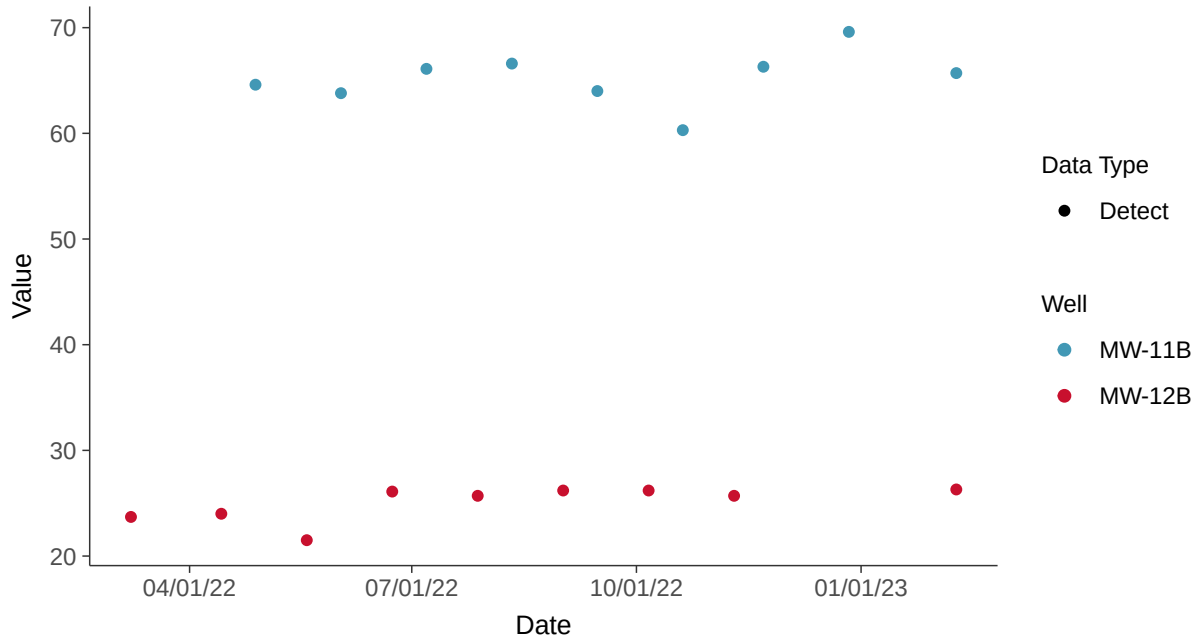
### Scatter Plot

Calcium, MW-11B & MW-12B (mg/L)



### Scatter Plot by Well

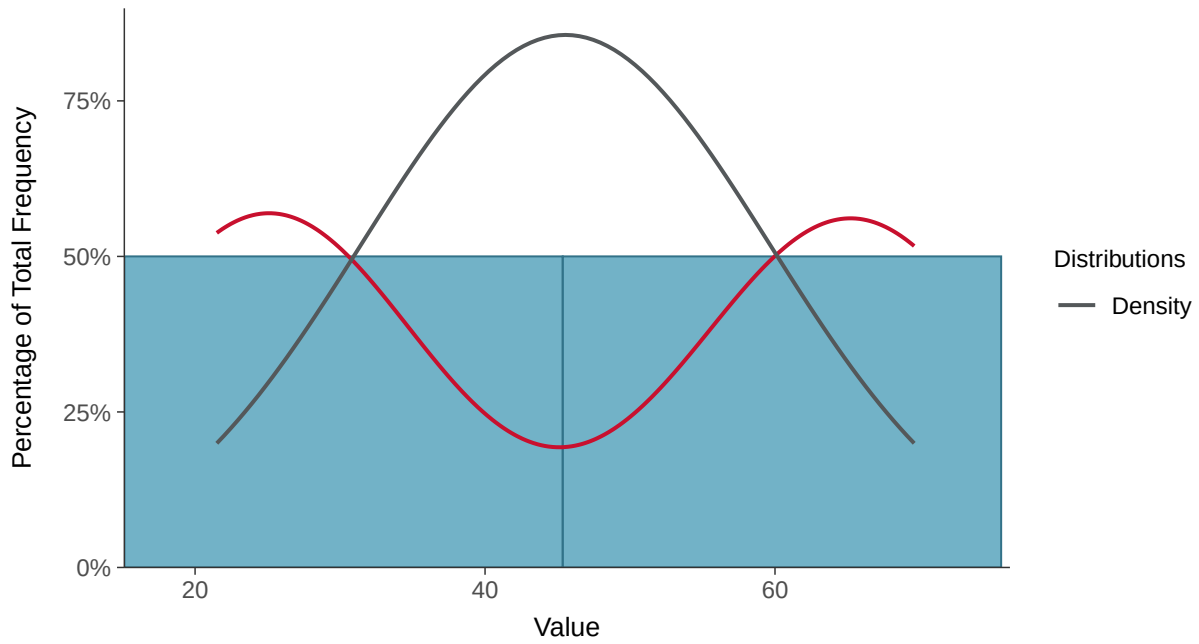
Calcium, MW-11B & MW-12B (mg/L)





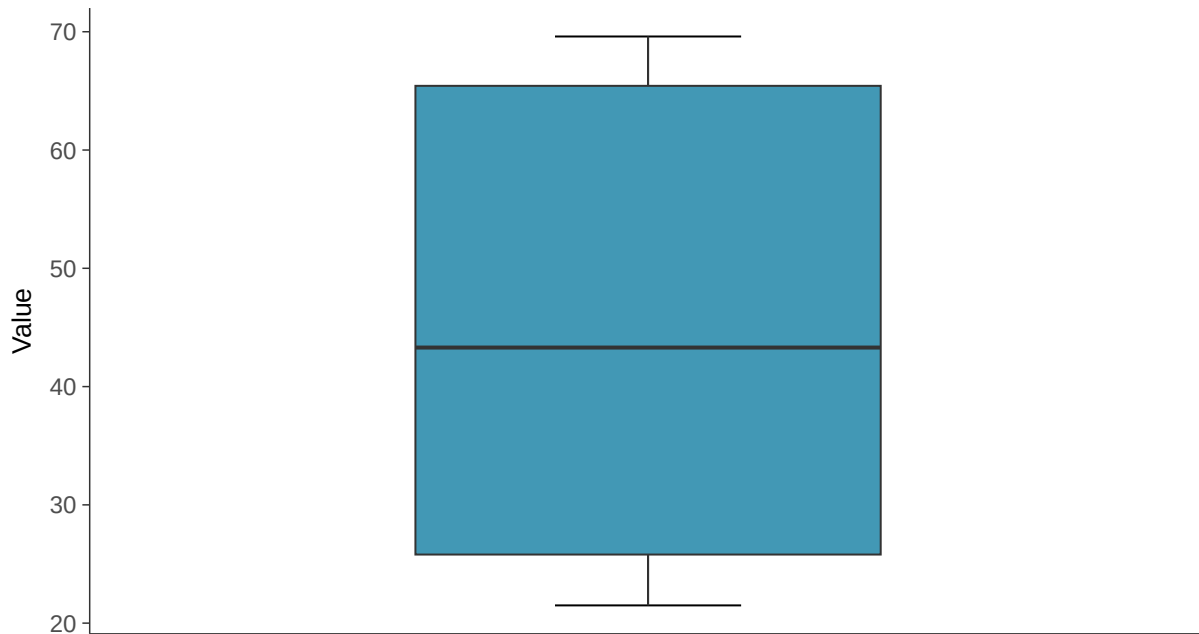
### Histogram

Calcium, MW-11B & MW-12B (mg/L)



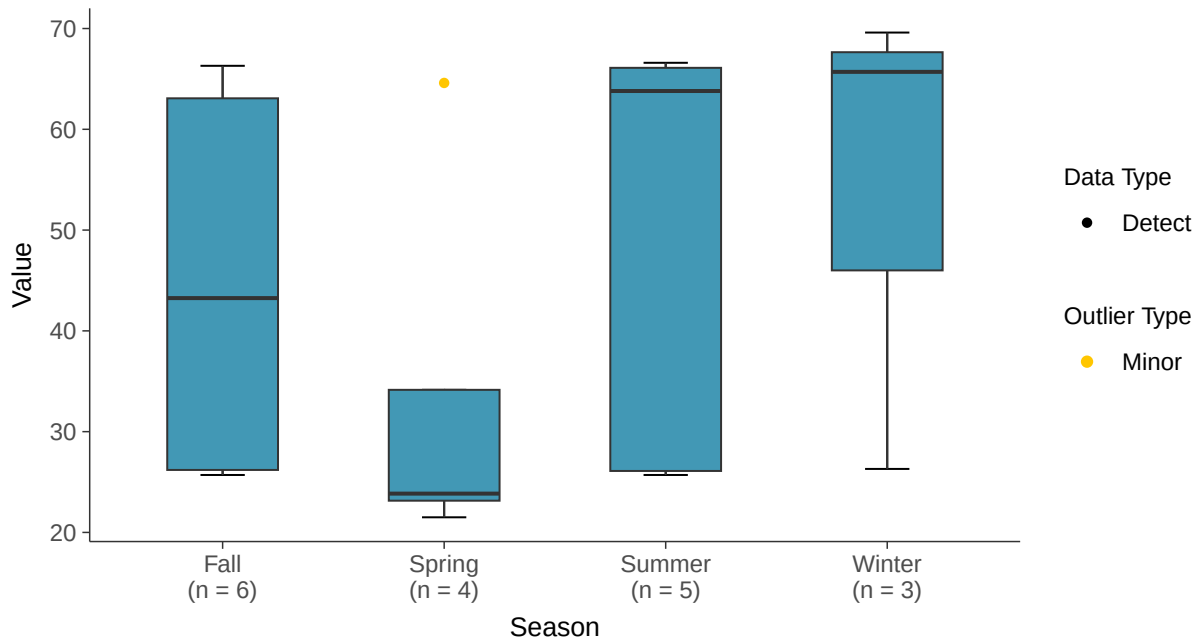
### Boxplot

Calcium, MW-11B & MW-12B (mg/L)



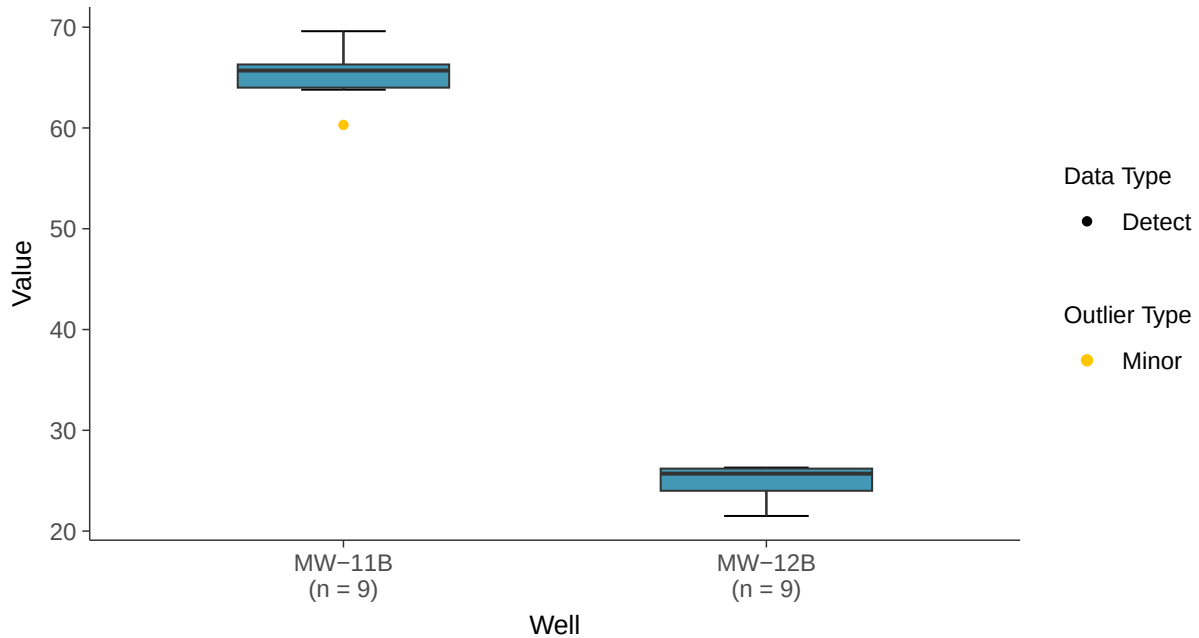
### Boxplot by Season

Calcium, MW-11B & MW-12B (mg/L)



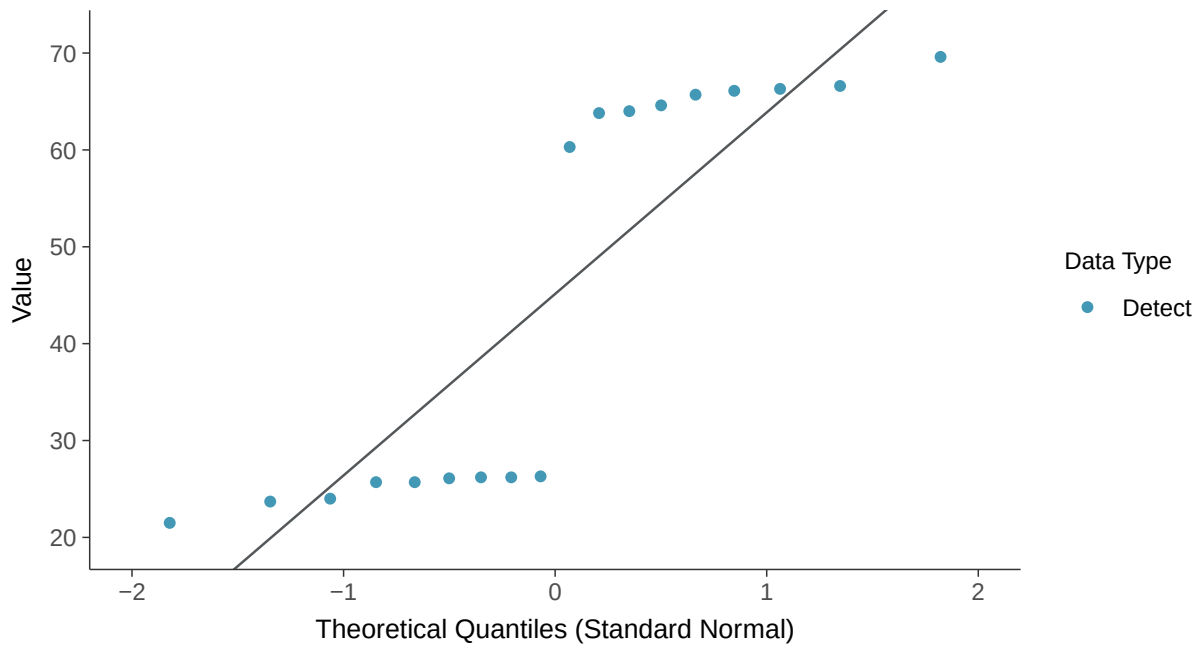
### Boxplot by Well

Calcium, MW-11B & MW-12B (mg/L)



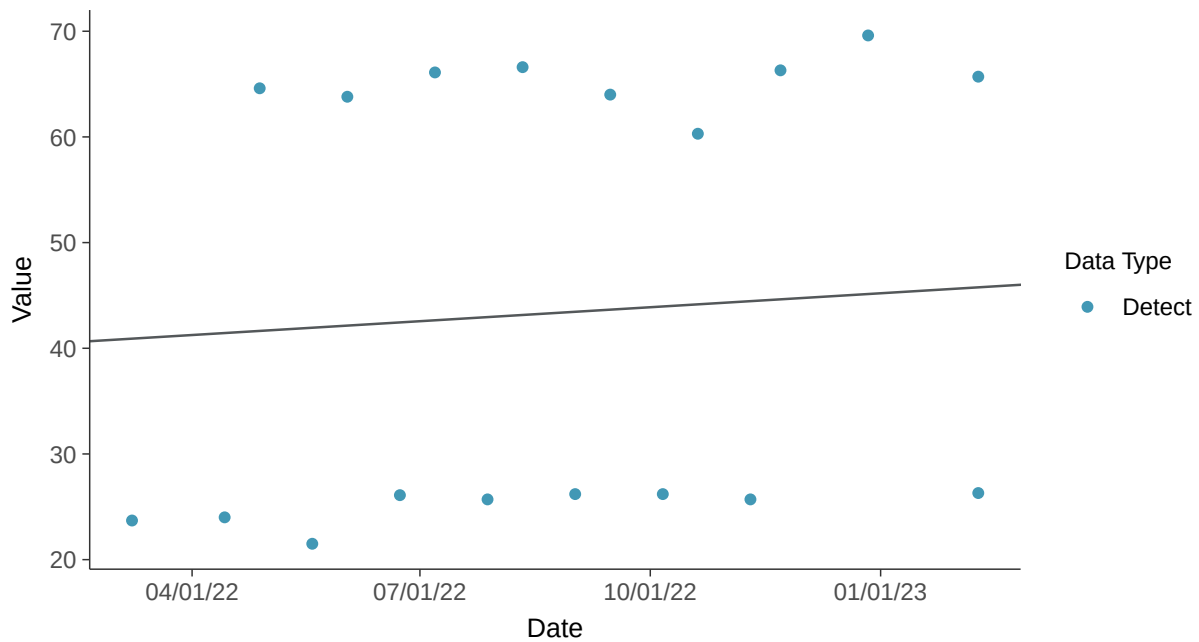
### Normal Q-Q plot

Calcium, MW-11B & MW-12B (mg/L)



### Trend Regression: Mann-Kendall/Theil-Sen Estimate

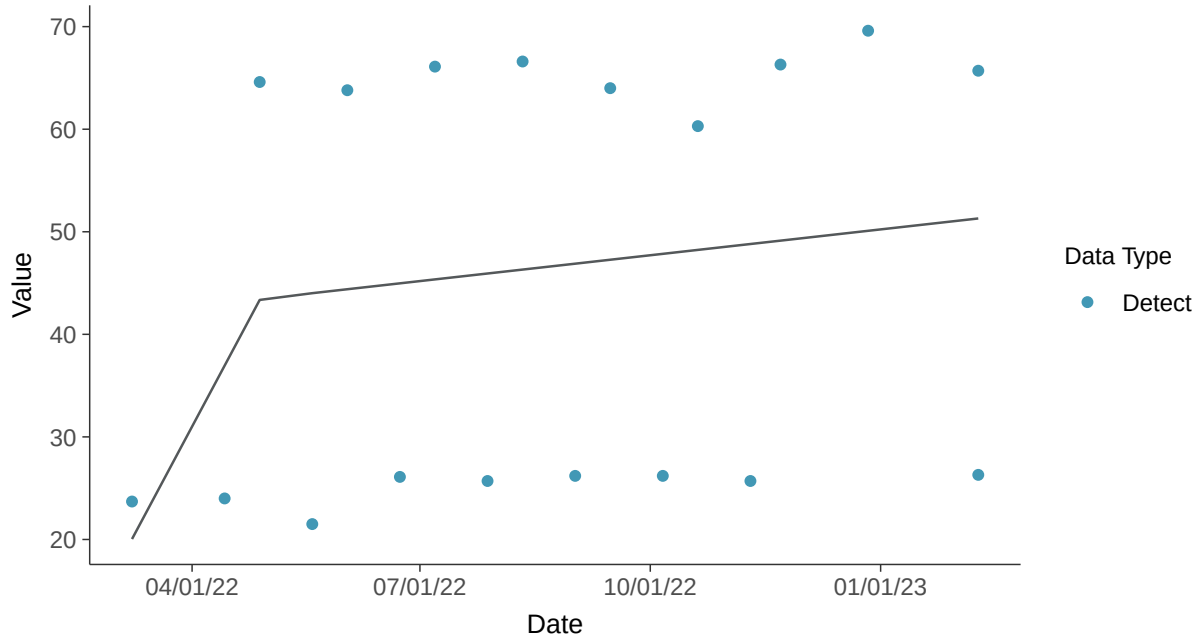
Calcium, MW-11B & MW-12B (mg/L)





### Trend Regression: Piecewise Linear-Linear

Calcium, MW-11B & MW-12B (mg/L)

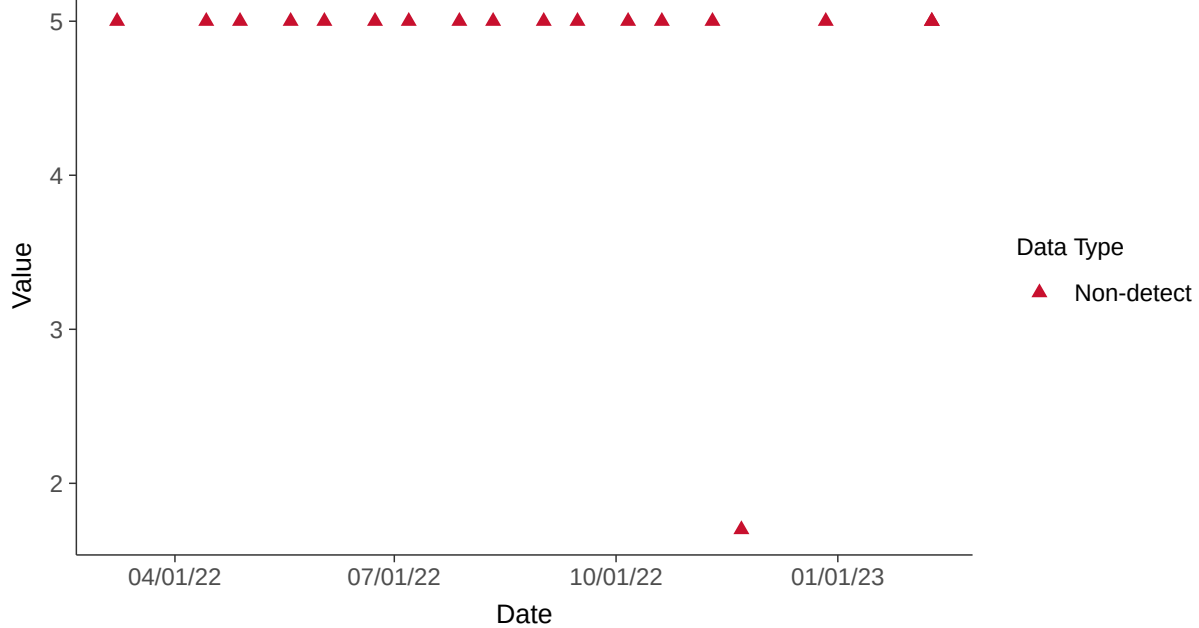


## Appendix III: Chloride, MW-11B & MW-12B

ID: 1\_03

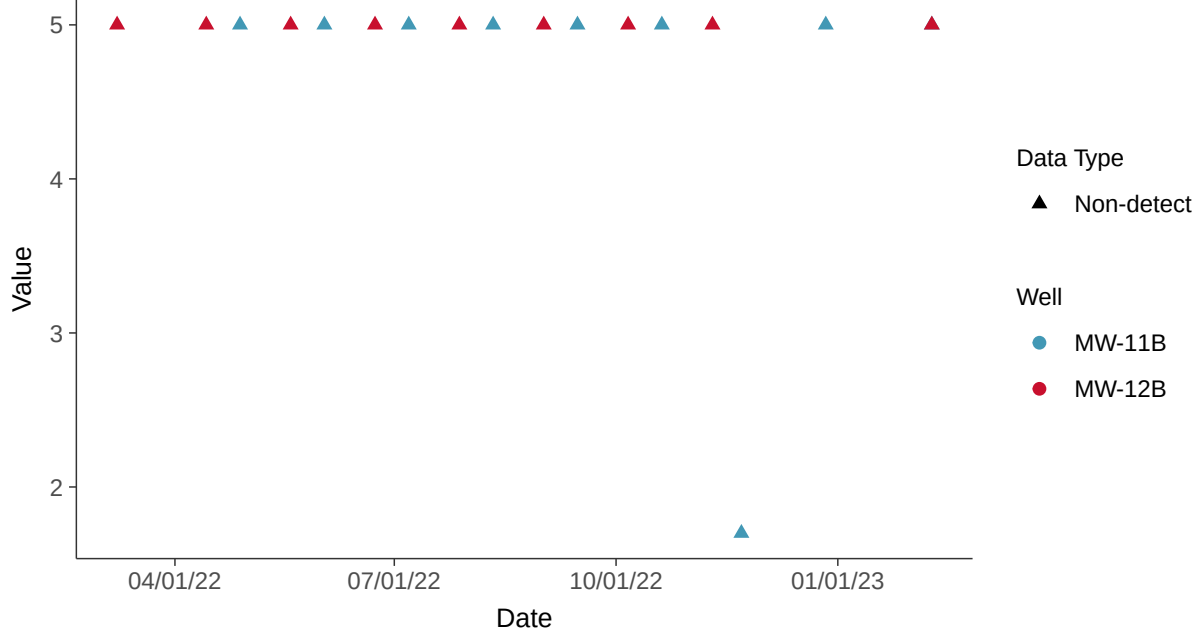
### Scatter Plot

Chloride, MW-11B & MW-12B (mg/L)



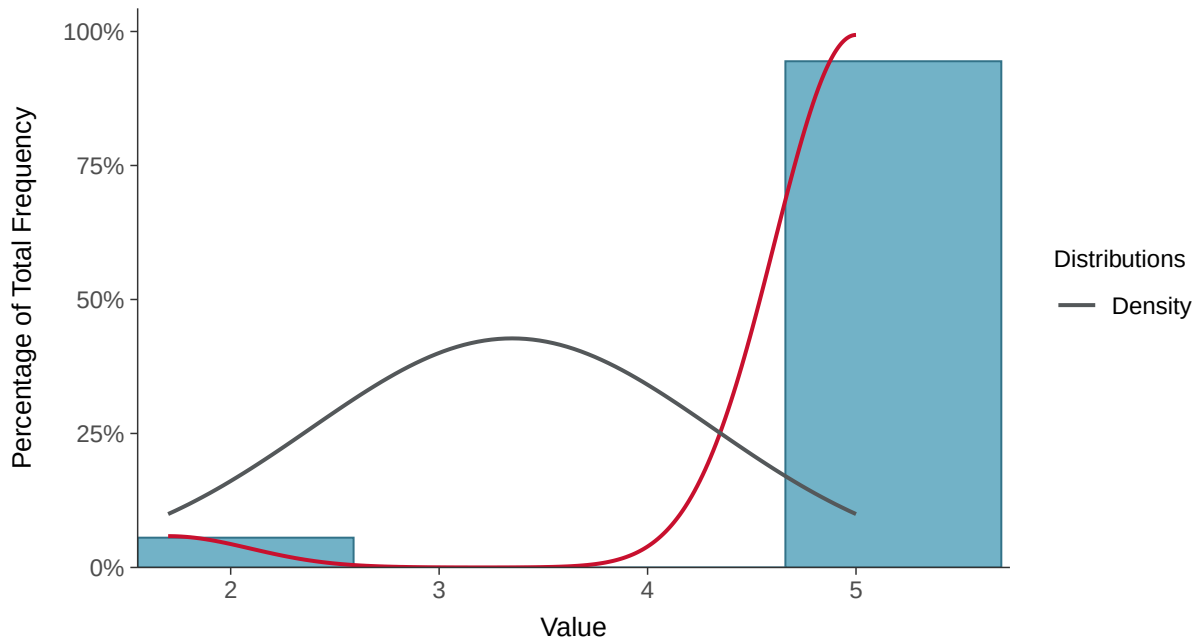
### Scatter Plot by Well

Chloride, MW-11B & MW-12B (mg/L)



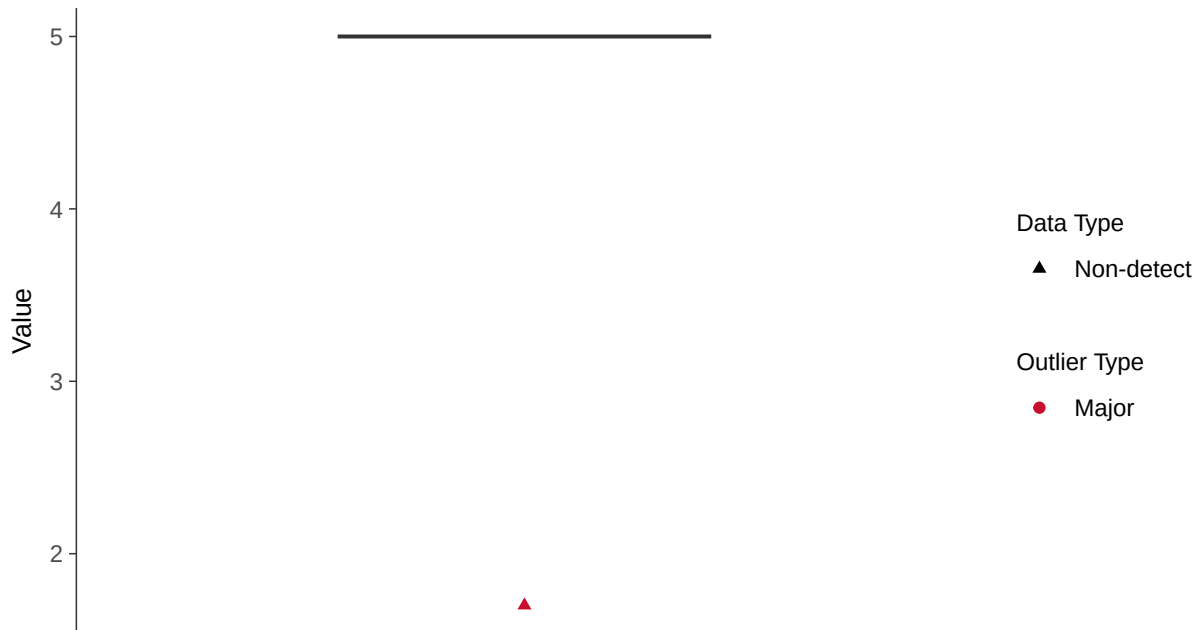
### Histogram

Chloride, MW-11B & MW-12B (mg/L)



### Boxplot

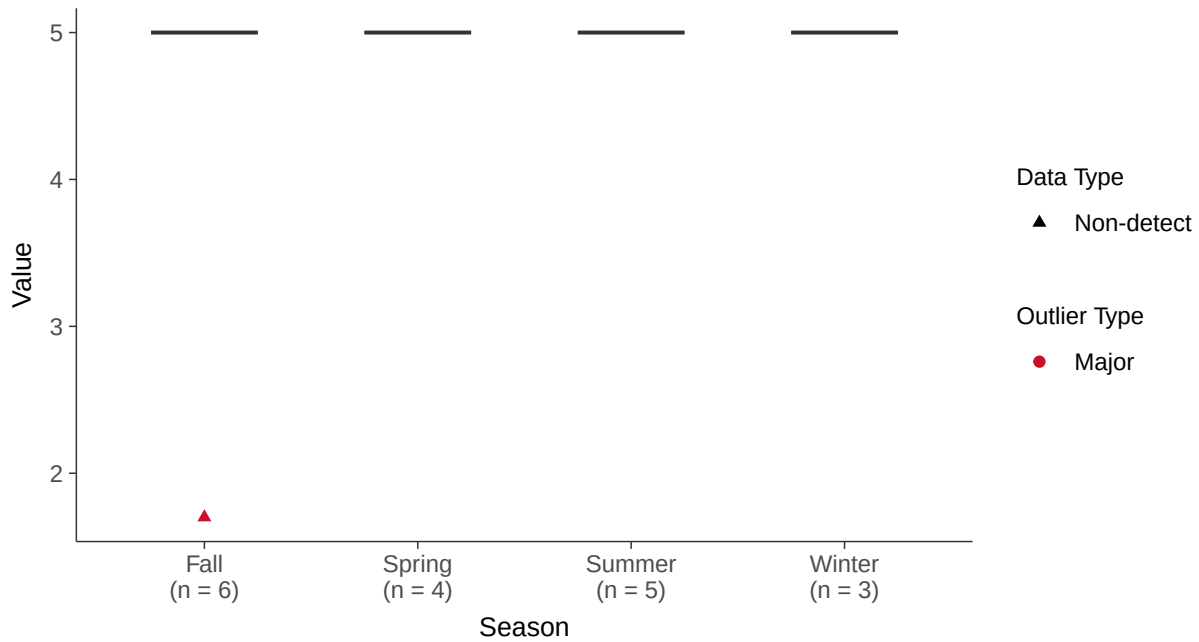
Chloride, MW-11B & MW-12B (mg/L)





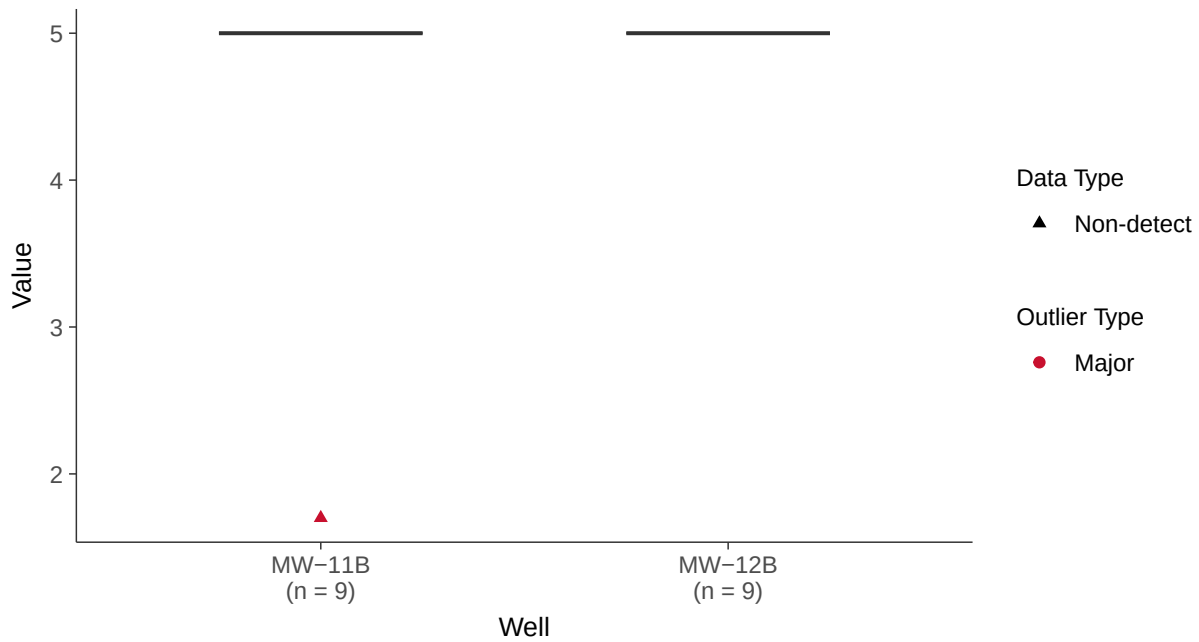
### Boxplot by Season

Chloride, MW-11B & MW-12B (mg/L)



### Boxplot by Well

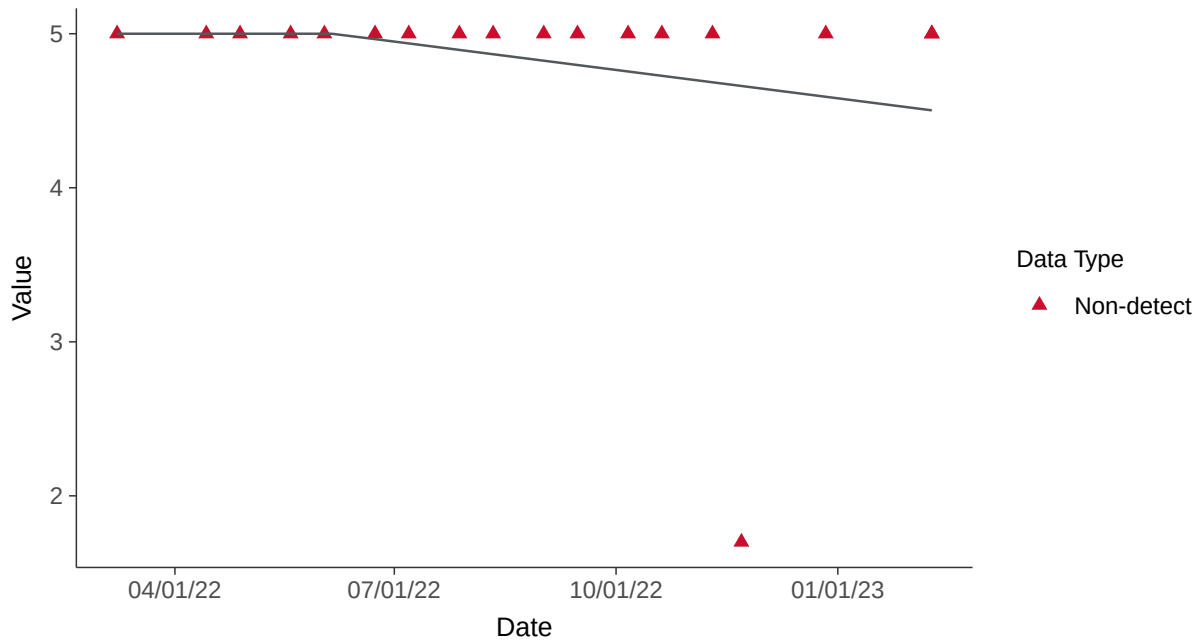
Chloride, MW-11B & MW-12B (mg/L)





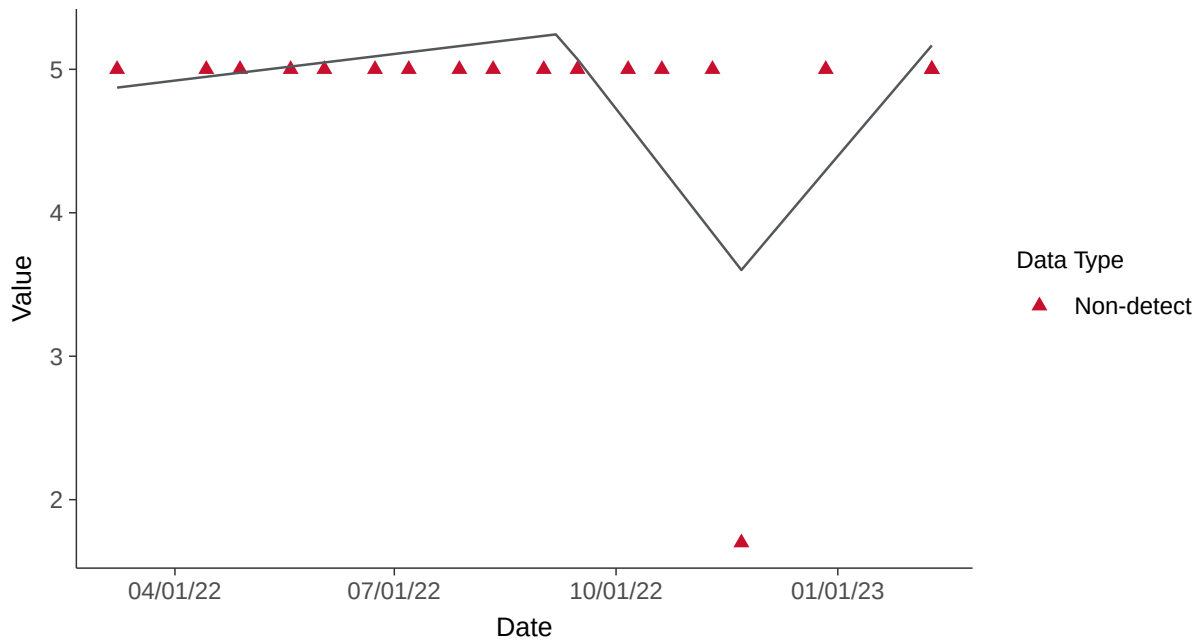
### Trend Regression: Piecewise Linear-Linear

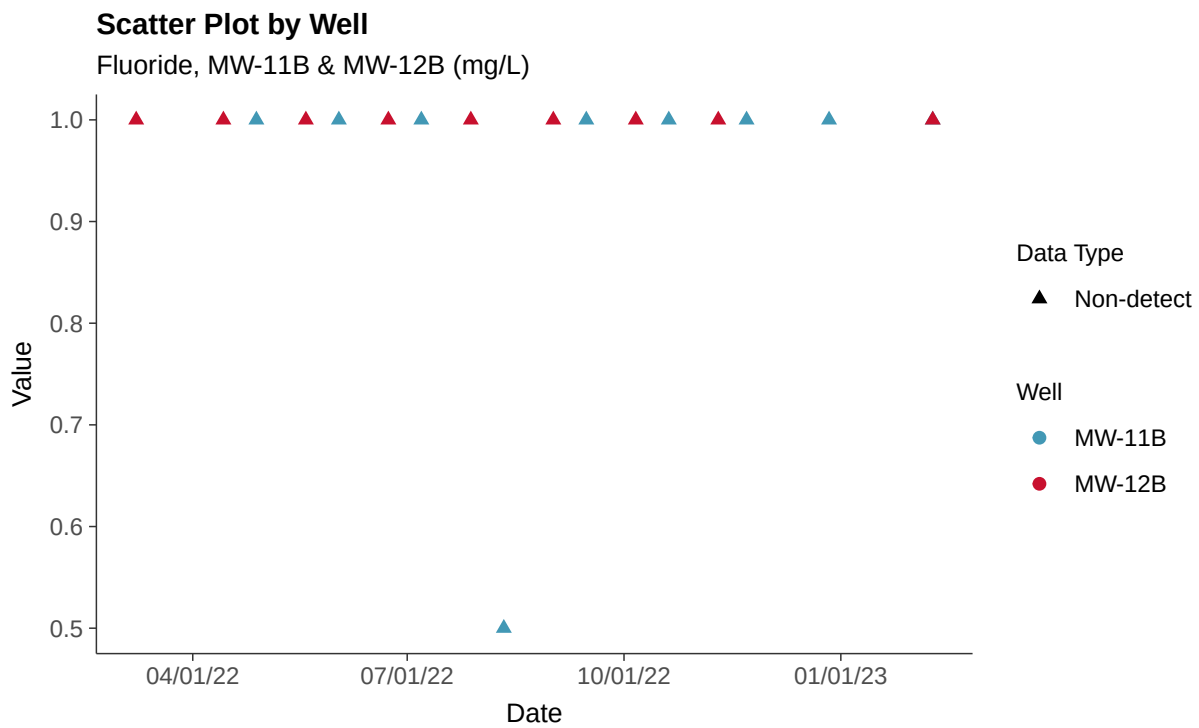
Chloride, MW-11B & MW-12B (mg/L)



### Trend Regression: Piecewise Linear-Linear-Linear

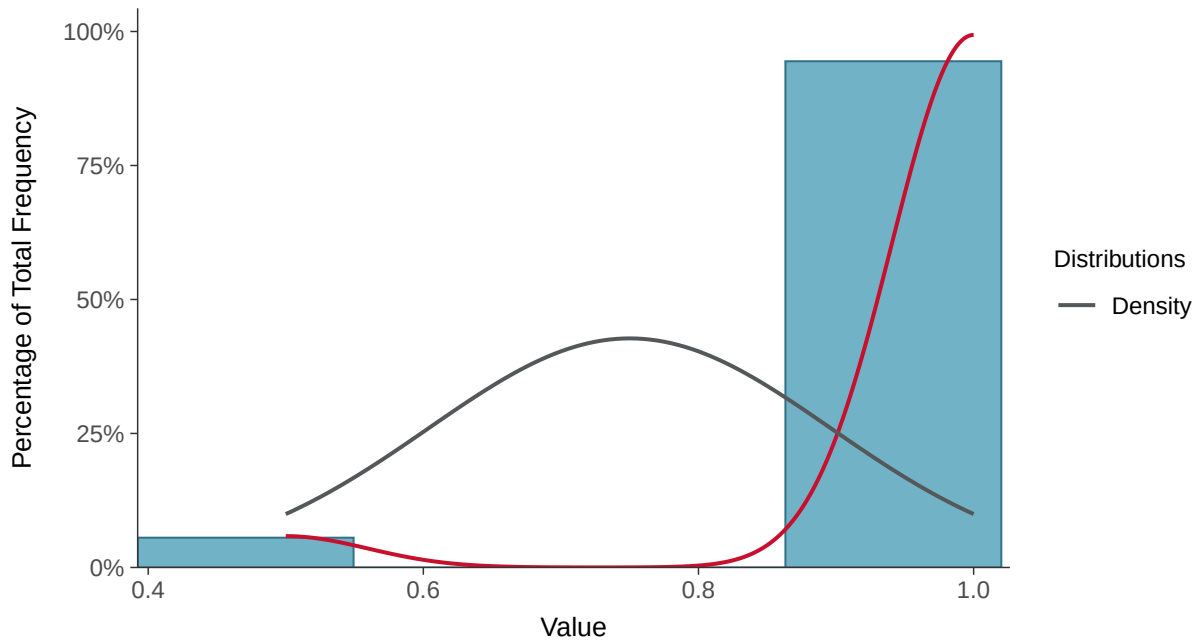
Chloride, MW-11B & MW-12B (mg/L)





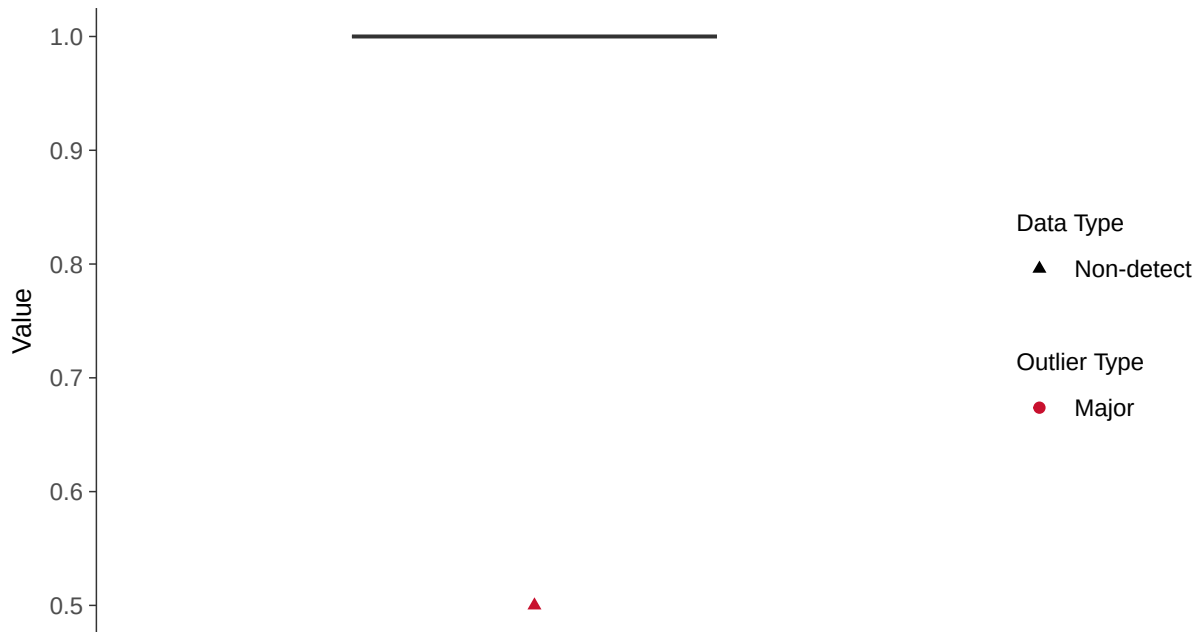
### Histogram

Fluoride, MW-11B & MW-12B (mg/L)



### Boxplot

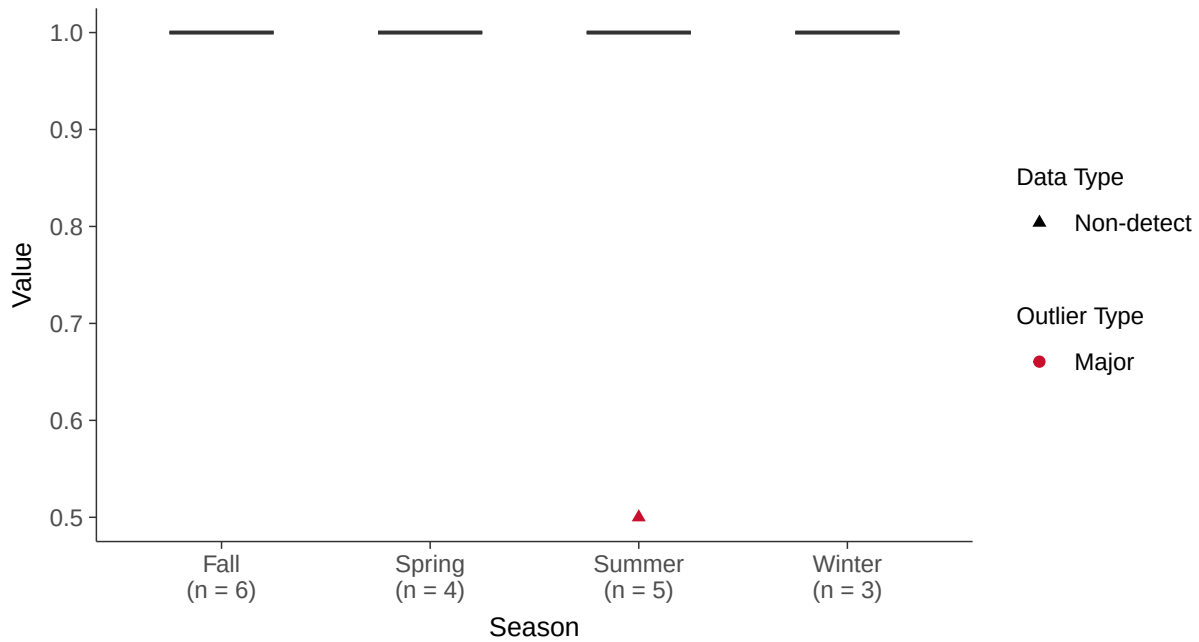
Fluoride, MW-11B & MW-12B (mg/L)





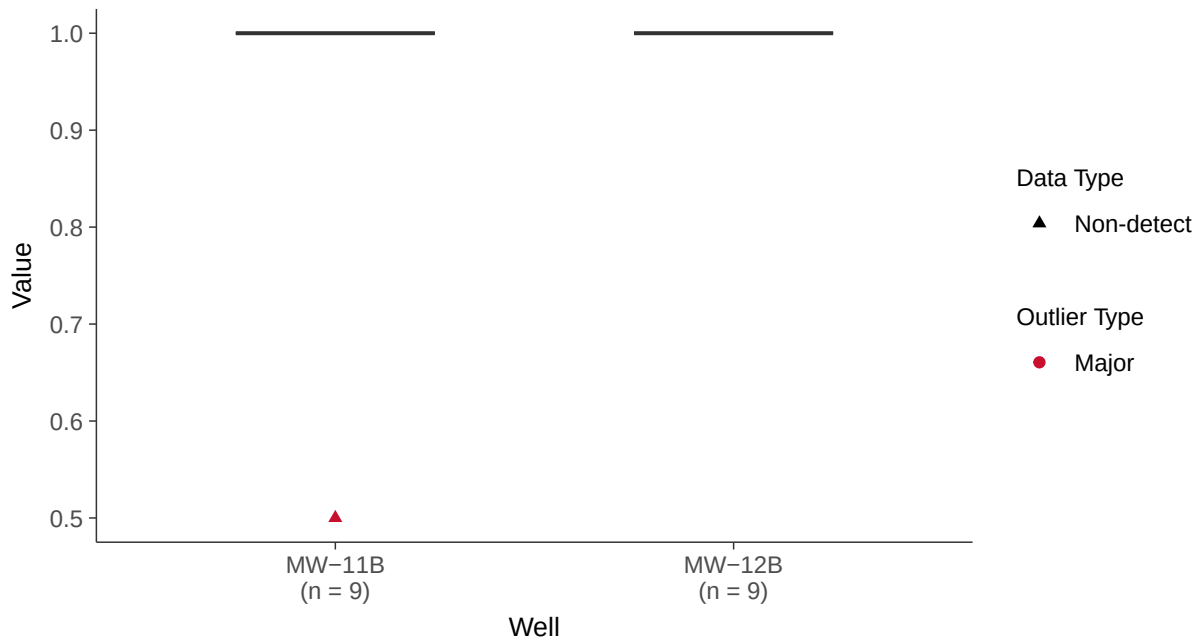
### Boxplot by Season

Fluoride, MW-11B & MW-12B (mg/L)



### Boxplot by Well

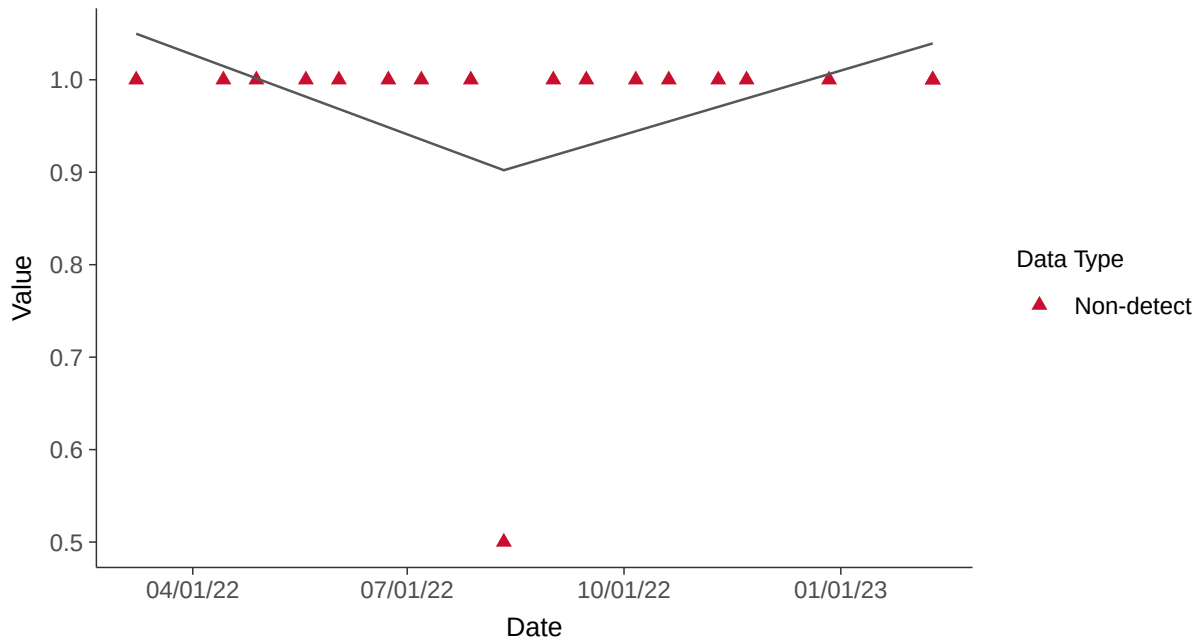
Fluoride, MW-11B & MW-12B (mg/L)





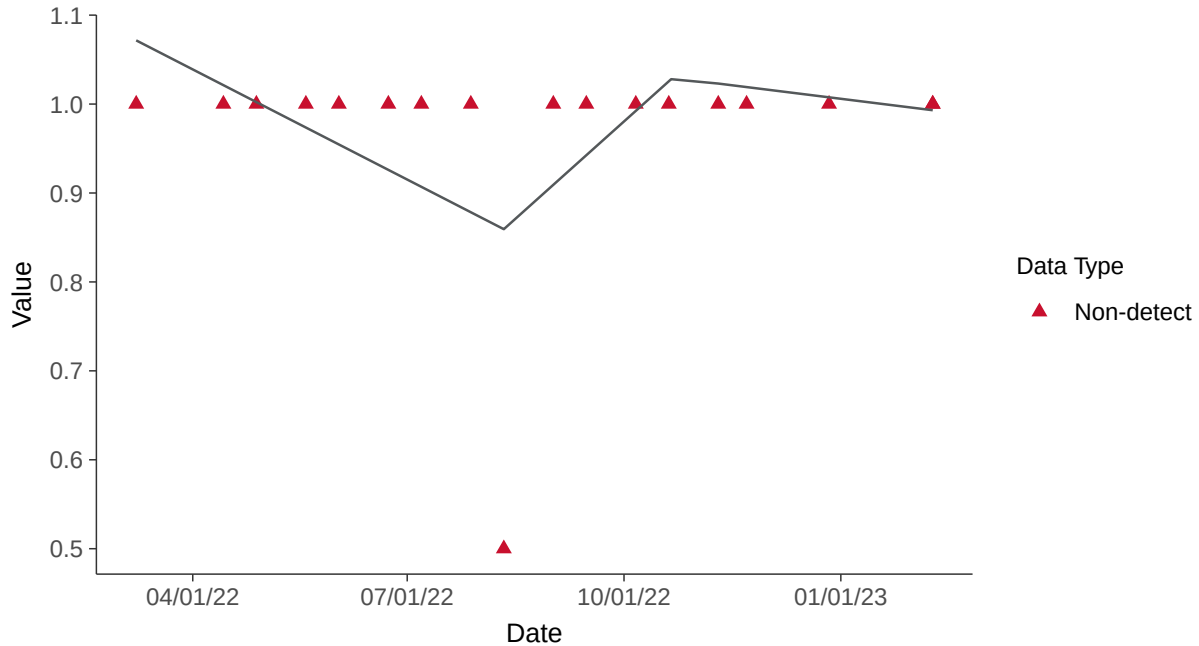
### Trend Regression: Piecewise Linear-Linear

Fluoride, MW-11B & MW-12B (mg/L)



### Trend Regression: Piecewise Linear-Linear-Linear

Fluoride, MW-11B & MW-12B (mg/L)

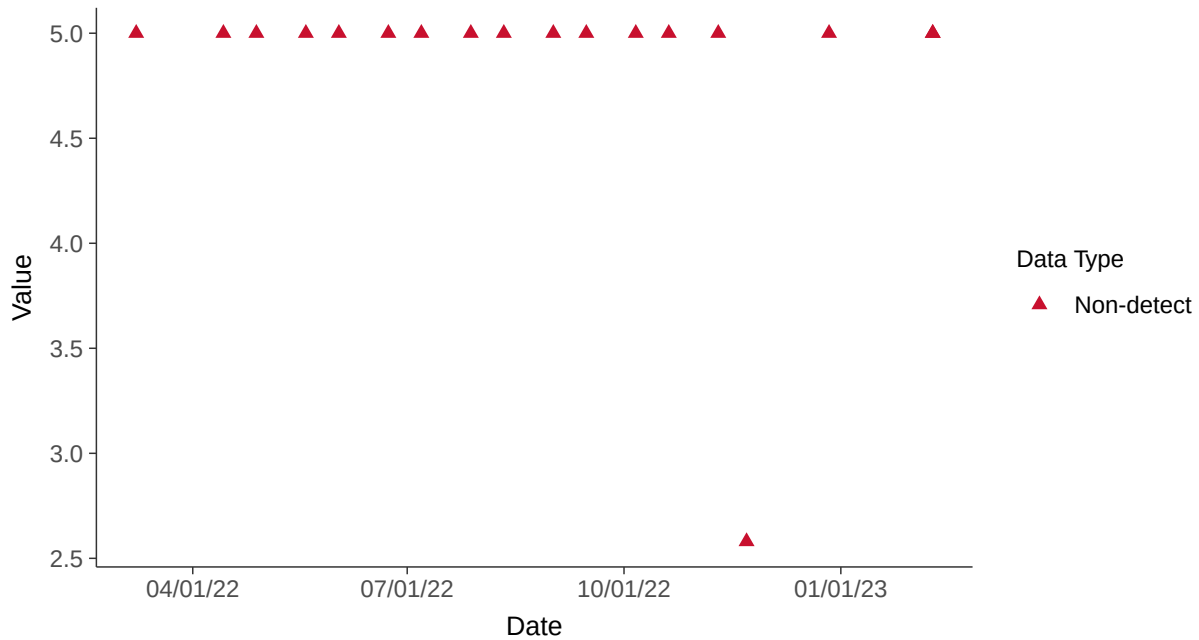


## Appendix III: Sulfate, MW-11B & MW-12B

ID: 1\_05

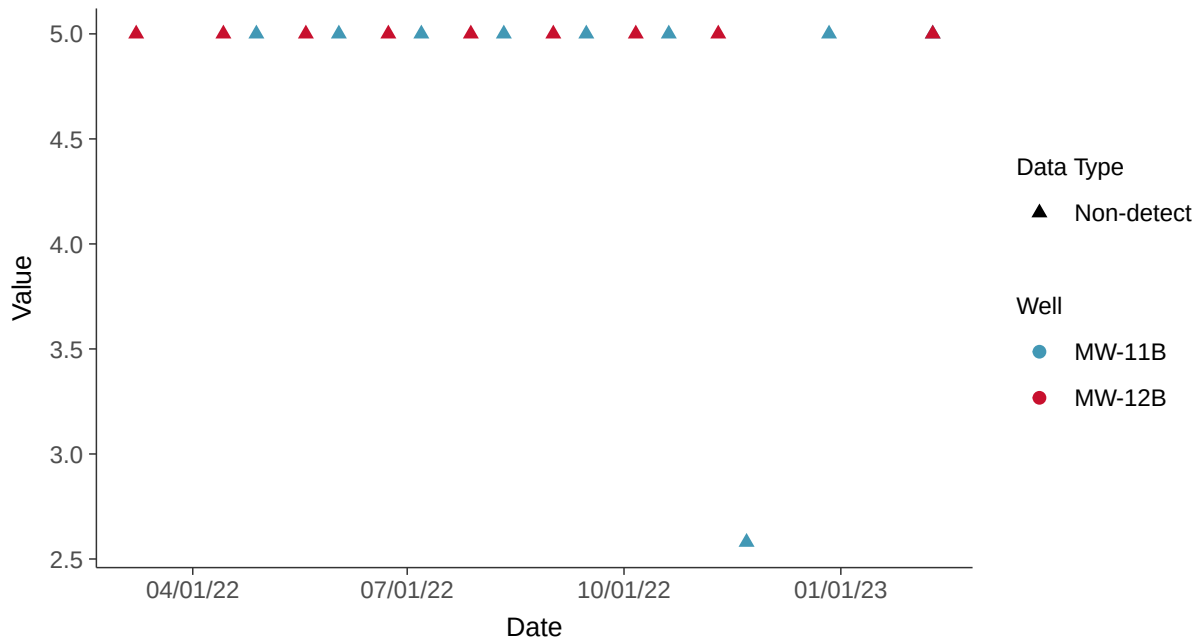
### Scatter Plot

Sulfate, MW-11B & MW-12B (mg/L)



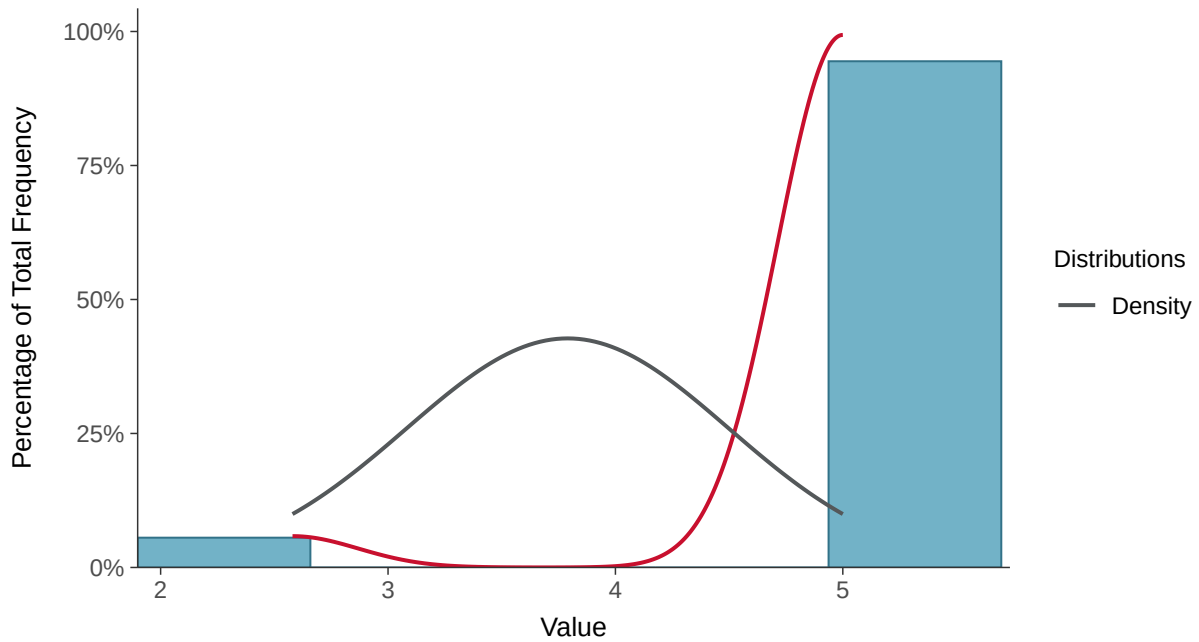
### Scatter Plot by Well

Sulfate, MW-11B & MW-12B (mg/L)



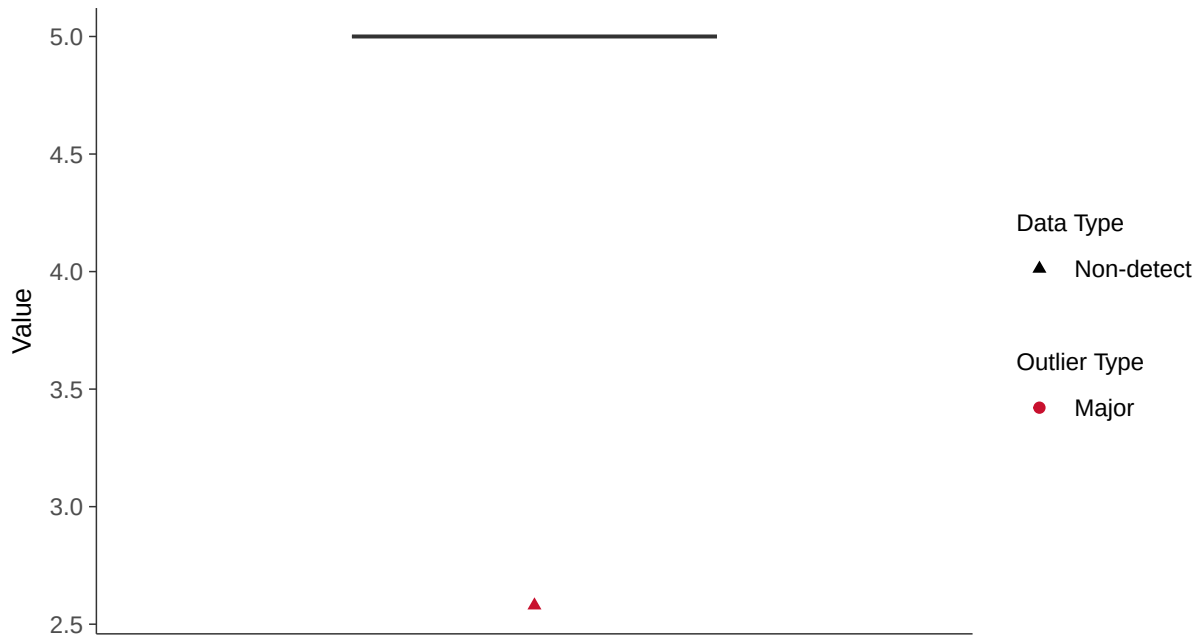
### Histogram

Sulfate, MW-11B & MW-12B (mg/L)



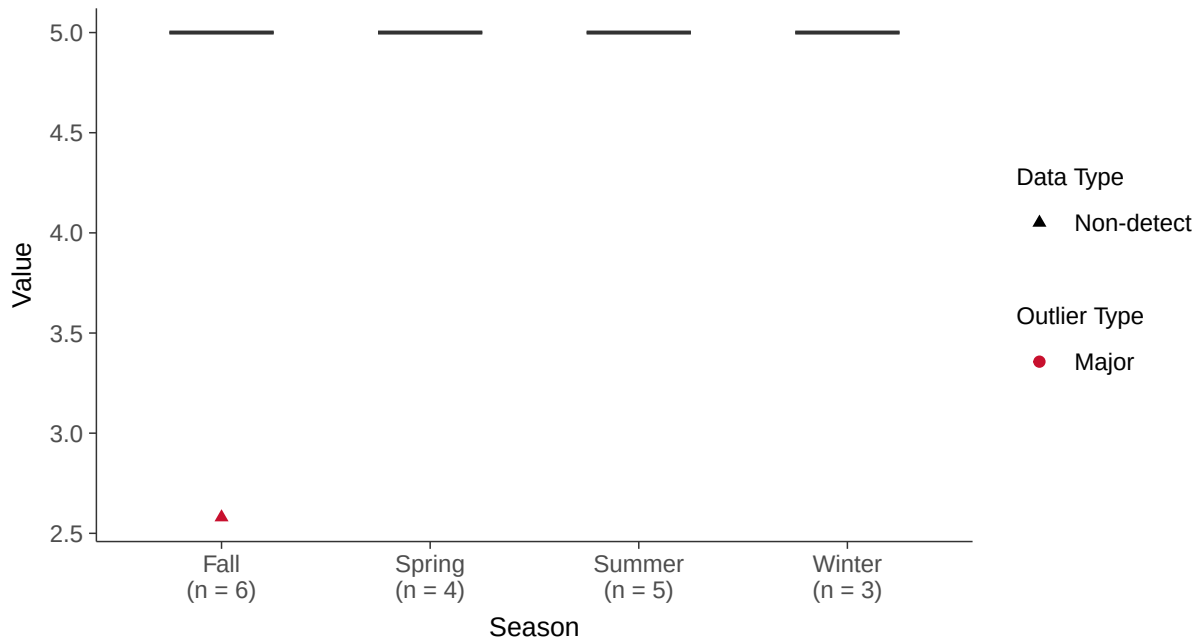
### Boxplot

Sulfate, MW-11B & MW-12B (mg/L)



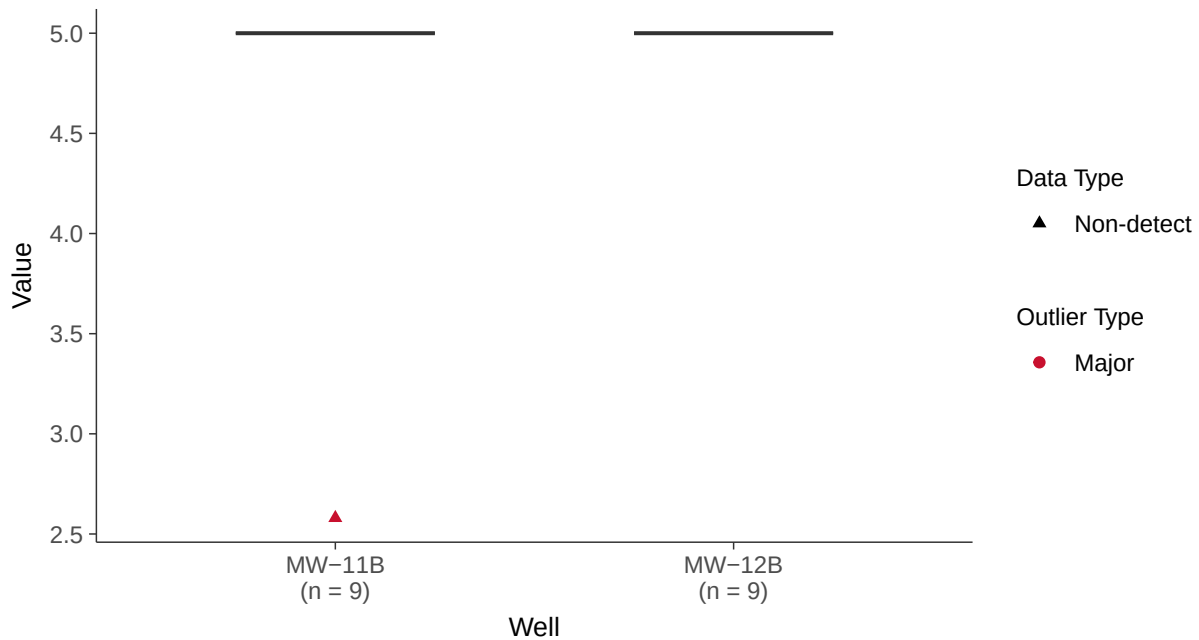
### Boxplot by Season

Sulfate, MW-11B & MW-12B (mg/L)



### Boxplot by Well

Sulfate, MW-11B & MW-12B (mg/L)

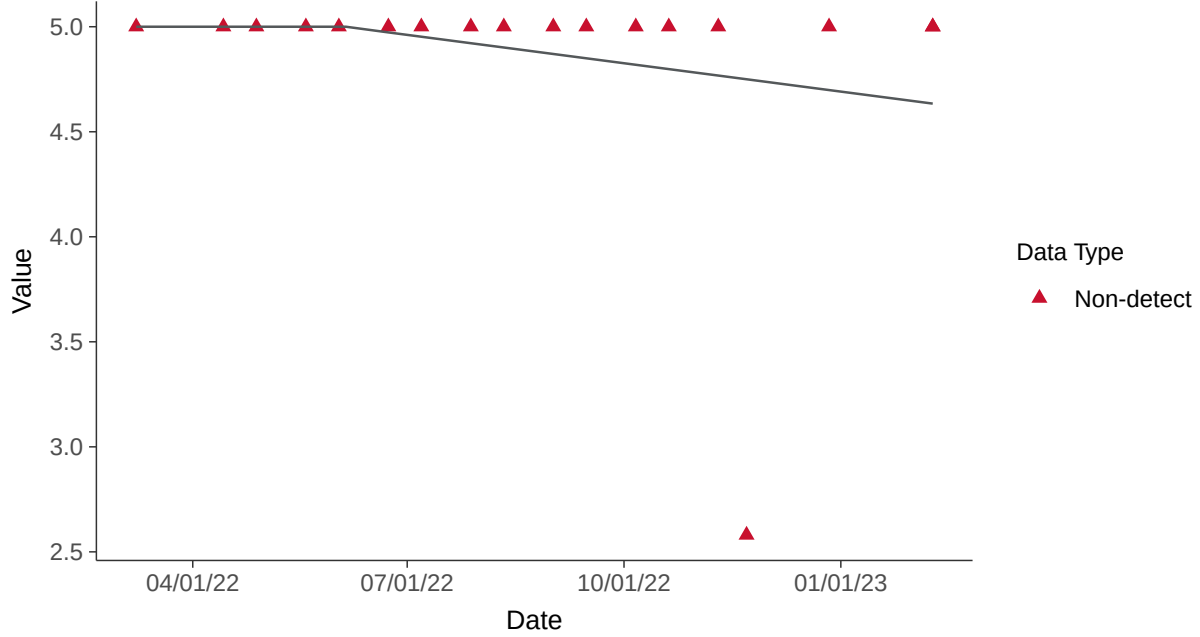






### Trend Regression: Piecewise Linear-Linear

Sulfate, MW-11B & MW-12B (mg/L)

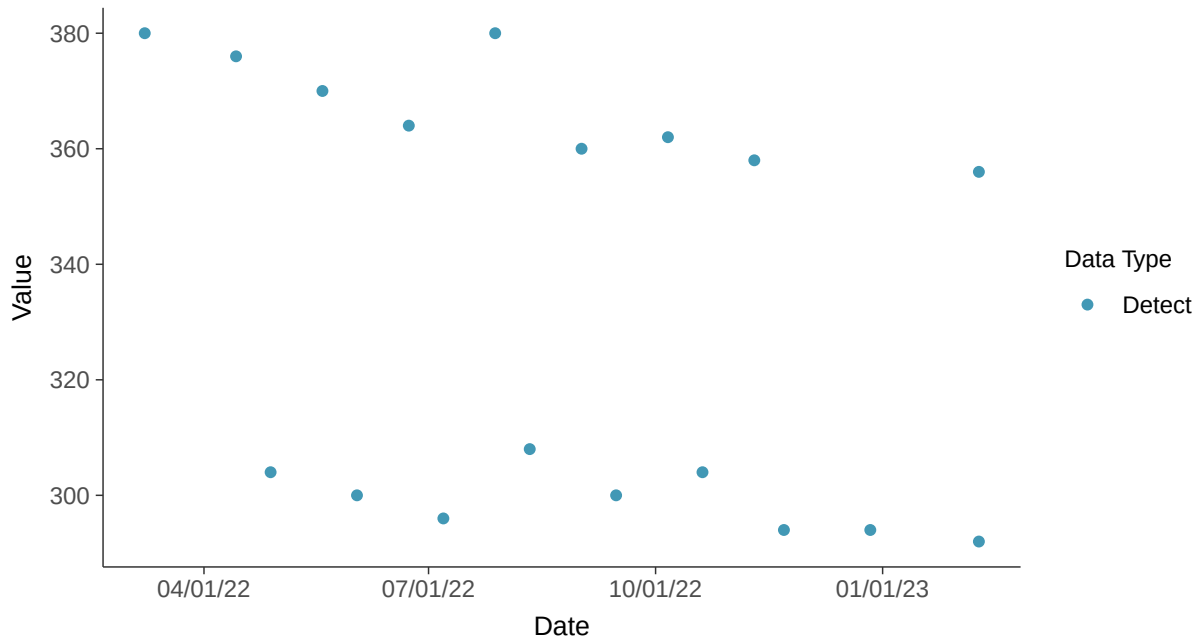


## Appendix III: Total Dissolved Solids, MW-11B & MW-12B

ID: 1\_06

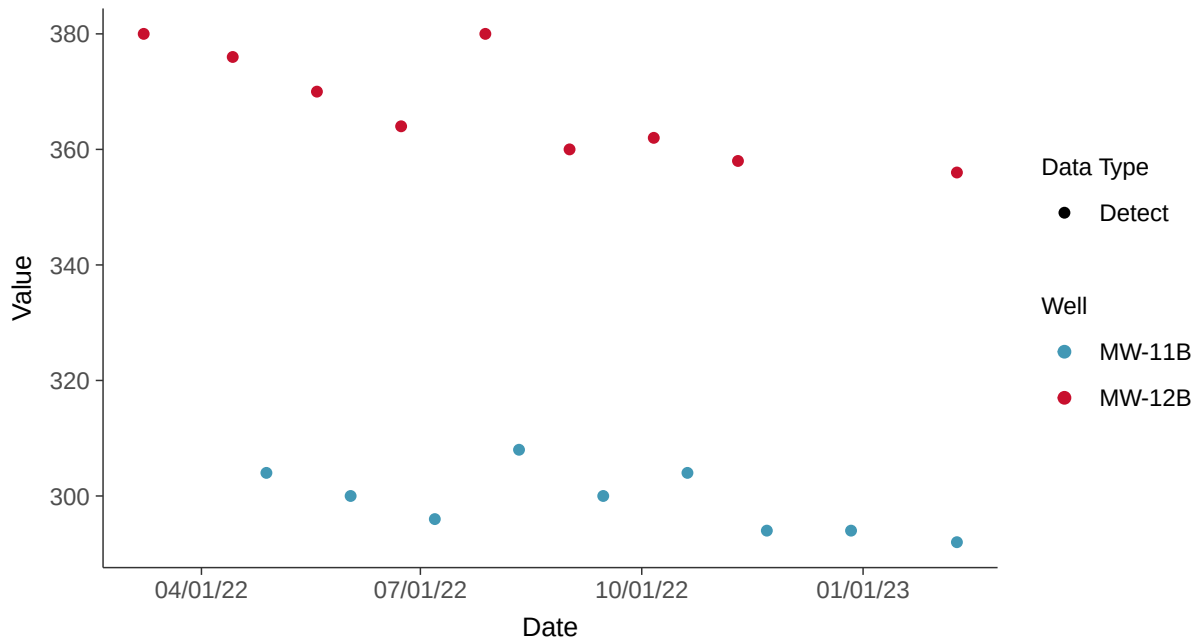
### Scatter Plot

Total Dissolved Solids, MW-11B & MW-12B (mg/L)



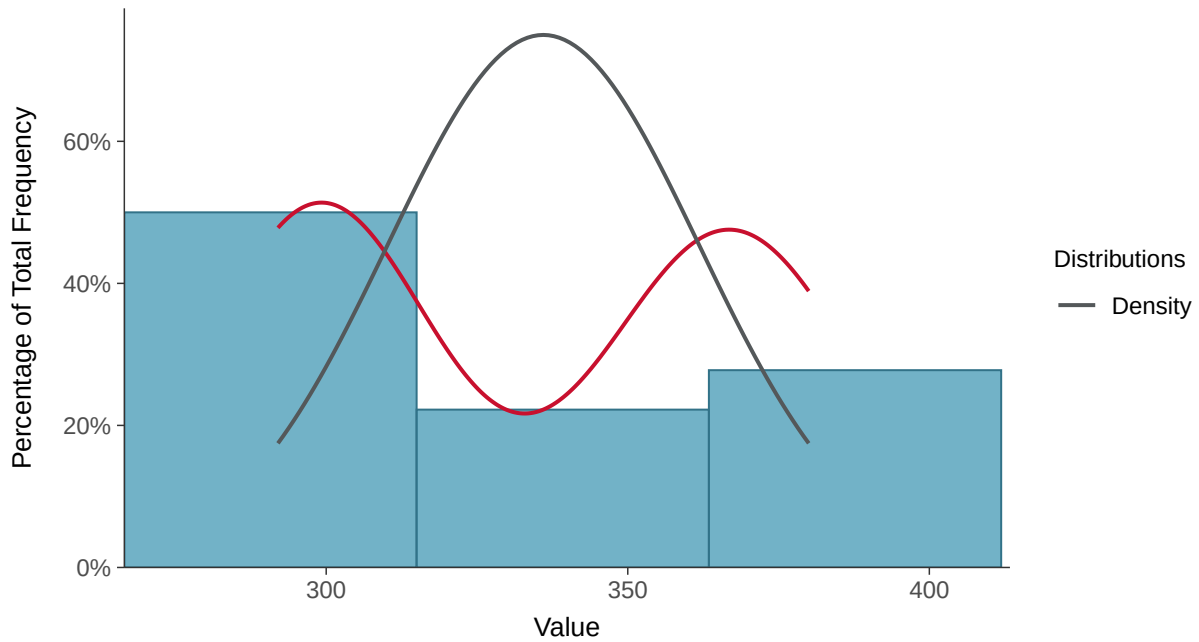
### Scatter Plot by Well

Total Dissolved Solids, MW-11B & MW-12B (mg/L)



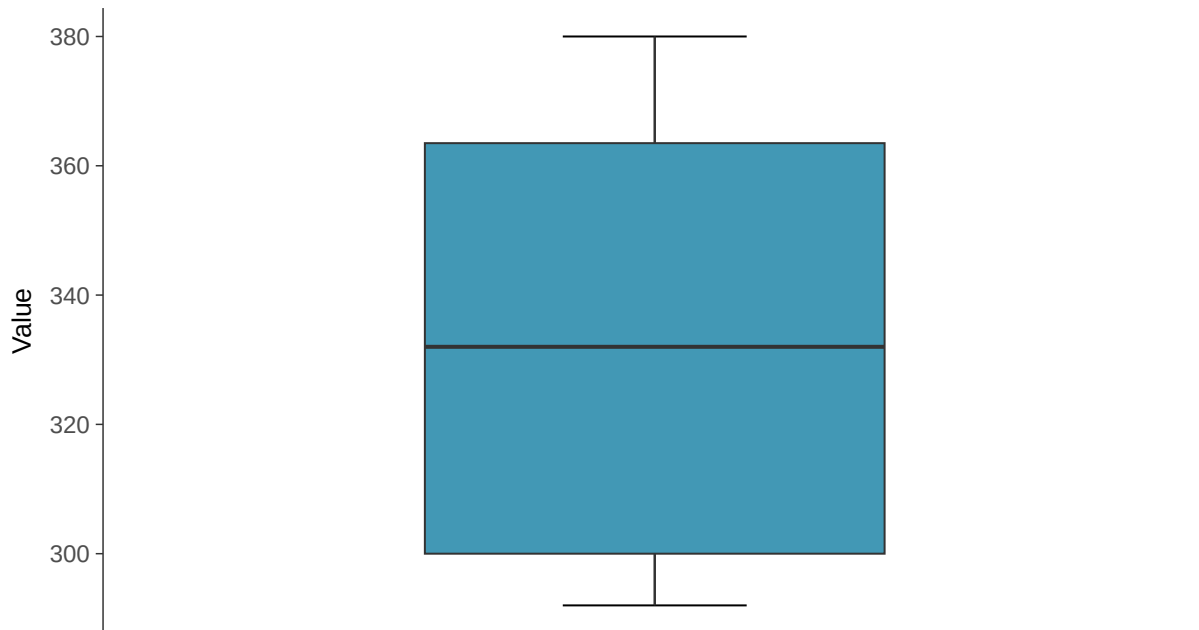
## Histogram

Total Dissolved Solids, MW-11B & MW-12B (mg/L)



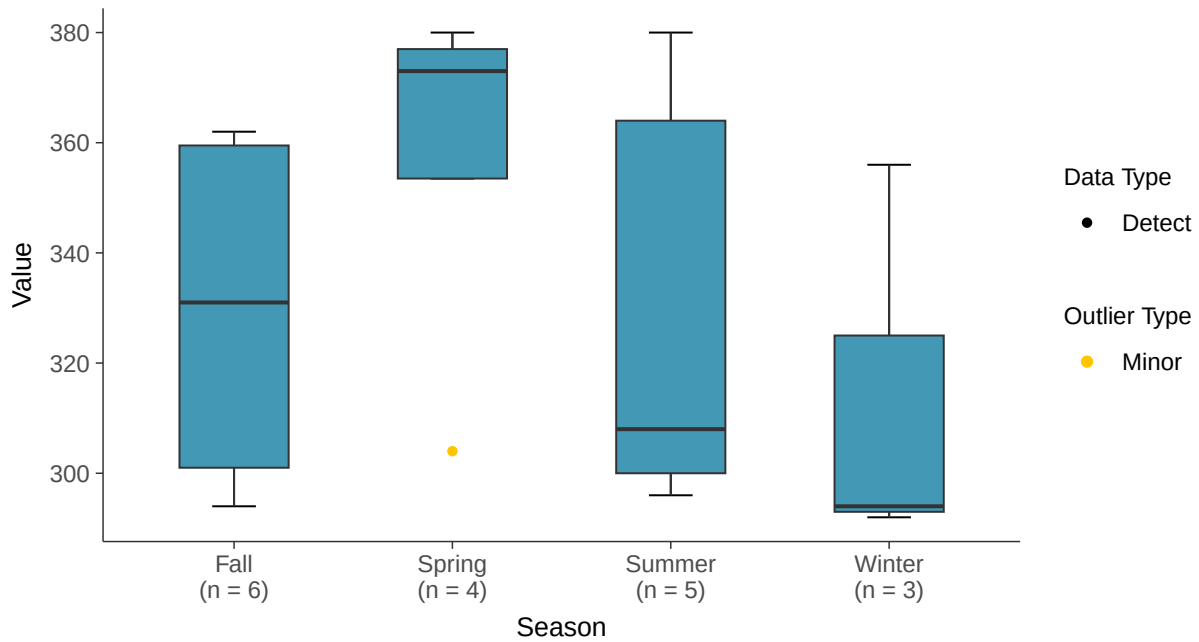
## Boxplot

Total Dissolved Solids, MW-11B & MW-12B (mg/L)



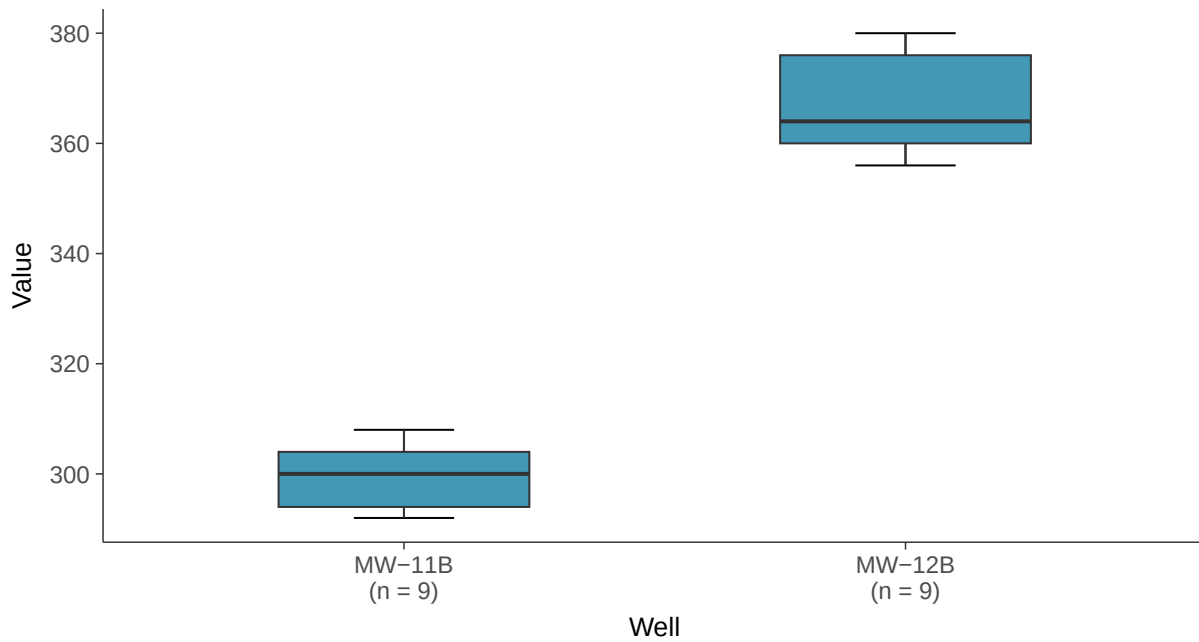
### Boxplot by Season

Total Dissolved Solids, MW-11B & MW-12B (mg/L)



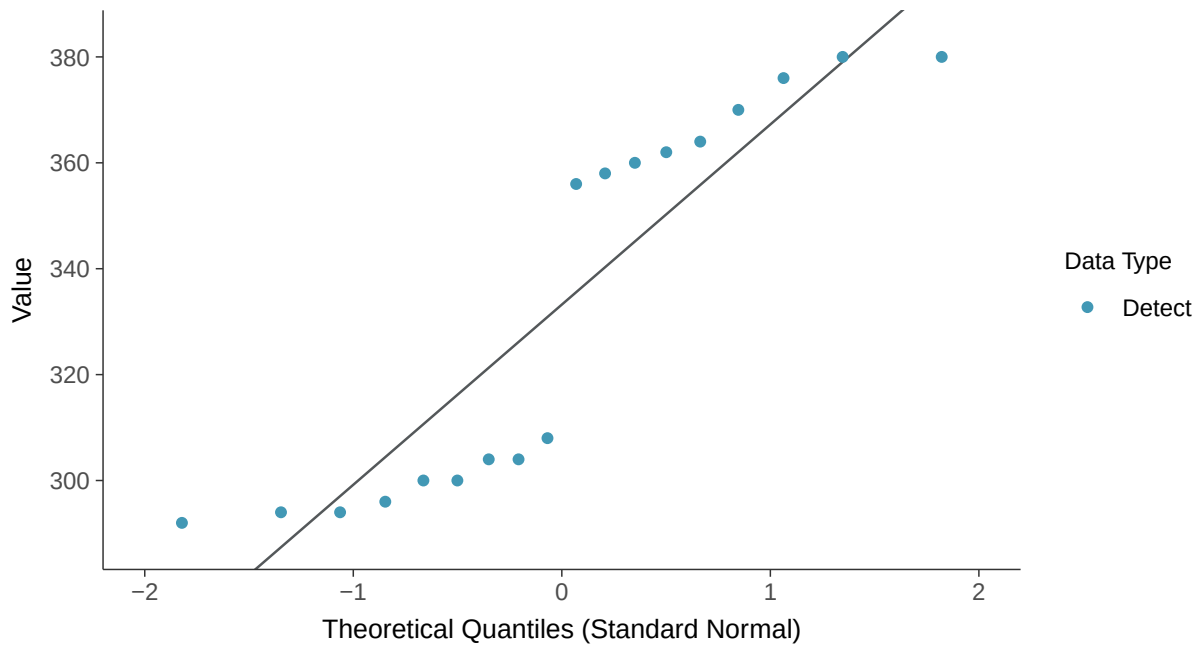
### Boxplot by Well

Total Dissolved Solids, MW-11B & MW-12B (mg/L)



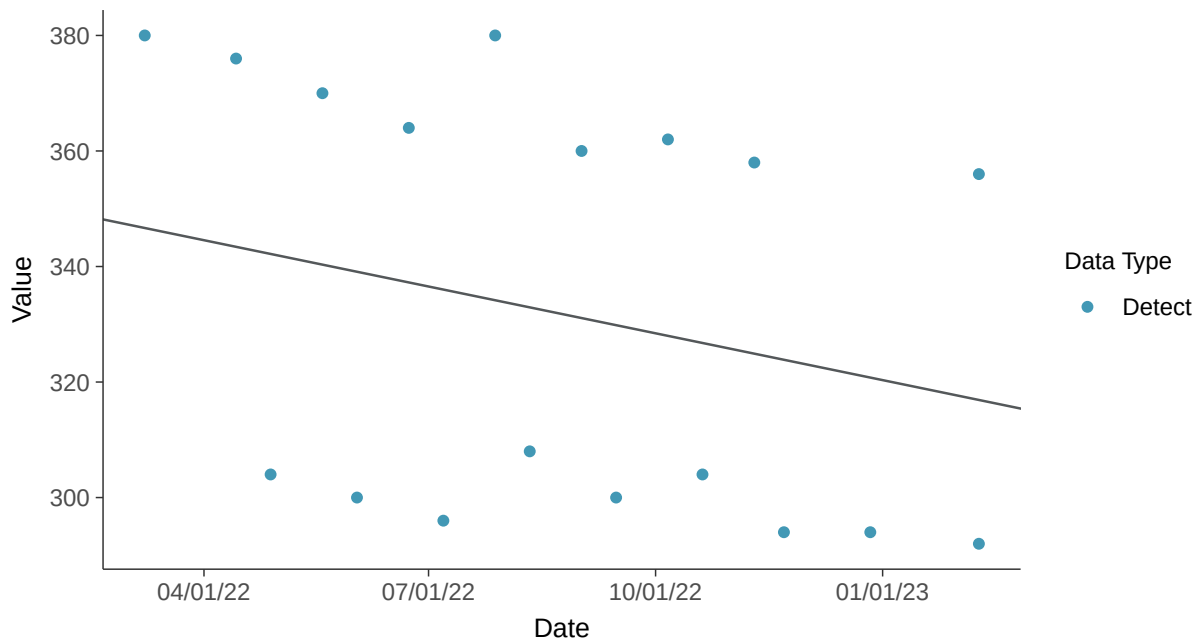
### Normal Q-Q plot

Total Dissolved Solids, MW-11B & MW-12B (mg/L)



### Trend Regression: Mann-Kendall/Theil-Sen Estimate

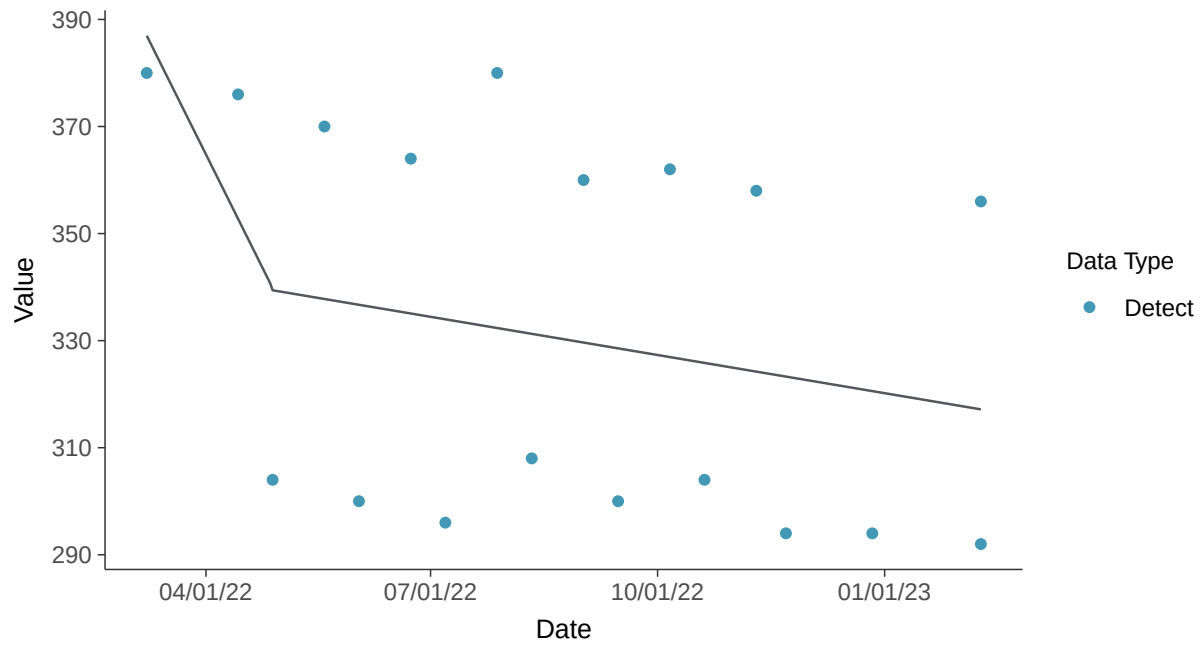
Total Dissolved Solids, MW-11B & MW-12B (mg/L)





### Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-11B & MW-12B (mg/L)

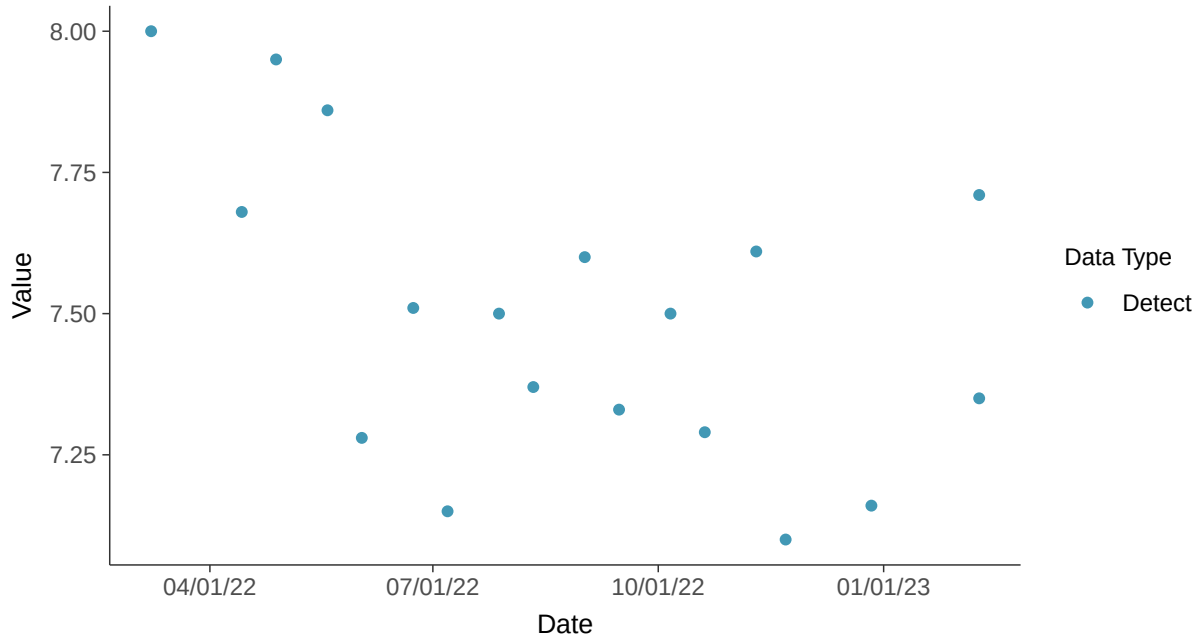


## Appendix III: pH, Field, MW-11B & MW-12B

ID: 1\_07

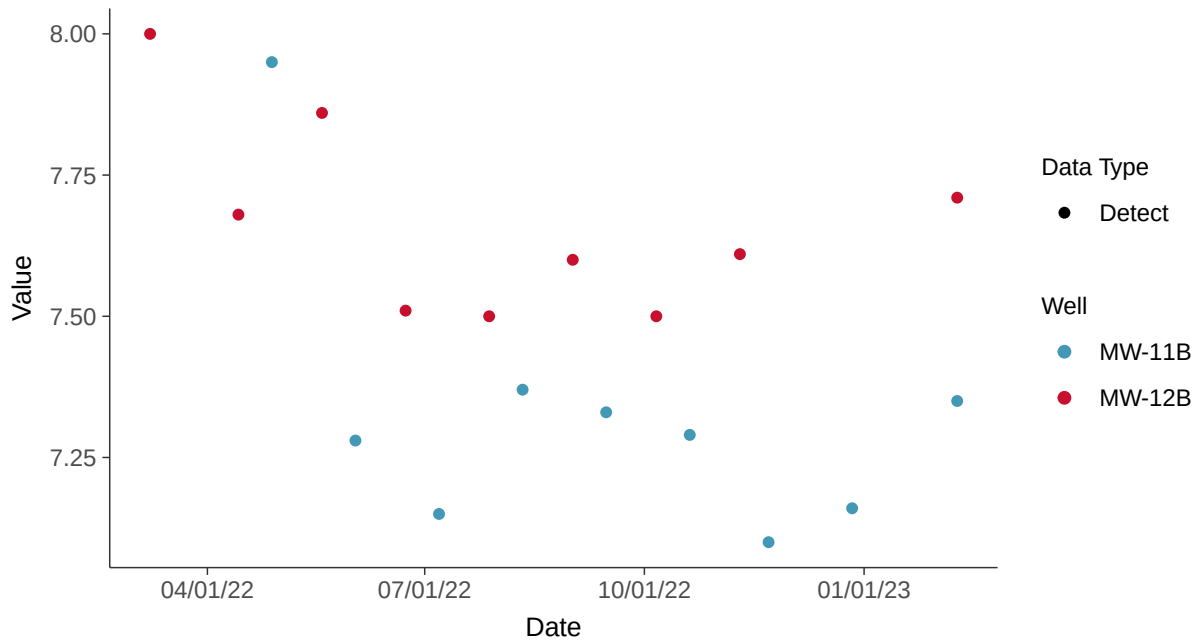
### Scatter Plot

pH, Field, MW-11B & MW-12B (su)



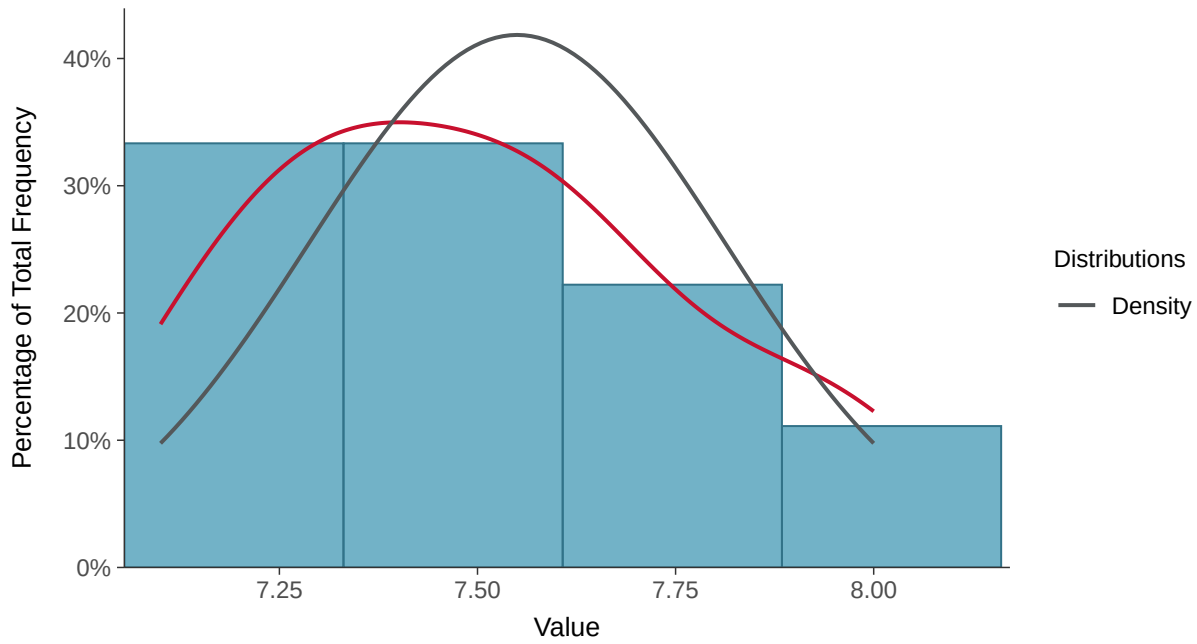
### Scatter Plot by Well

pH, Field, MW-11B & MW-12B (su)



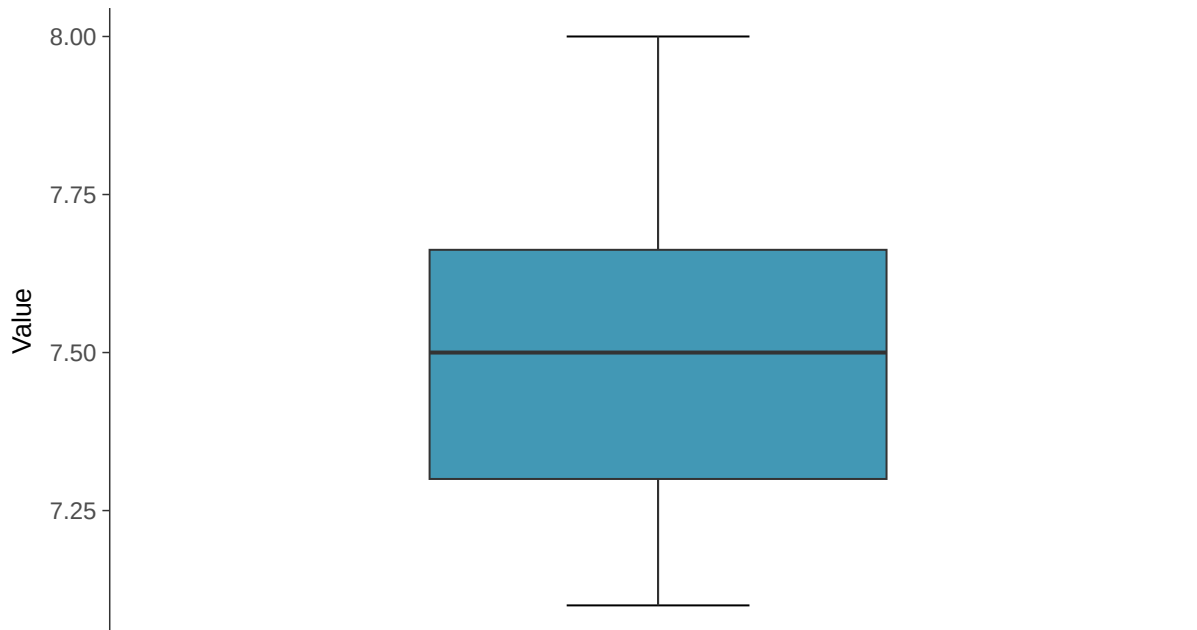
### Histogram

pH, Field, MW-11B & MW-12B (su)



### Boxplot

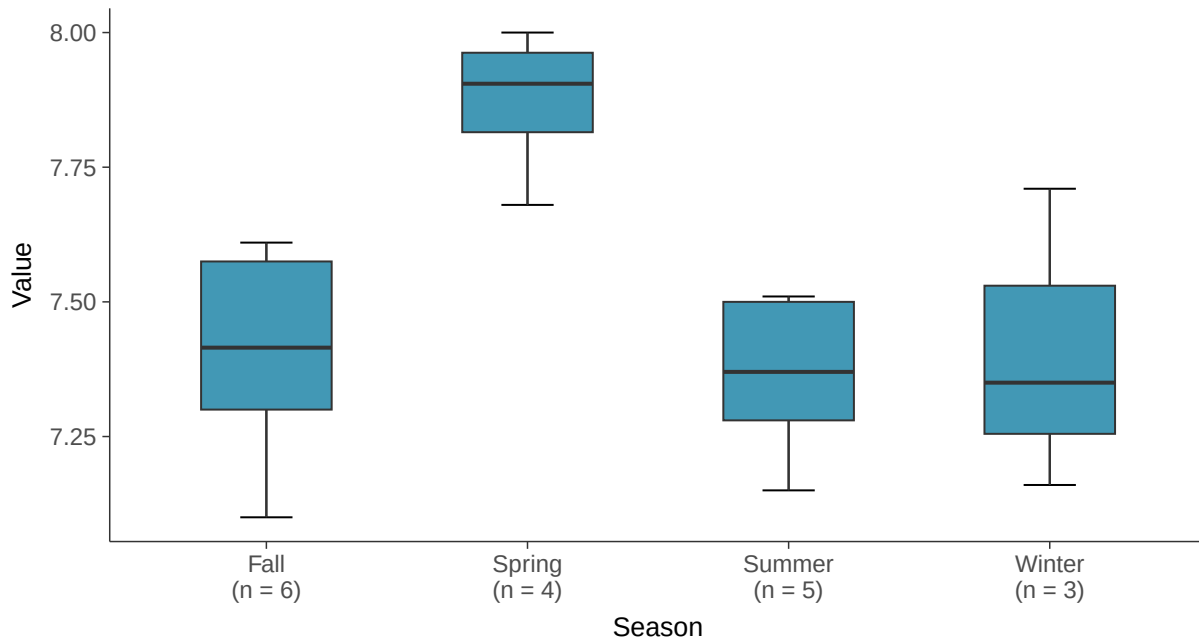
pH, Field, MW-11B & MW-12B (su)





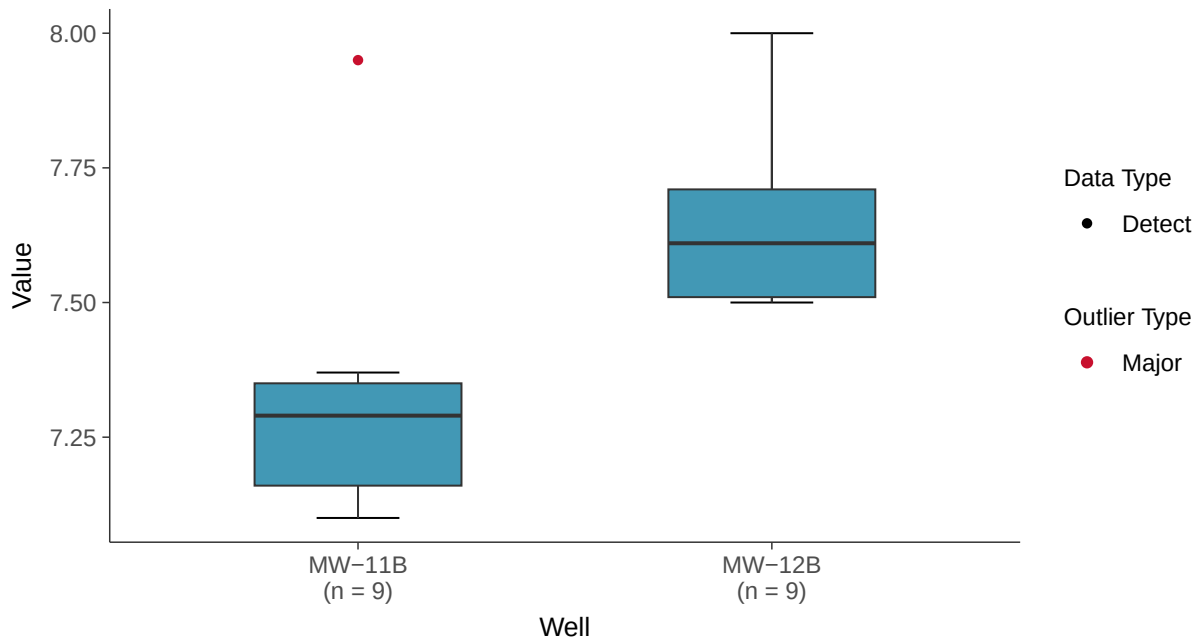
### Boxplot by Season

pH, Field, MW-11B & MW-12B (su)



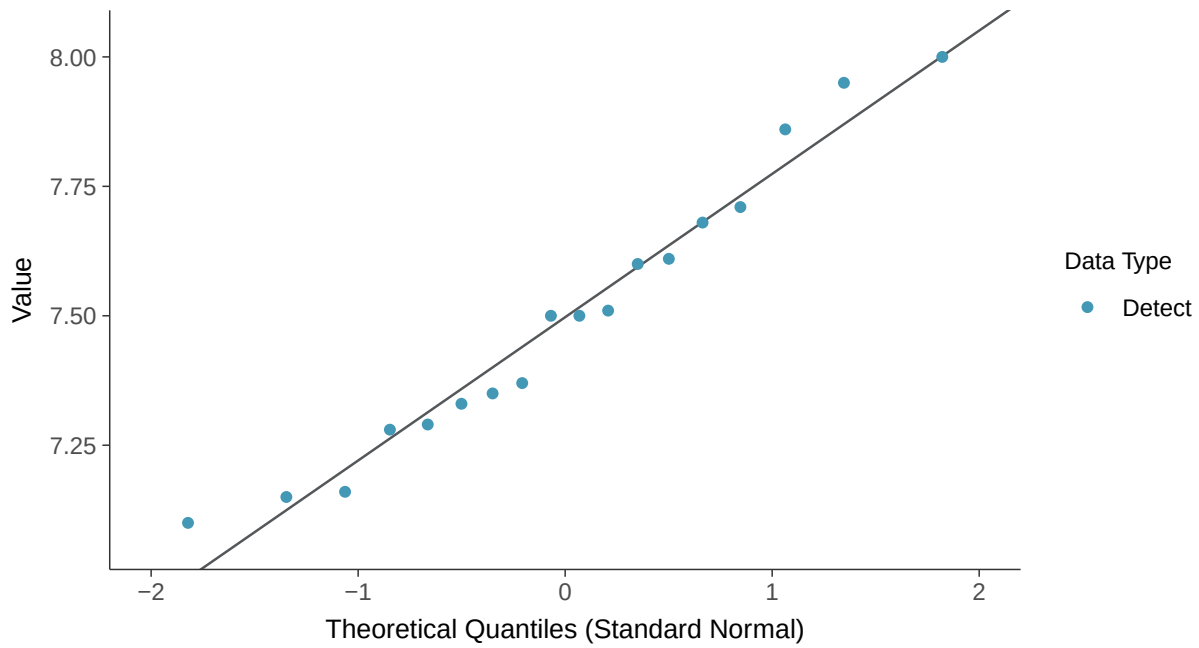
### Boxplot by Well

pH, Field, MW-11B & MW-12B (su)



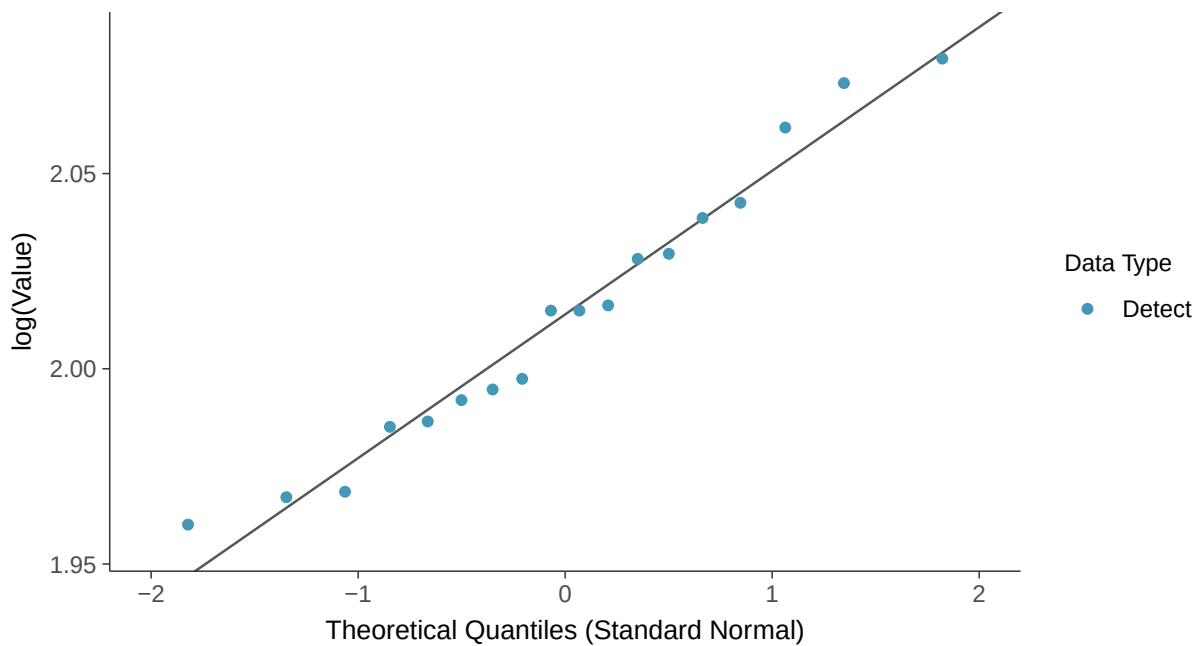
### Normal Q-Q plot

pH, Field, MW-11B & MW-12B (su)



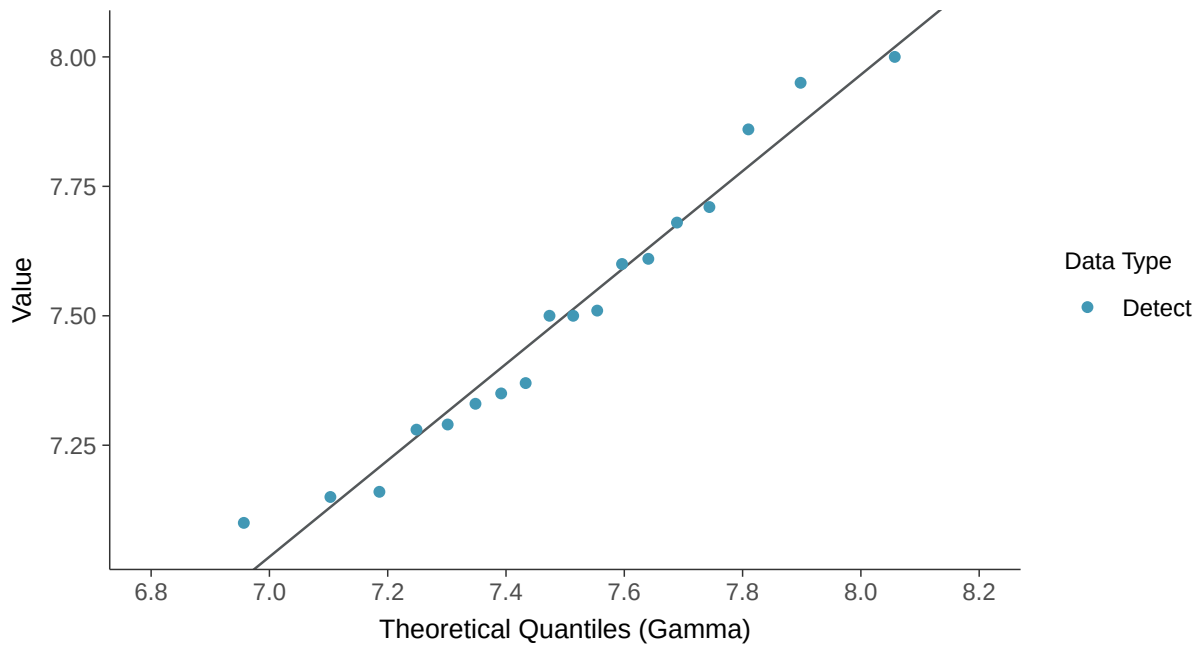
### Lognormal Q-Q plot

pH, Field, MW-11B & MW-12B (su)



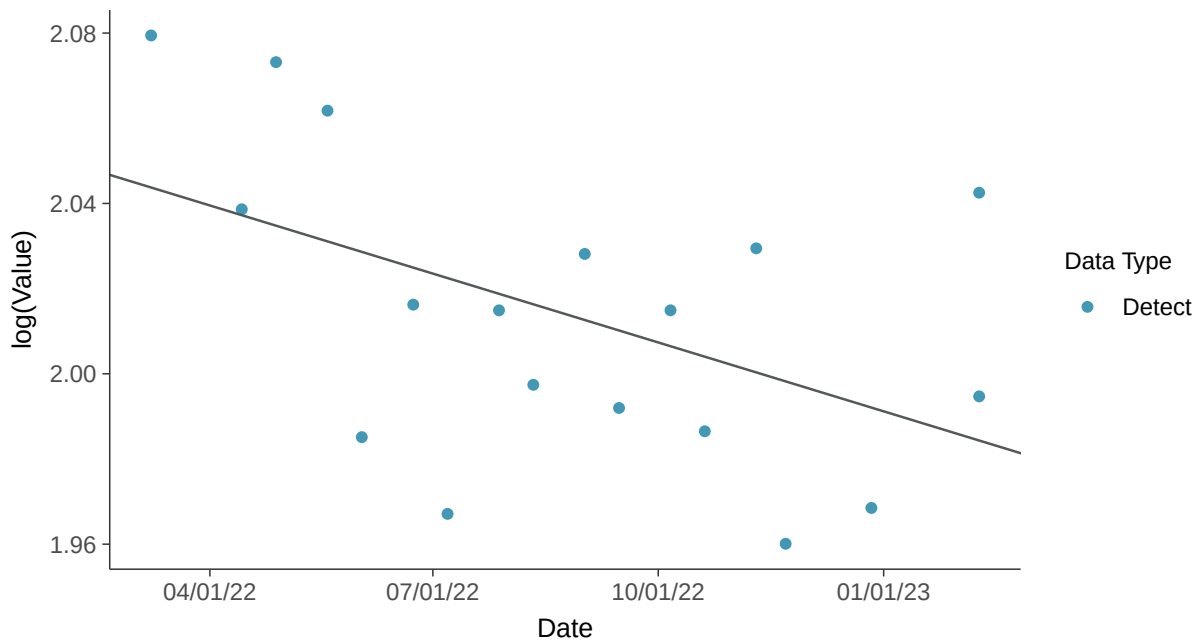
### Gamma Q-Q plot

pH, Field, MW-11B & MW-12B (su)



### Trend Regression: Lognormal MLE

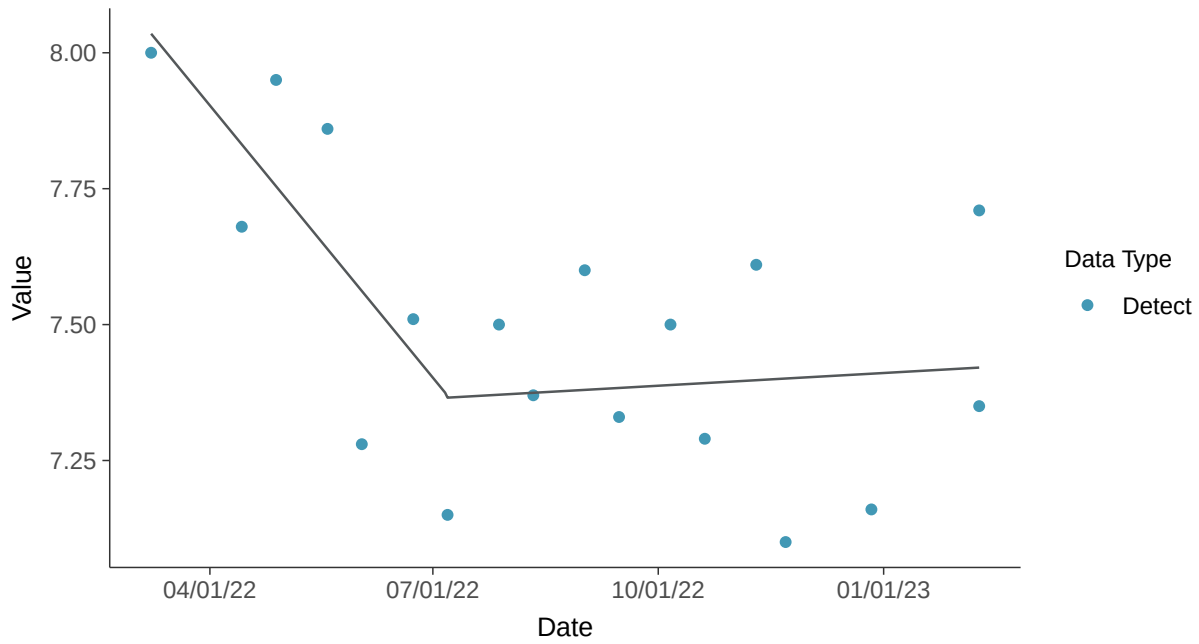
pH, Field, MW-11B & MW-12B (su)

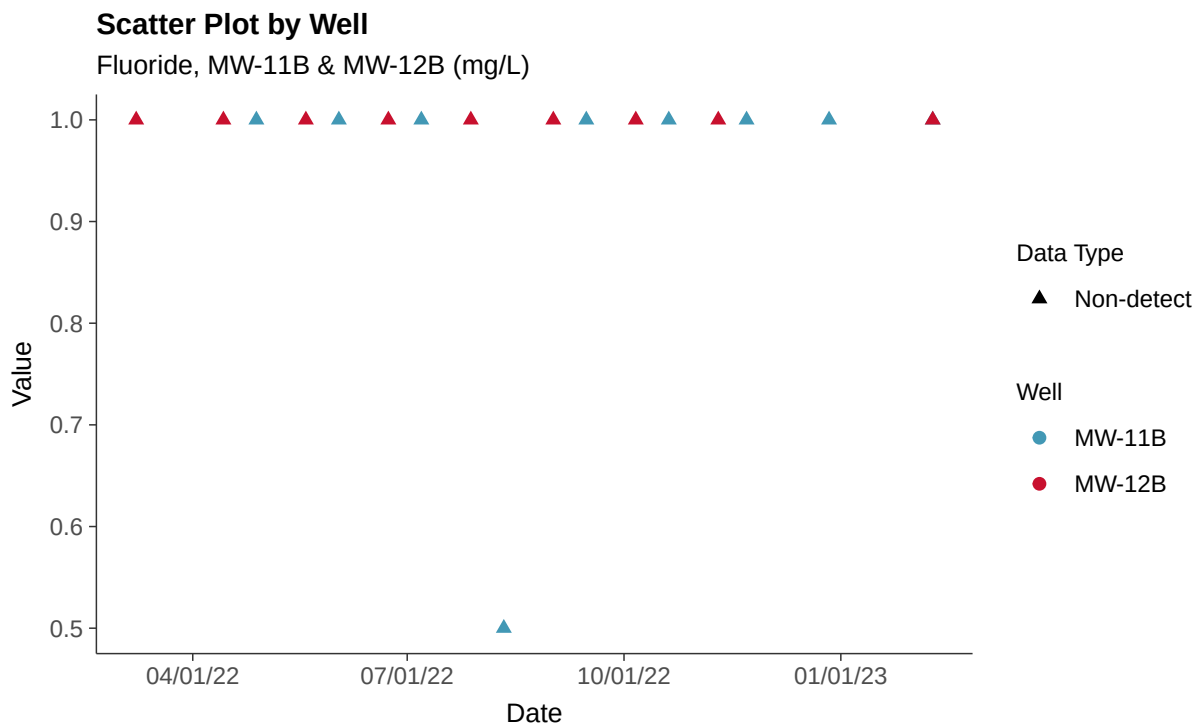




### Trend Regression: Piecewise Linear-Linear

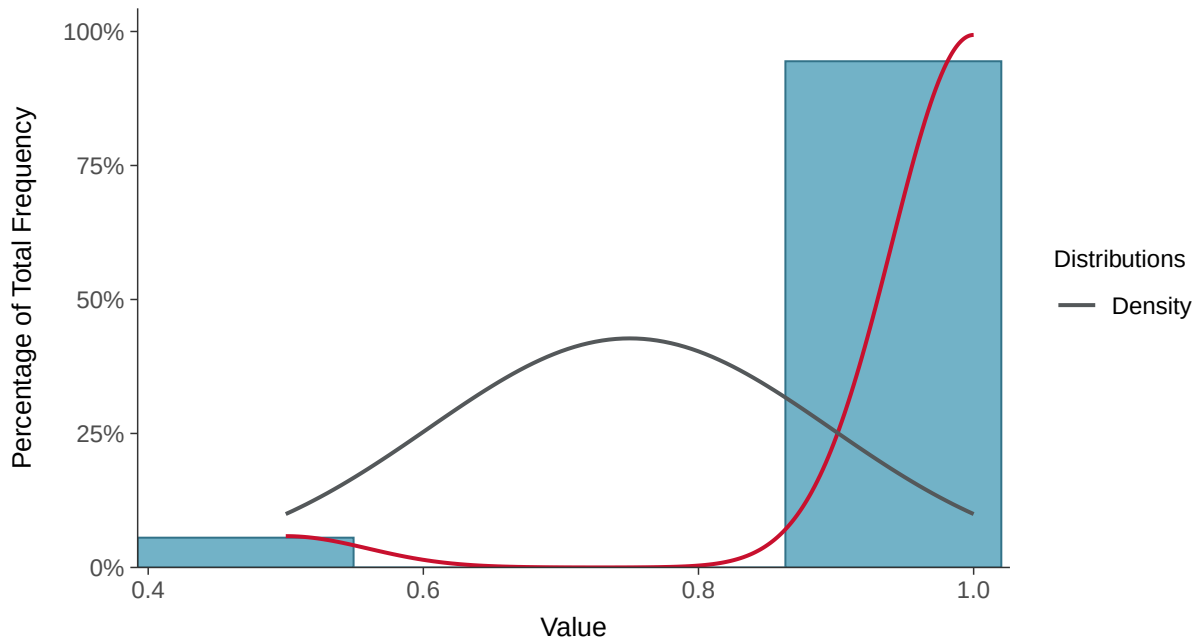
pH, Field, MW-11B & MW-12B (su)





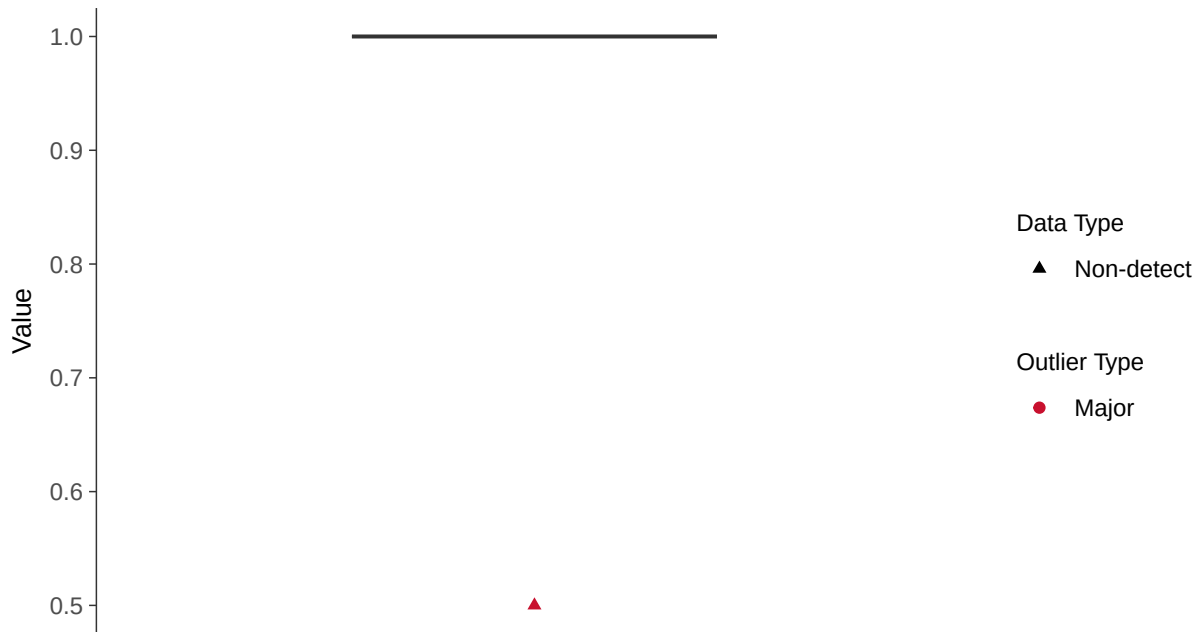
### Histogram

Fluoride, MW-11B & MW-12B (mg/L)



### Boxplot

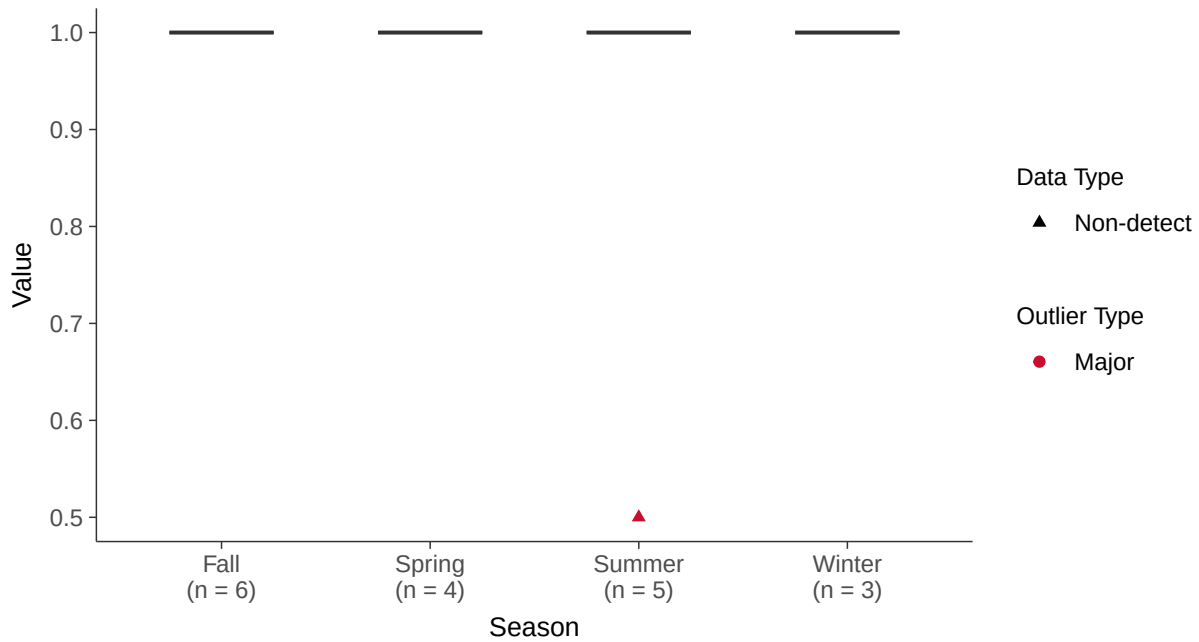
Fluoride, MW-11B & MW-12B (mg/L)





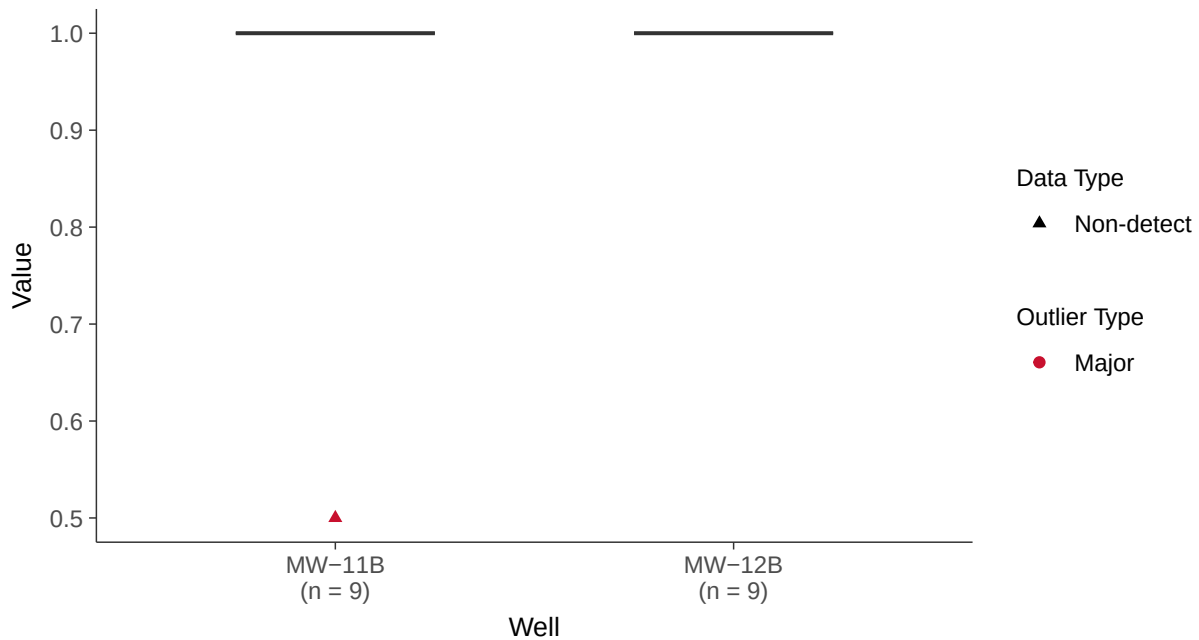
### Boxplot by Season

Fluoride, MW-11B & MW-12B (mg/L)



### Boxplot by Well

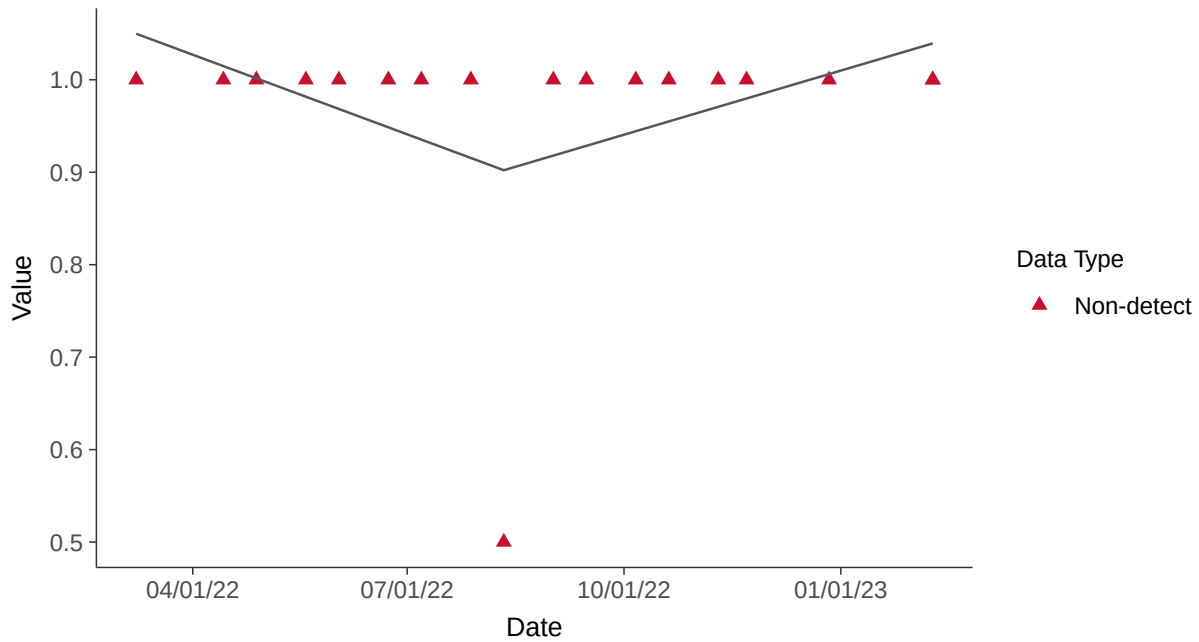
Fluoride, MW-11B & MW-12B (mg/L)





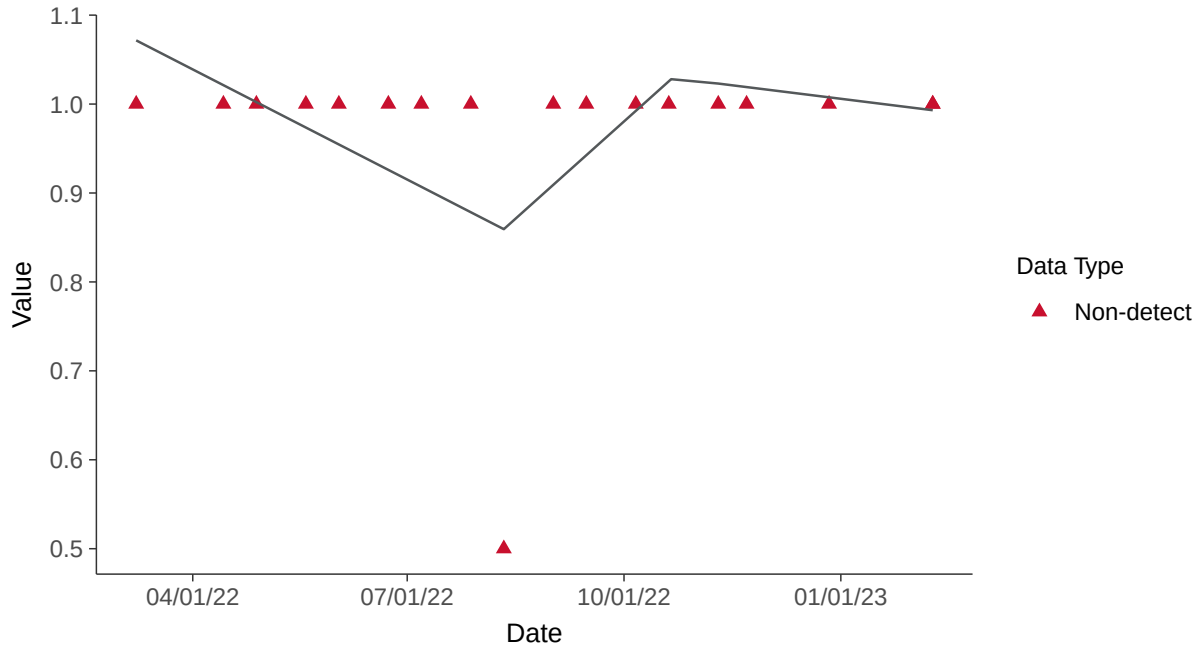
### Trend Regression: Piecewise Linear-Linear

Fluoride, MW-11B & MW-12B (mg/L)



### Trend Regression: Piecewise Linear-Linear-Linear

Fluoride, MW-11B & MW-12B (mg/L)



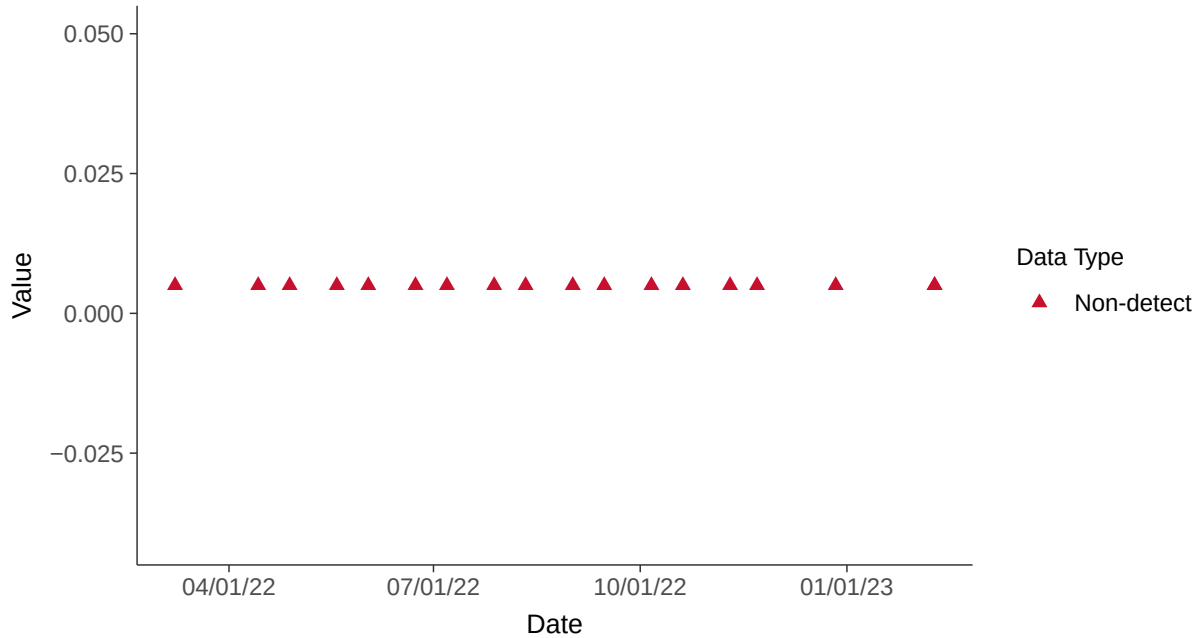


## Appendix IV: Antimony, MW-11B & MW-12B

ID: 2\_08

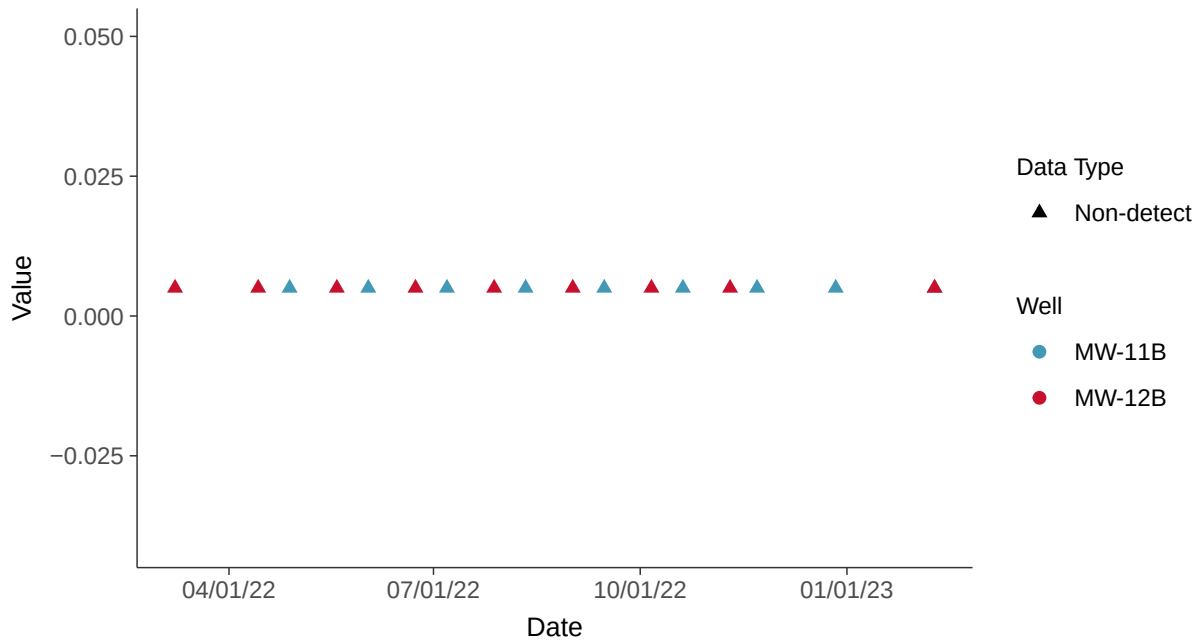
### Scatter Plot

Antimony, MW-11B & MW-12B (mg/L)



### Scatter Plot by Well

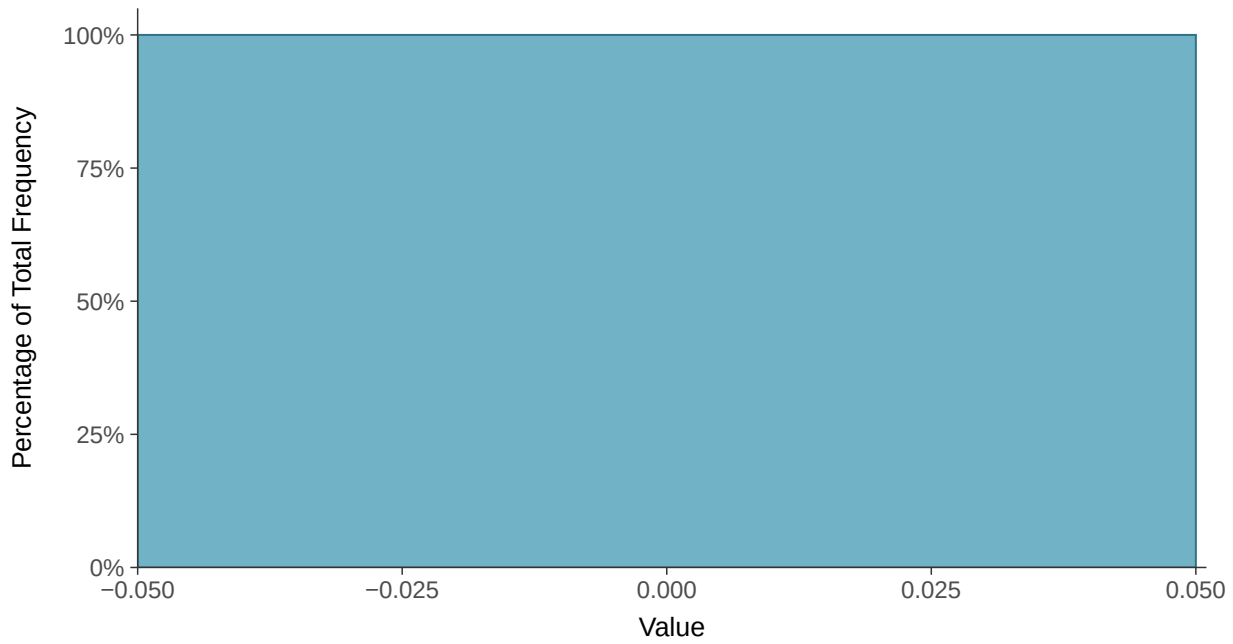
Antimony, MW-11B & MW-12B (mg/L)





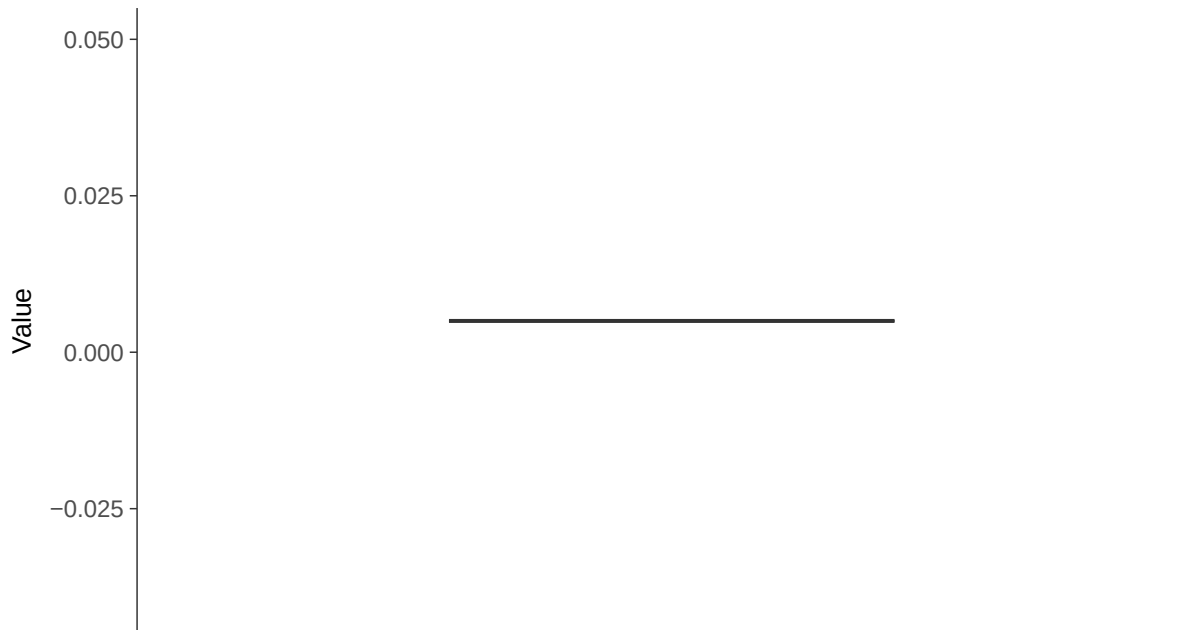
### Histogram

Antimony, MW-11B & MW-12B (mg/L)



### Boxplot

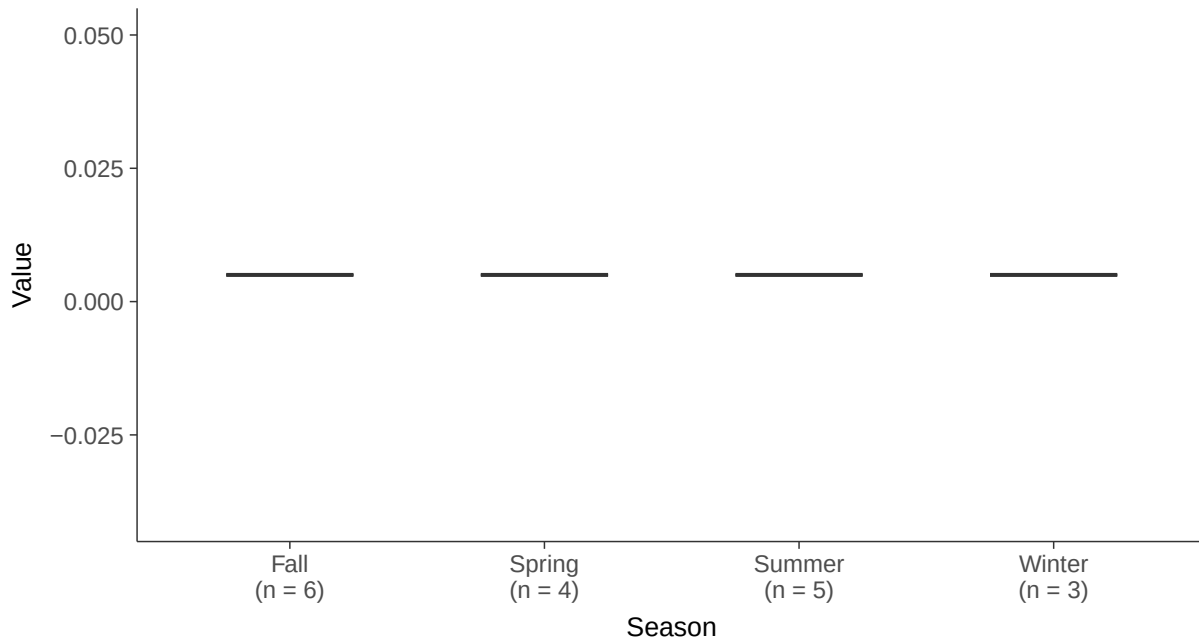
Antimony, MW-11B & MW-12B (mg/L)





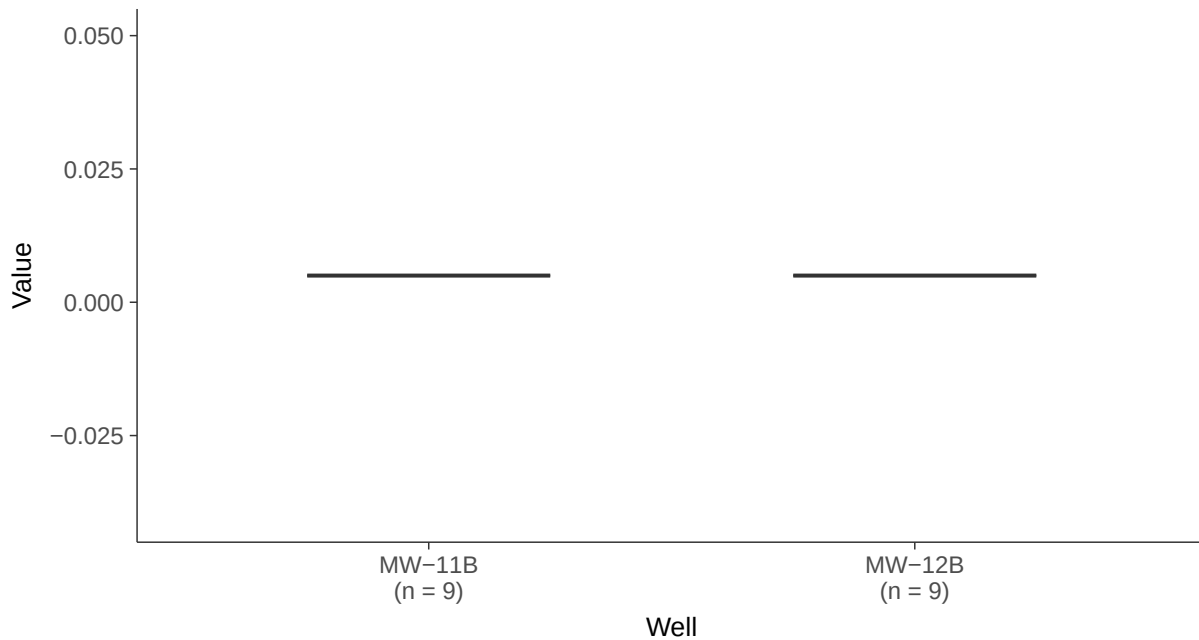
### Boxplot by Season

Antimony, MW-11B & MW-12B (mg/L)



### Boxplot by Well

Antimony, MW-11B & MW-12B (mg/L)

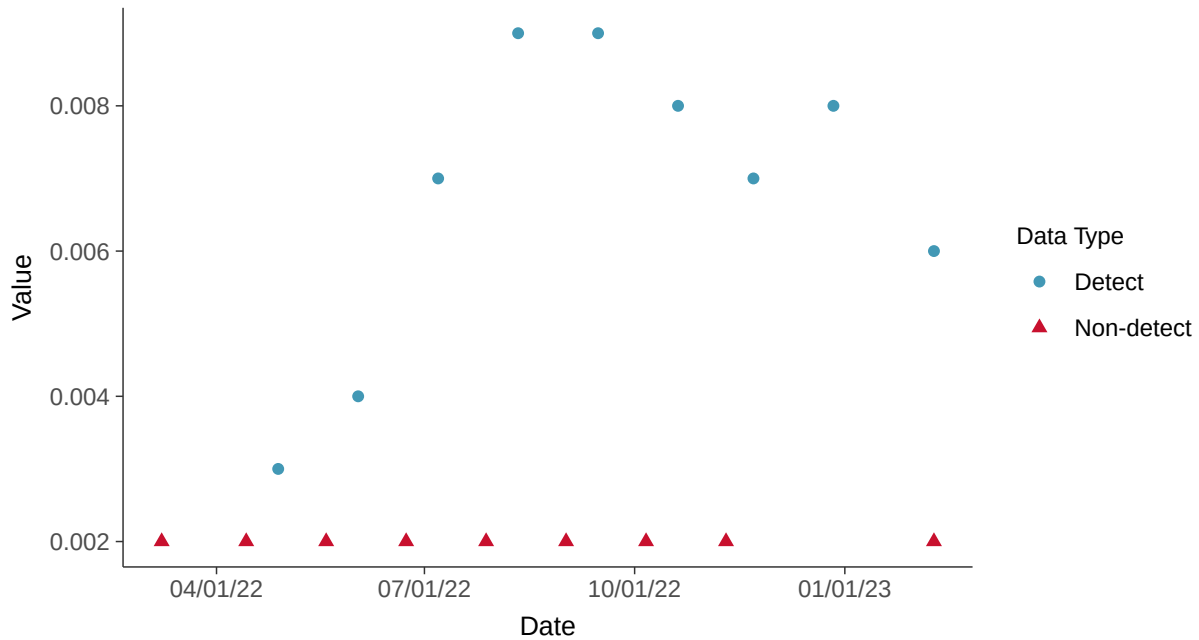


## Appendix IV: Arsenic, MW-11B & MW-12B

ID: 2\_09

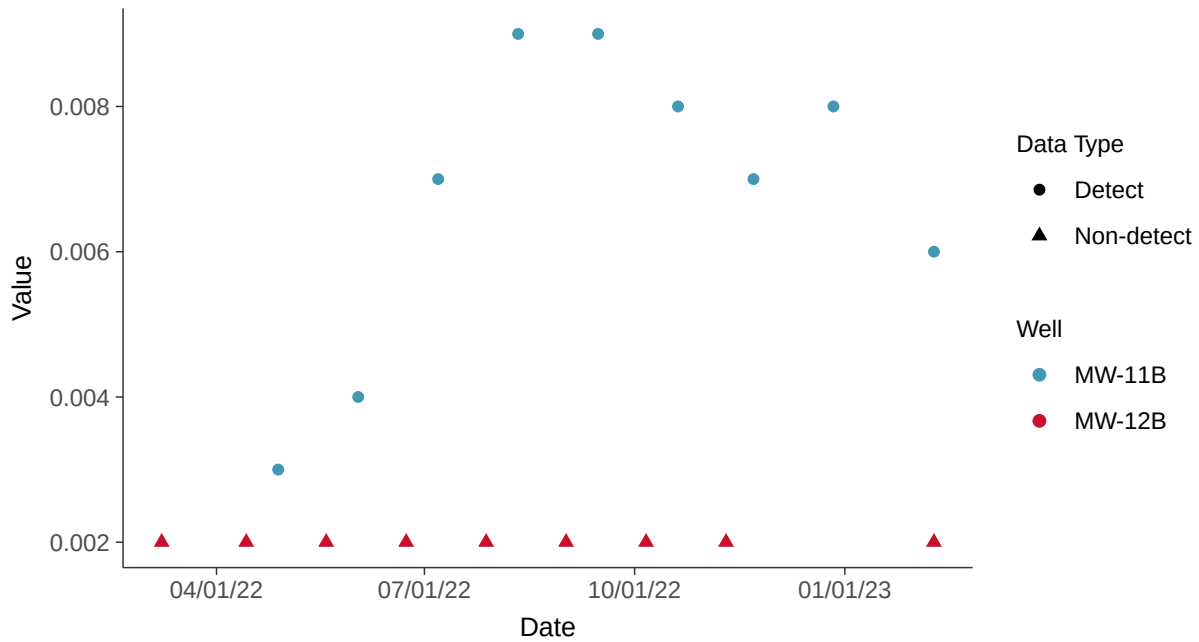
### Scatter Plot

Arsenic, MW-11B & MW-12B (mg/L)



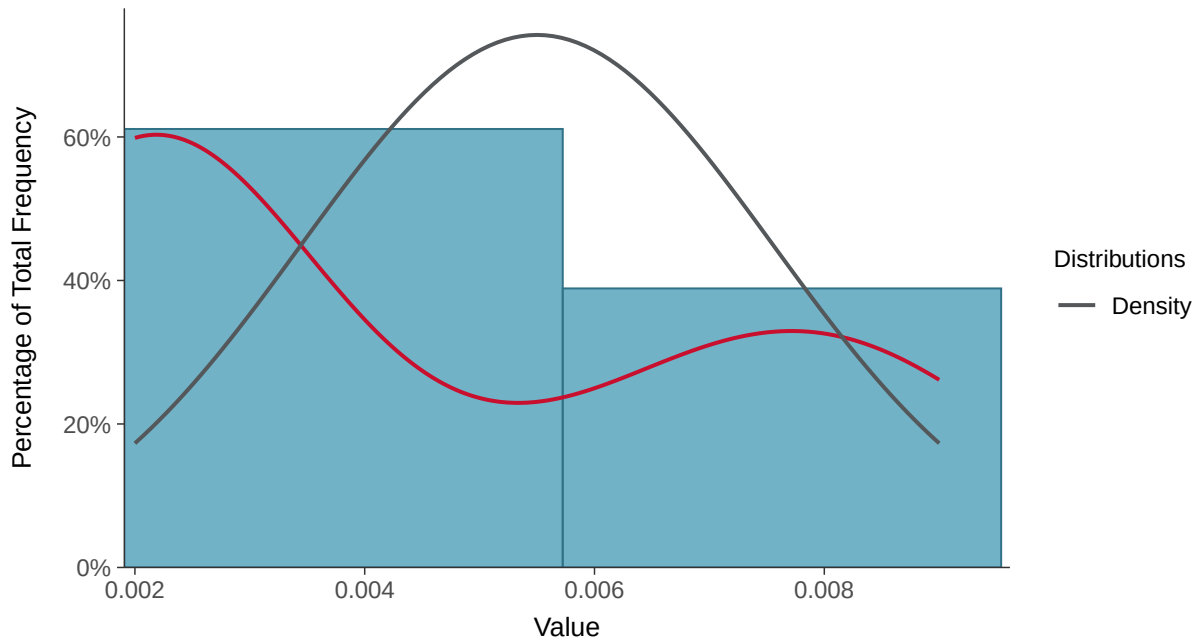
### Scatter Plot by Well

Arsenic, MW-11B & MW-12B (mg/L)



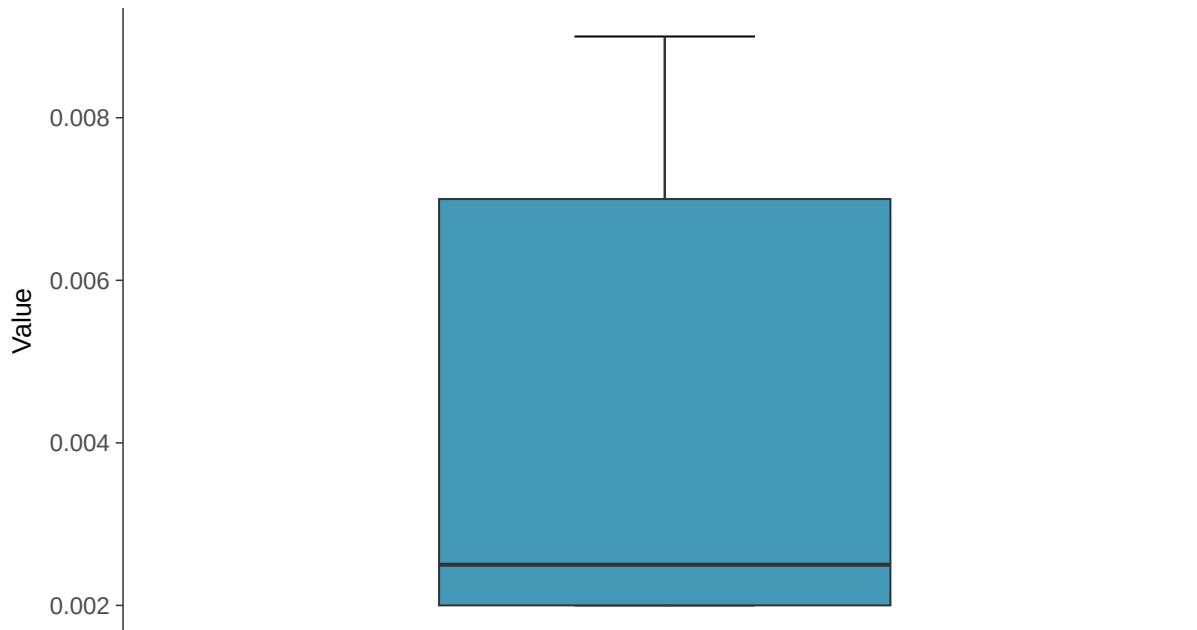
### Histogram

Arsenic, MW-11B & MW-12B (mg/L)



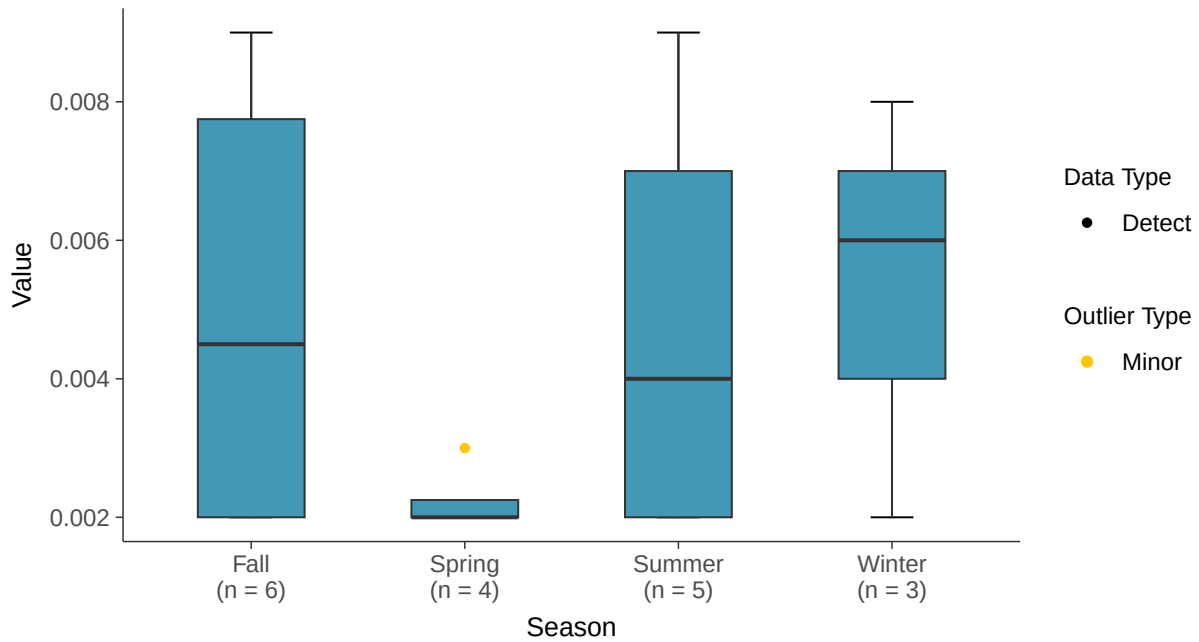
### Boxplot

Arsenic, MW-11B & MW-12B (mg/L)



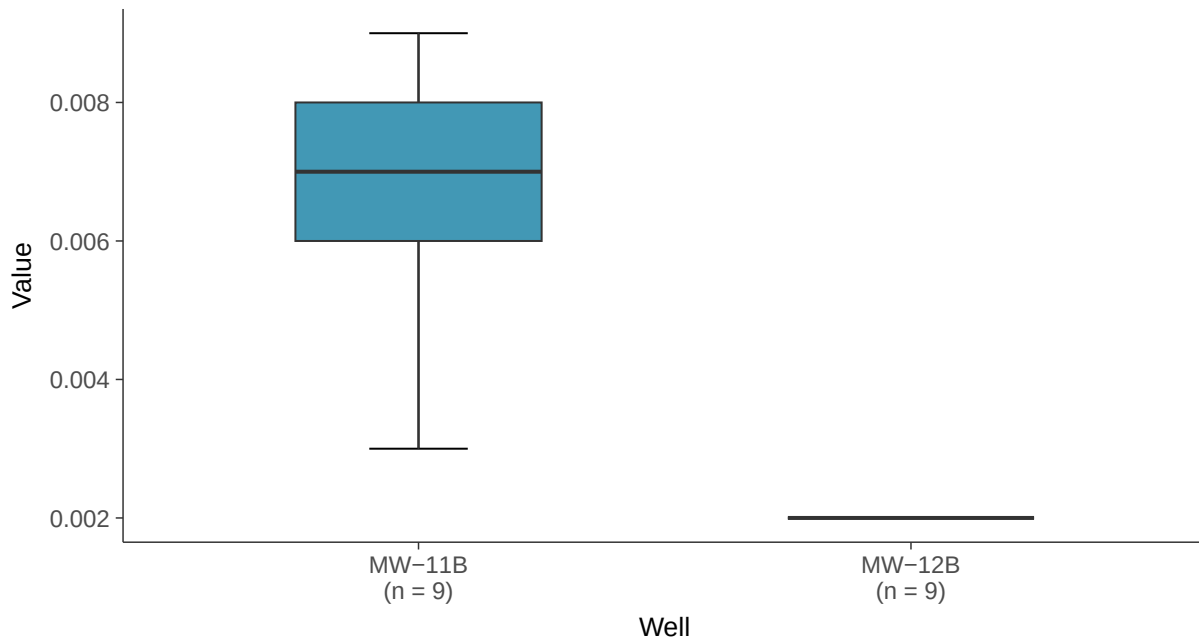
### Boxplot by Season

Arsenic, MW-11B & MW-12B (mg/L)



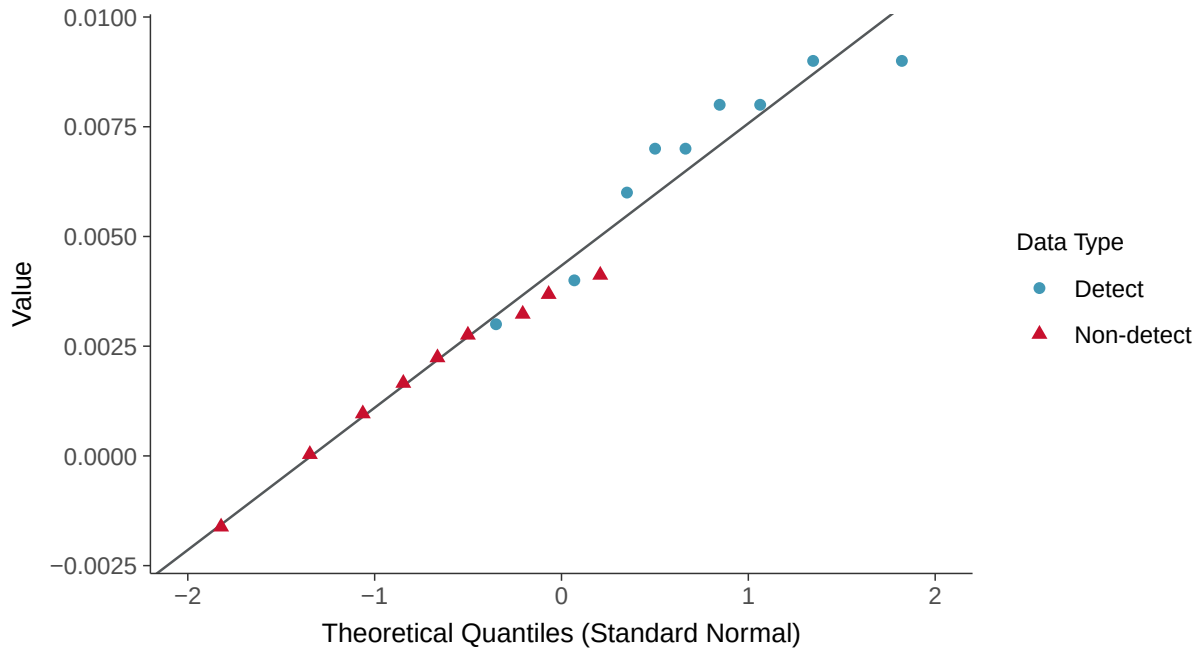
### Boxplot by Well

Arsenic, MW-11B & MW-12B (mg/L)



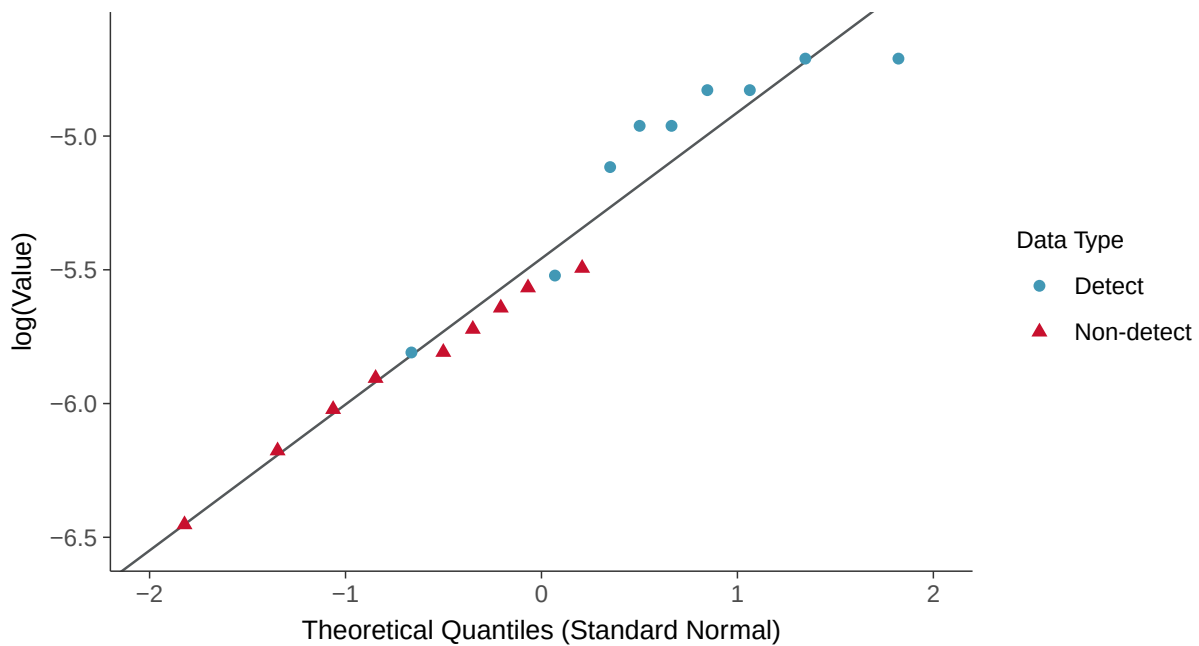
### Normal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-11B & MW-12B (mg/L)



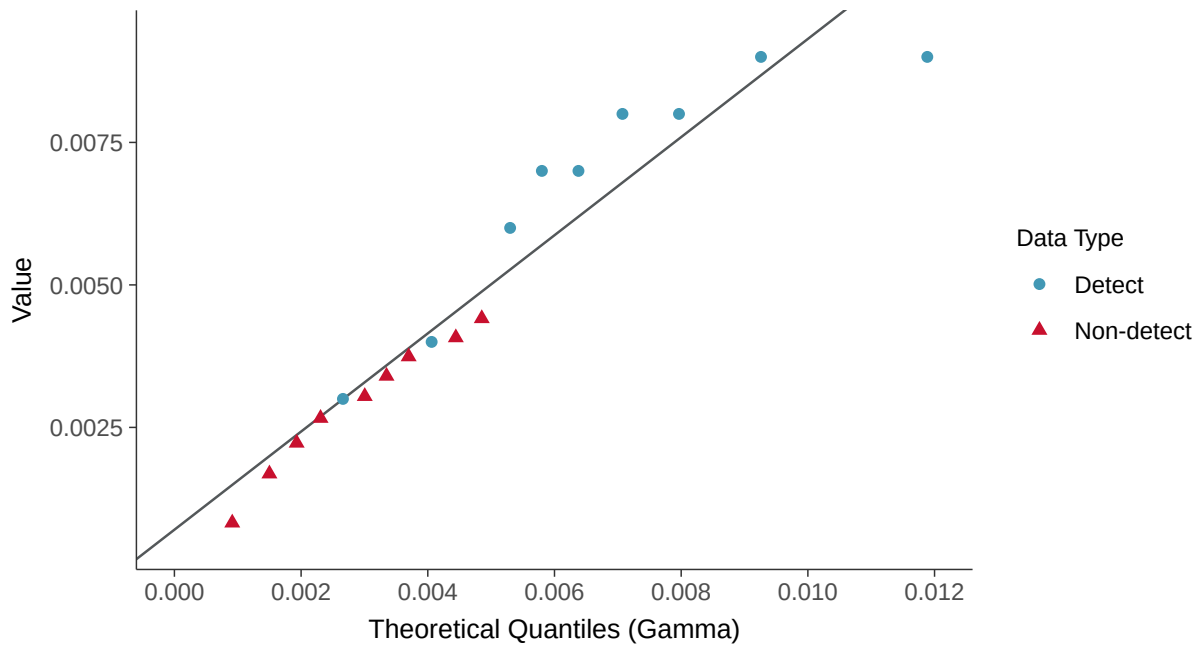
### Lognormal Q-Q plot using ROS Imputed Estimates

Arsenic, MW-11B & MW-12B (mg/L)



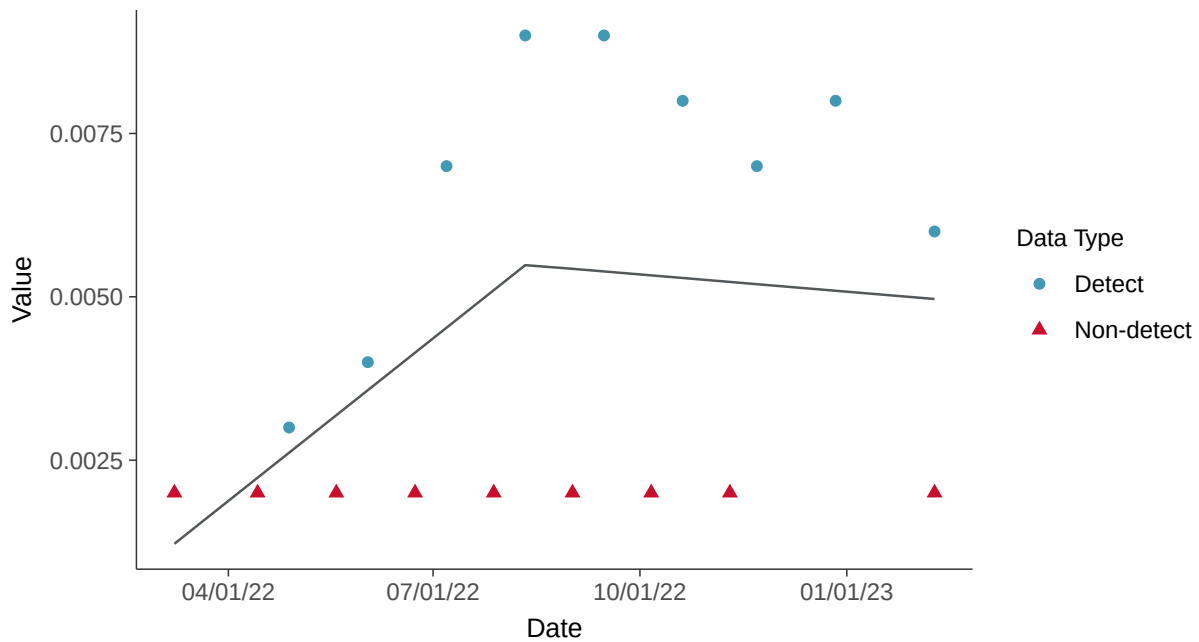
### Gamma Q-Q plot using ROS Imputed Estimates

Arsenic, MW-11B & MW-12B (mg/L)



### Trend Regression: Piecewise Linear-Linear

Arsenic, MW-11B & MW-12B (mg/L)



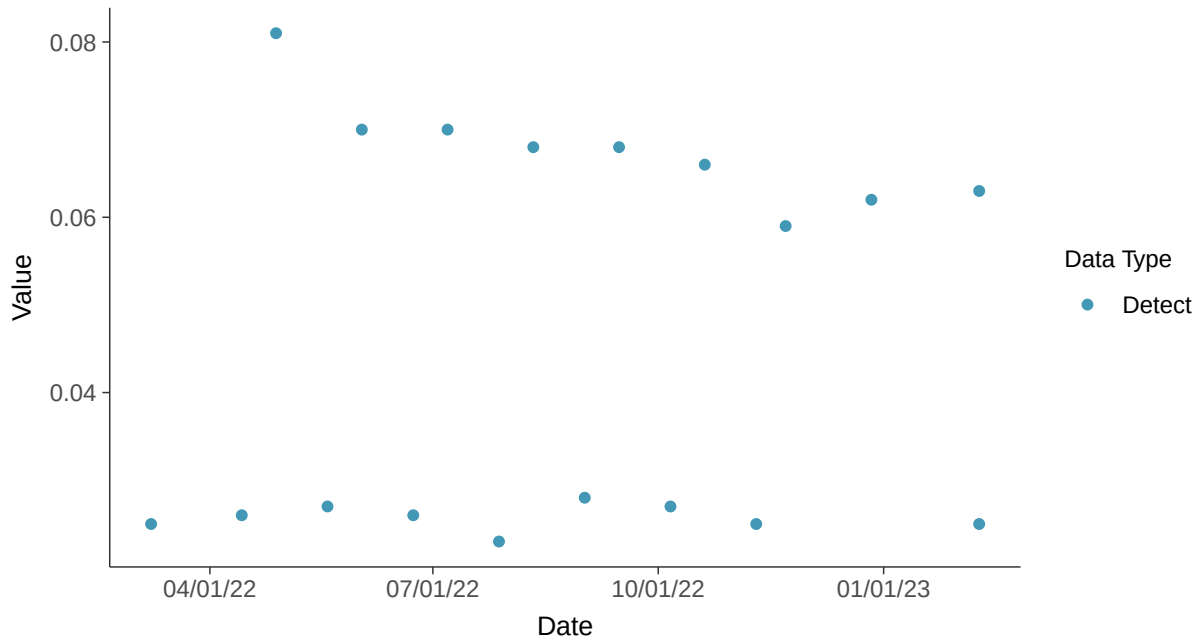


## Appendix IV: Barium, MW-11B & MW-12B

ID: 2\_10

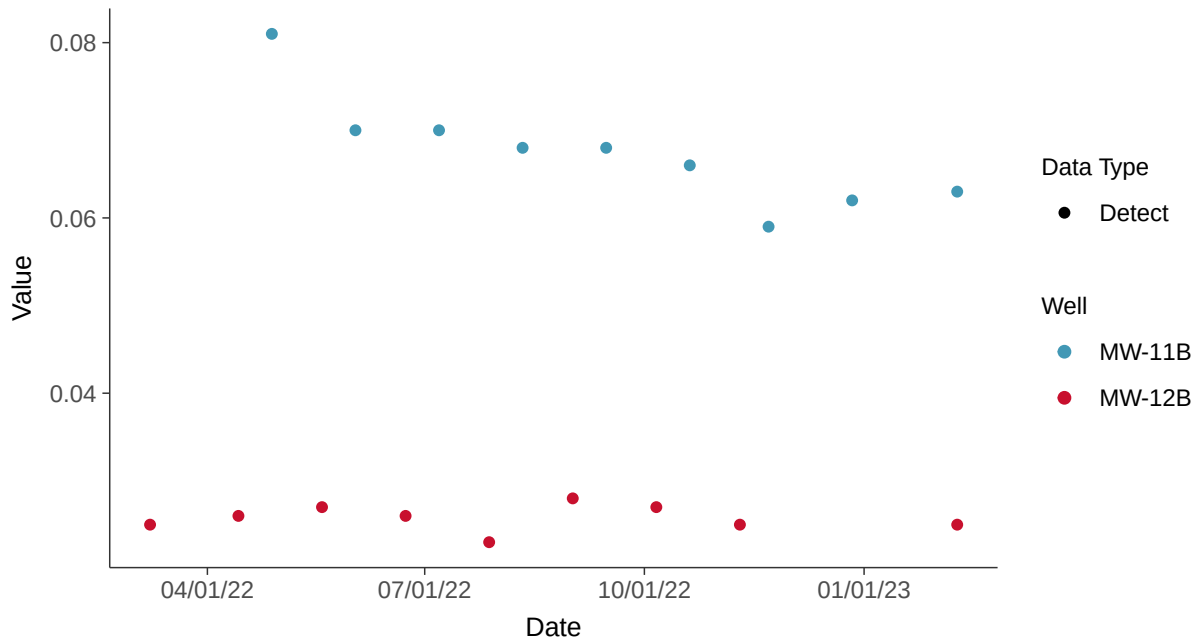
### Scatter Plot

Barium, MW-11B & MW-12B (mg/L)



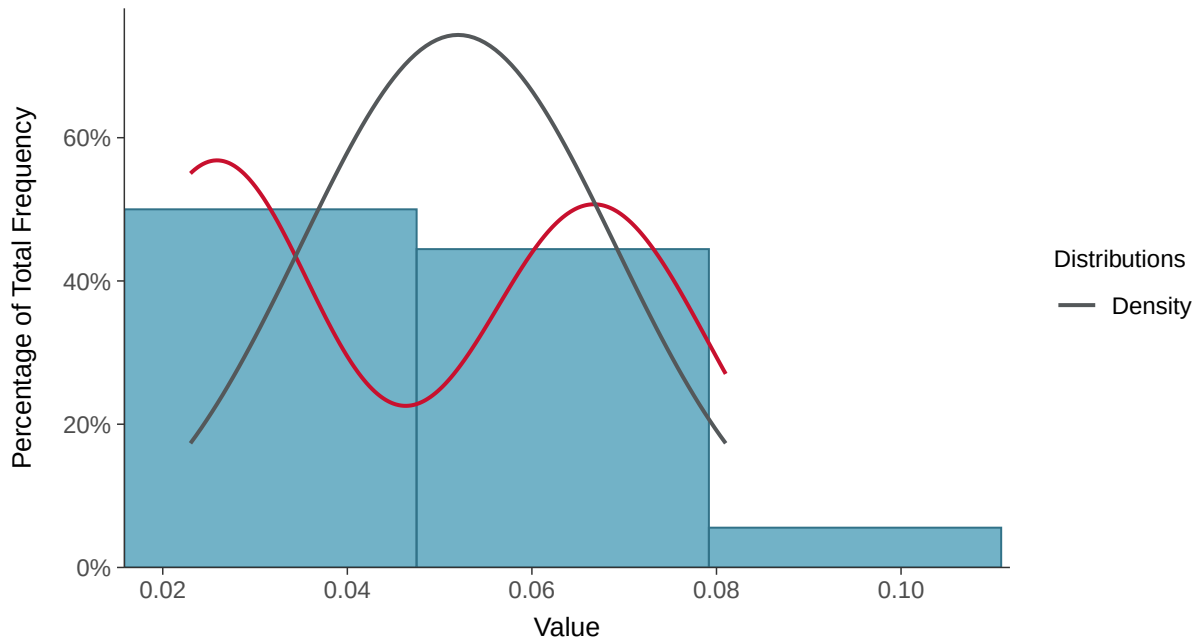
### Scatter Plot by Well

Barium, MW-11B & MW-12B (mg/L)



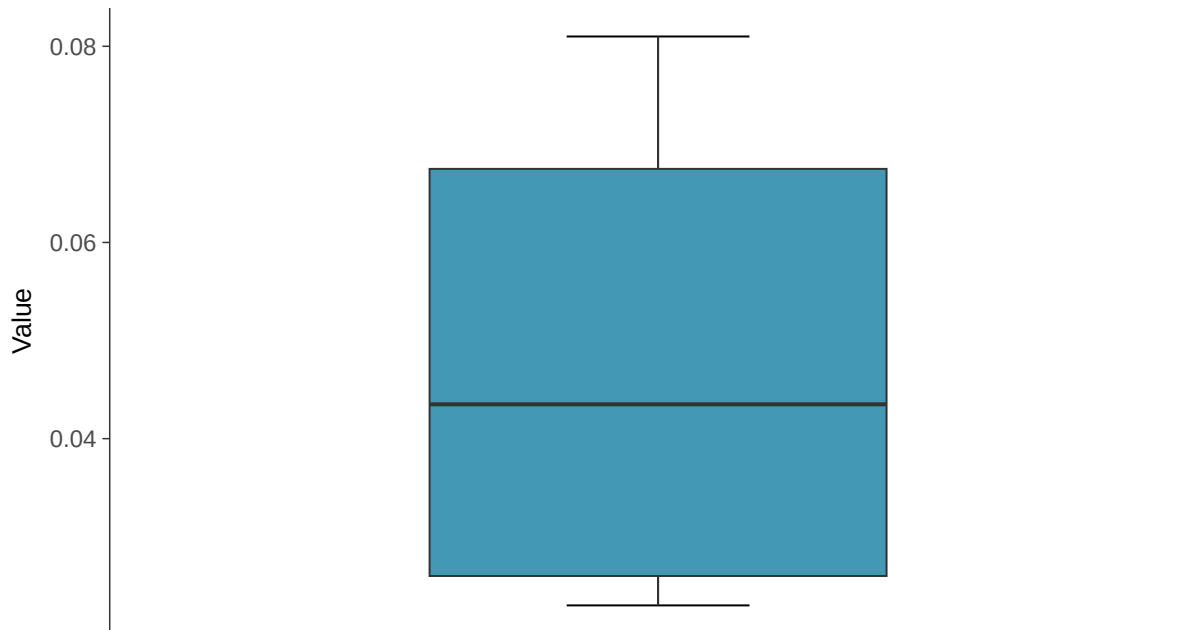
### Histogram

Barium, MW-11B & MW-12B (mg/L)



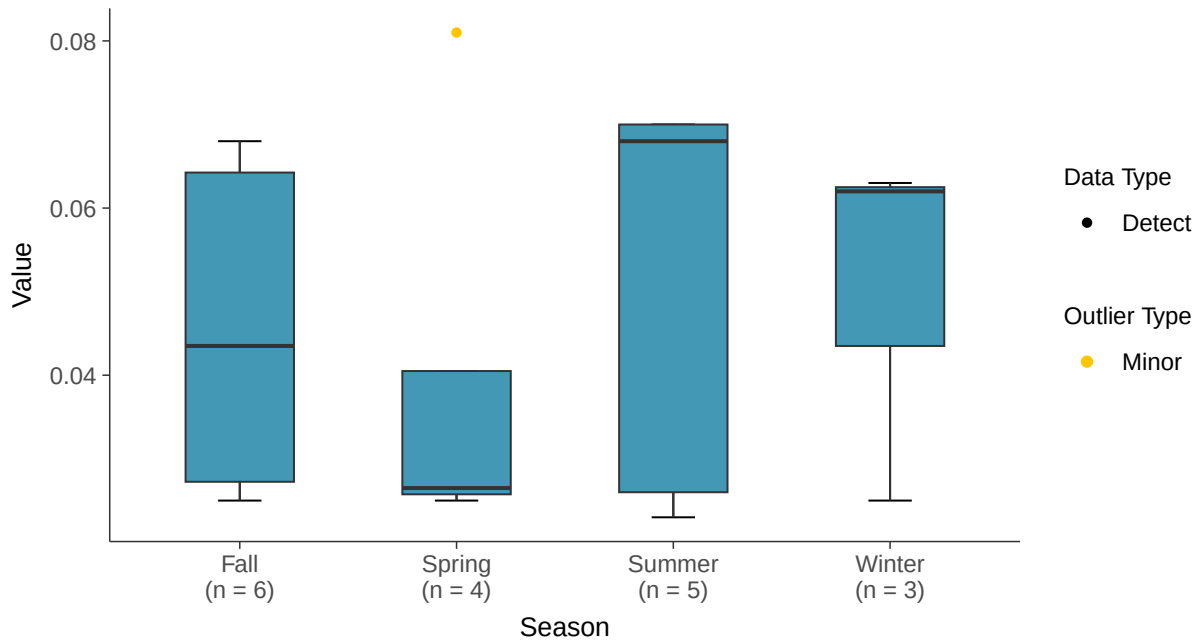
### Boxplot

Barium, MW-11B & MW-12B (mg/L)



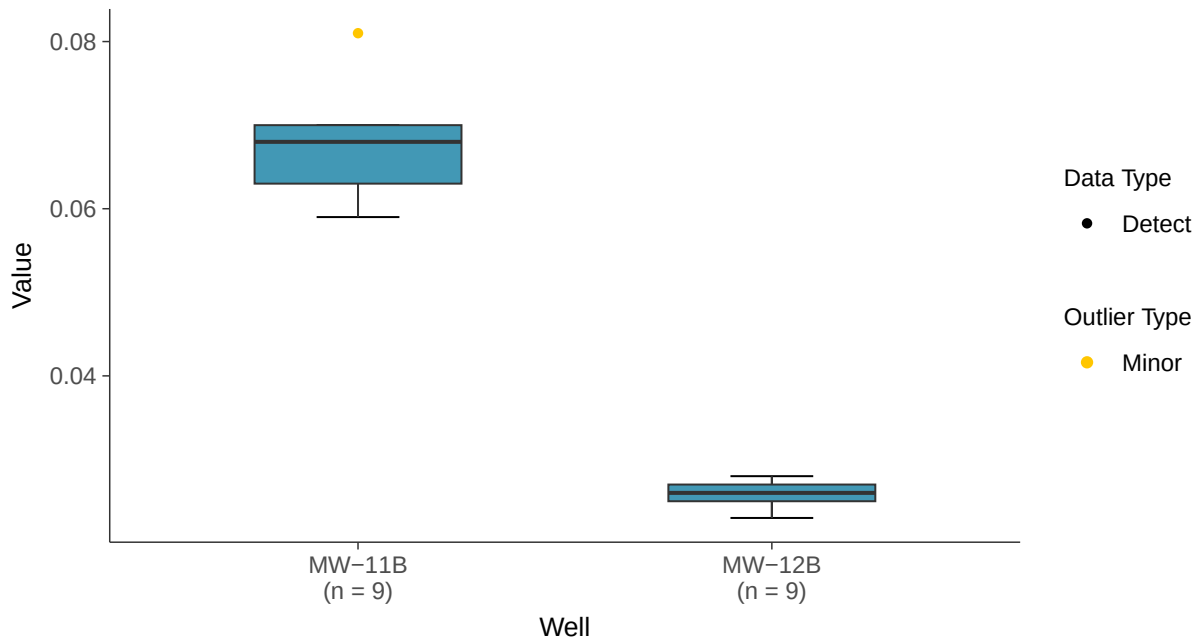
### Boxplot by Season

Barium, MW-11B & MW-12B (mg/L)



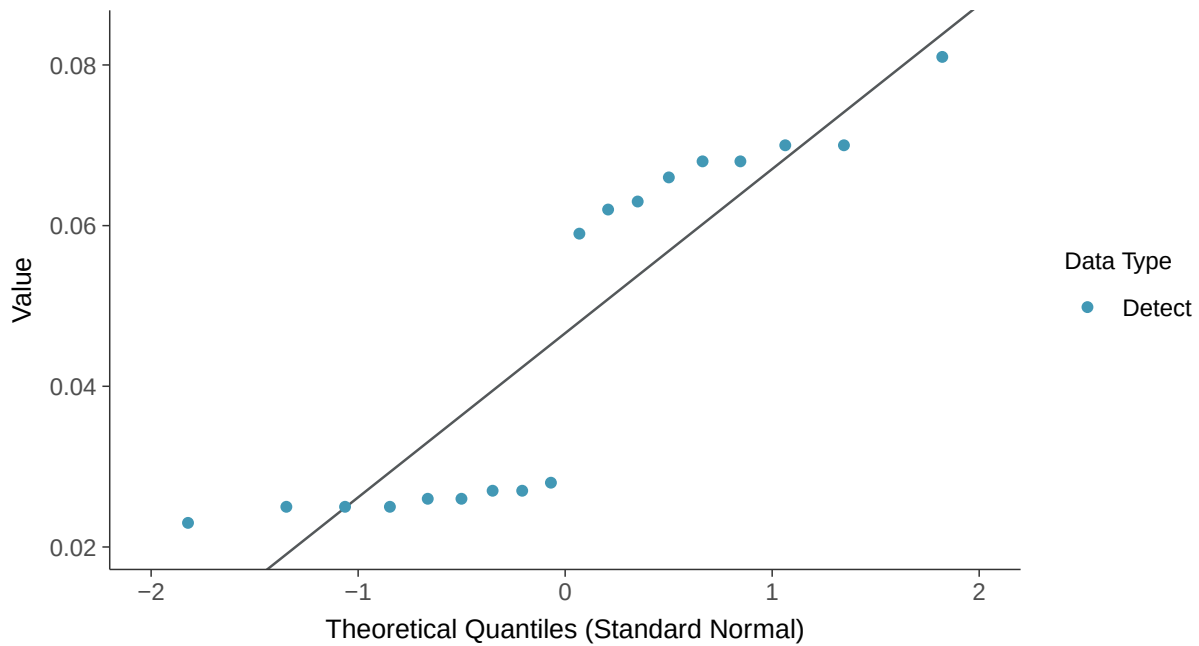
### Boxplot by Well

Barium, MW-11B & MW-12B (mg/L)



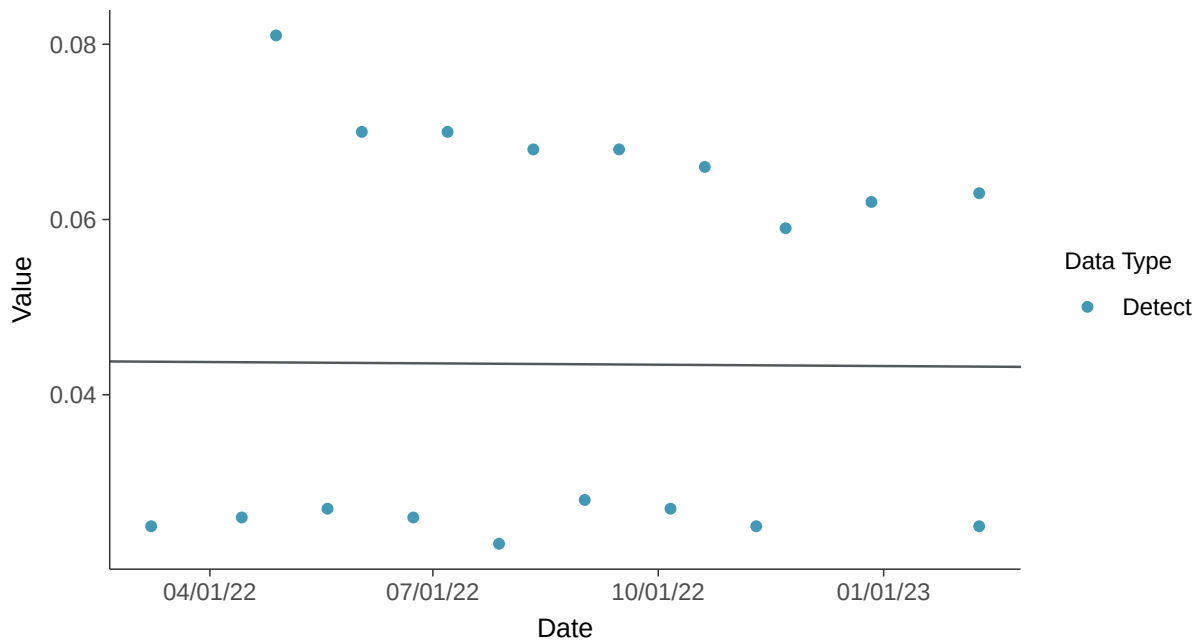
### Normal Q-Q plot

Barium, MW-11B & MW-12B (mg/L)



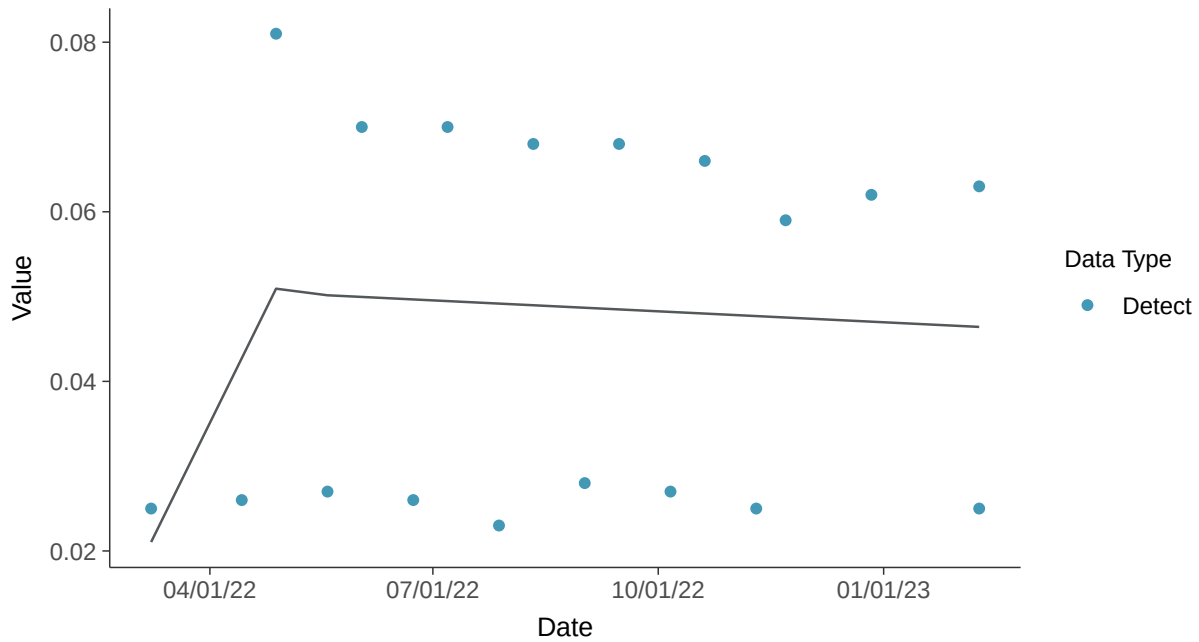
### Trend Regression: Mann-Kendall/Theil-Sen Estimate

Barium, MW-11B & MW-12B (mg/L)



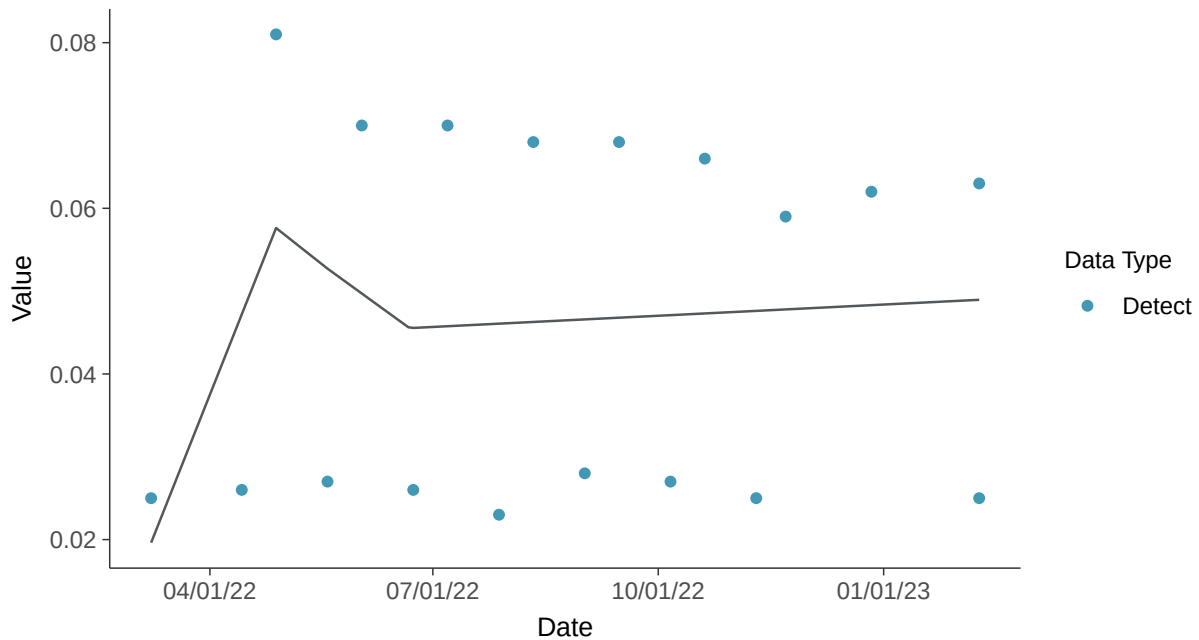
### Trend Regression: Piecewise Linear-Linear

Barium, MW-11B & MW-12B (mg/L)



### Trend Regression: Piecewise Linear-Linear-Linear

Barium, MW-11B & MW-12B (mg/L)



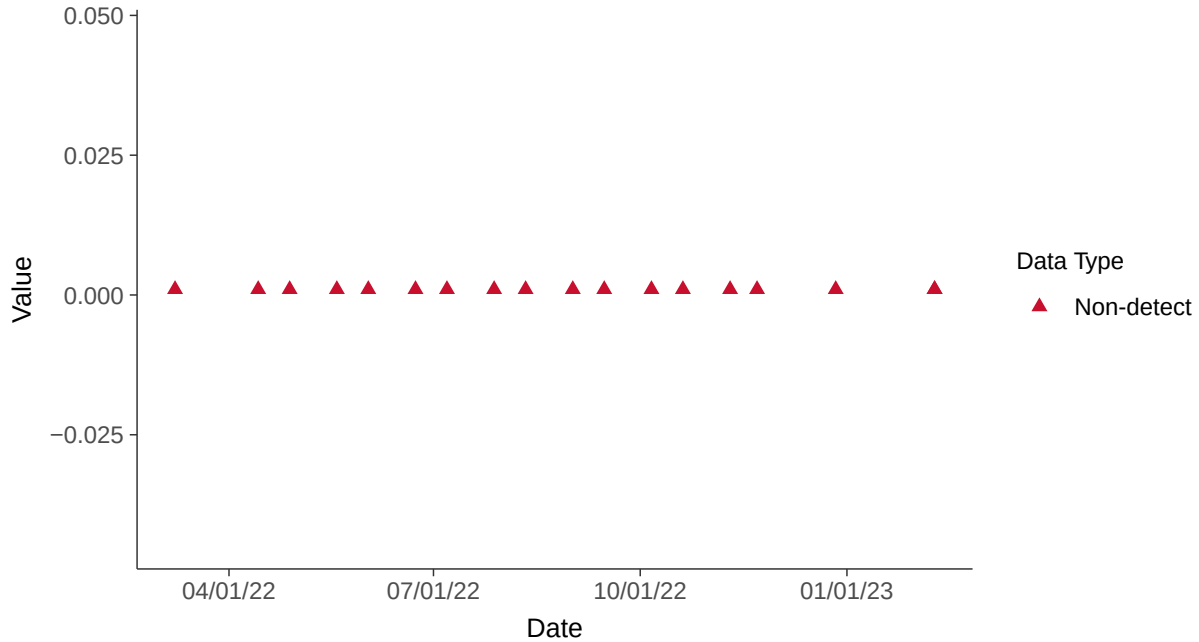


## Appendix IV: Beryllium, MW-11B & MW-12B

ID: 2\_11

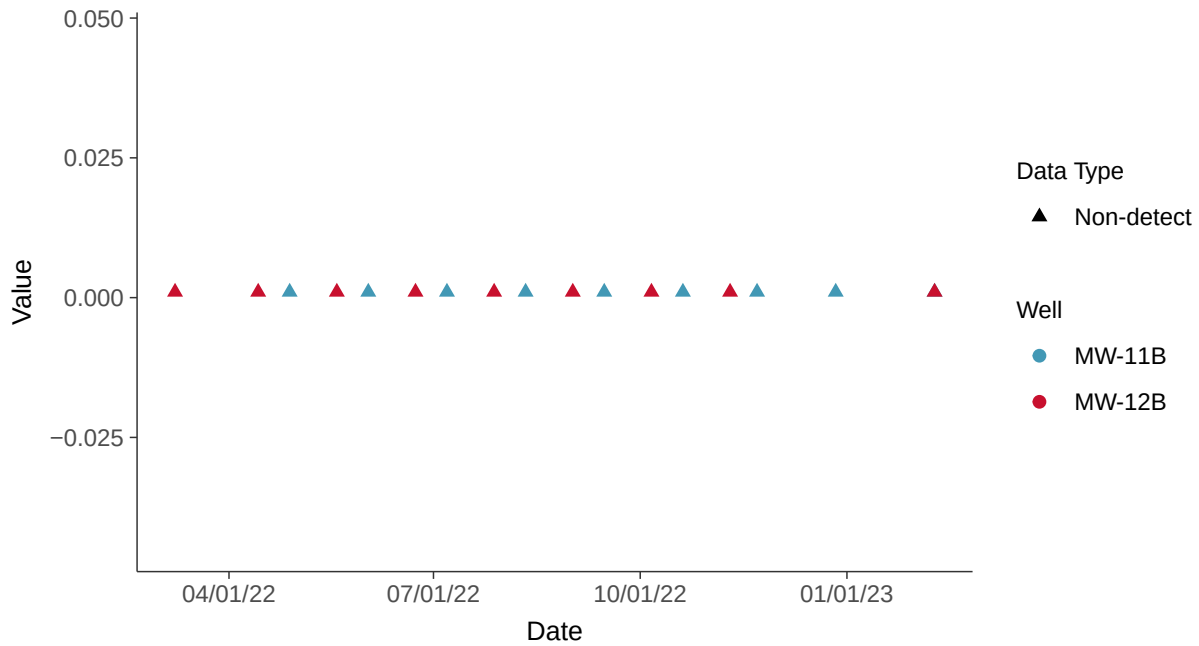
### Scatter Plot

Beryllium, MW-11B & MW-12B (mg/L)



### Scatter Plot by Well

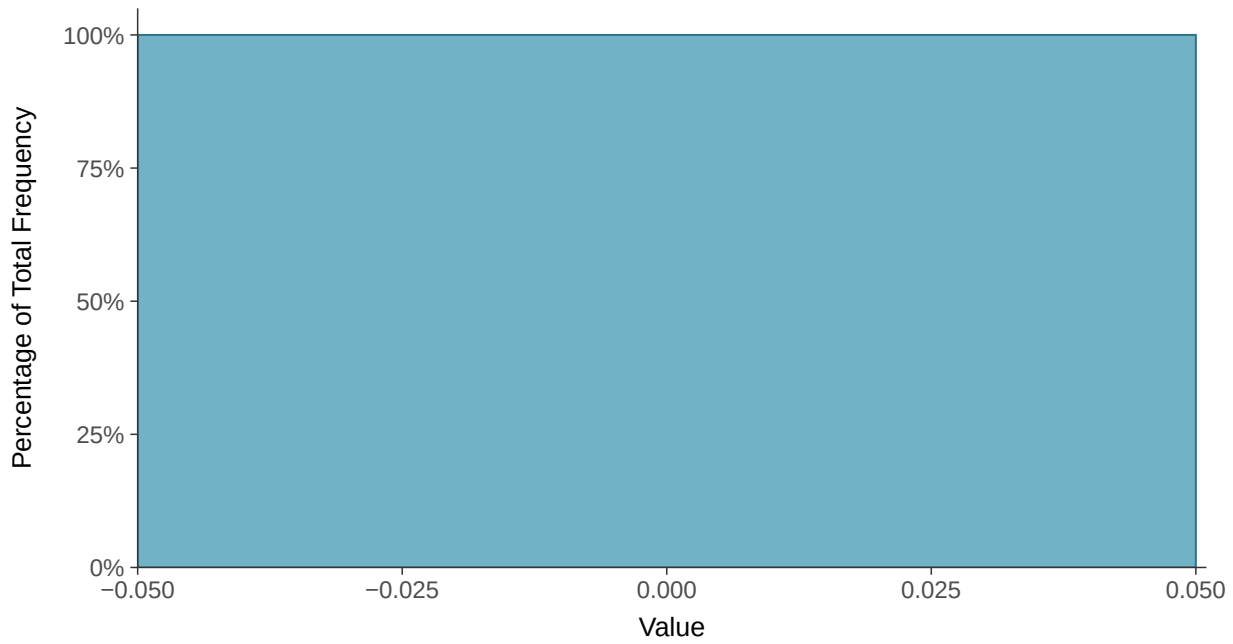
Beryllium, MW-11B & MW-12B (mg/L)





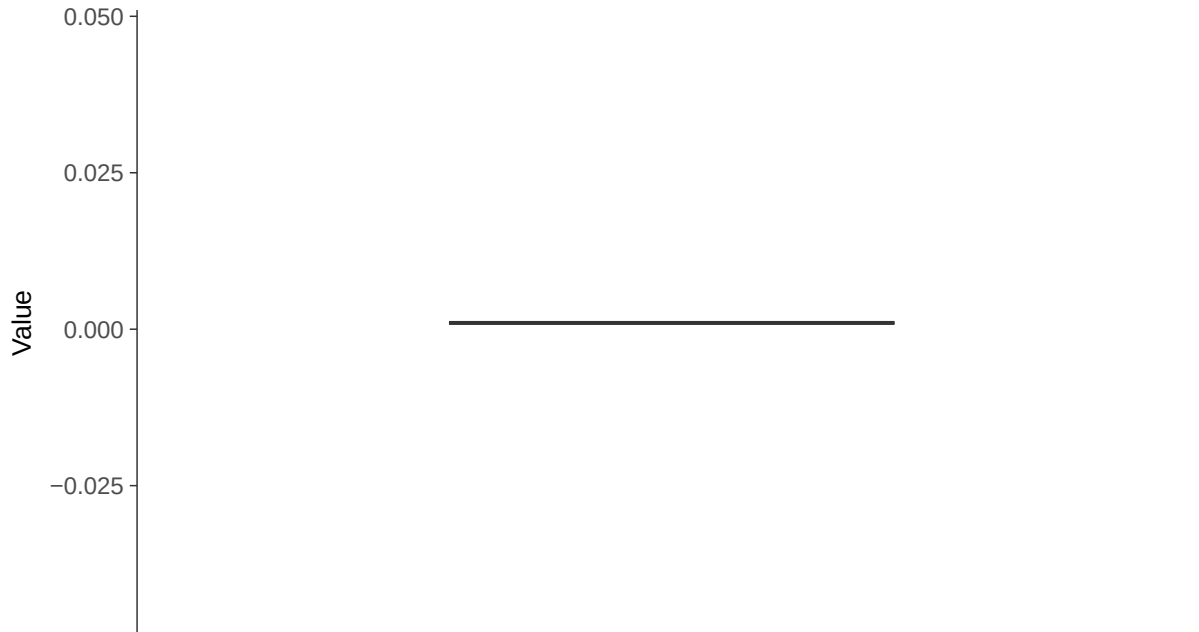
### Histogram

Beryllium, MW-11B & MW-12B (mg/L)



### Boxplot

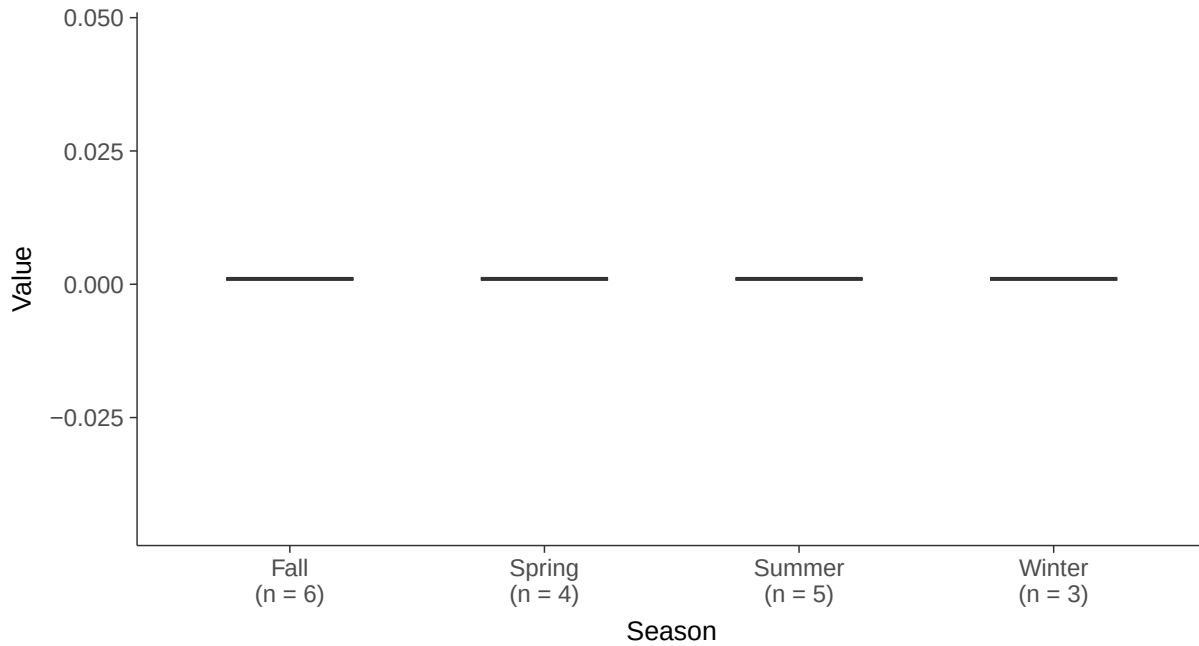
Beryllium, MW-11B & MW-12B (mg/L)





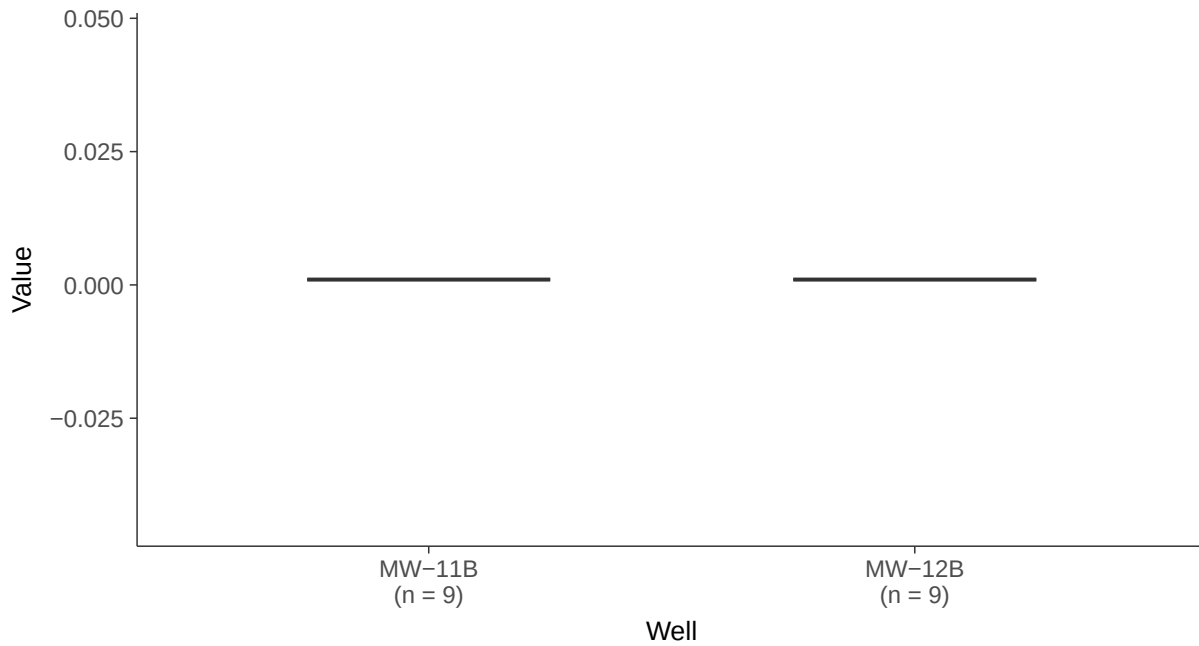
### Boxplot by Season

Beryllium, MW-11B & MW-12B (mg/L)



### Boxplot by Well

Beryllium, MW-11B & MW-12B (mg/L)



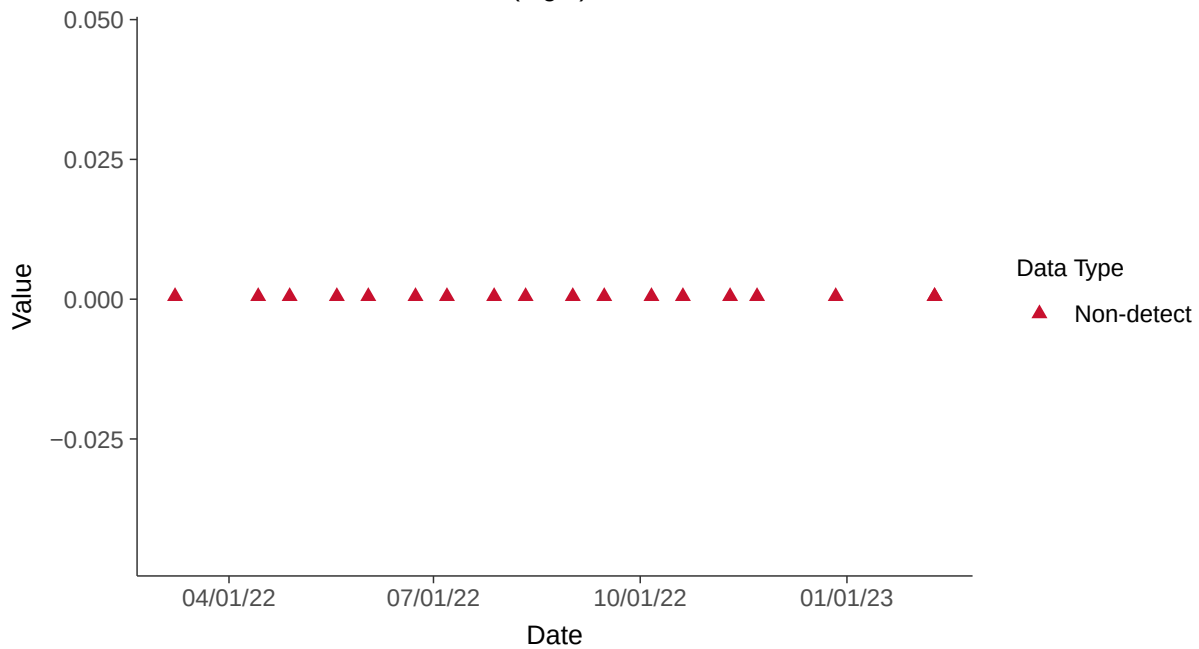


## Appendix IV: Cadmium, MW-11B & MW-12B

ID: 2\_12

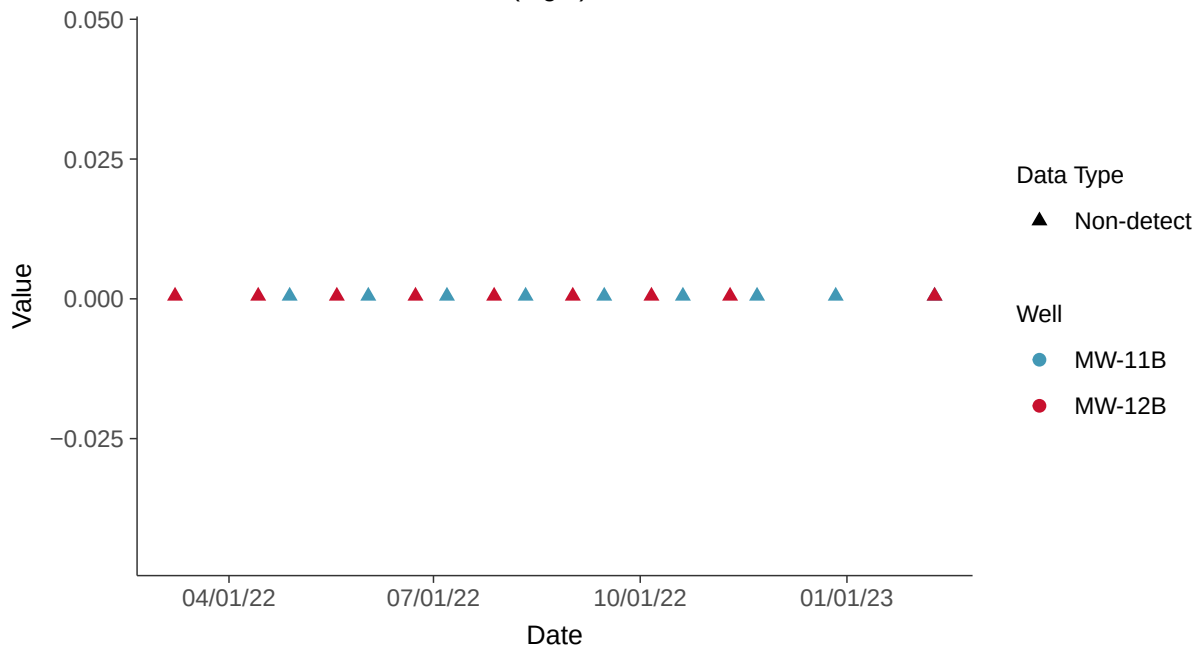
### Scatter Plot

Cadmium, MW-11B & MW-12B (mg/L)



### Scatter Plot by Well

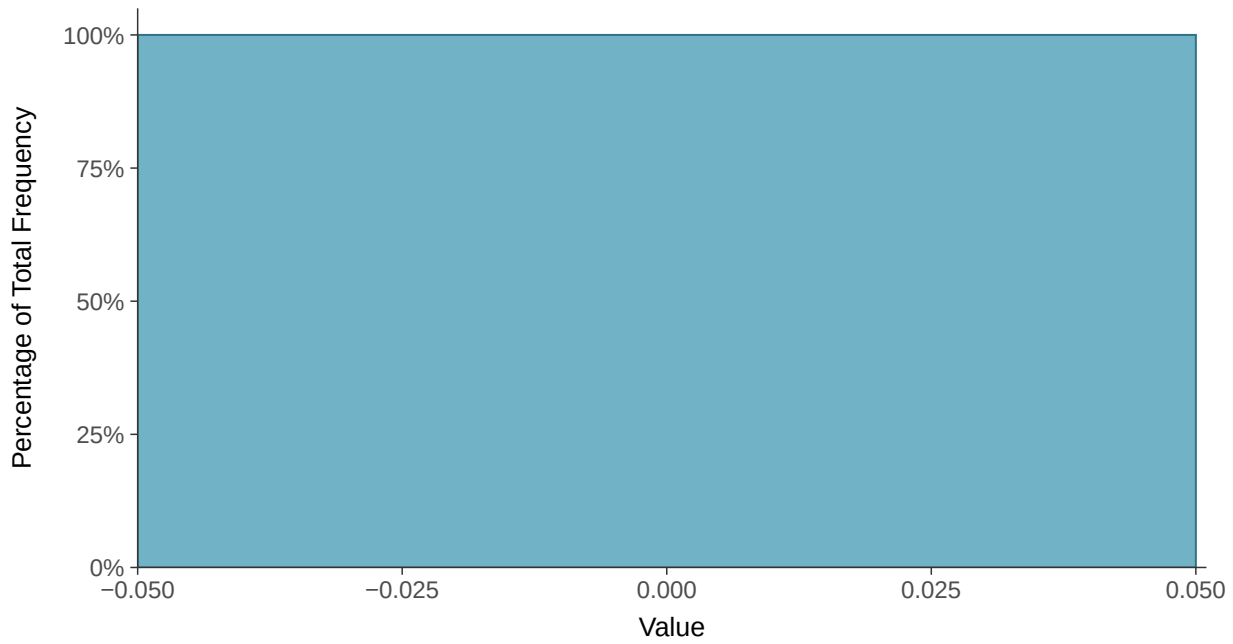
Cadmium, MW-11B & MW-12B (mg/L)





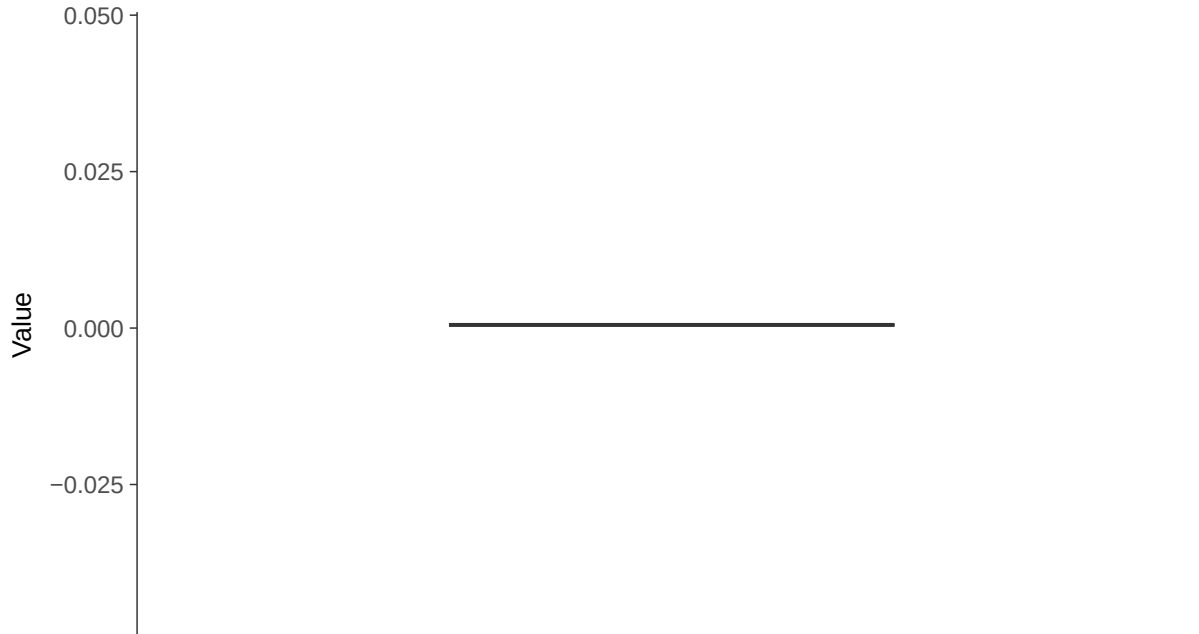
### Histogram

Cadmium, MW-11B & MW-12B (mg/L)



### Boxplot

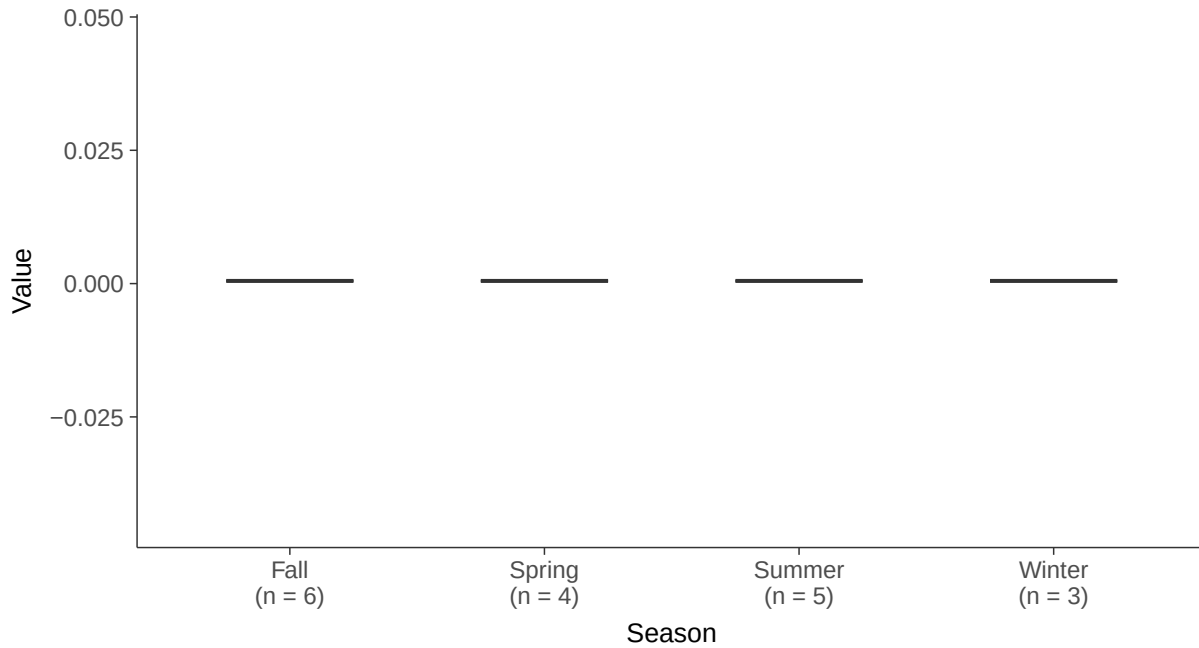
Cadmium, MW-11B & MW-12B (mg/L)





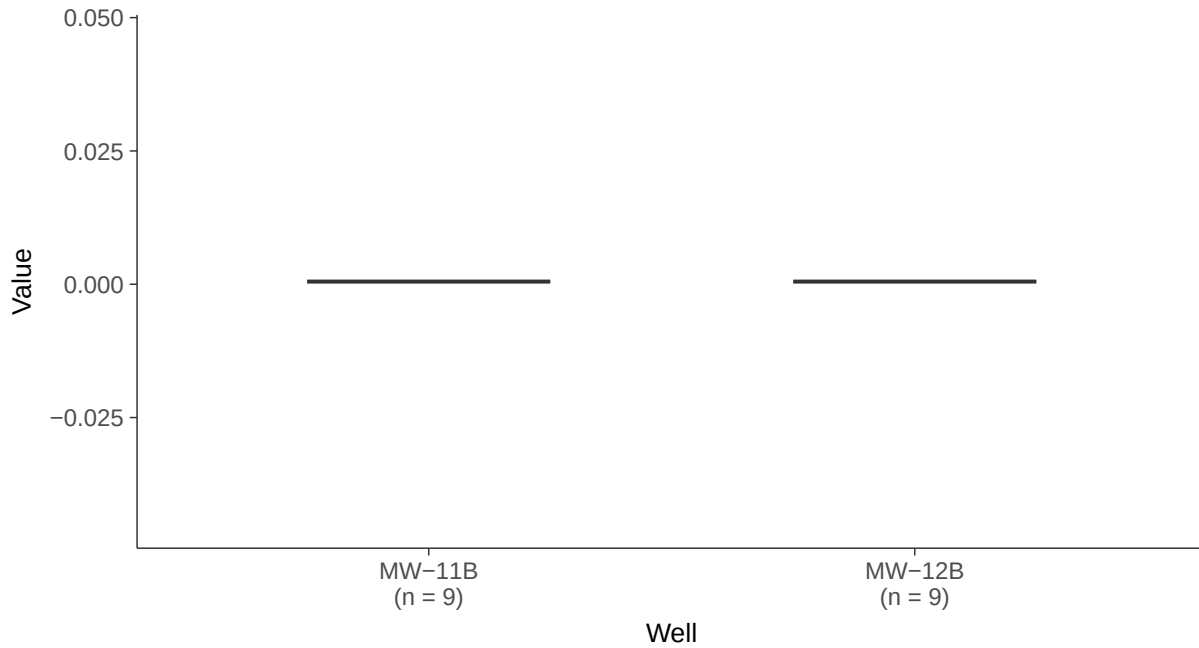
### Boxplot by Season

Cadmium, MW-11B & MW-12B (mg/L)



### Boxplot by Well

Cadmium, MW-11B & MW-12B (mg/L)

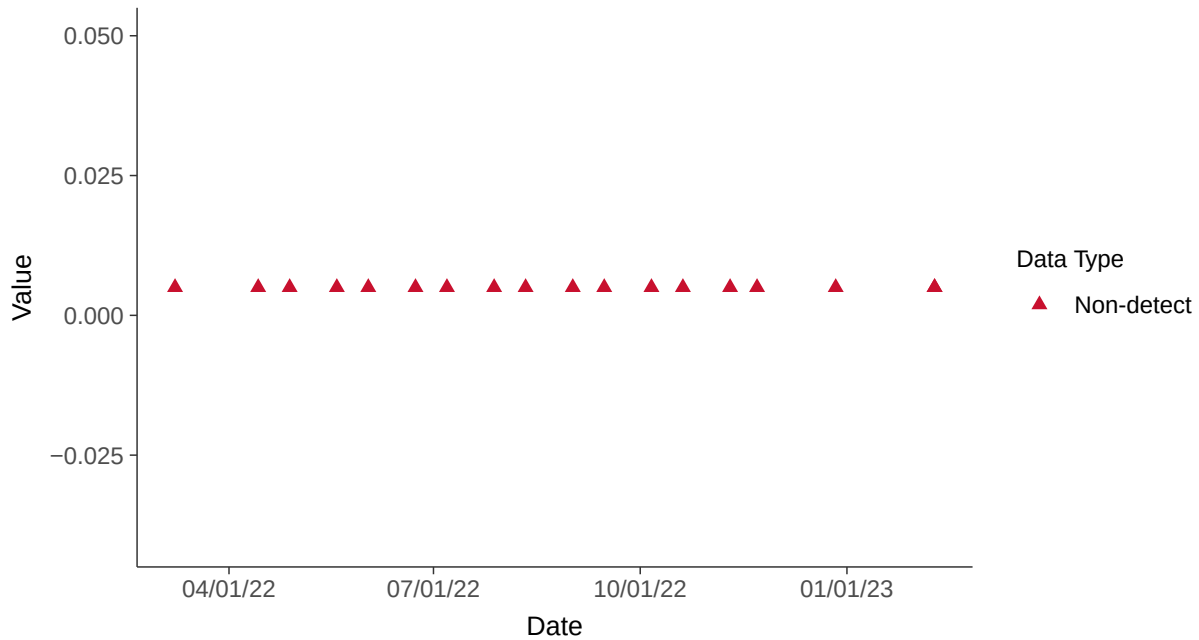


## Appendix IV: Chromium, MW-11B & MW-12B

ID: 2\_13

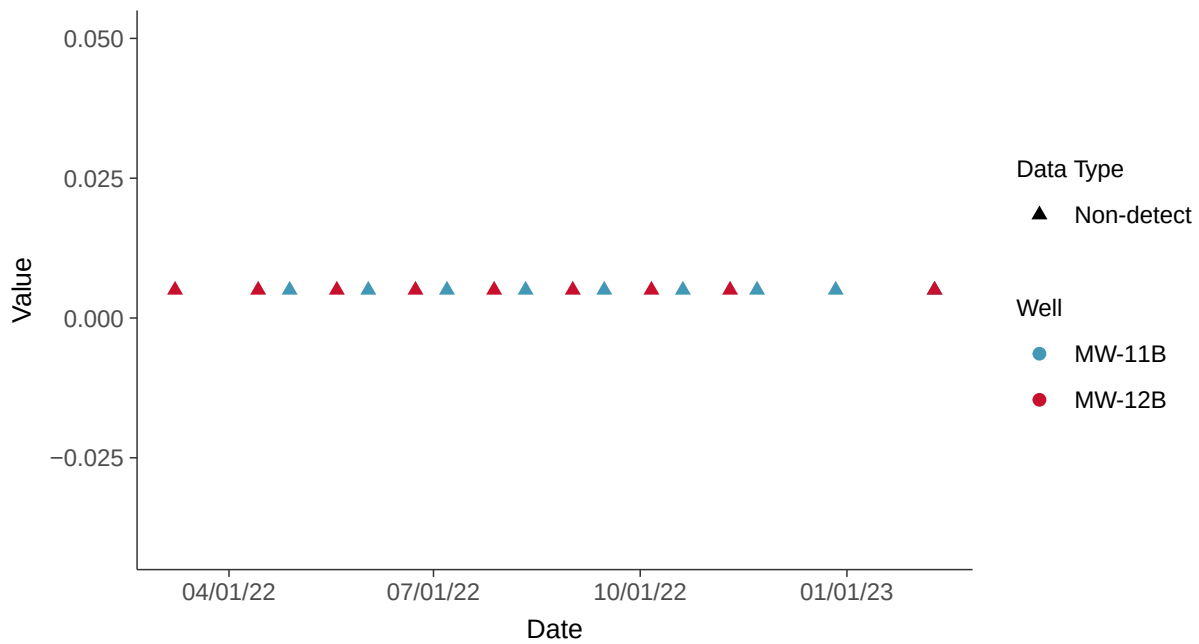
### Scatter Plot

Chromium, MW-11B & MW-12B (mg/L)



### Scatter Plot by Well

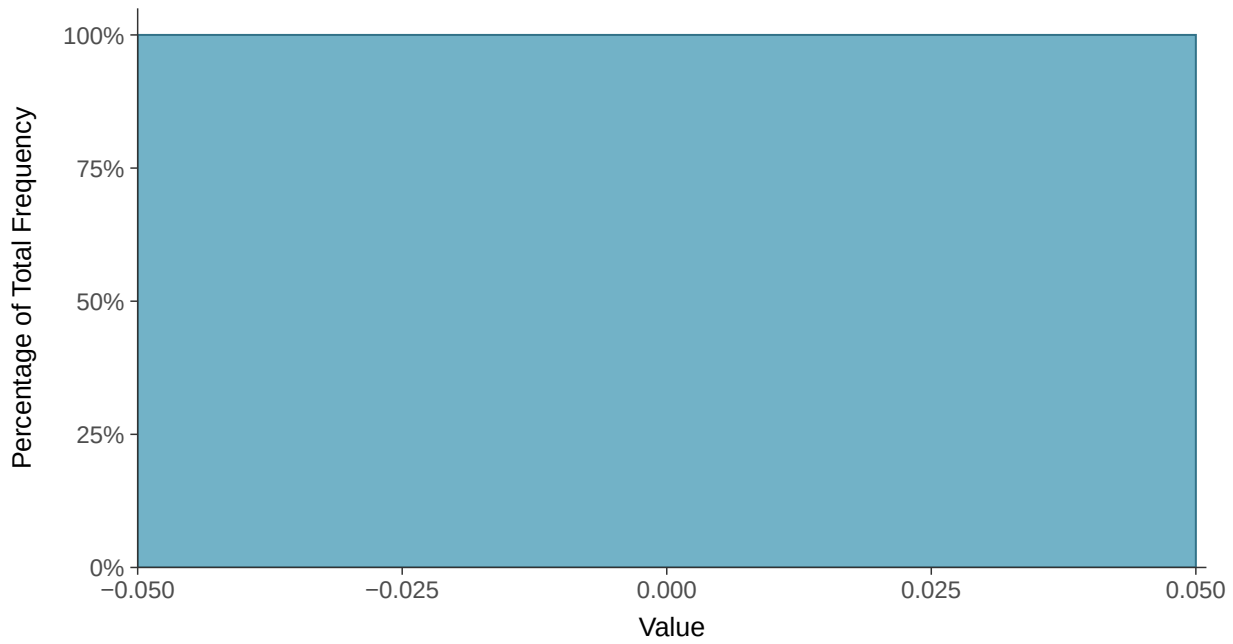
Chromium, MW-11B & MW-12B (mg/L)





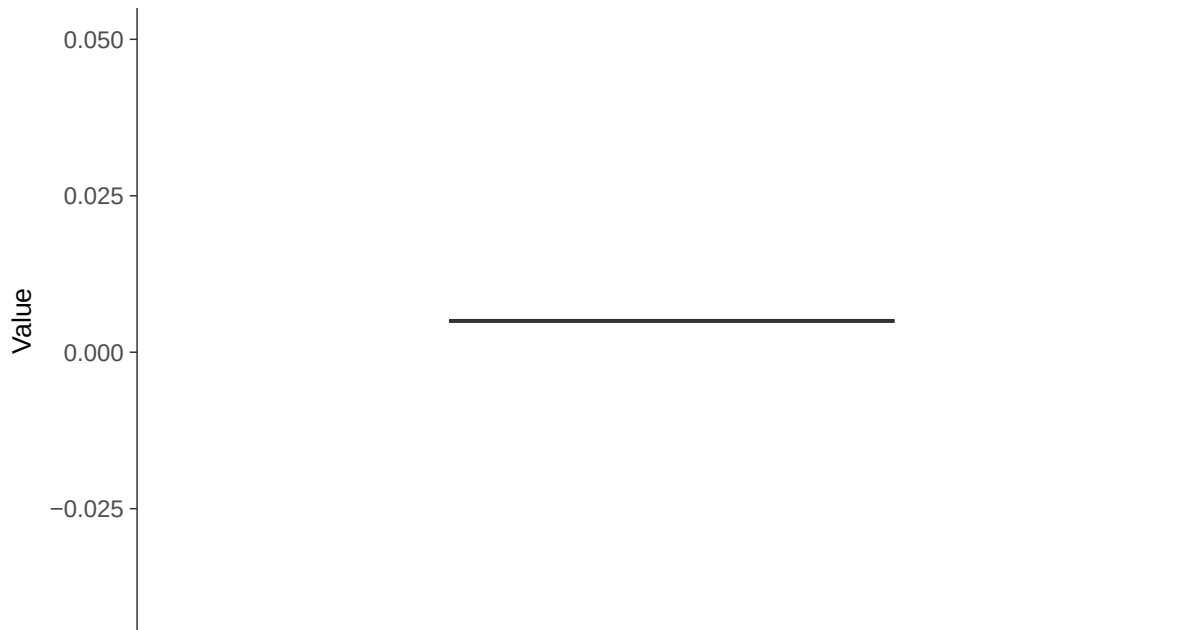
### Histogram

Chromium, MW-11B & MW-12B (mg/L)



### Boxplot

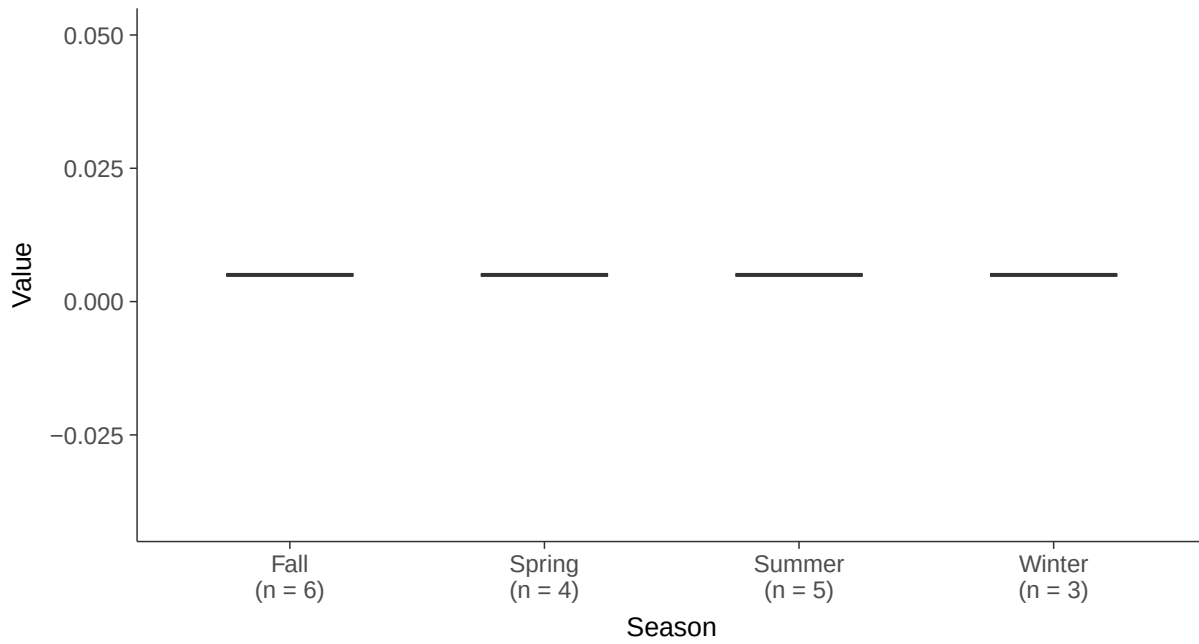
Chromium, MW-11B & MW-12B (mg/L)





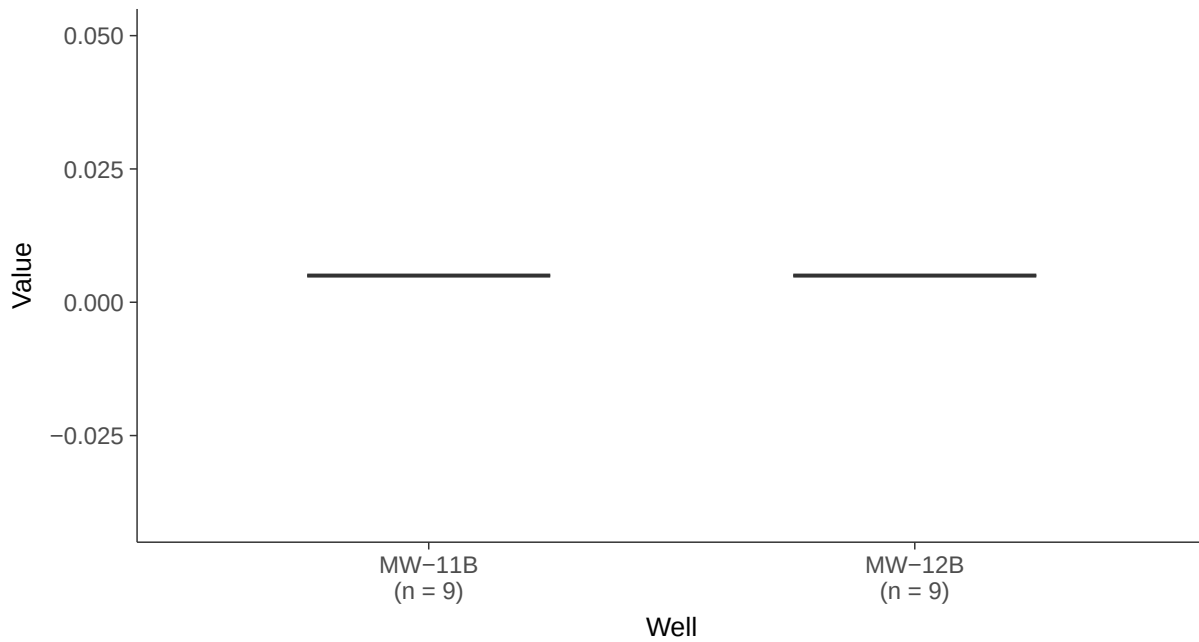
### Boxplot by Season

Chromium, MW-11B & MW-12B (mg/L)



### Boxplot by Well

Chromium, MW-11B & MW-12B (mg/L)



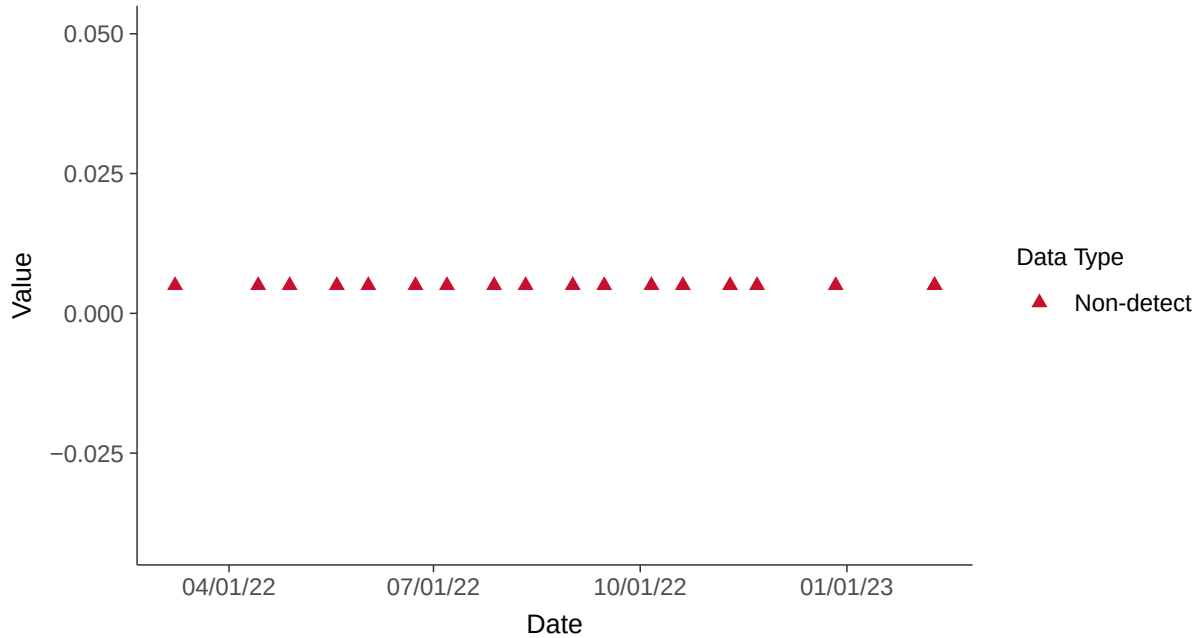


## Appendix IV: Cobalt, MW-11B & MW-12B

ID: 2\_14

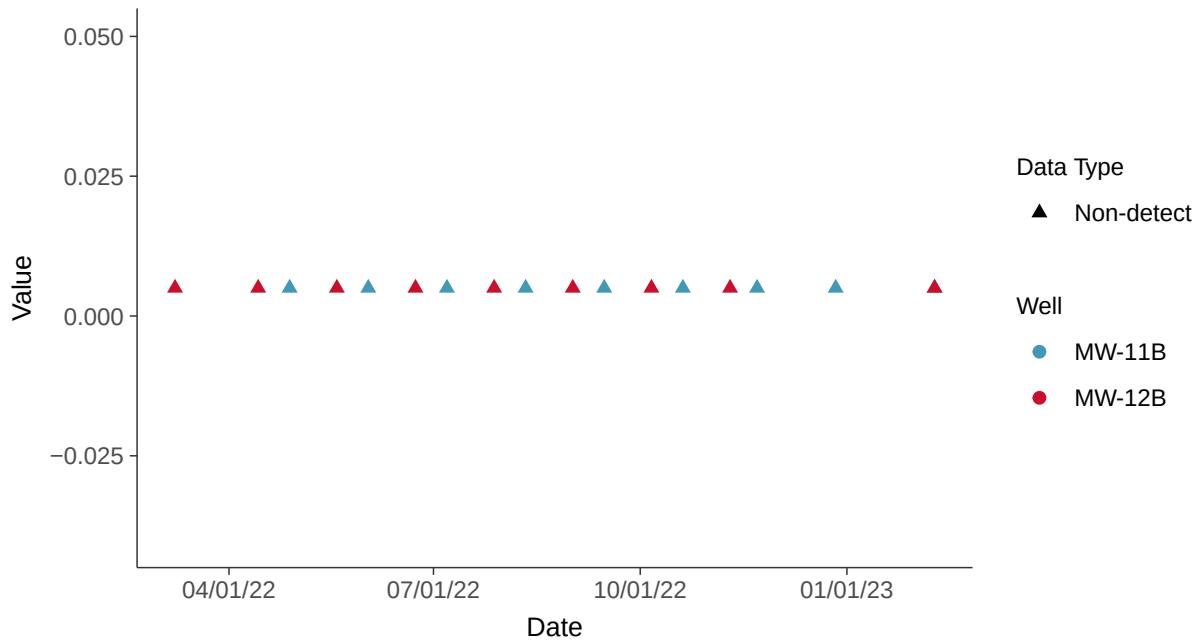
### Scatter Plot

Cobalt, MW-11B & MW-12B (mg/L)



### Scatter Plot by Well

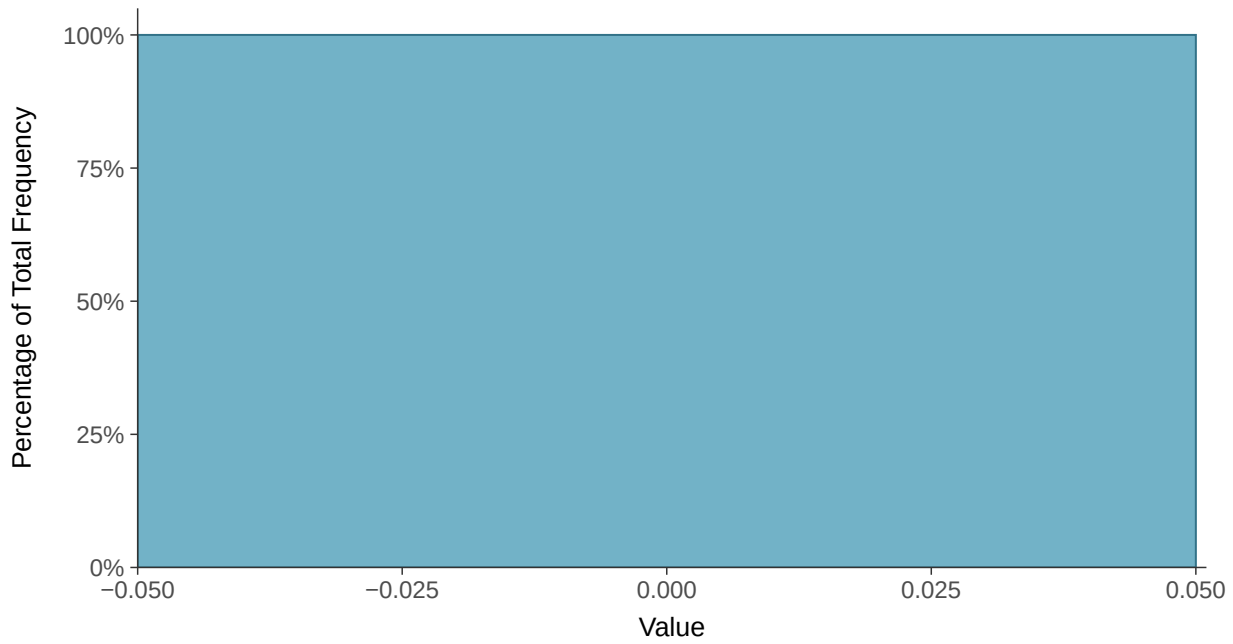
Cobalt, MW-11B & MW-12B (mg/L)





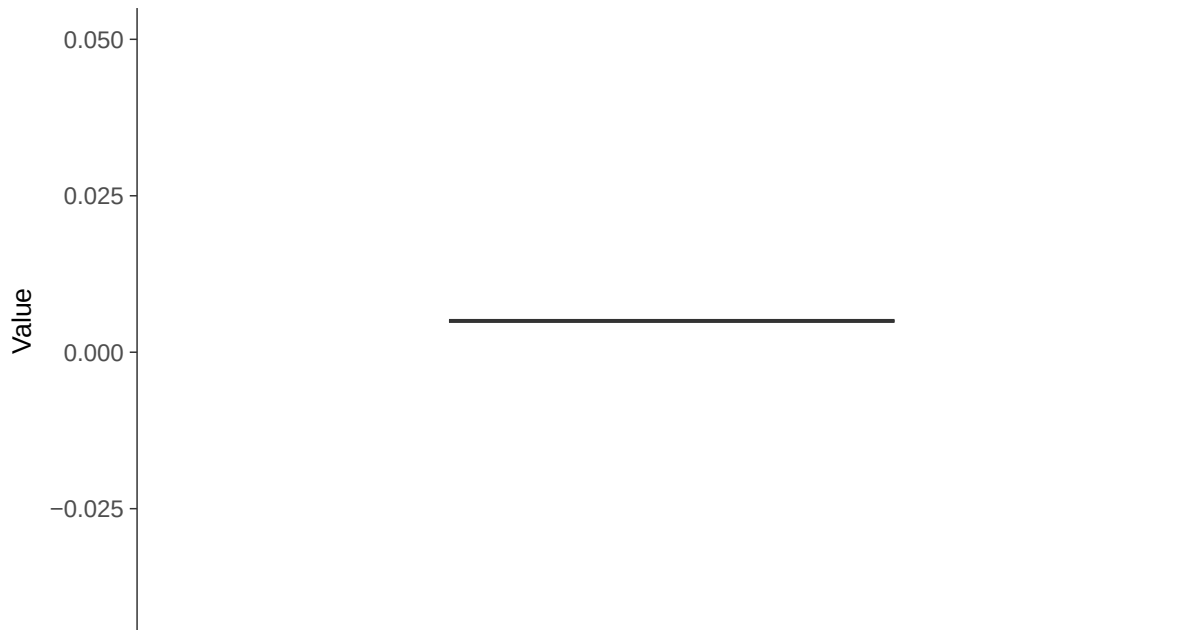
### Histogram

Cobalt, MW-11B & MW-12B (mg/L)



### Boxplot

Cobalt, MW-11B & MW-12B (mg/L)

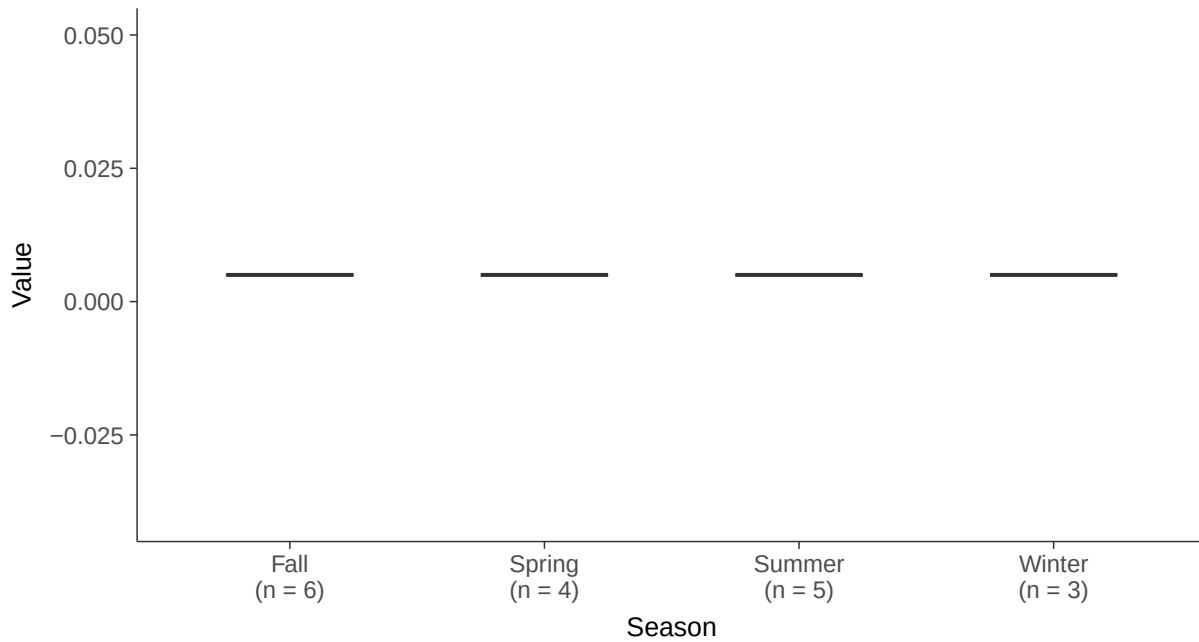






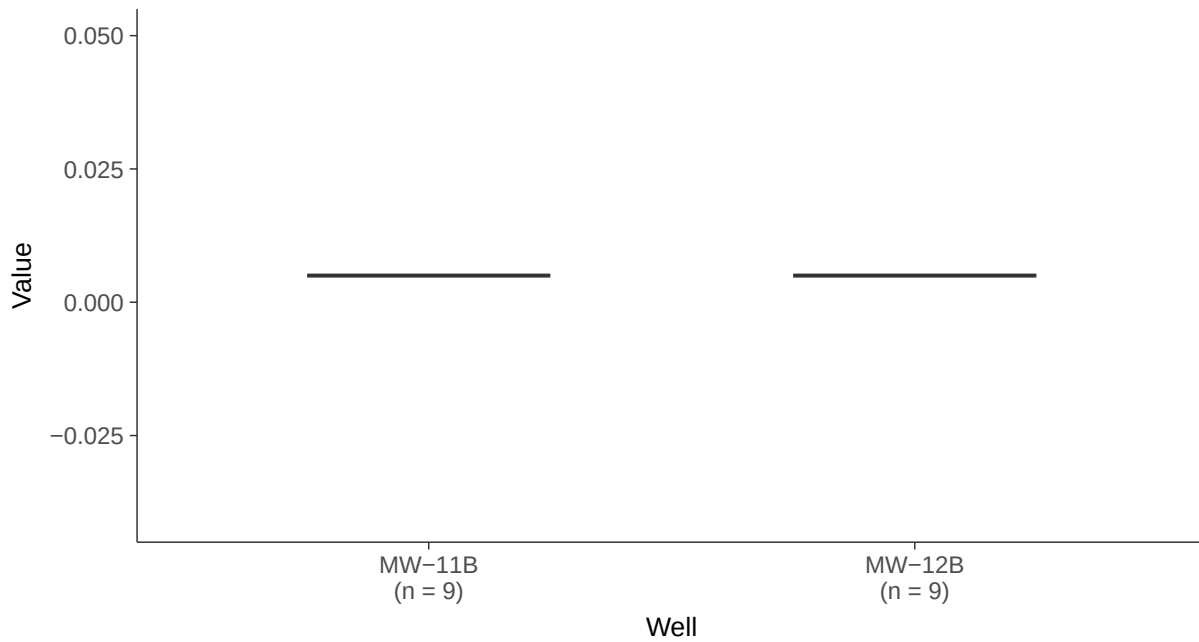
### Boxplot by Season

Cobalt, MW-11B & MW-12B (mg/L)



### Boxplot by Well

Cobalt, MW-11B & MW-12B (mg/L)

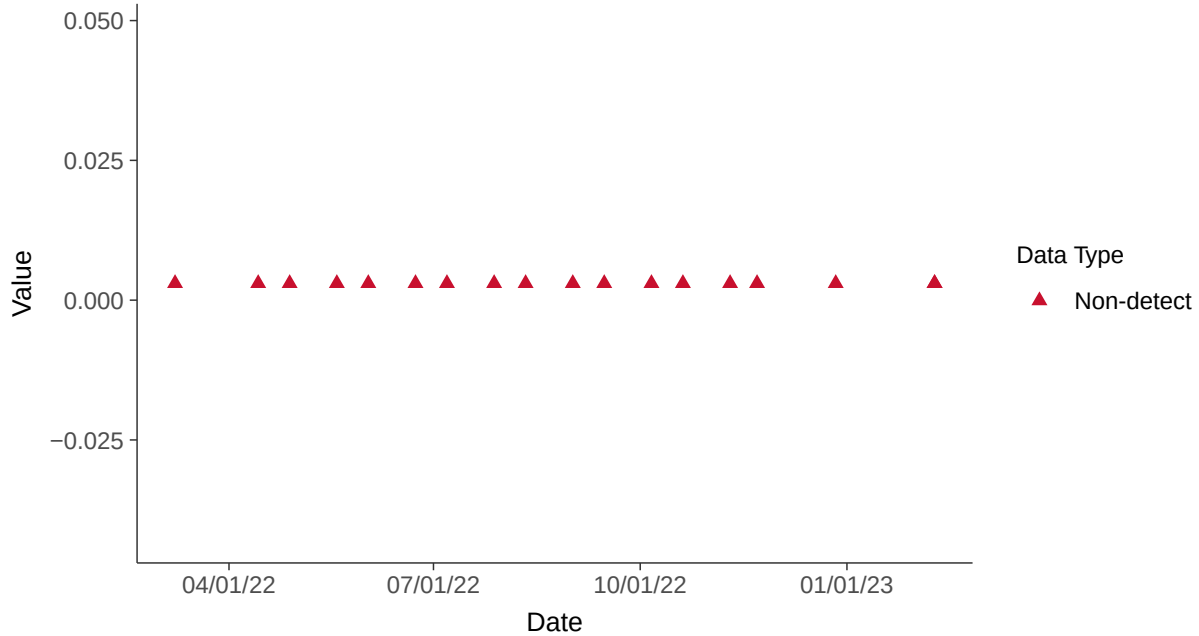


## Appendix IV: Lead, MW-11B & MW-12B

ID: 2\_15

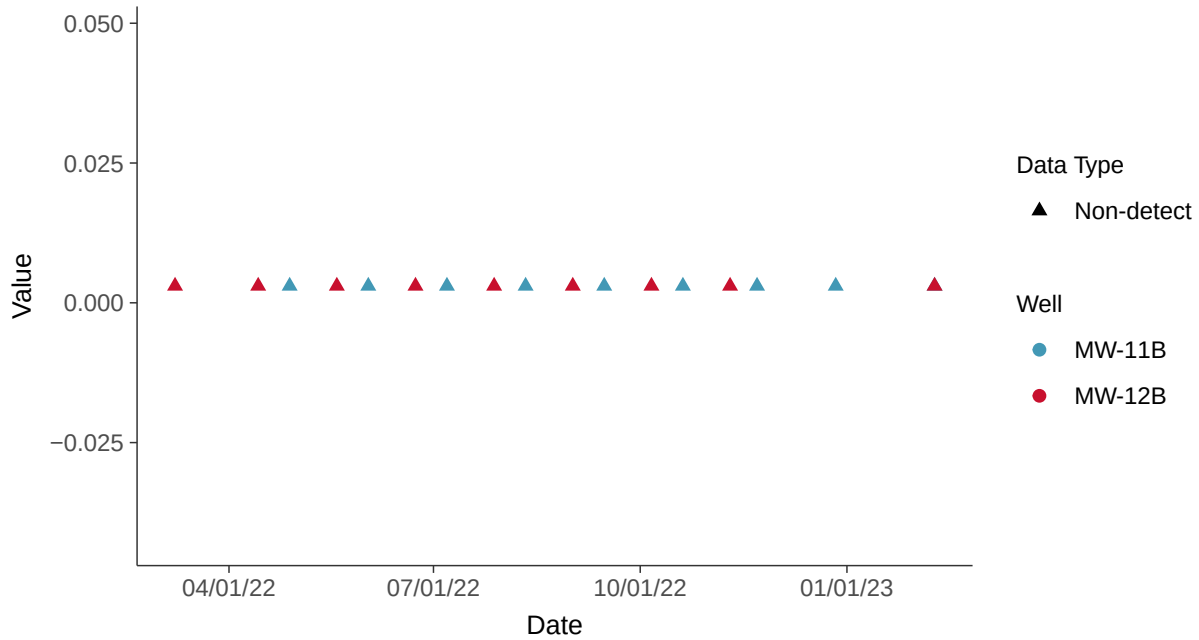
### Scatter Plot

Lead, MW-11B & MW-12B (mg/L)



### Scatter Plot by Well

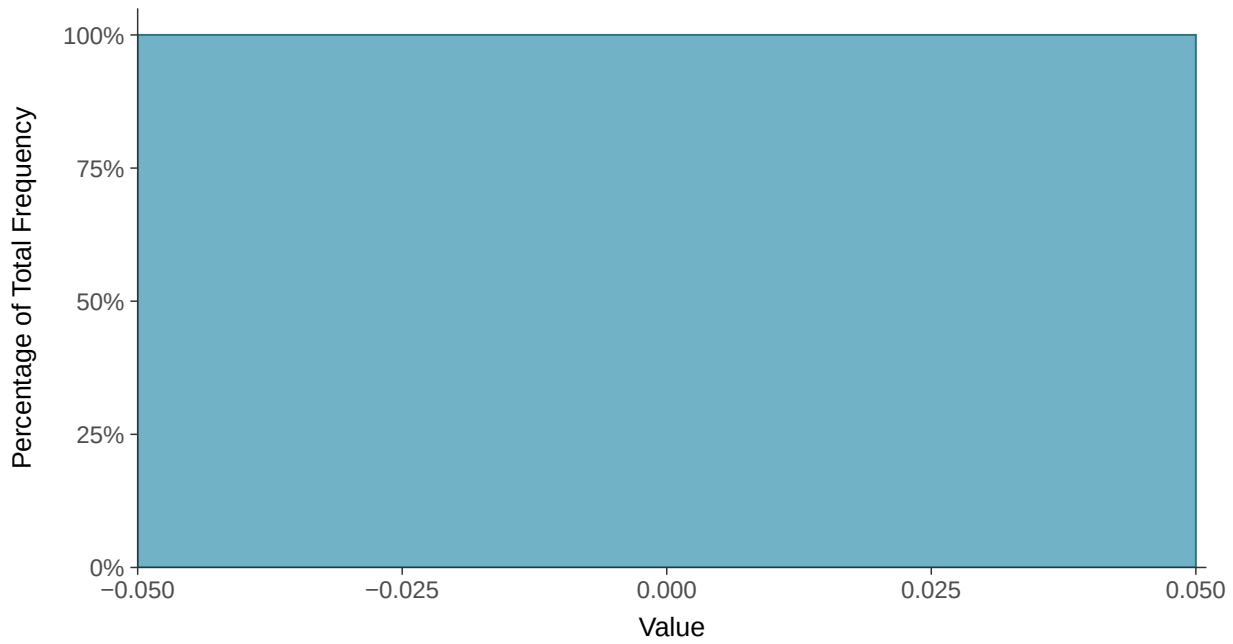
Lead, MW-11B & MW-12B (mg/L)





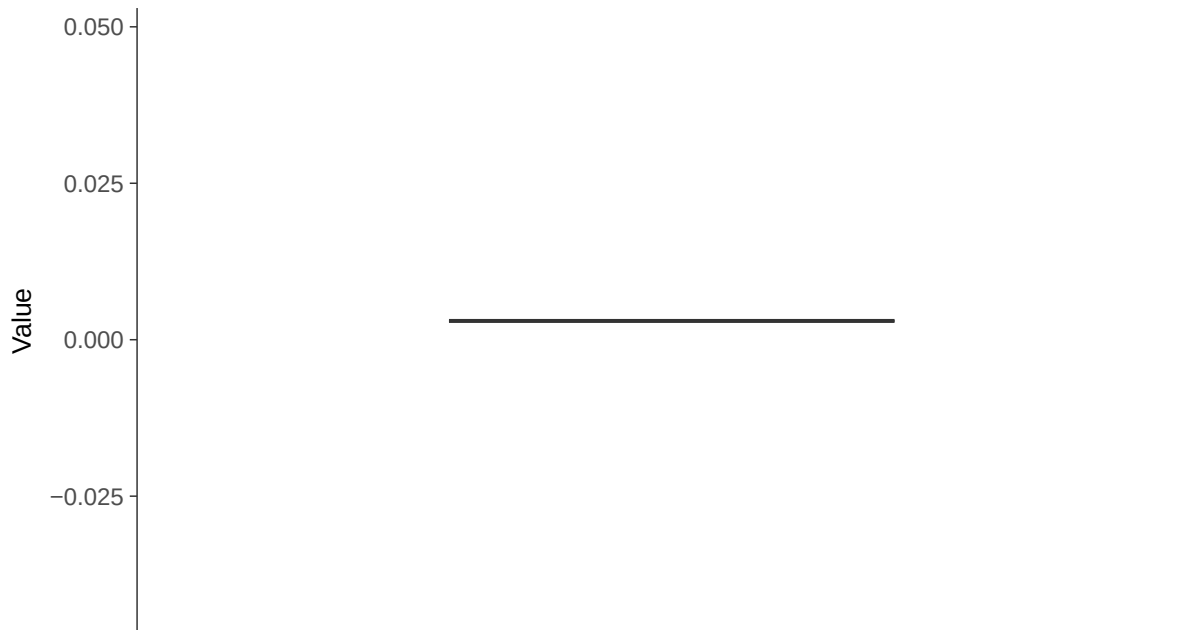
### Histogram

Lead, MW-11B & MW-12B (mg/L)



### Boxplot

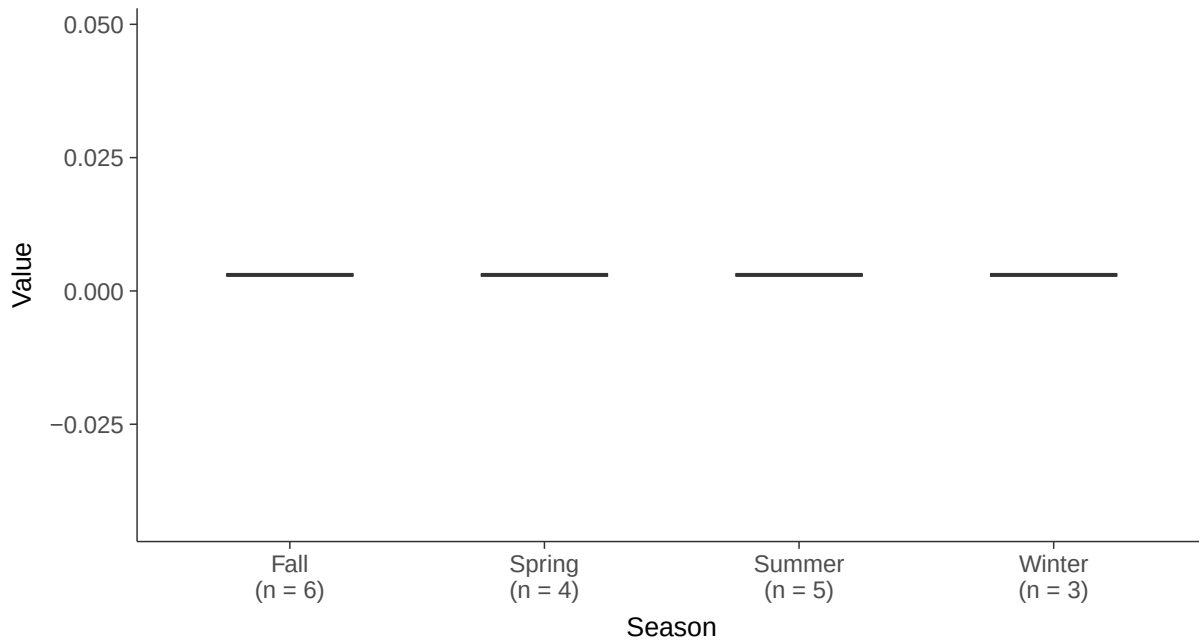
Lead, MW-11B & MW-12B (mg/L)





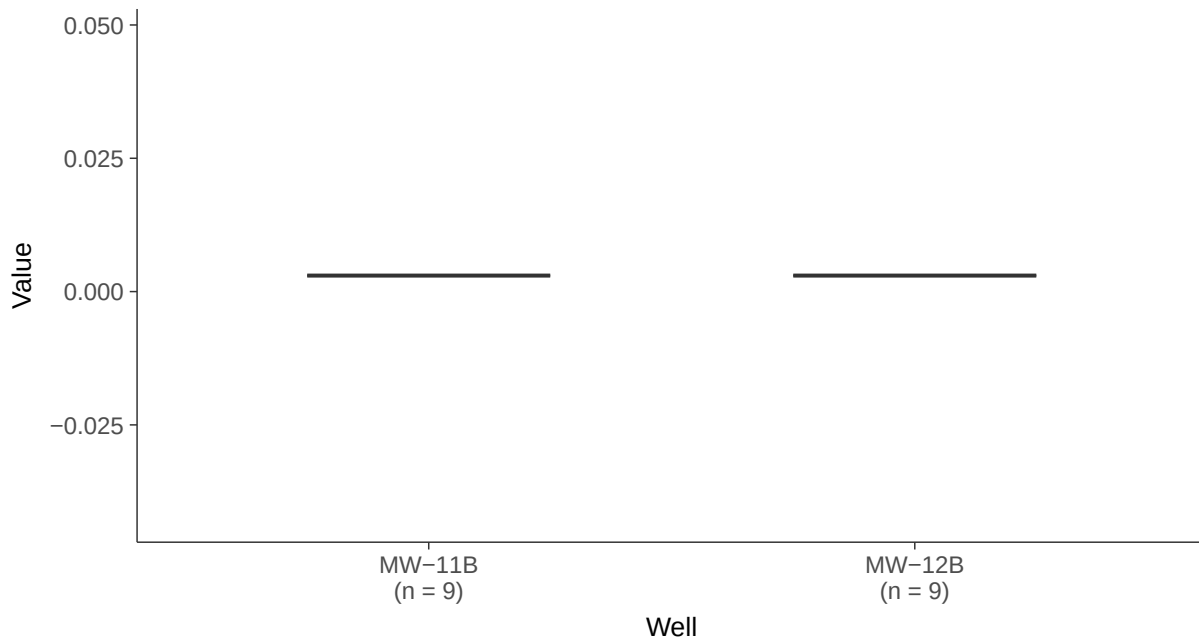
### Boxplot by Season

Lead, MW-11B & MW-12B (mg/L)



### Boxplot by Well

Lead, MW-11B & MW-12B (mg/L)

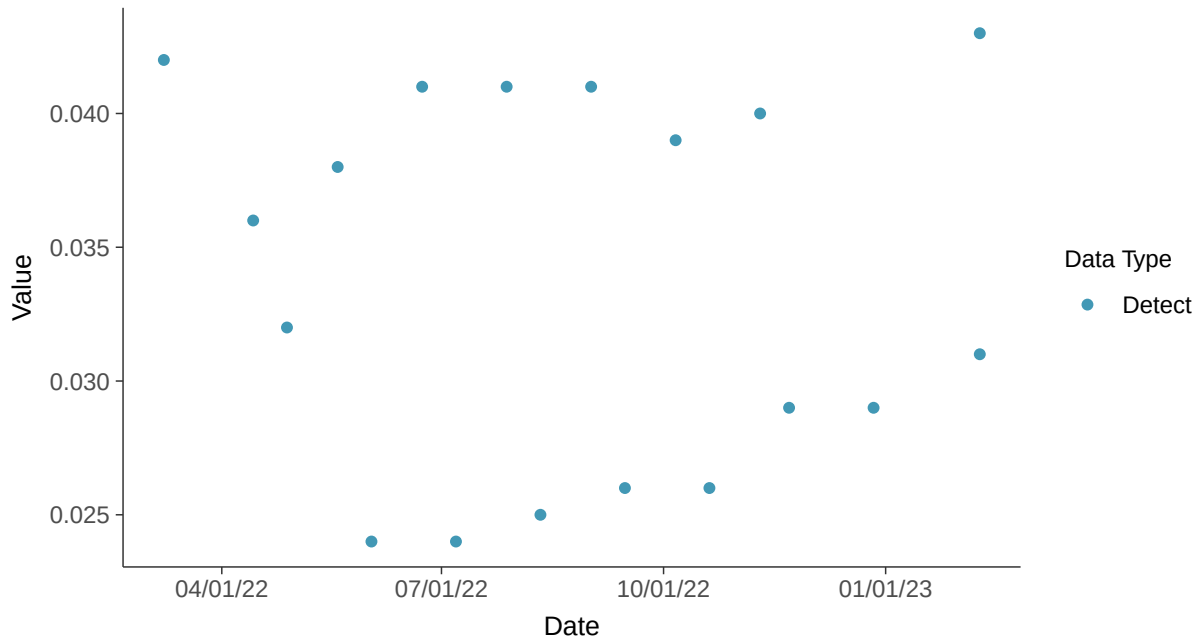


## Appendix IV: Lithium, MW-11B & MW-12B

ID: 2\_16

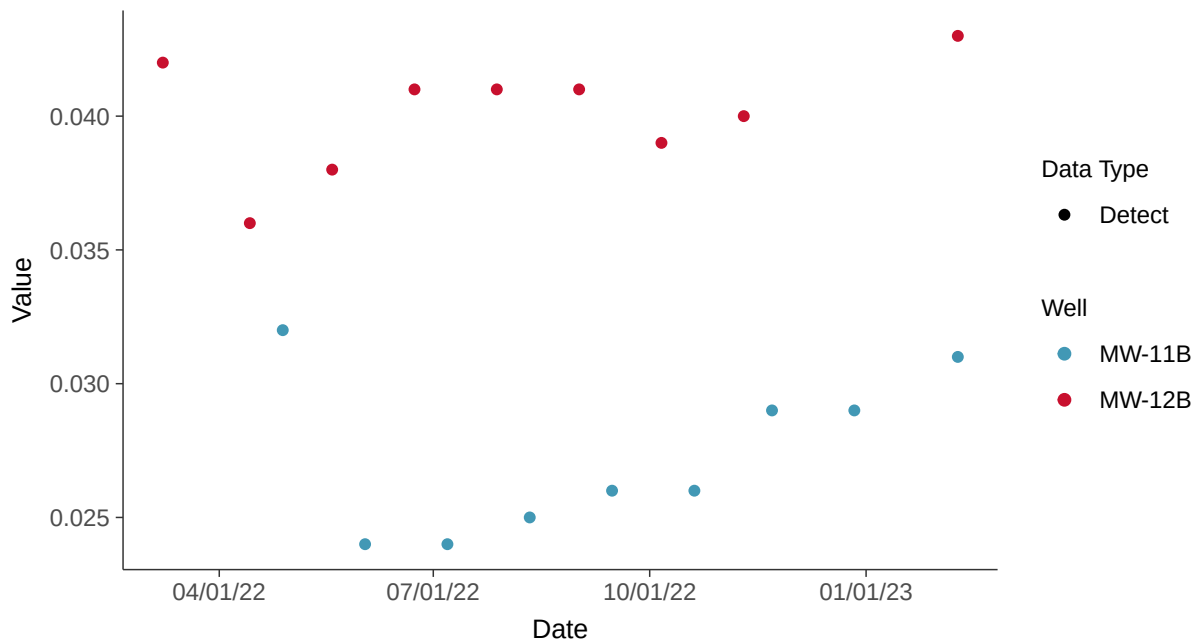
### Scatter Plot

Lithium, MW-11B & MW-12B (mg/L)



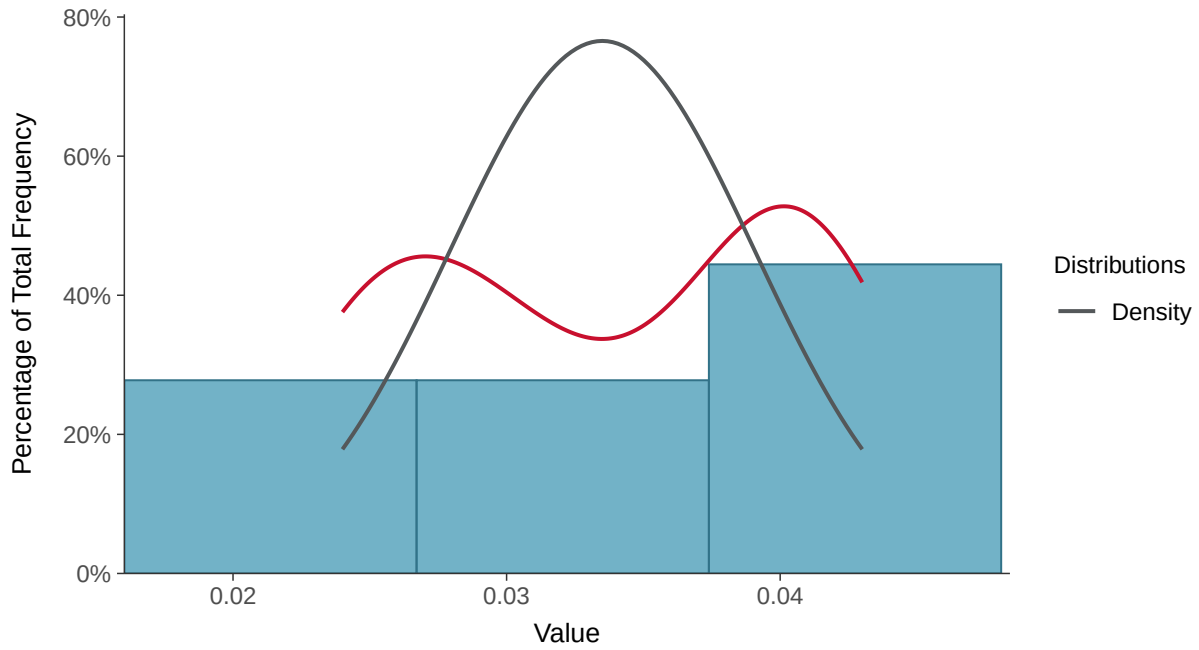
### Scatter Plot by Well

Lithium, MW-11B & MW-12B (mg/L)



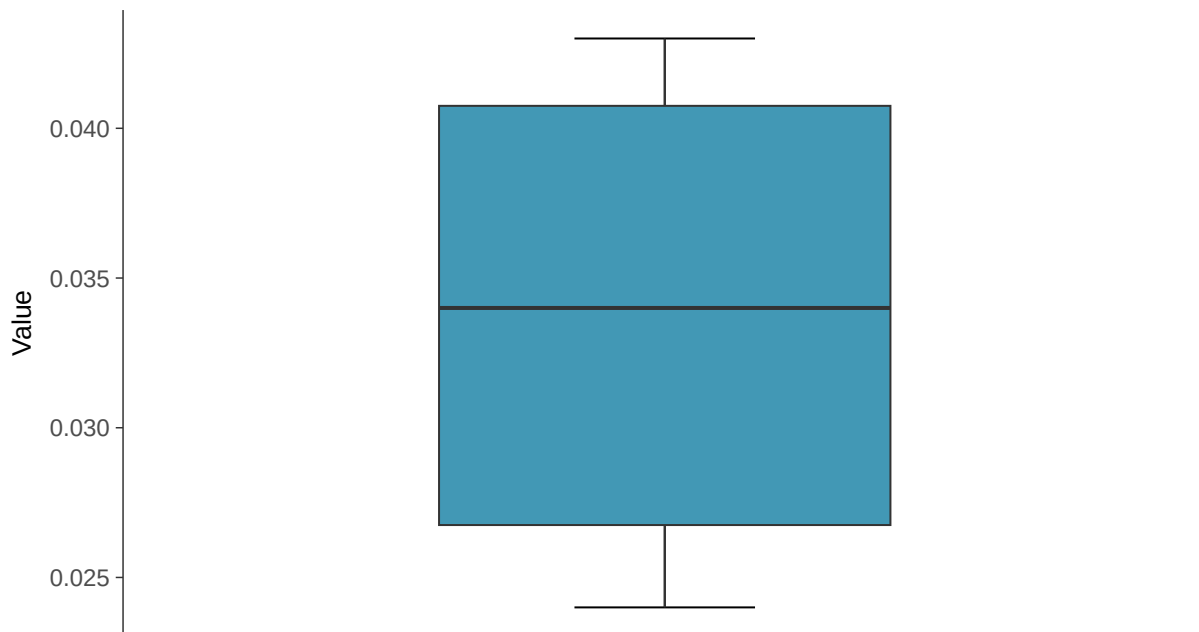
### Histogram

Lithium, MW-11B & MW-12B (mg/L)



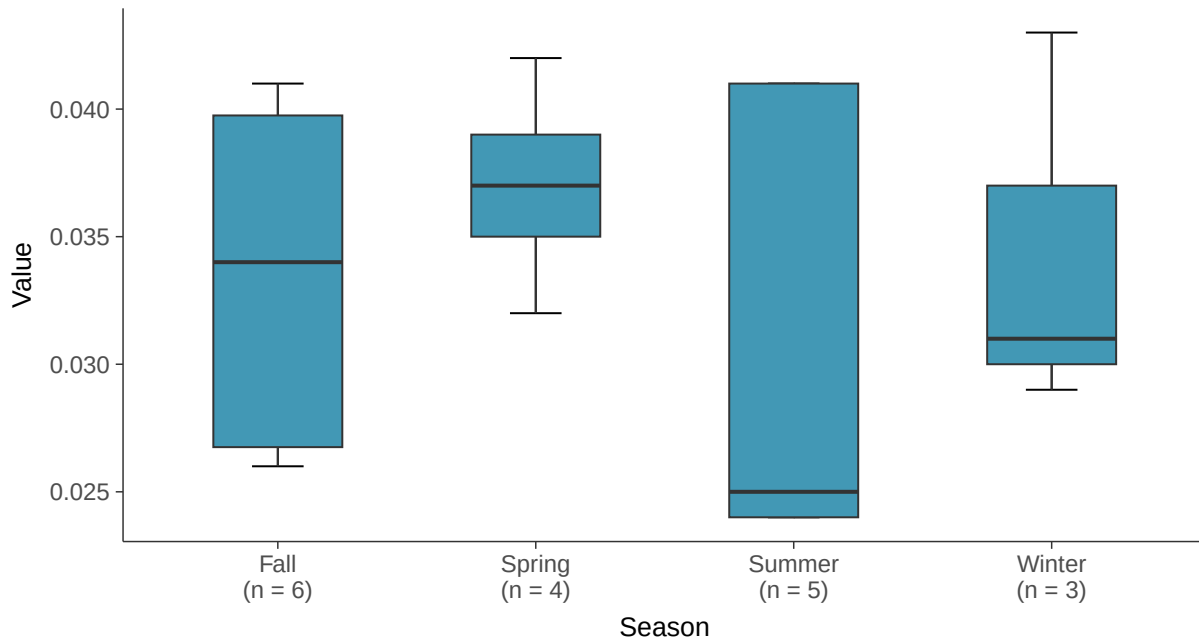
### Boxplot

Lithium, MW-11B & MW-12B (mg/L)



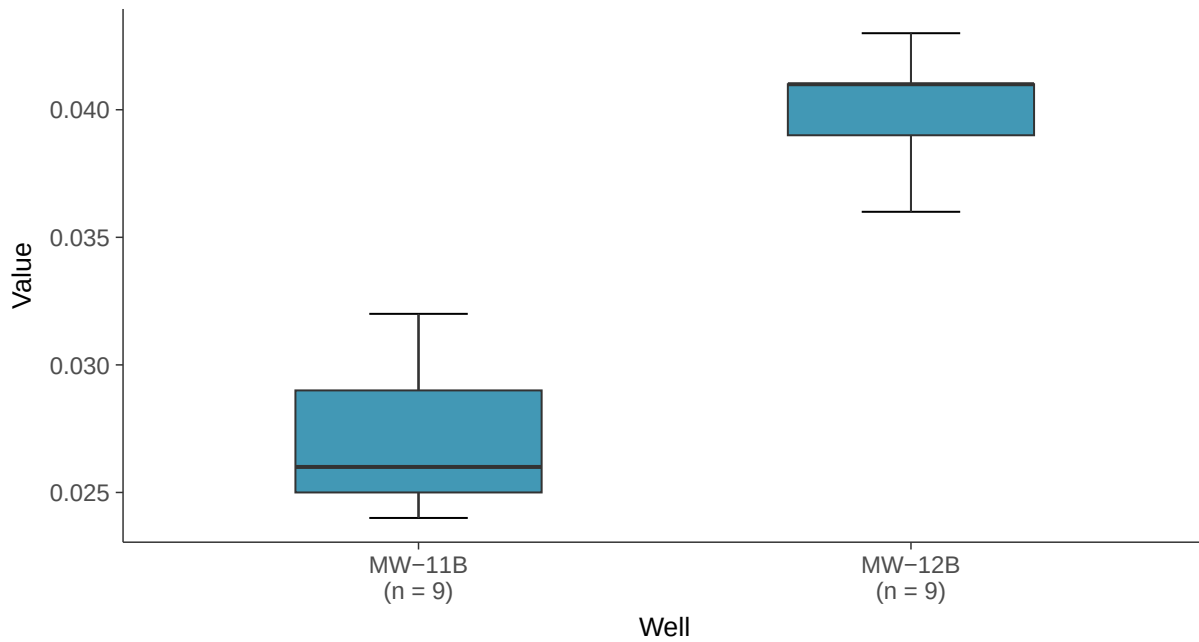
### Boxplot by Season

Lithium, MW-11B & MW-12B (mg/L)



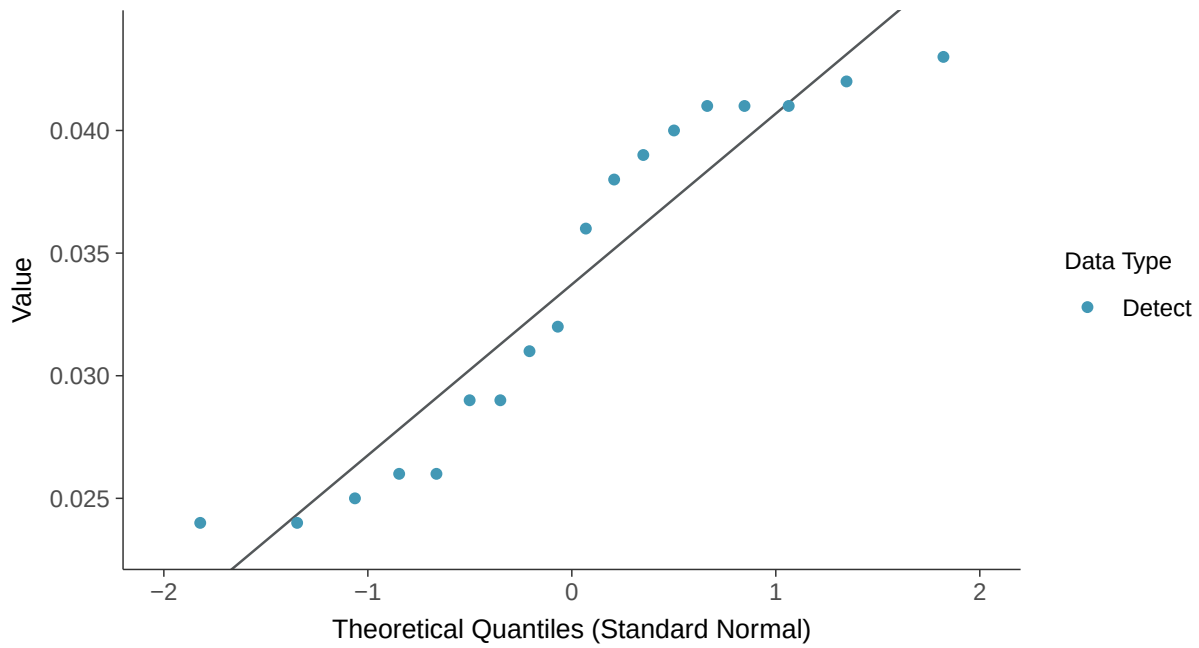
### Boxplot by Well

Lithium, MW-11B & MW-12B (mg/L)



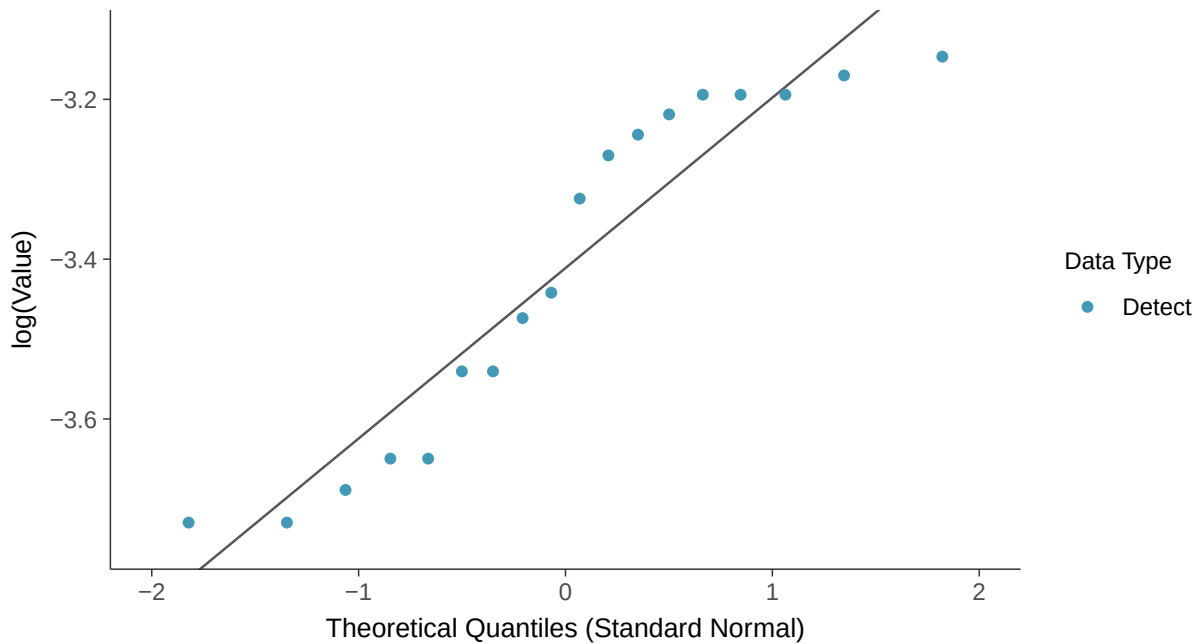
### Normal Q-Q plot

Lithium, MW-11B & MW-12B (mg/L)



### Lognormal Q-Q plot

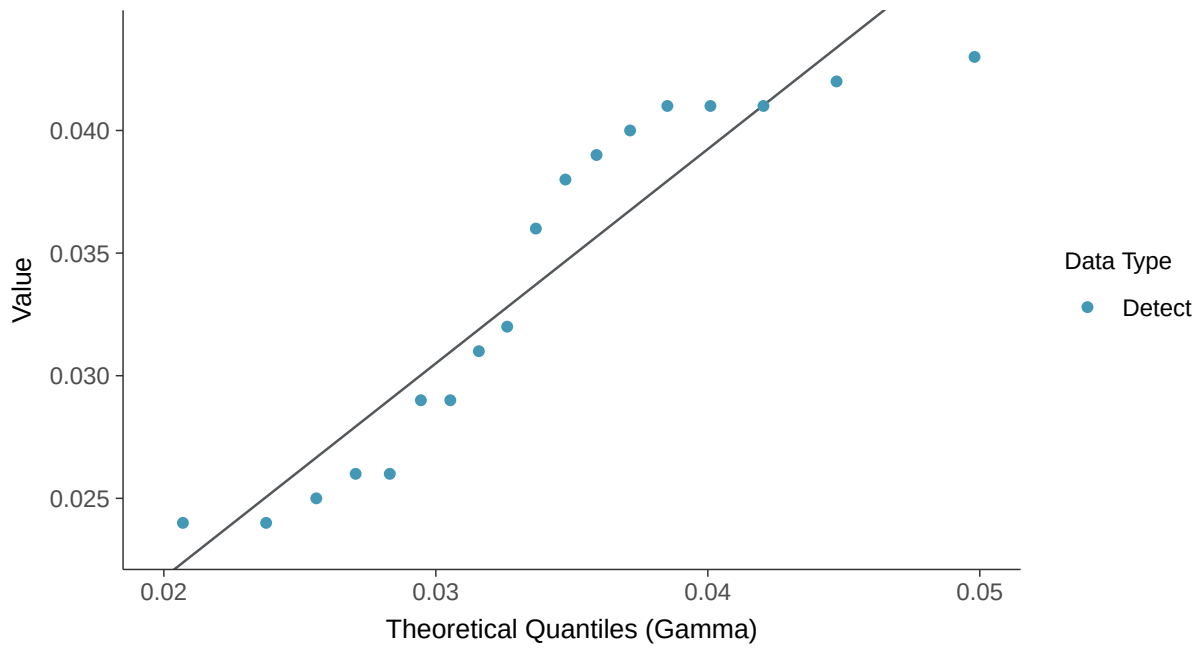
Lithium, MW-11B & MW-12B (mg/L)





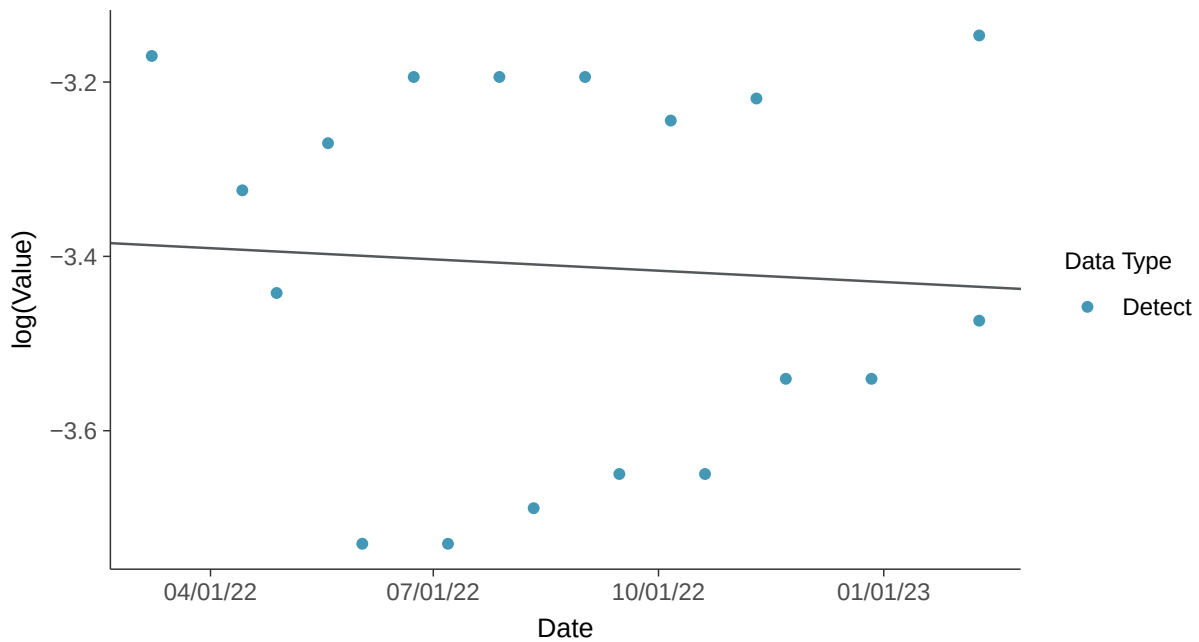
### Gamma Q-Q plot

Lithium, MW-11B & MW-12B (mg/L)



### Trend Regression: Lognormal MLE

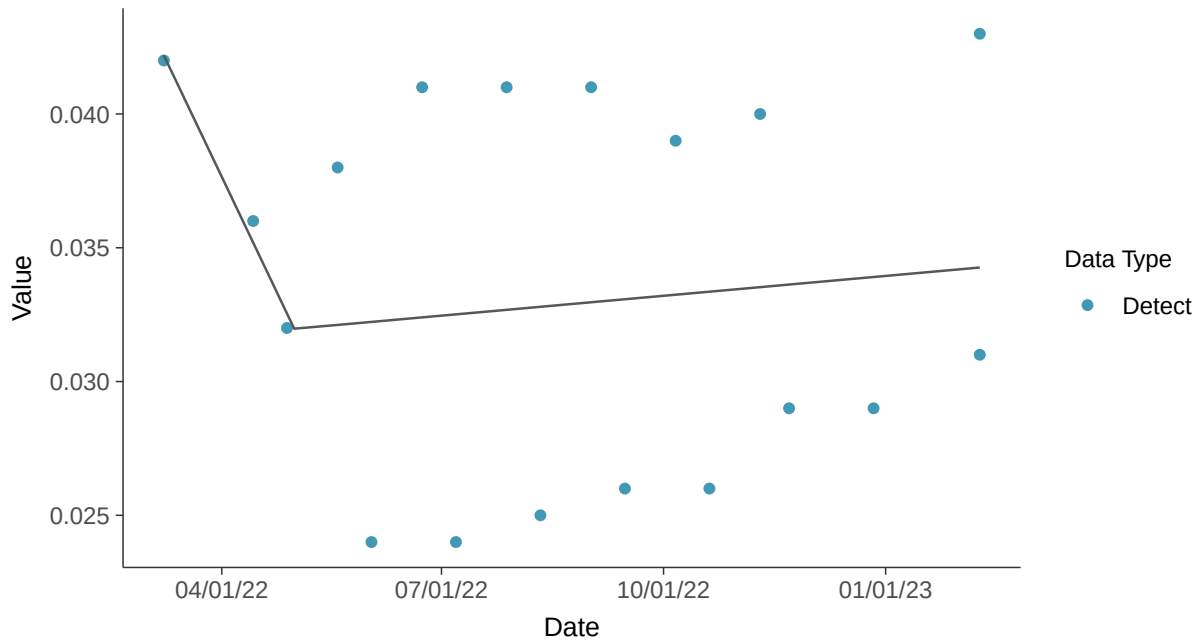
Lithium, MW-11B & MW-12B (mg/L)

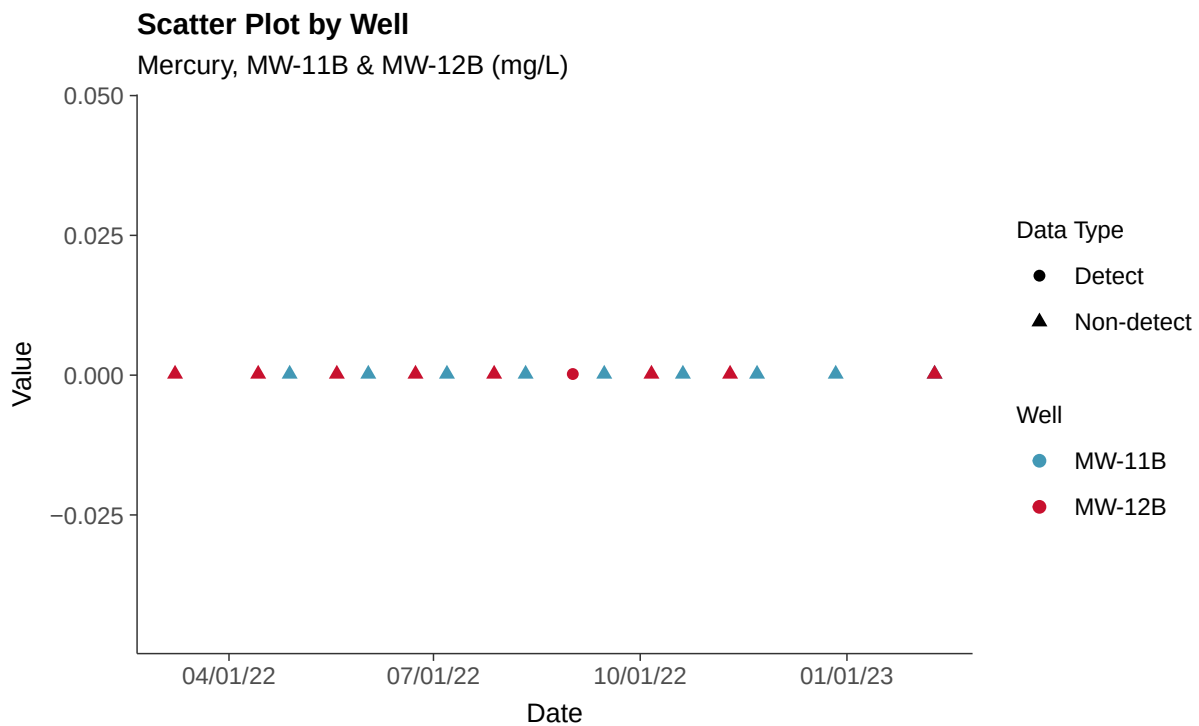




### Trend Regression: Piecewise Linear-Linear

Lithium, MW-11B & MW-12B (mg/L)

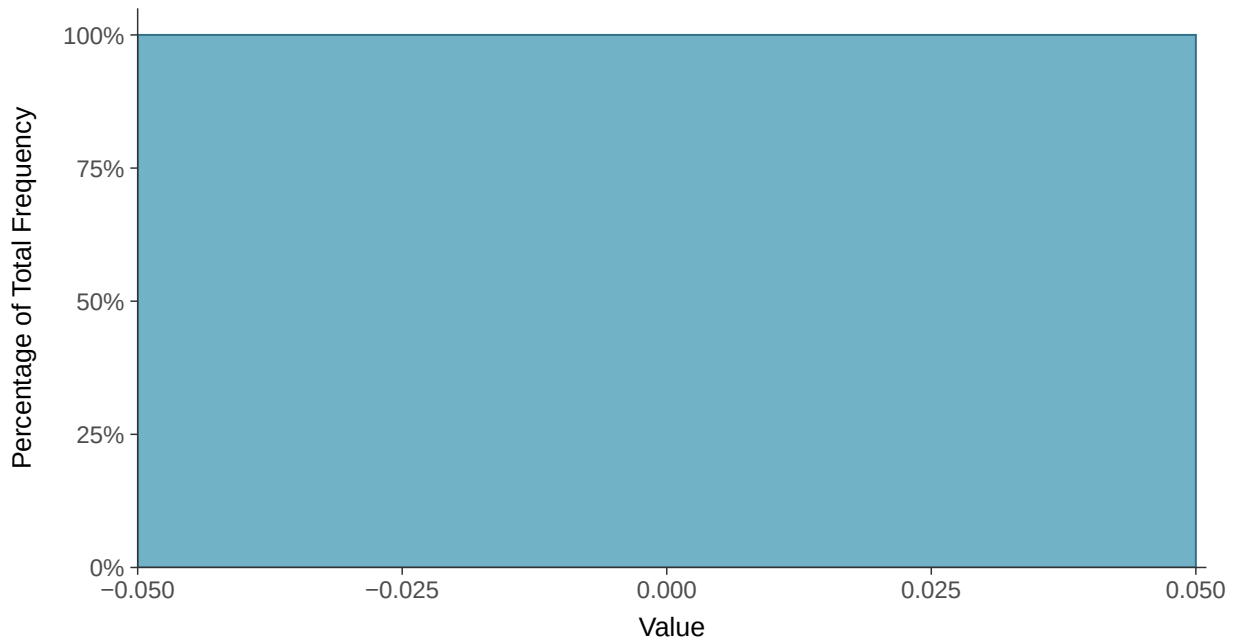






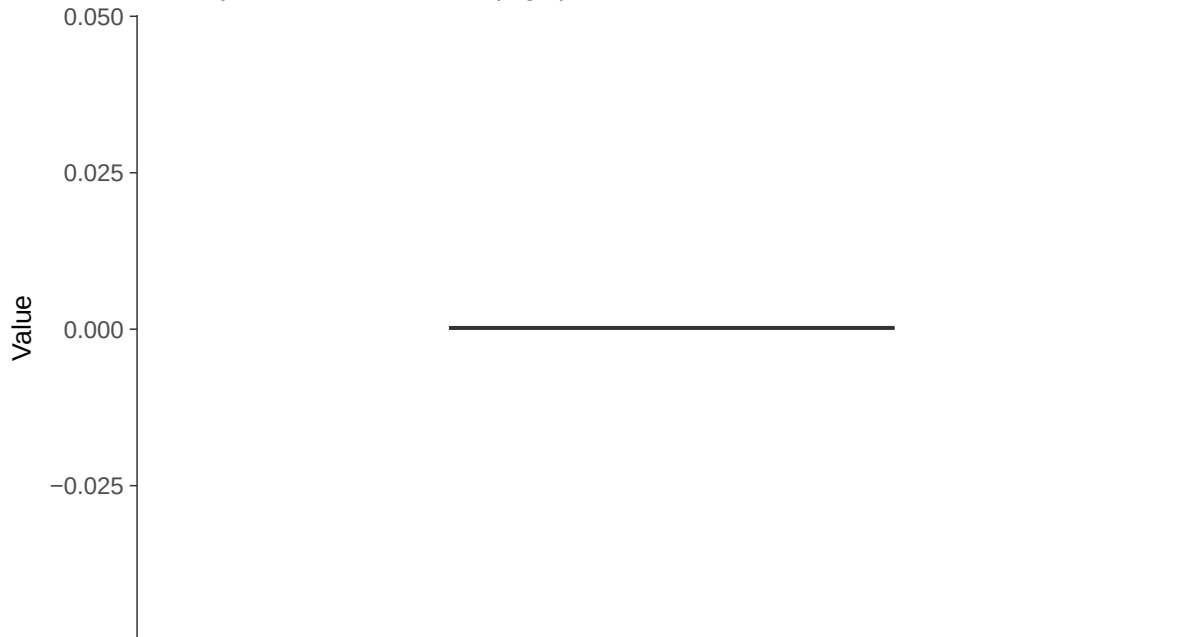
### Histogram

Mercury, MW-11B & MW-12B (mg/L)



### Boxplot

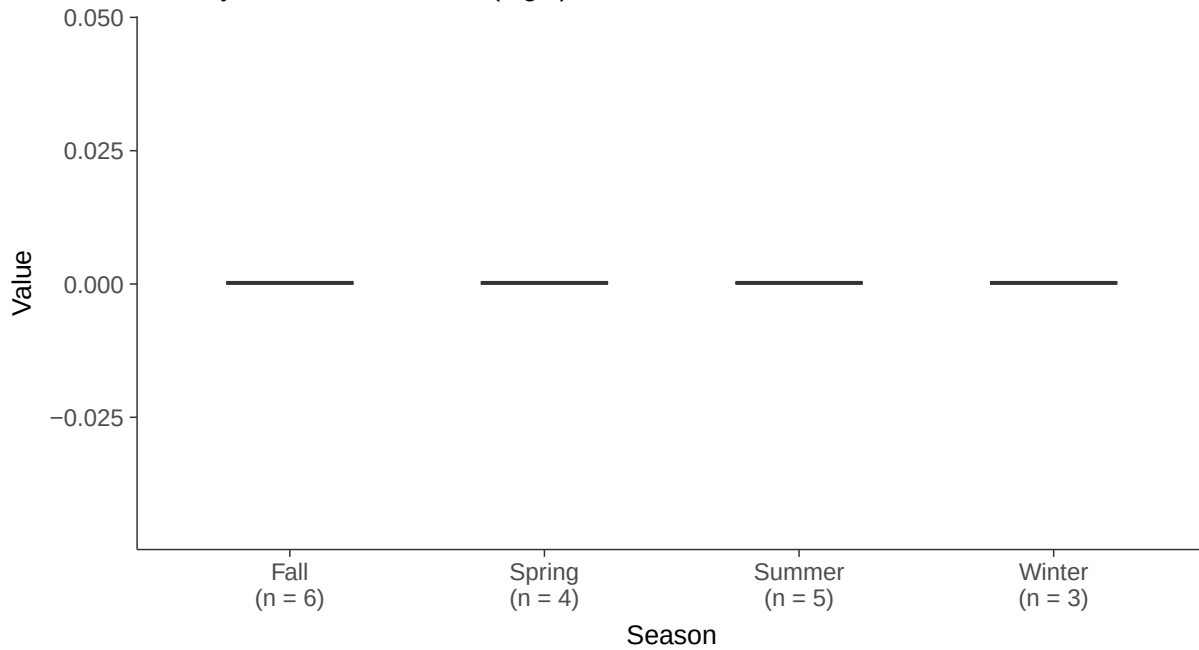
Mercury, MW-11B & MW-12B (mg/L)





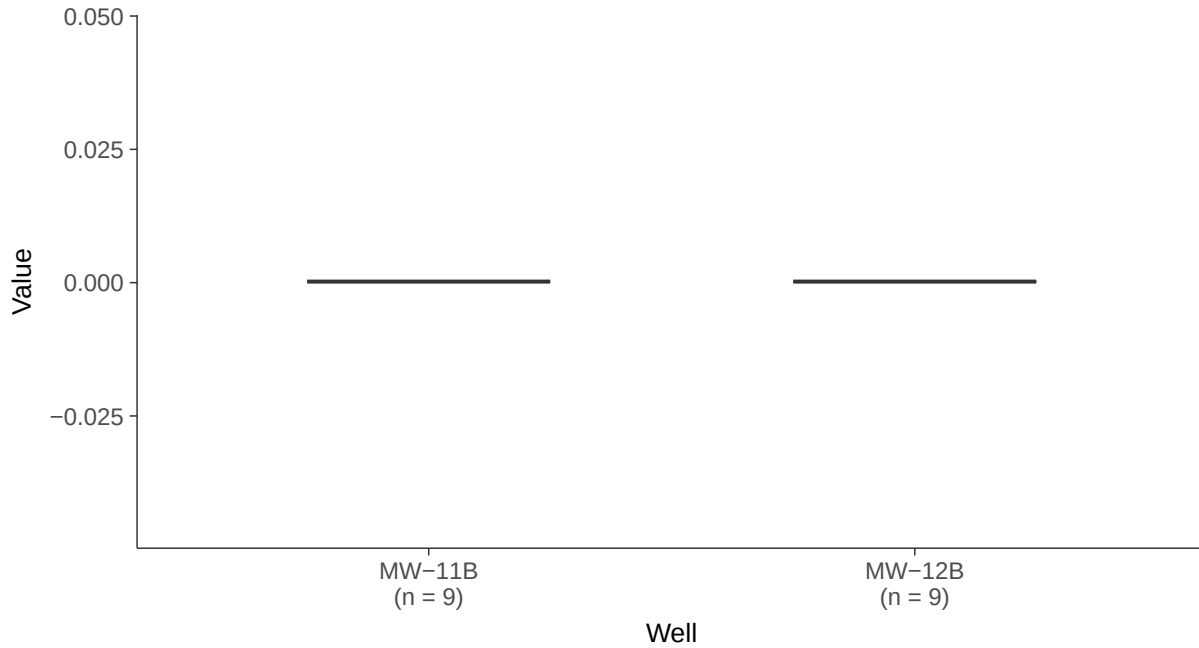
### Boxplot by Season

Mercury, MW-11B & MW-12B (mg/L)



### Boxplot by Well

Mercury, MW-11B & MW-12B (mg/L)

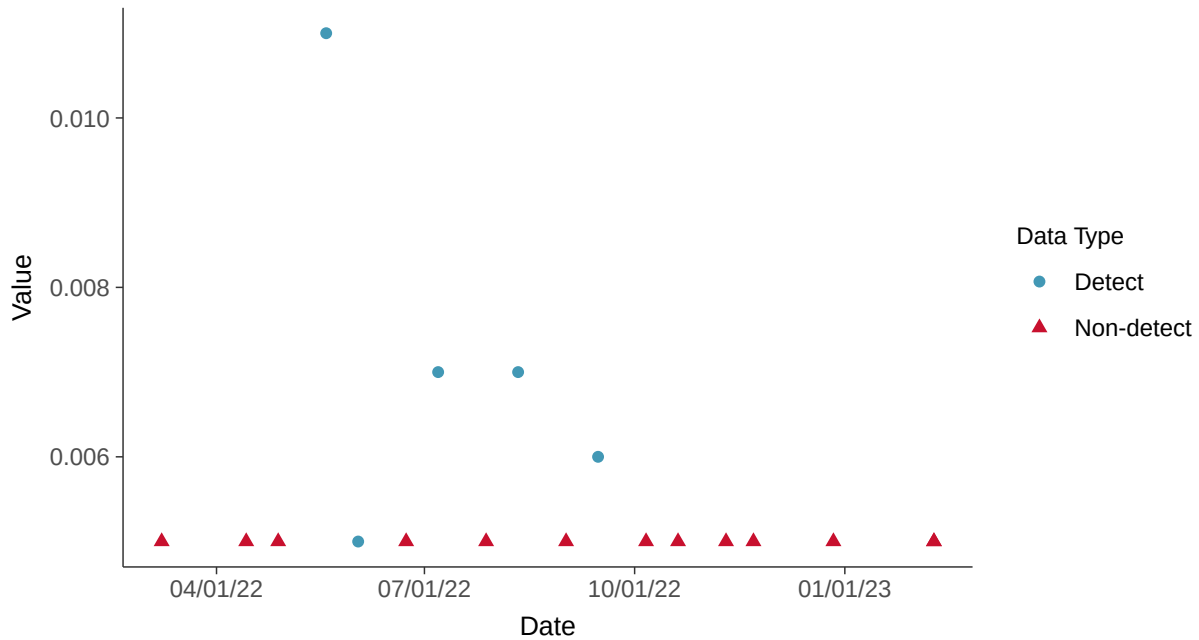


**Appendix IV: Molybdenum, MW-11B & MW-12B**

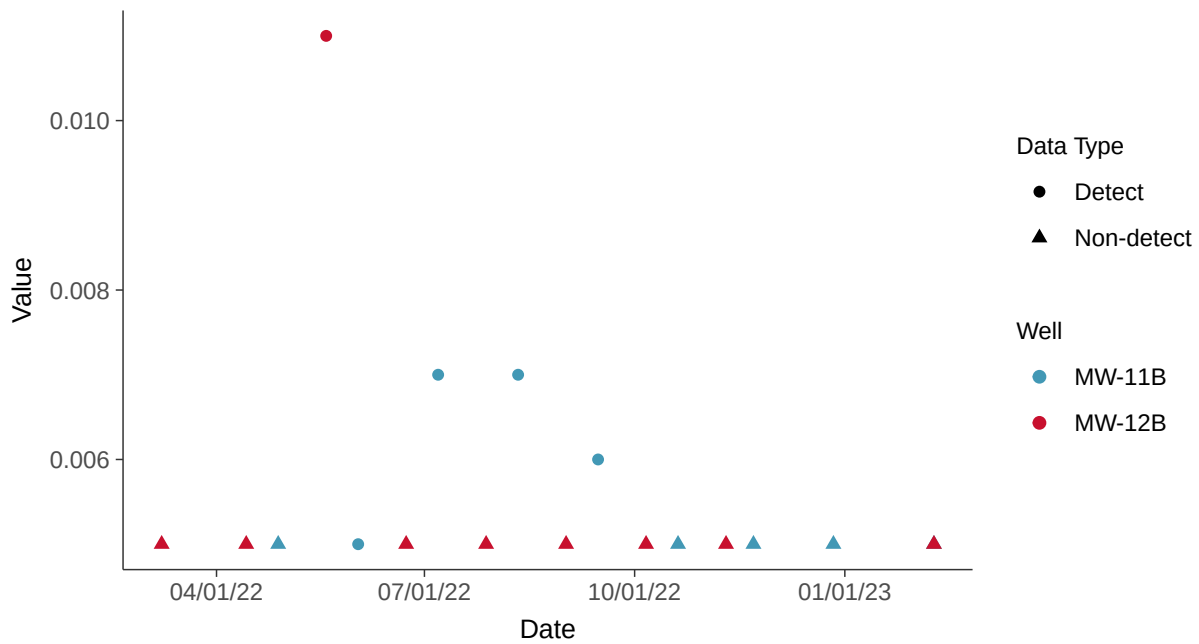
ID: 2\_18

**Scatter Plot**

Molybdenum, MW-11B &amp; MW-12B (mg/L)

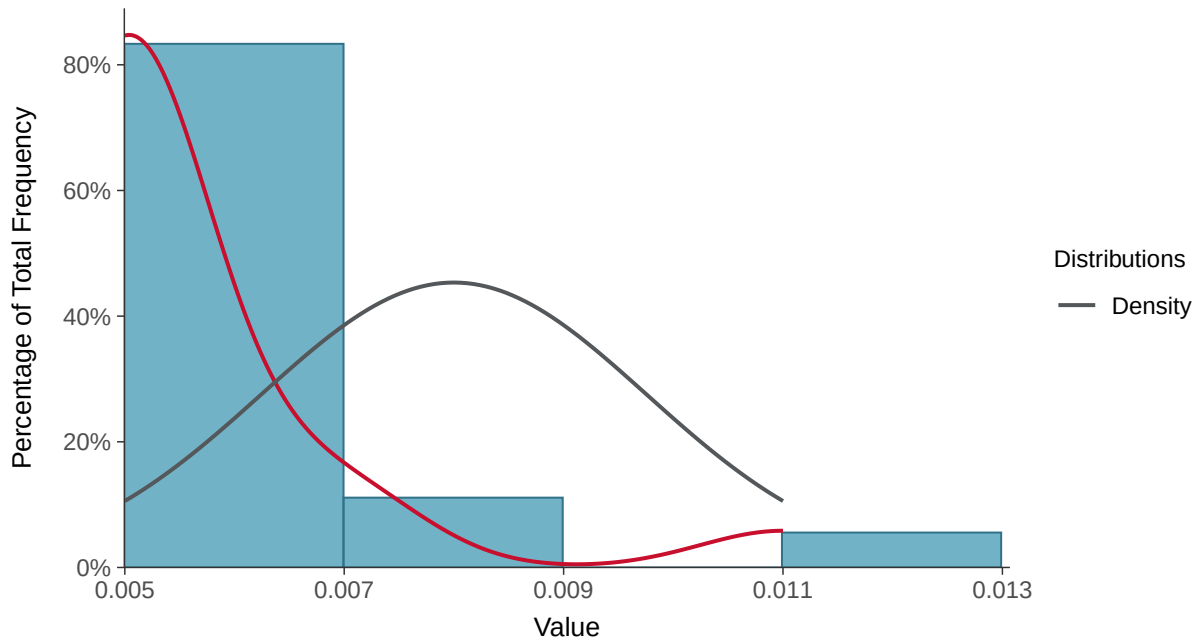
**Scatter Plot by Well**

Molybdenum, MW-11B &amp; MW-12B (mg/L)



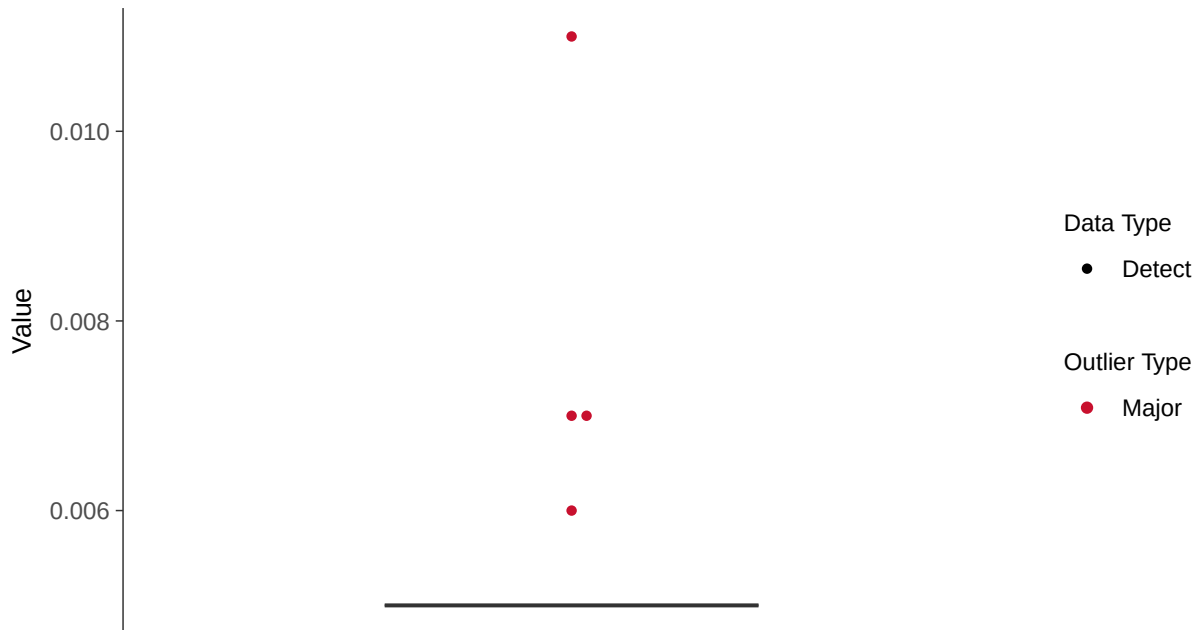
### Histogram

Molybdenum, MW-11B & MW-12B (mg/L)



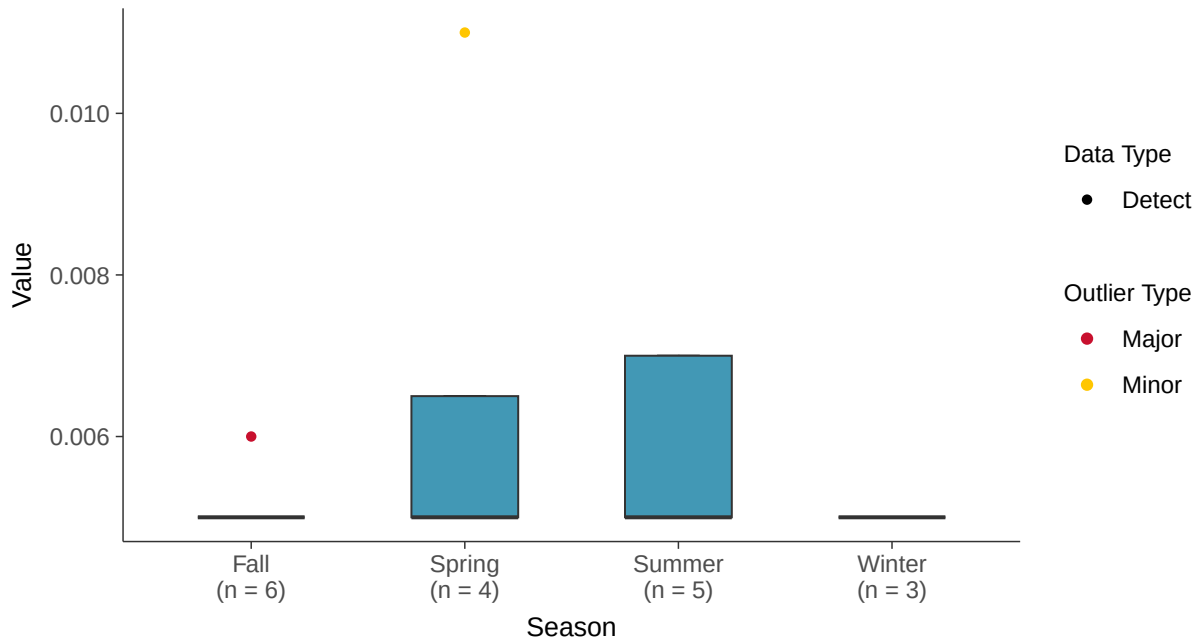
### Boxplot

Molybdenum, MW-11B & MW-12B (mg/L)



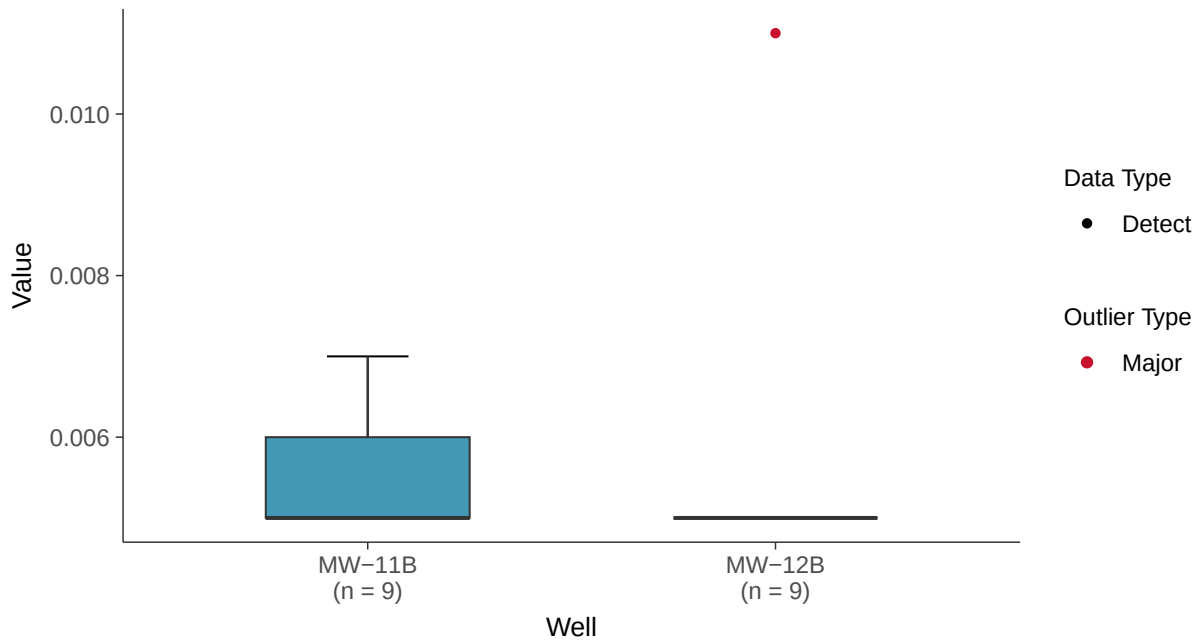
### Boxplot by Season

Molybdenum, MW-11B & MW-12B (mg/L)



### Boxplot by Well

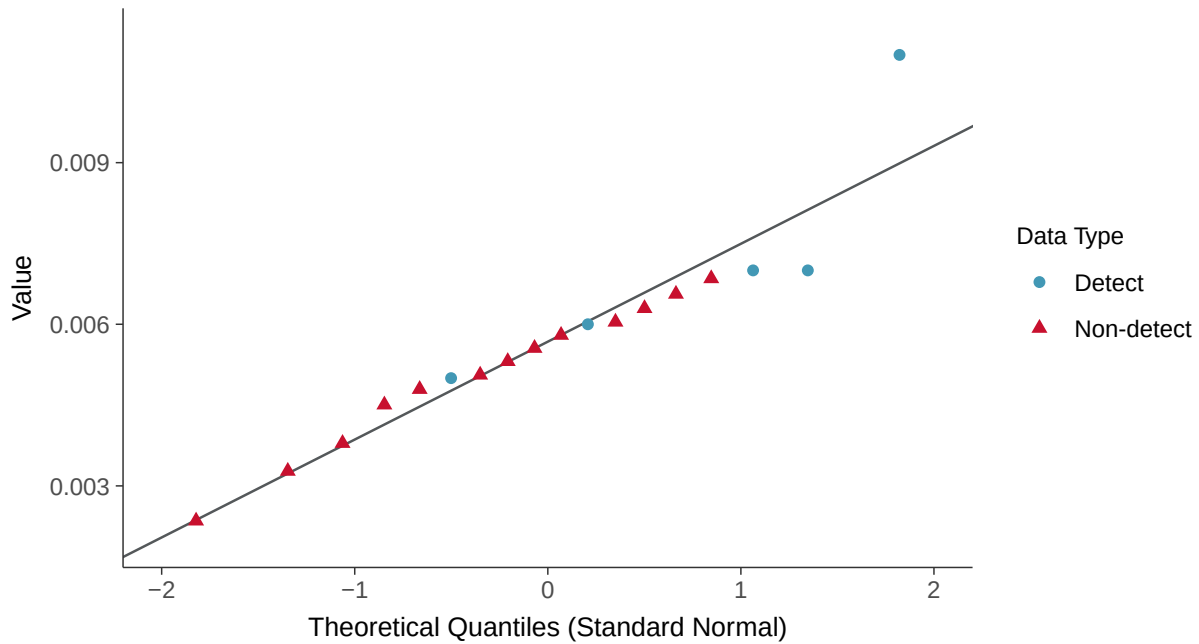
Molybdenum, MW-11B & MW-12B (mg/L)





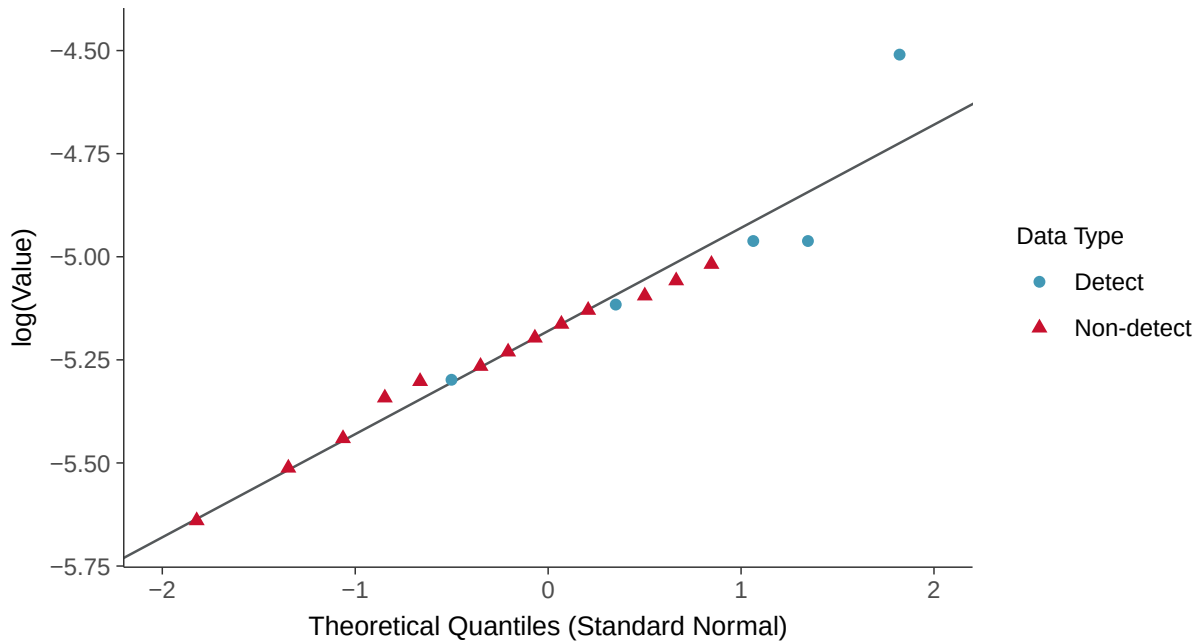
### Normal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-11B & MW-12B (mg/L)



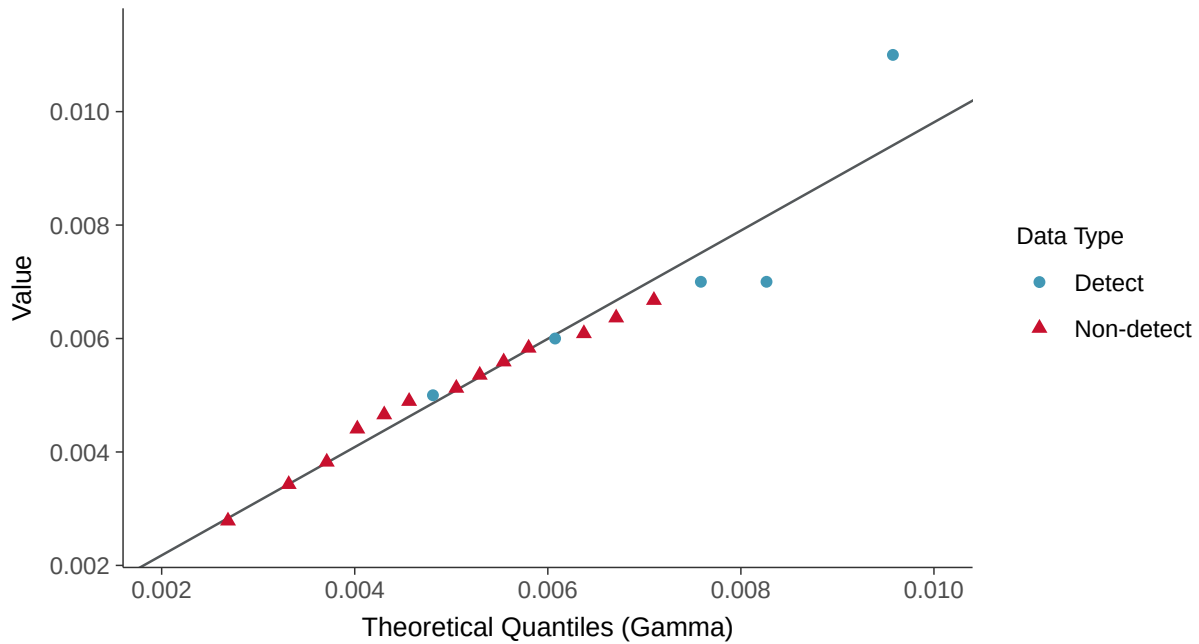
### Lognormal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-11B & MW-12B (mg/L)



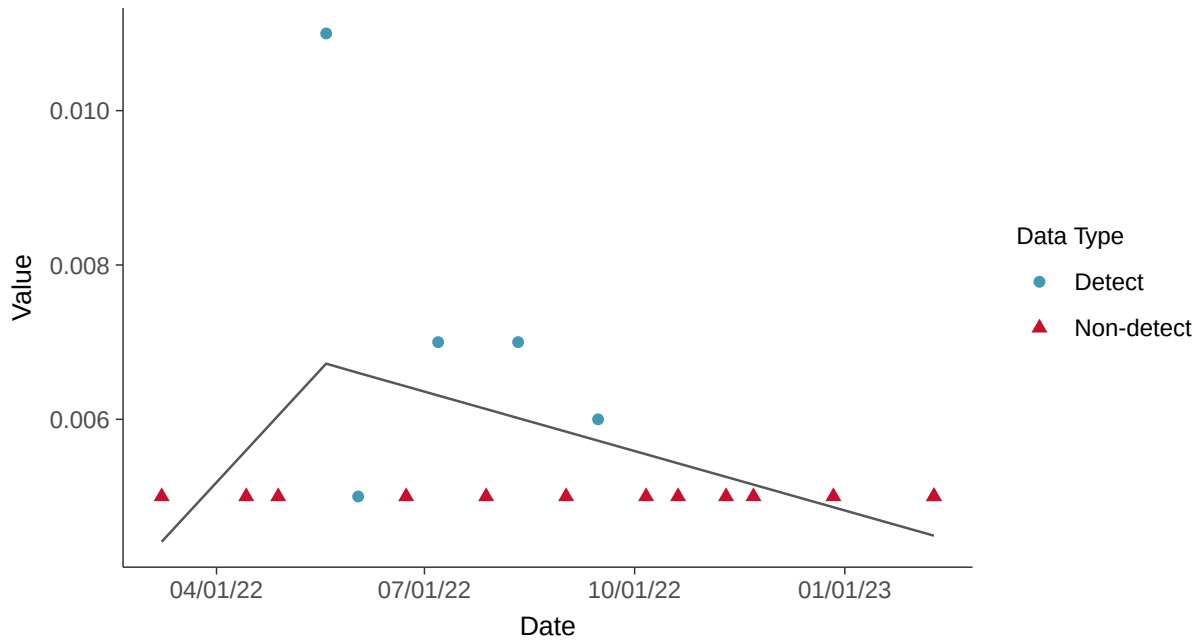
### Gamma Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-11B & MW-12B (mg/L)



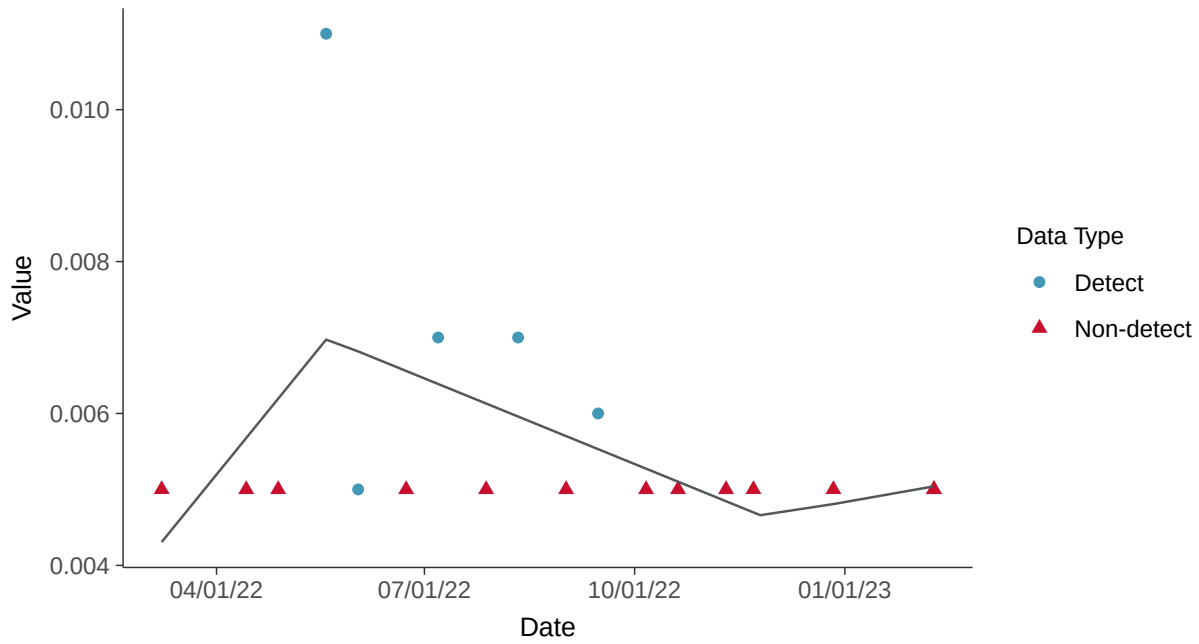
### Trend Regression: Piecewise Linear-Linear

Molybdenum, MW-11B & MW-12B (mg/L)





**Trend Regression: Piecewise Linear-Linear-Linear**  
Molybdenum, MW-11B & MW-12B (mg/L)

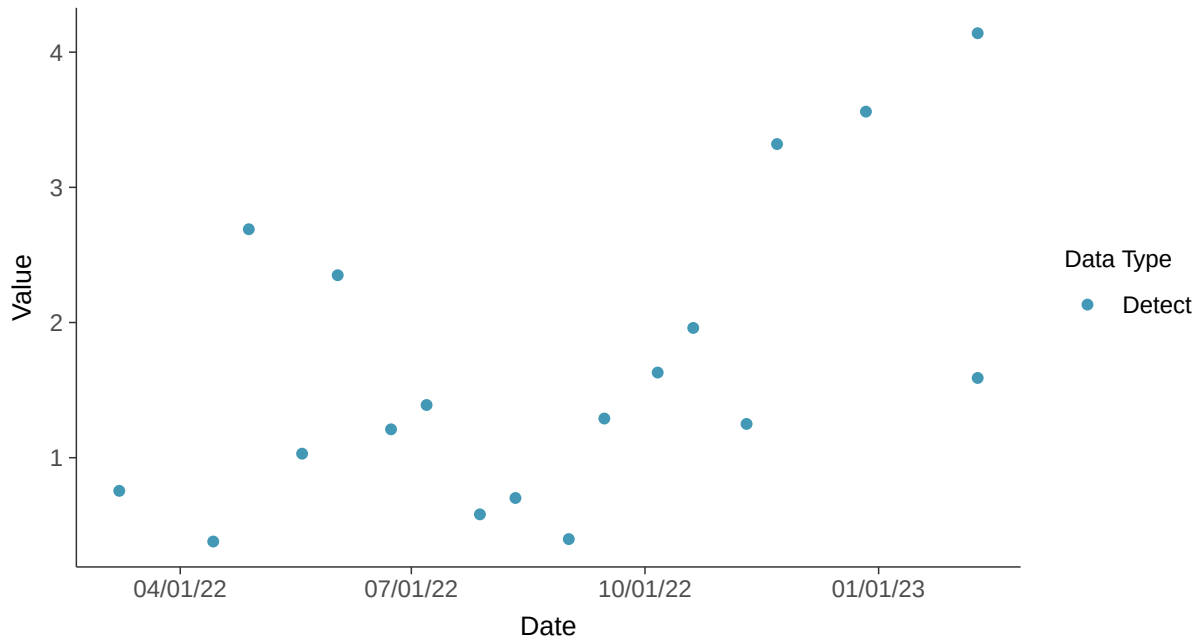


## Appendix IV: Radium-226/228, MW-11B & MW-12B

ID: 2\_20

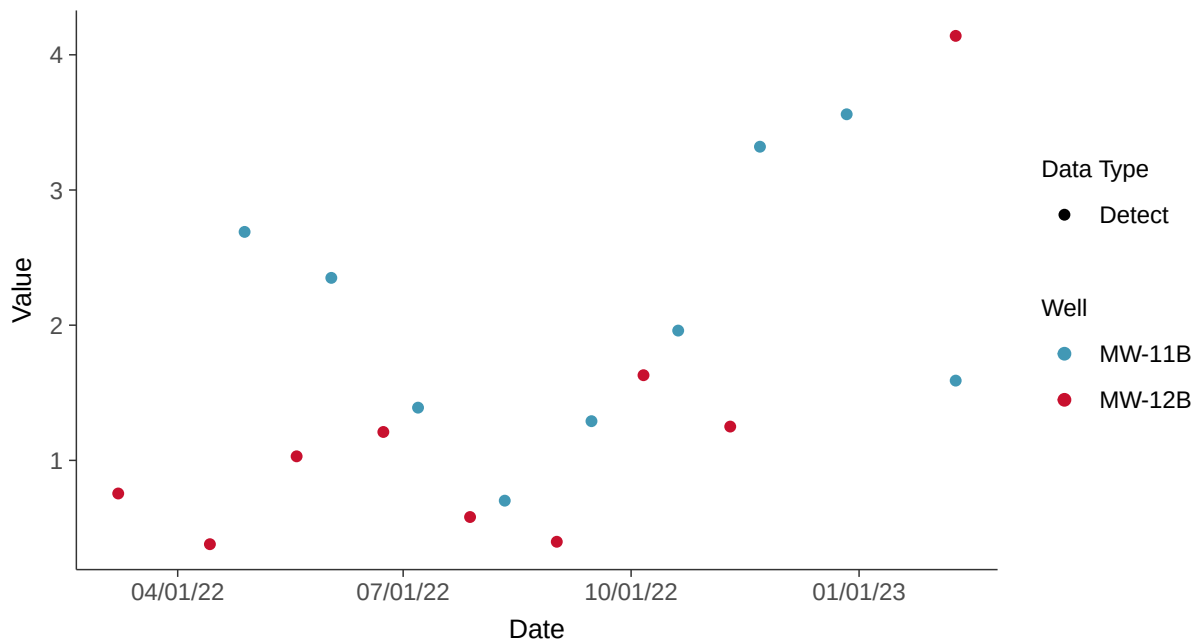
### Scatter Plot

Radium-226/228, MW-11B & MW-12B (pCi/L)



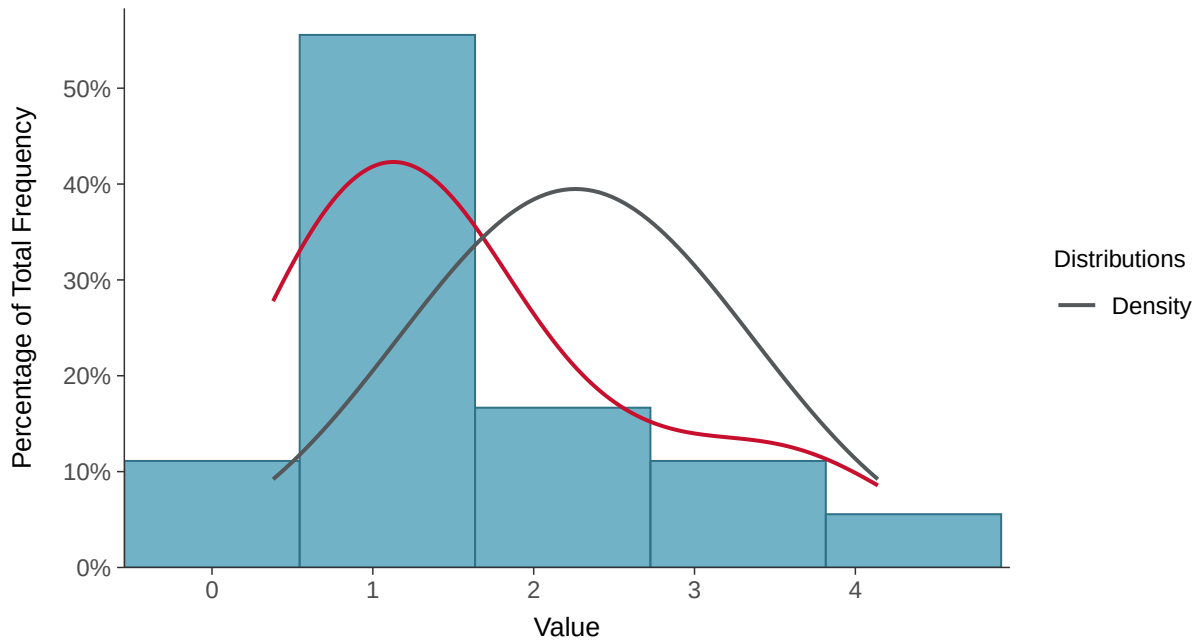
### Scatter Plot by Well

Radium-226/228, MW-11B & MW-12B (pCi/L)



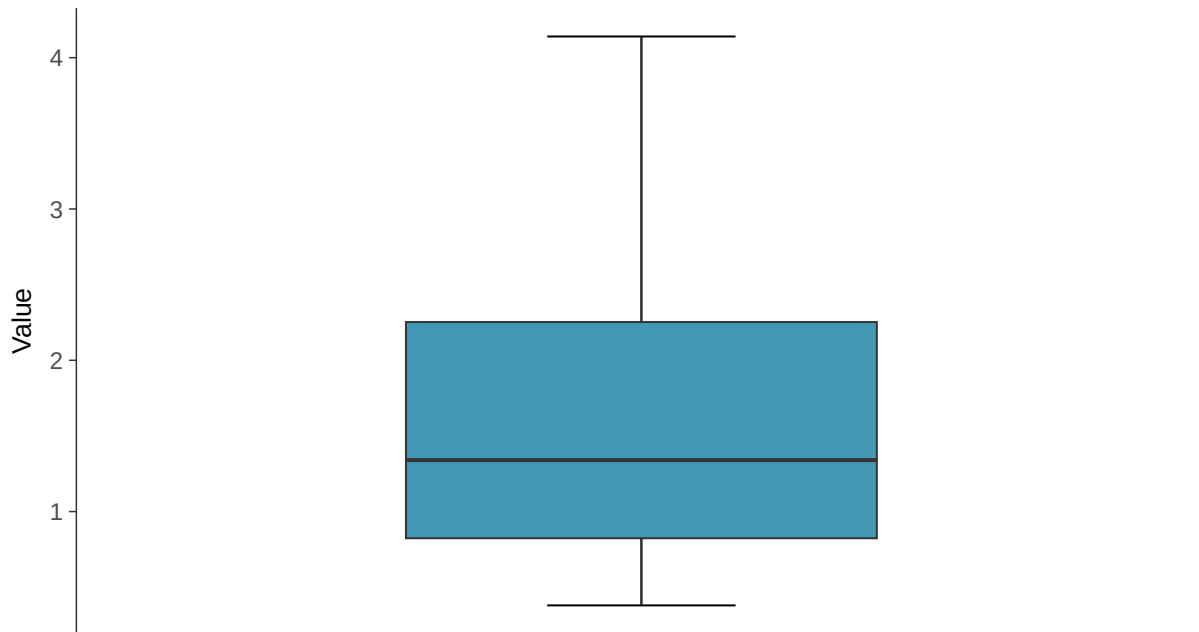
### Histogram

Radium-226/228, MW-11B & MW-12B (pCi/L)



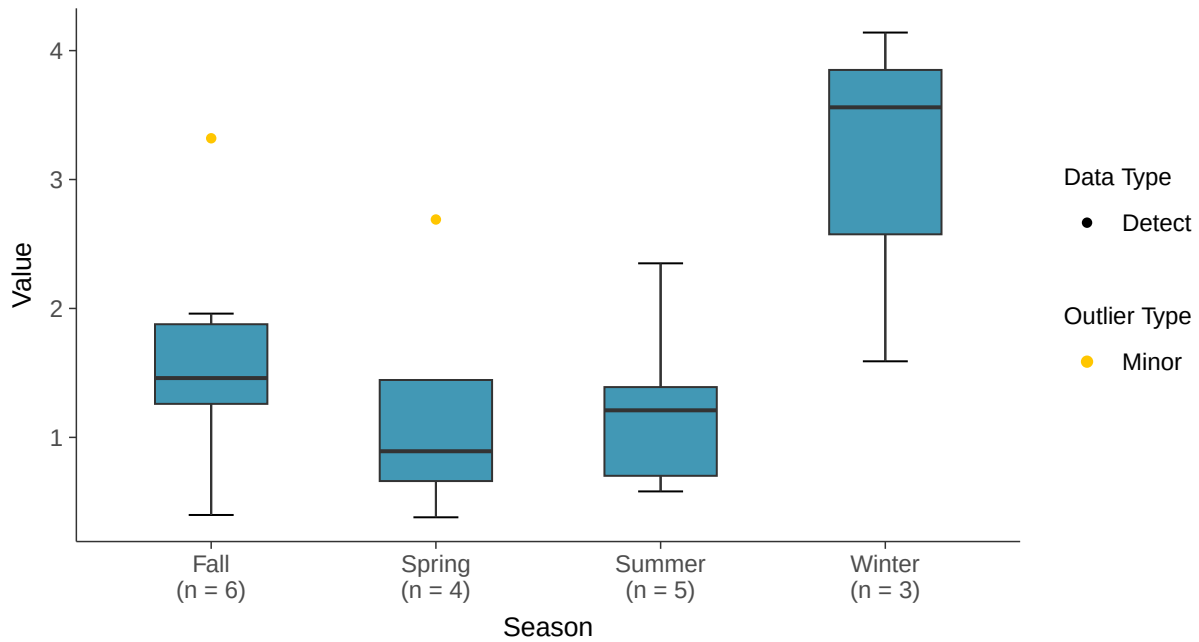
### Boxplot

Radium-226/228, MW-11B & MW-12B (pCi/L)



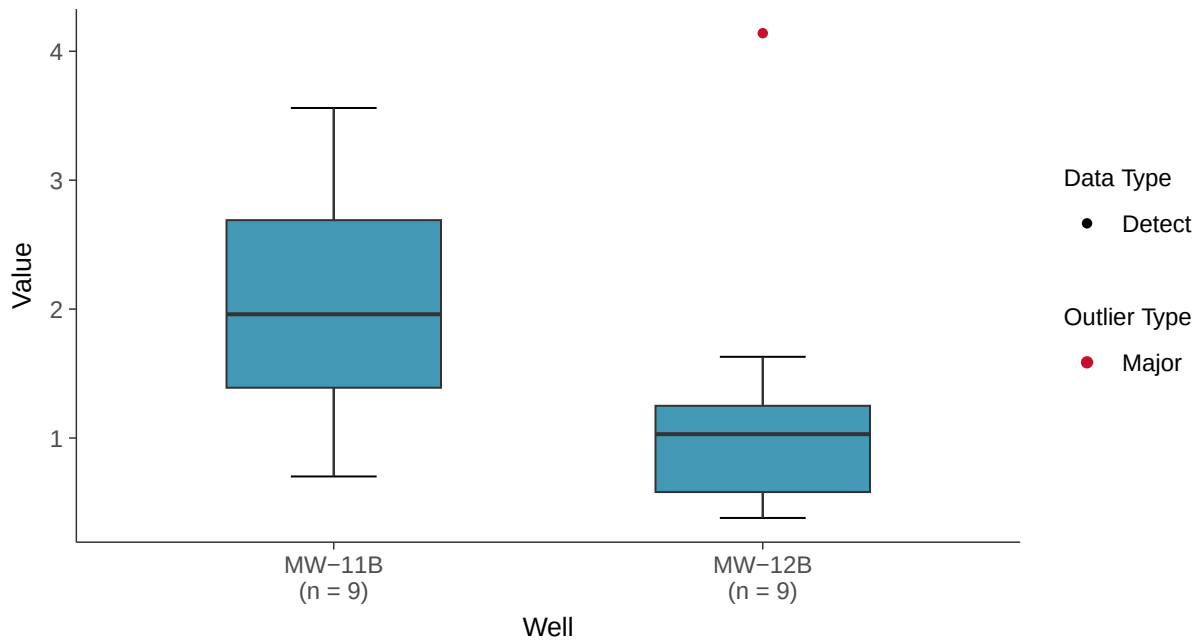
### Boxplot by Season

Radium-226/228, MW-11B & MW-12B (pCi/L)



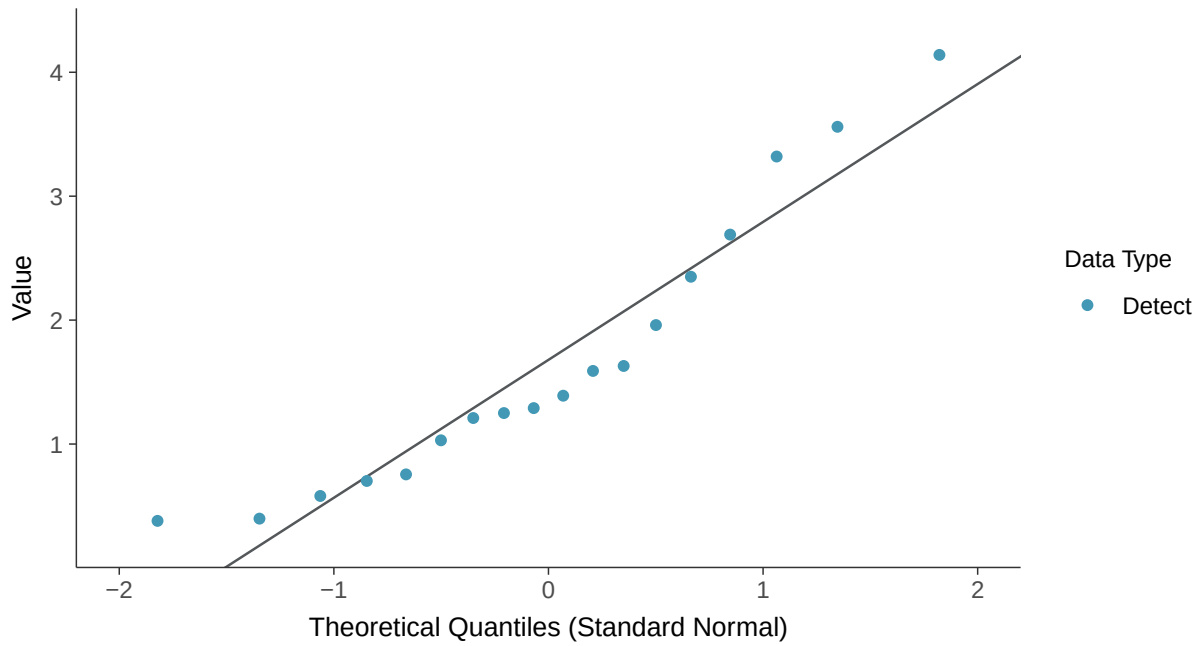
### Boxplot by Well

Radium-226/228, MW-11B & MW-12B (pCi/L)



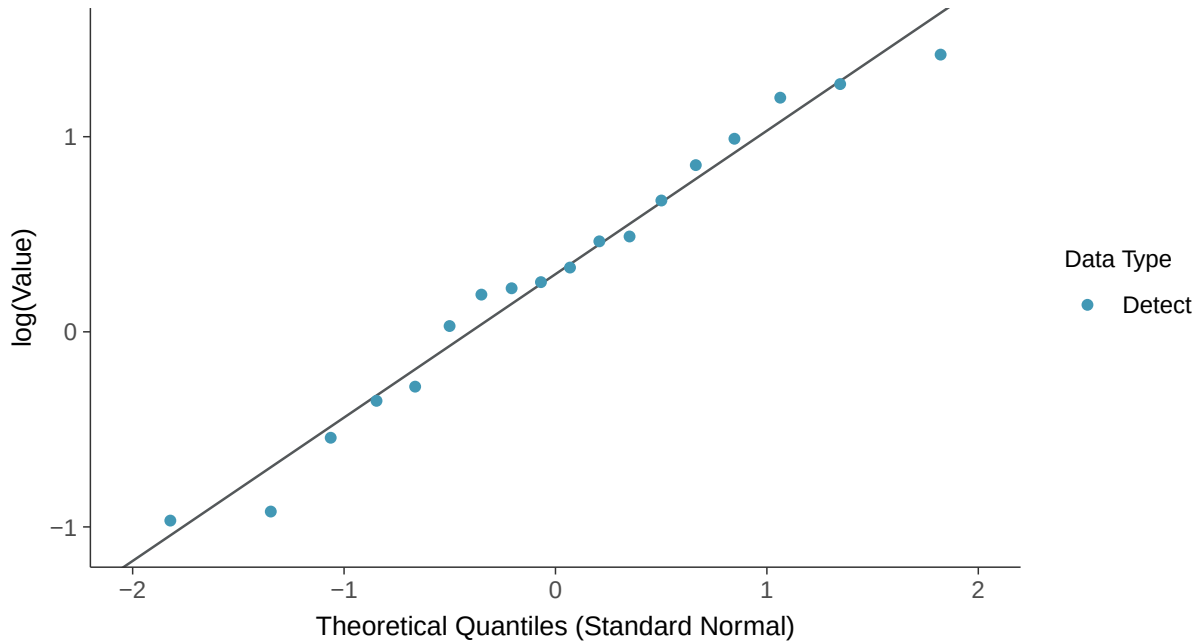
### Normal Q-Q plot

Radium-226/228, MW-11B & MW-12B (pCi/L)



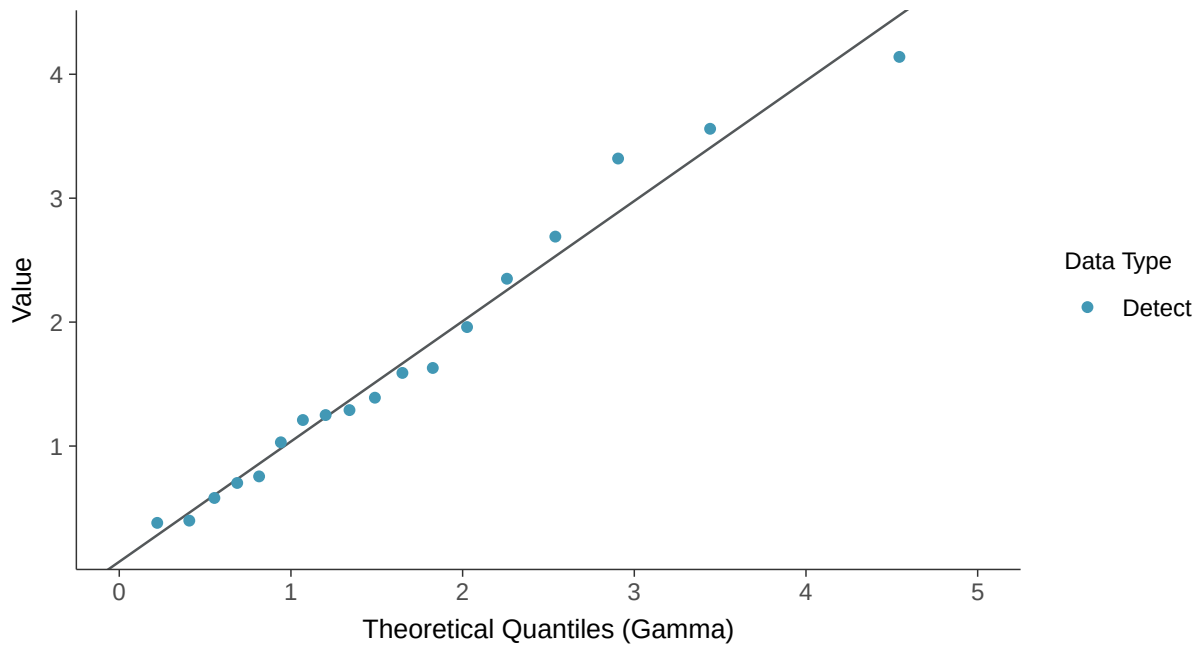
### Lognormal Q-Q plot

Radium-226/228, MW-11B & MW-12B (pCi/L)



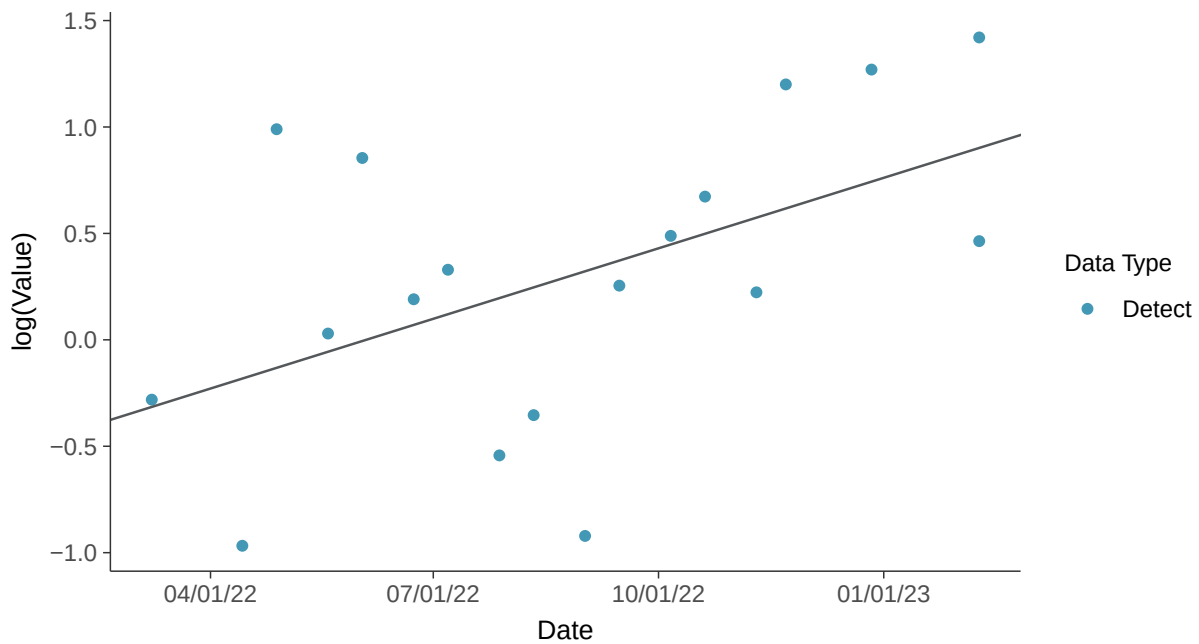
### Gamma Q-Q plot

Radium-226/228, MW-11B & MW-12B (pCi/L)



### Trend Regression: Lognormal MLE

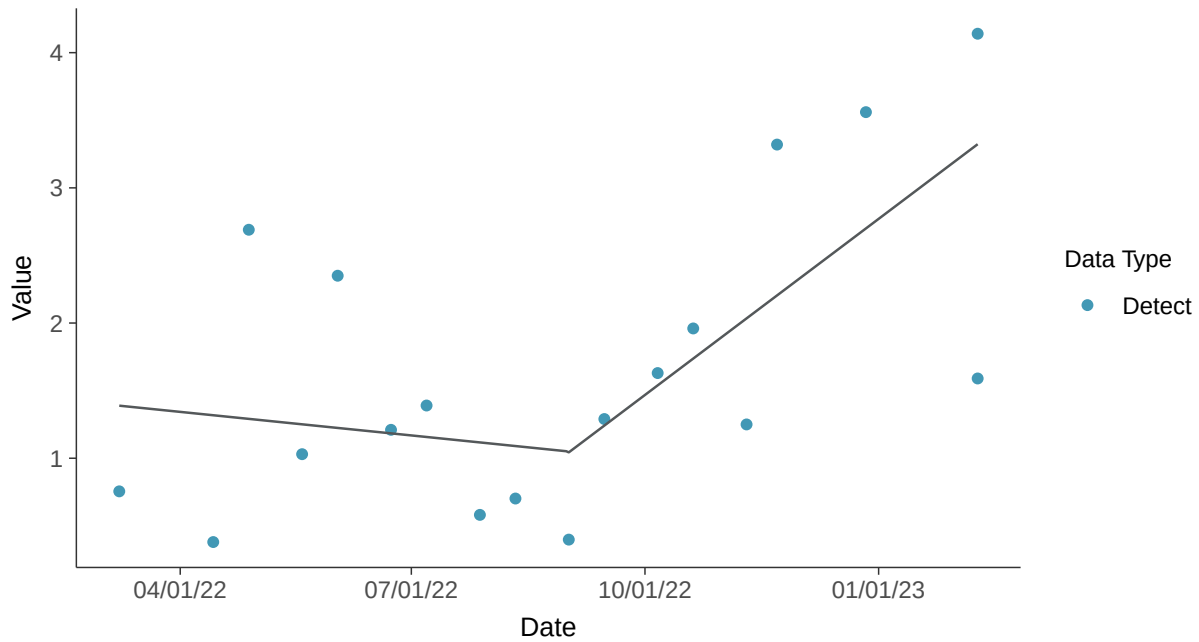
Radium-226/228, MW-11B & MW-12B (pCi/L)





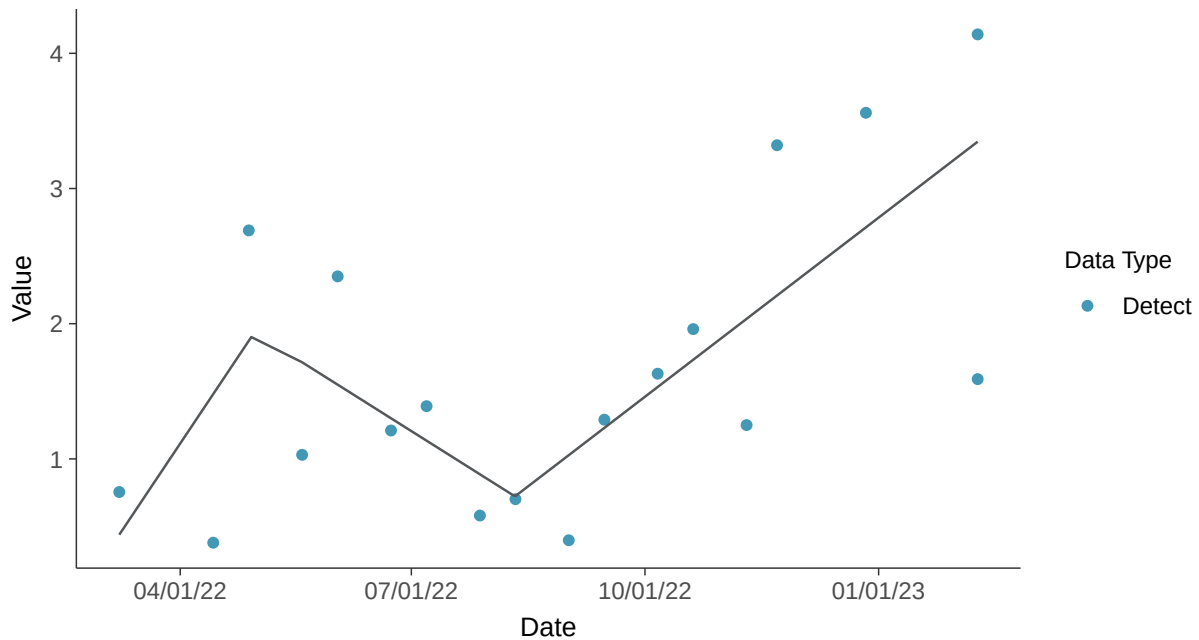
### Trend Regression: Piecewise Linear-Linear

Radium-226/228, MW-11B & MW-12B (pCi/L)



### Trend Regression: Piecewise Linear-Linear-Linear

Radium-226/228, MW-11B & MW-12B (pCi/L)

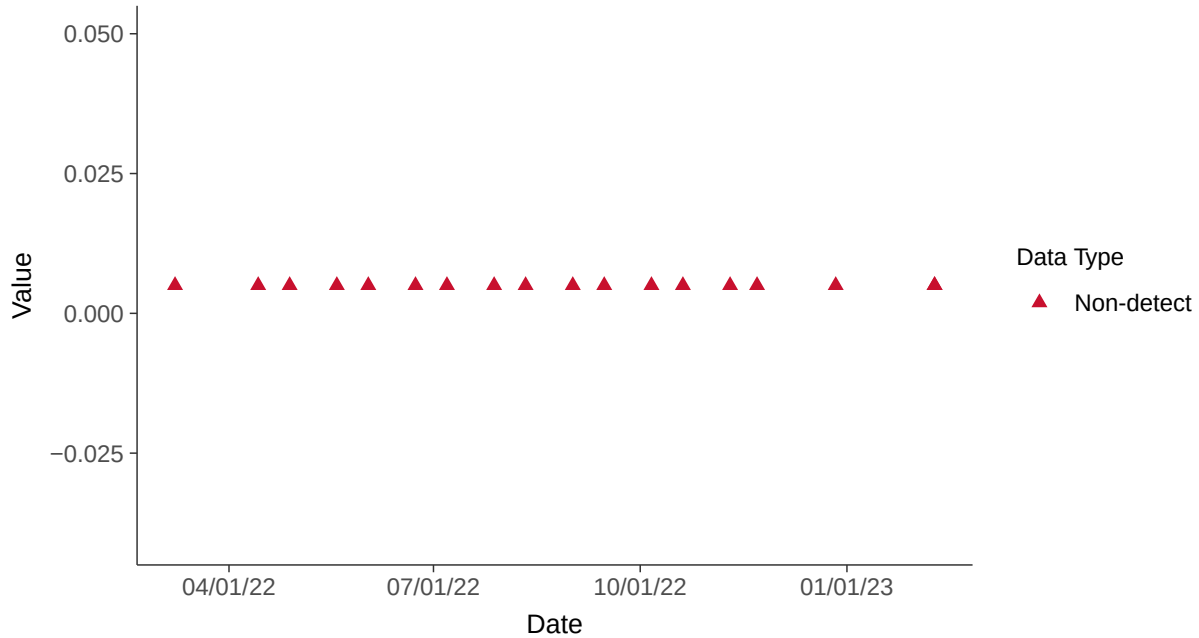


## Appendix IV: Selenium, MW-11B & MW-12B

ID: 2\_22

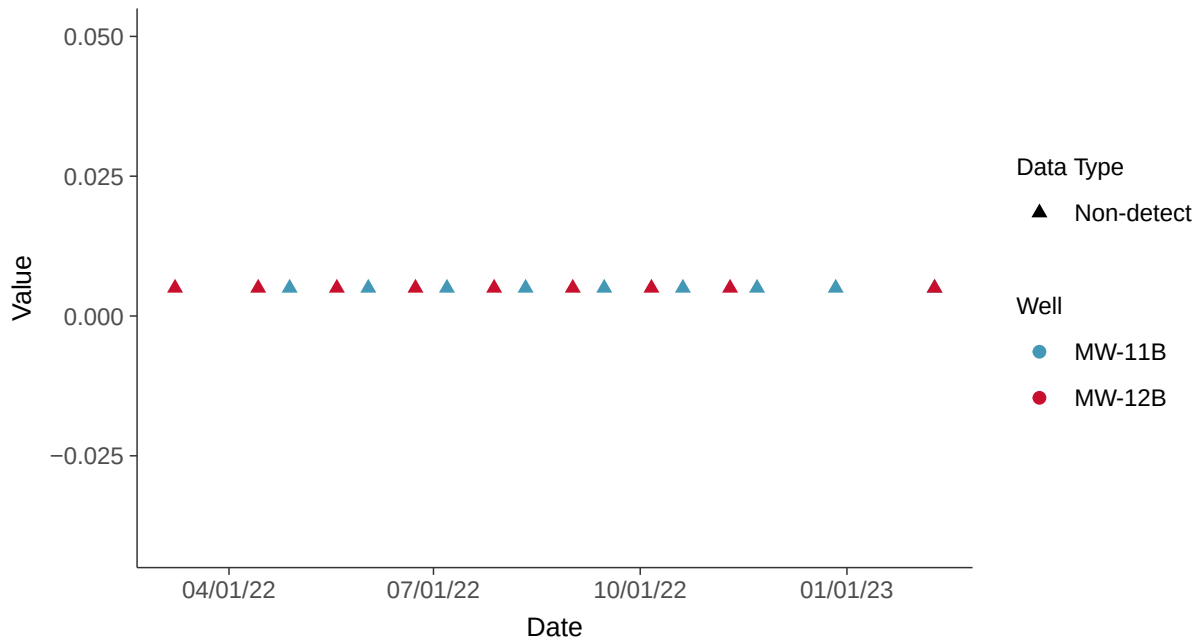
### Scatter Plot

Selenium, MW-11B & MW-12B (mg/L)



### Scatter Plot by Well

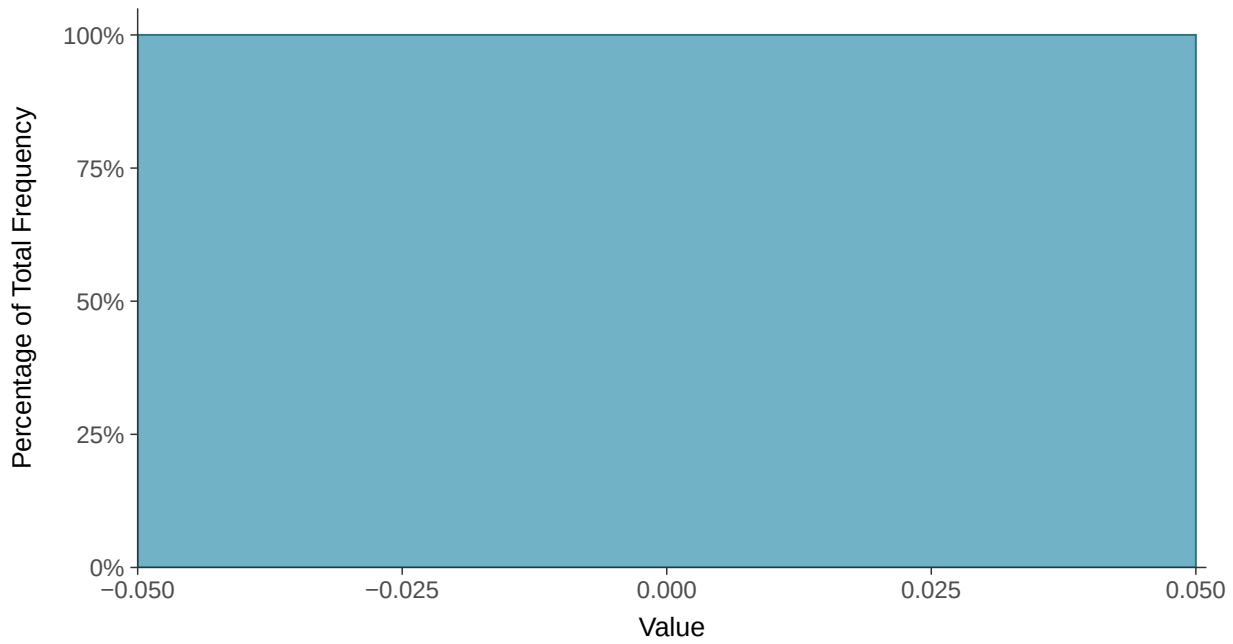
Selenium, MW-11B & MW-12B (mg/L)





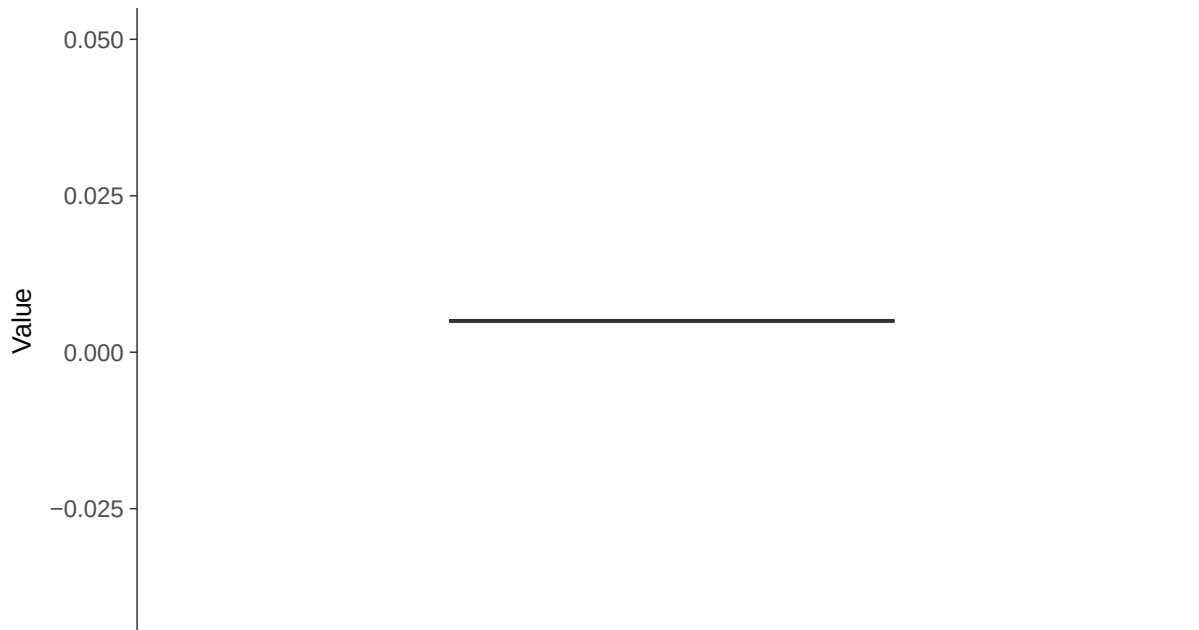
### Histogram

Selenium, MW-11B & MW-12B (mg/L)



### Boxplot

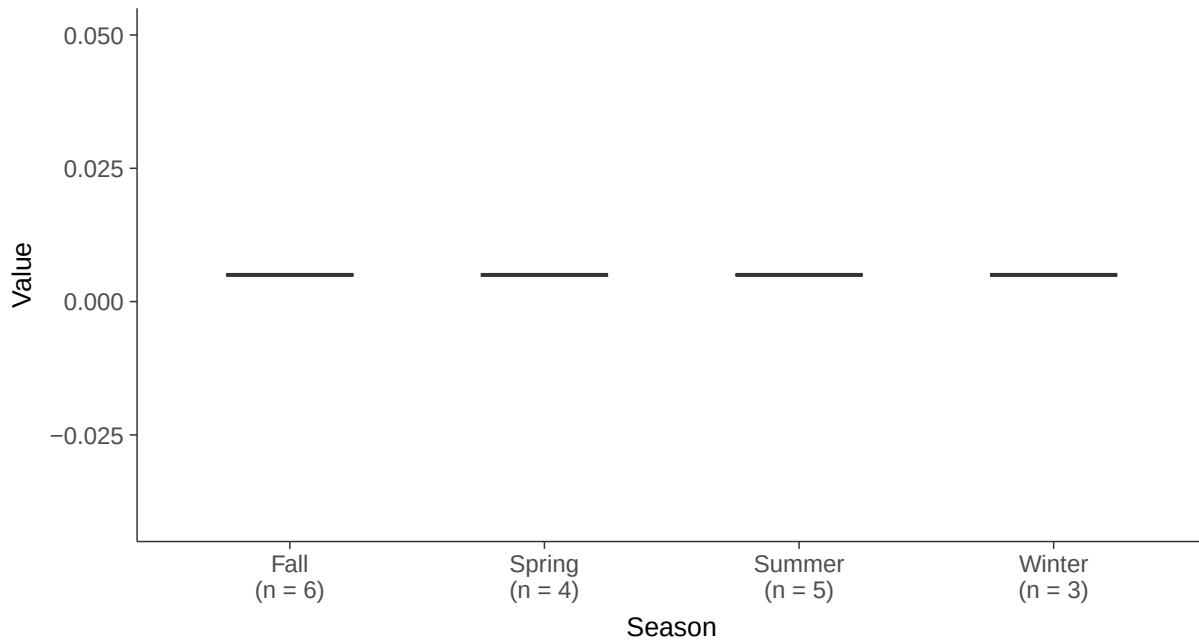
Selenium, MW-11B & MW-12B (mg/L)





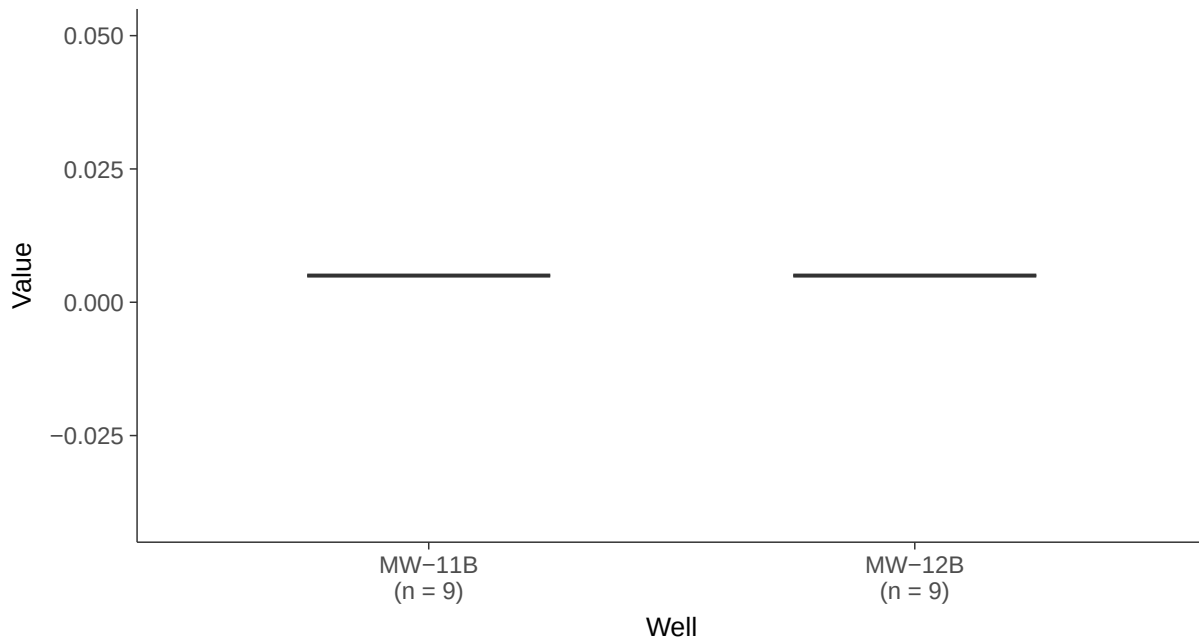
### Boxplot by Season

Selenium, MW-11B & MW-12B (mg/L)



### Boxplot by Well

Selenium, MW-11B & MW-12B (mg/L)

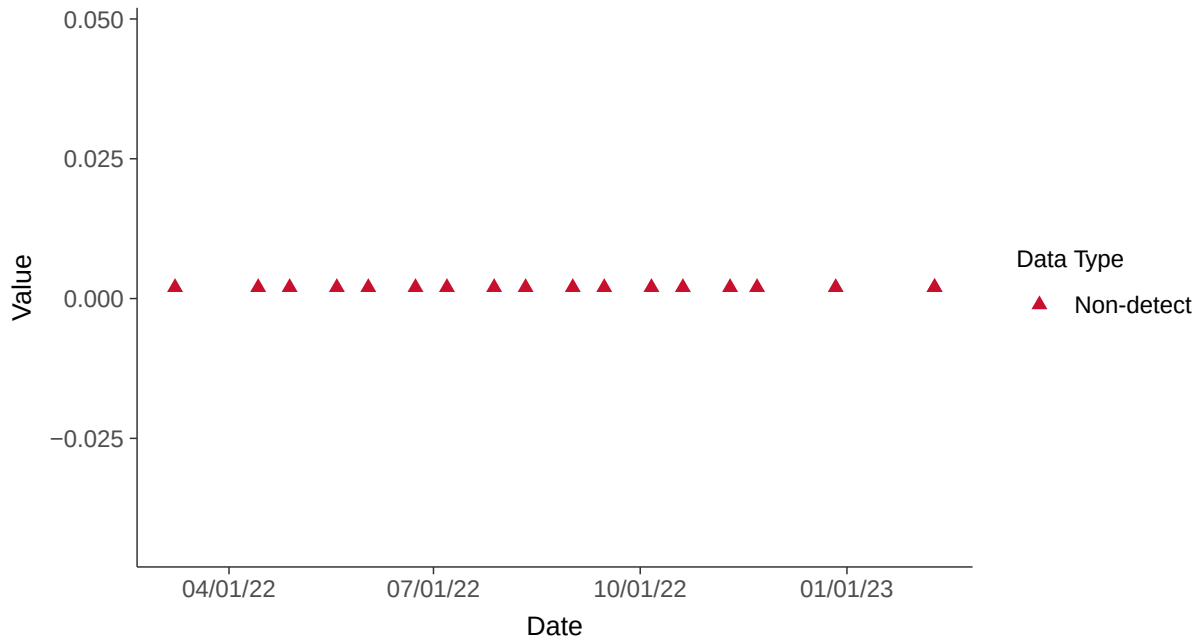


## Appendix IV: Thallium, MW-11B & MW-12B

ID: 2\_23

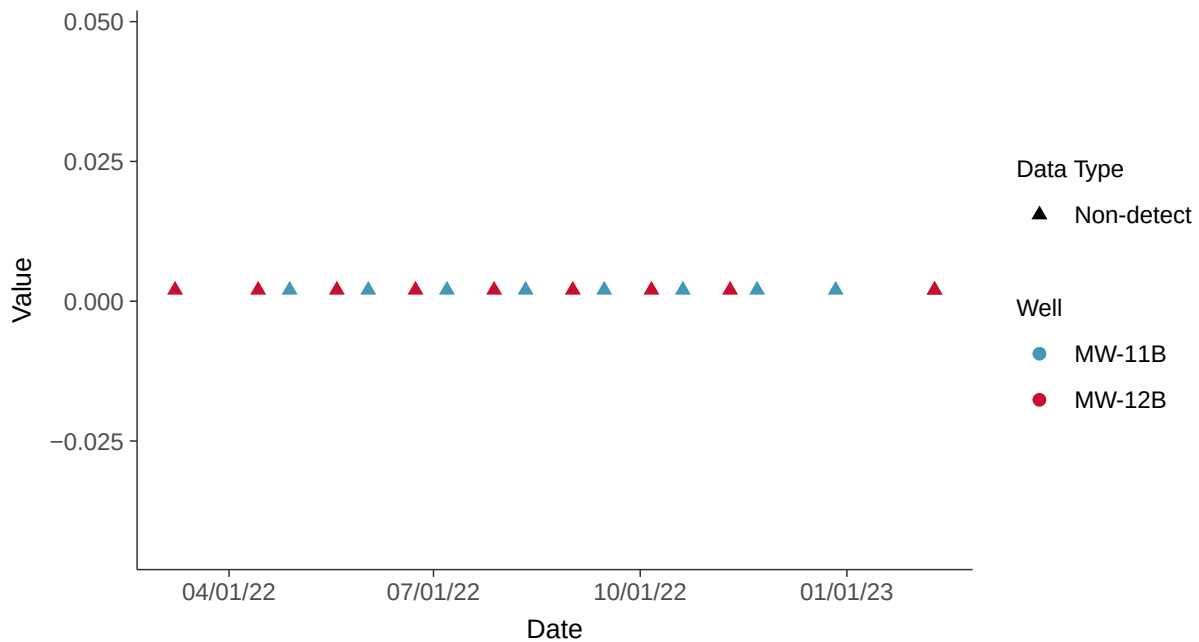
### Scatter Plot

Thallium, MW-11B & MW-12B (mg/L)



### Scatter Plot by Well

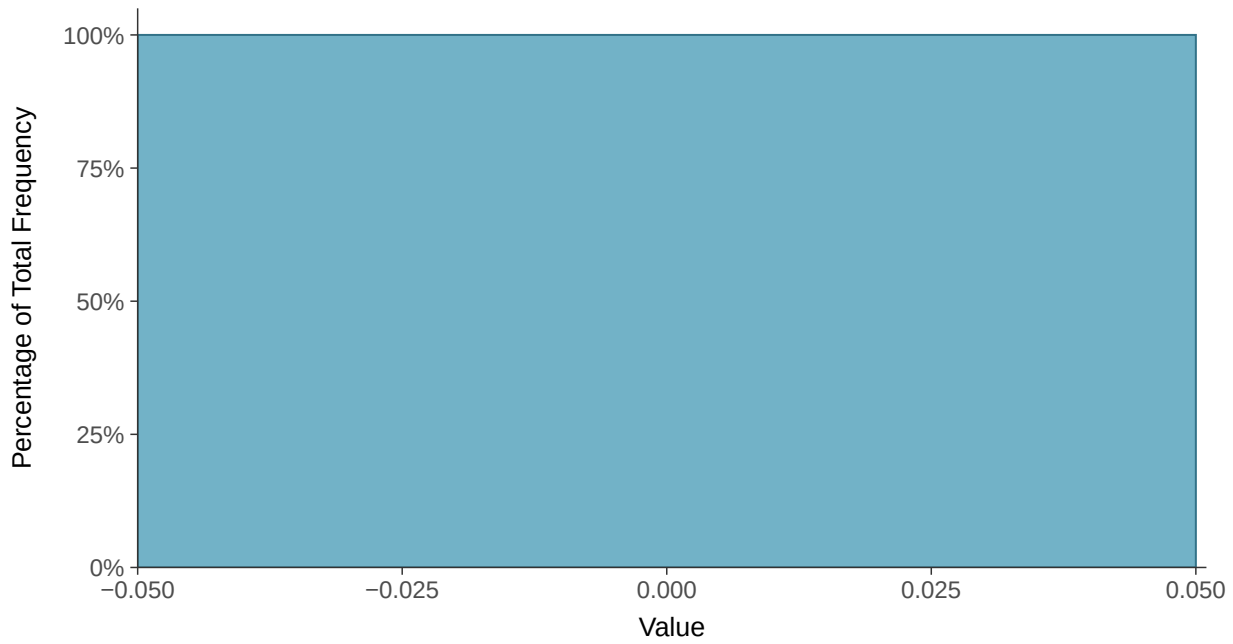
Thallium, MW-11B & MW-12B (mg/L)





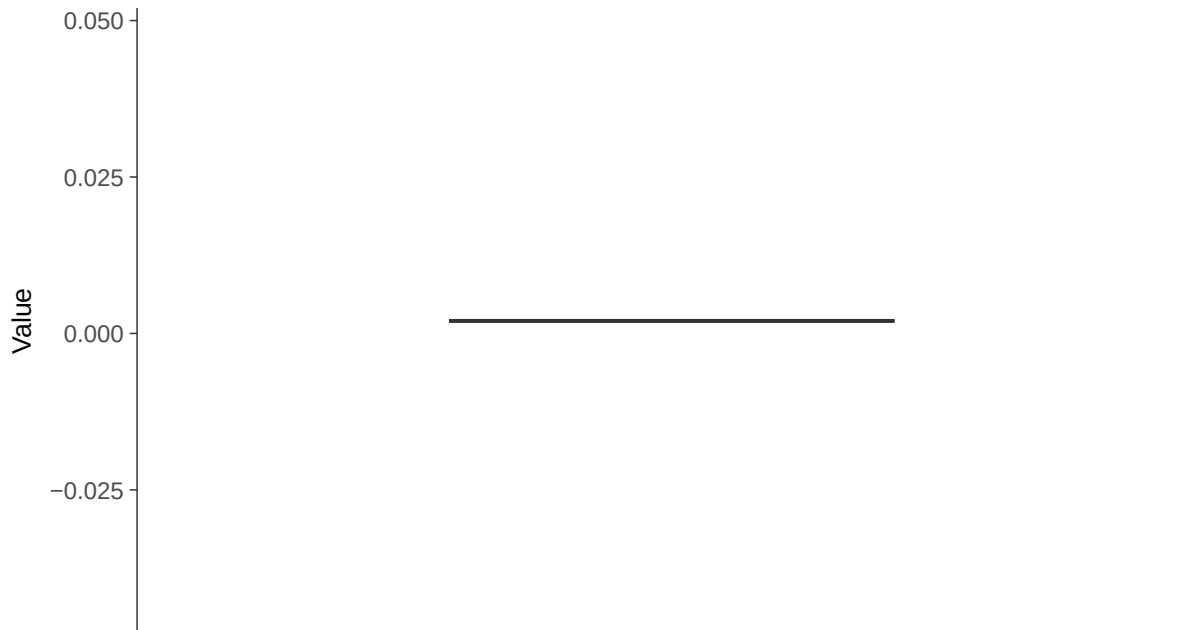
### Histogram

Thallium, MW-11B & MW-12B (mg/L)



### Boxplot

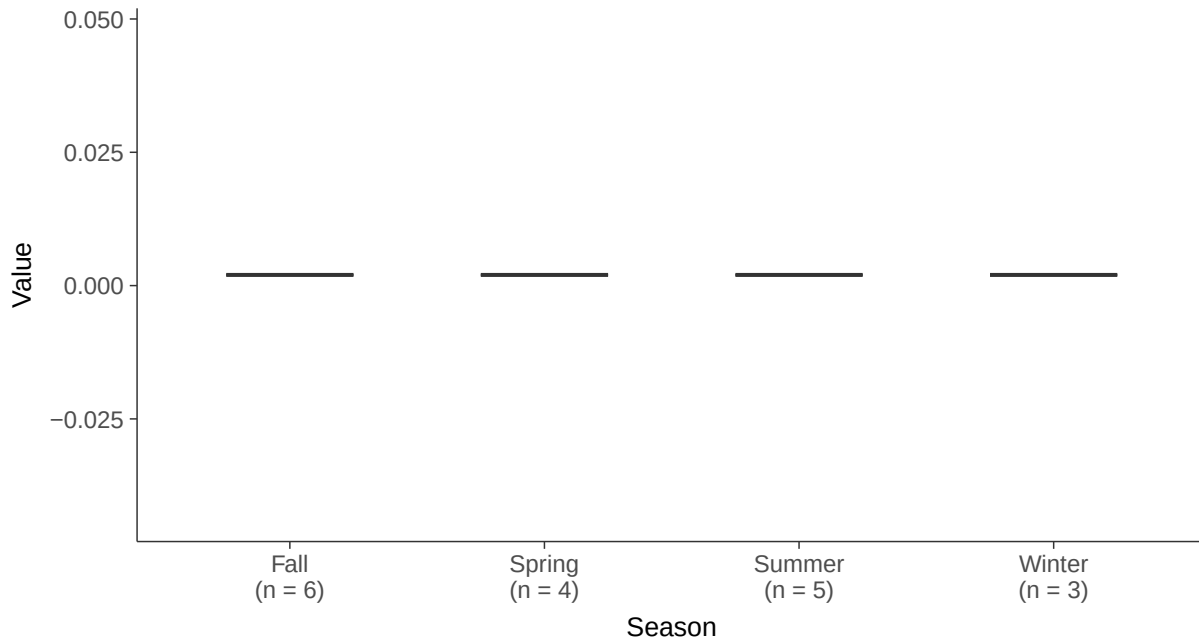
Thallium, MW-11B & MW-12B (mg/L)





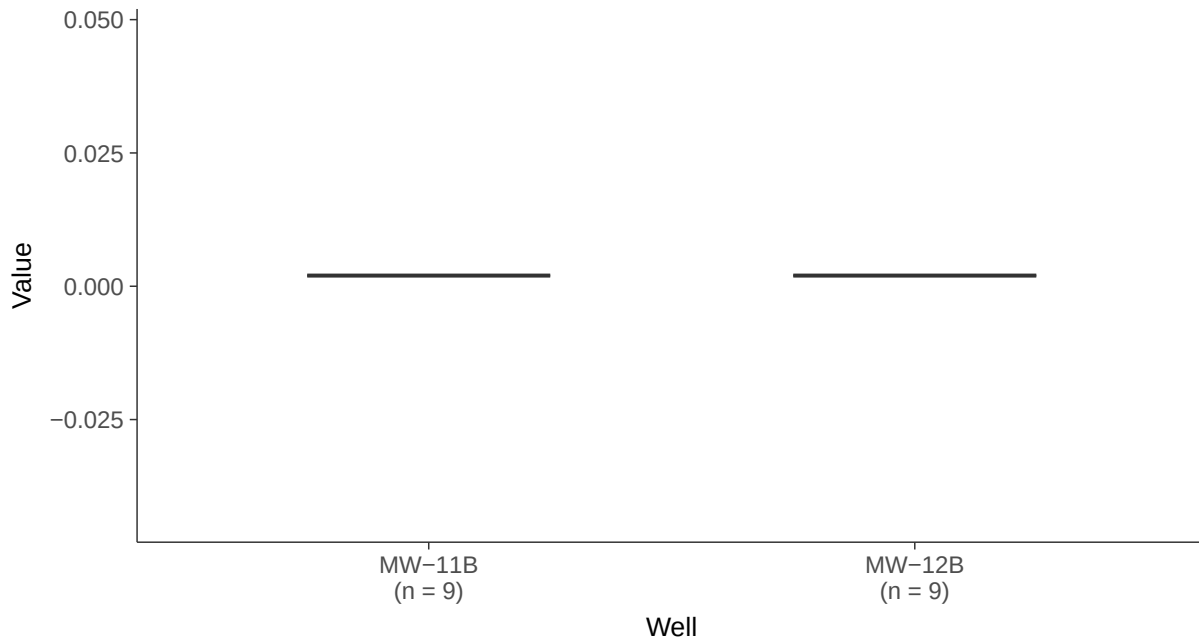
### Boxplot by Season

Thallium, MW-11B & MW-12B (mg/L)



### Boxplot by Well

Thallium, MW-11B & MW-12B (mg/L)





E

Erickson BWL Glacial  
Background Plots



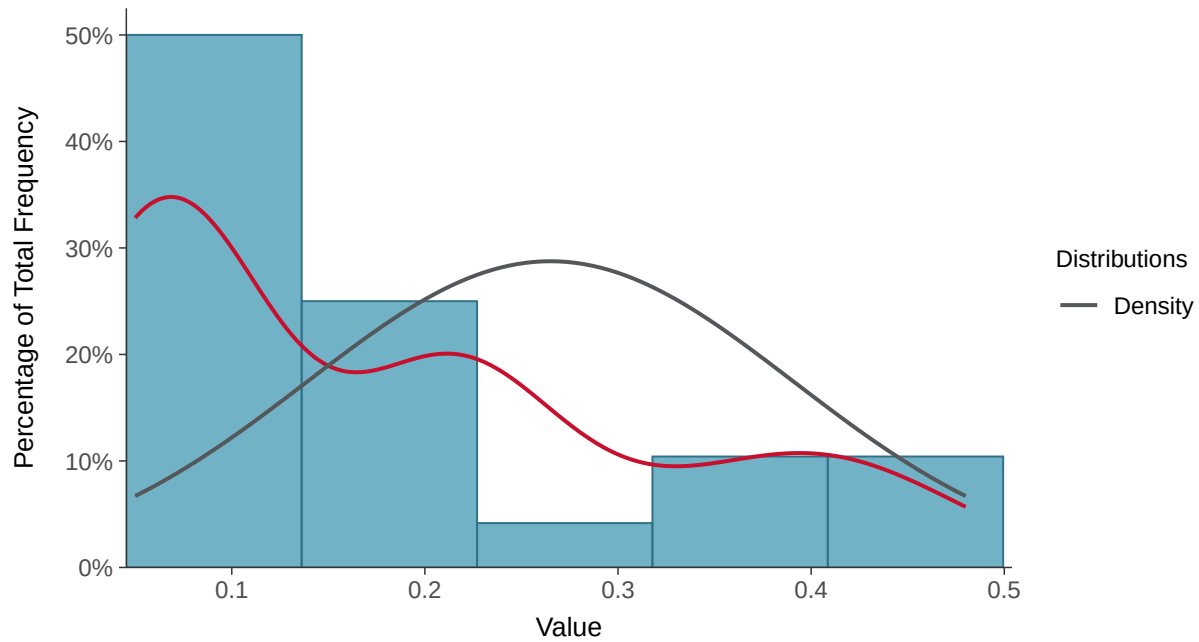
## H2R

H2R



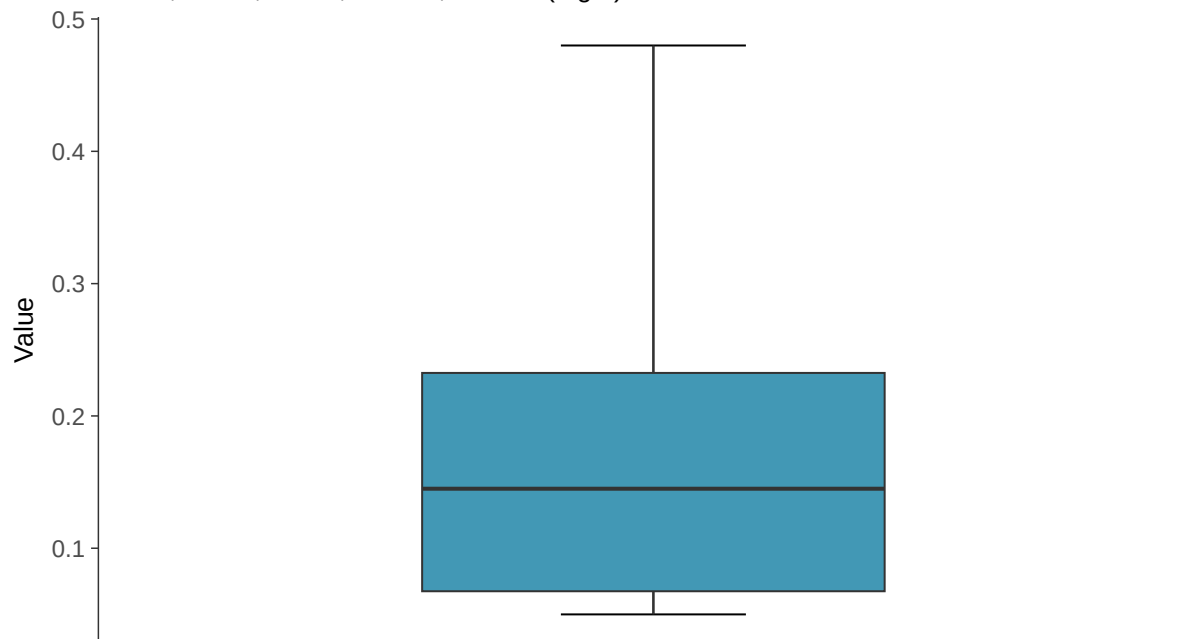
### Histogram

Boron, MW-1, MW-4, MW-11, MW-12 (mg/L)



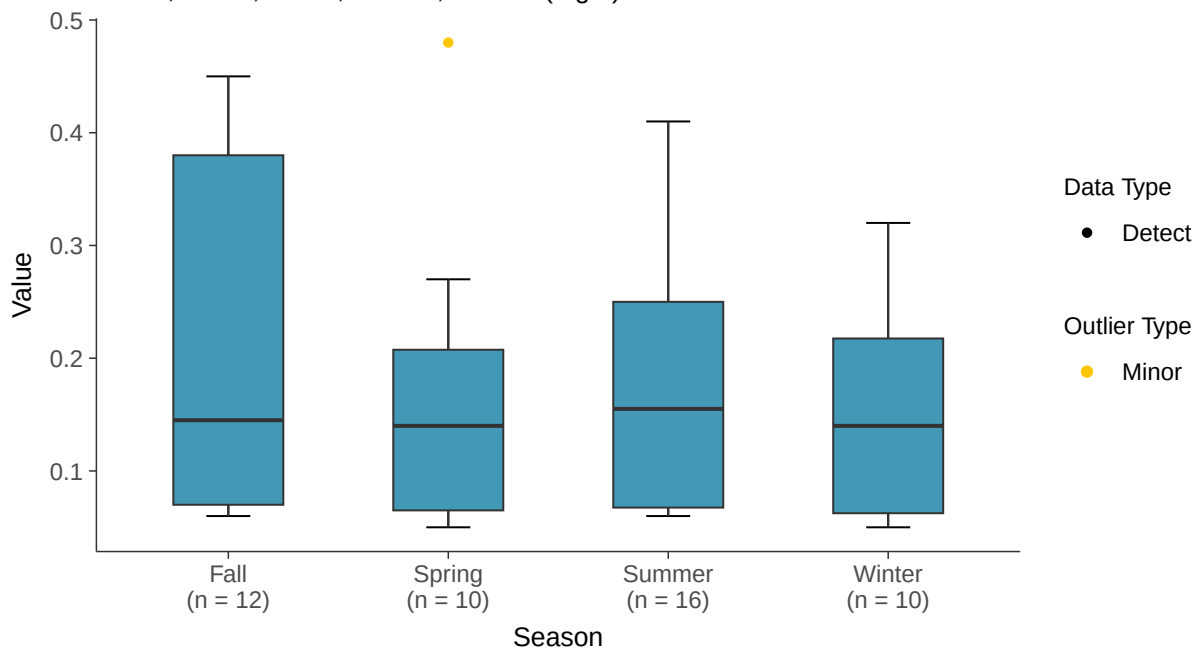
### Boxplot

Boron, MW-1, MW-4, MW-11, MW-12 (mg/L)



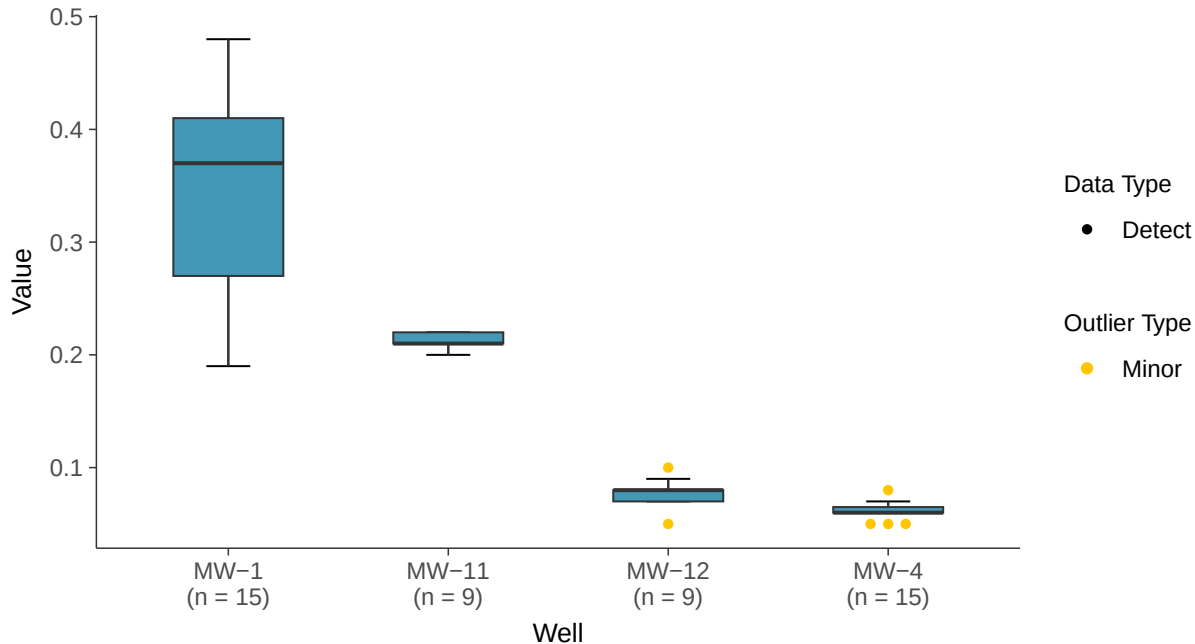
### Boxplot by Season

Boron, MW-1, MW-4, MW-11, MW-12 (mg/L)



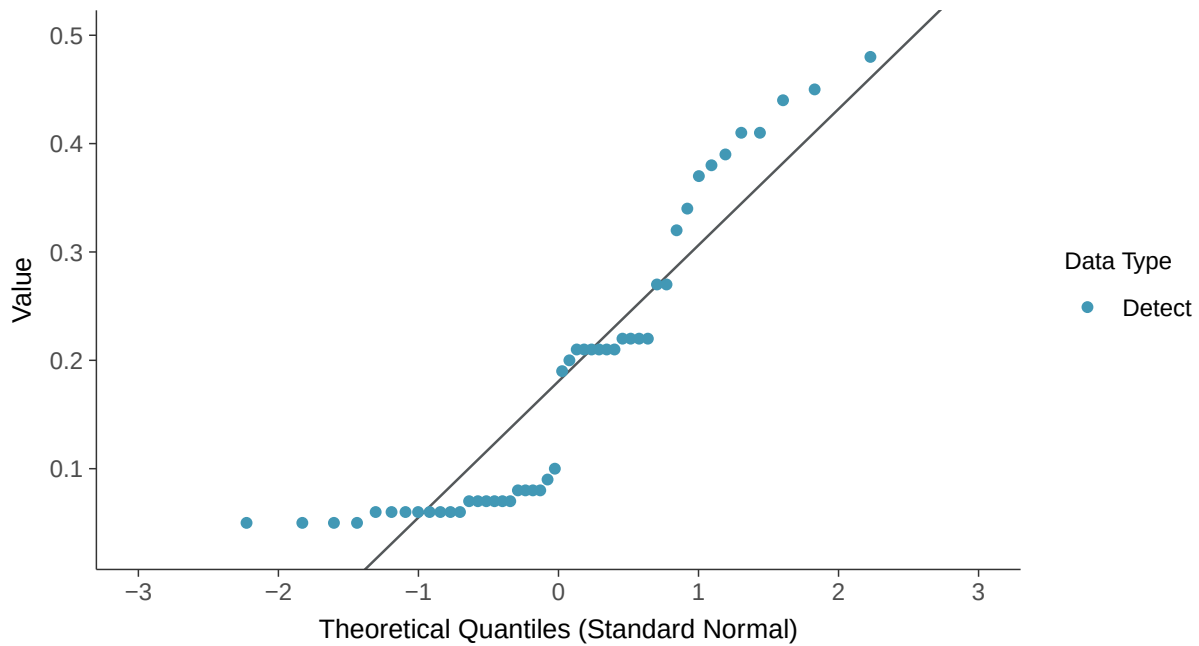
### Boxplot by Well

Boron, MW-1, MW-4, MW-11, MW-12 (mg/L)



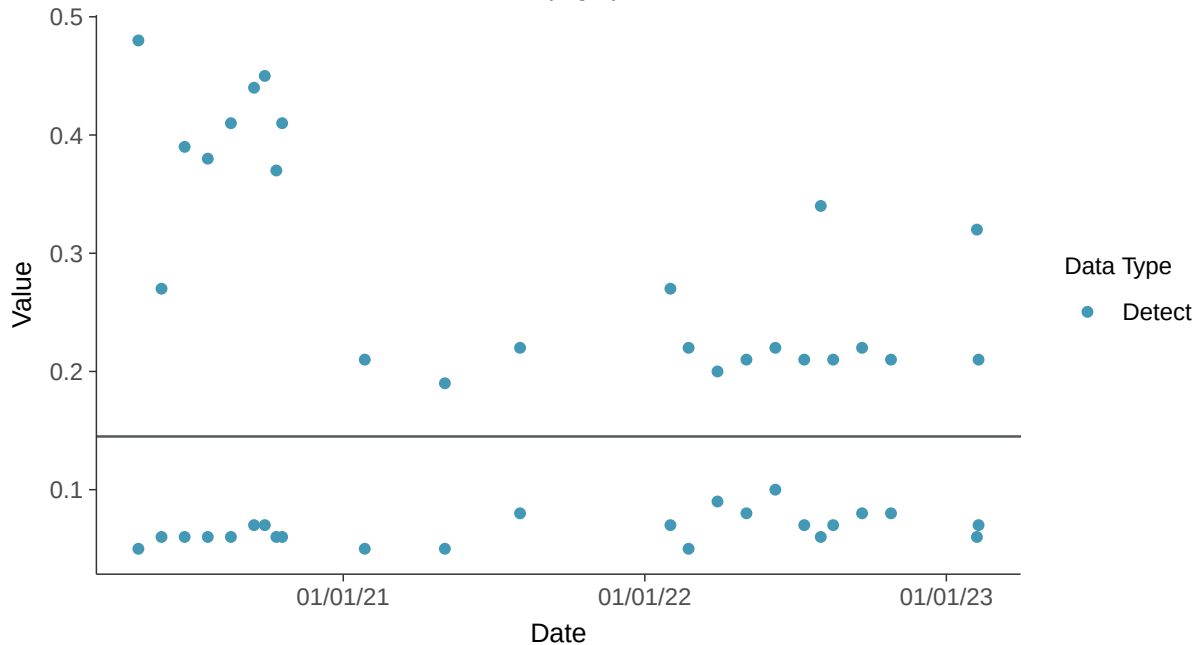
### Normal Q-Q plot

Boron, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Trend Regression: Mann-Kendall/Theil-Sen Estimate

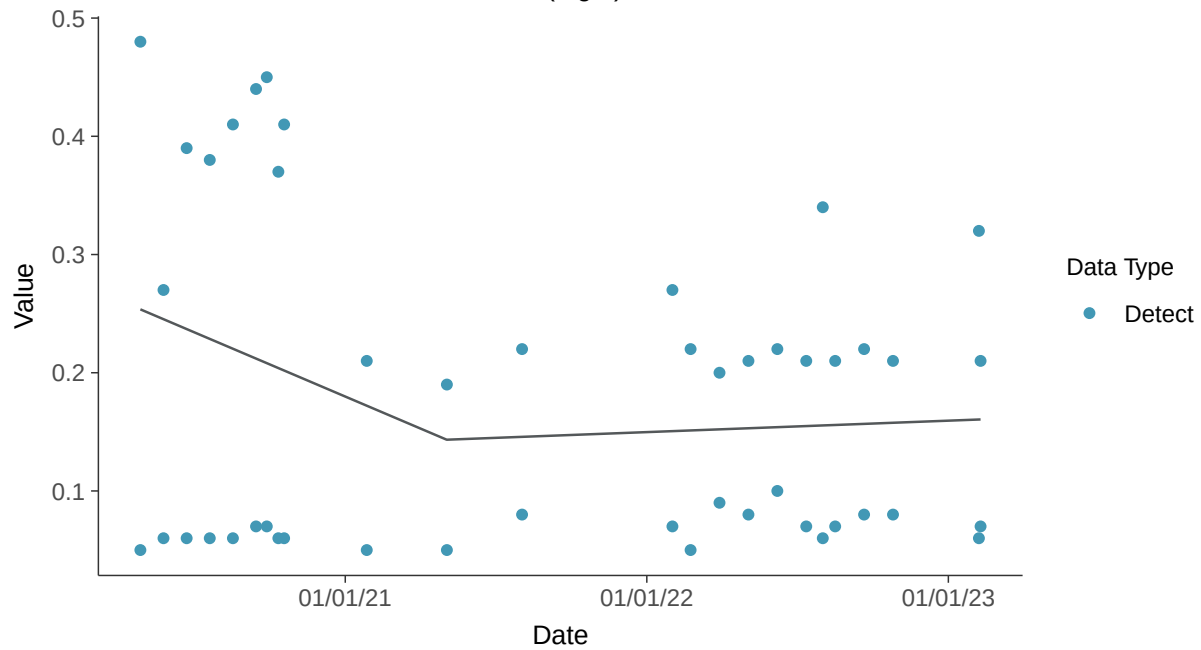
Boron, MW-1, MW-4, MW-11, MW-12 (mg/L)





### Trend Regression: Piecewise Linear-Linear

Boron, MW-1, MW-4, MW-11, MW-12 (mg/L)

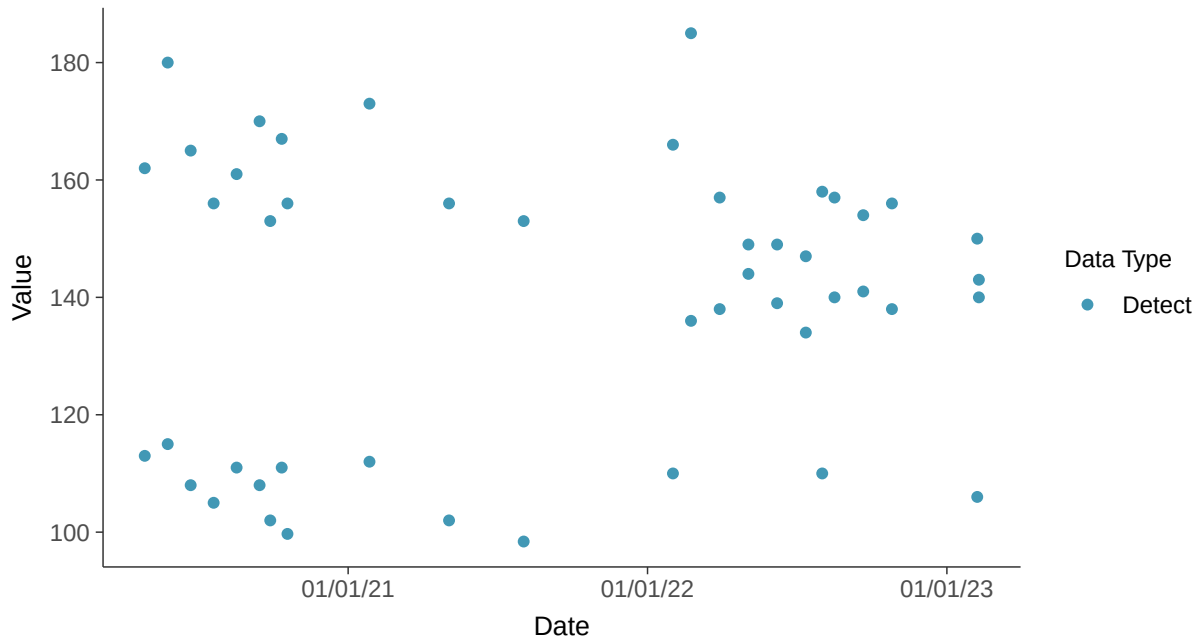


**Appendix III: Calcium, MW-1, MW-4, MW-11, MW-12**

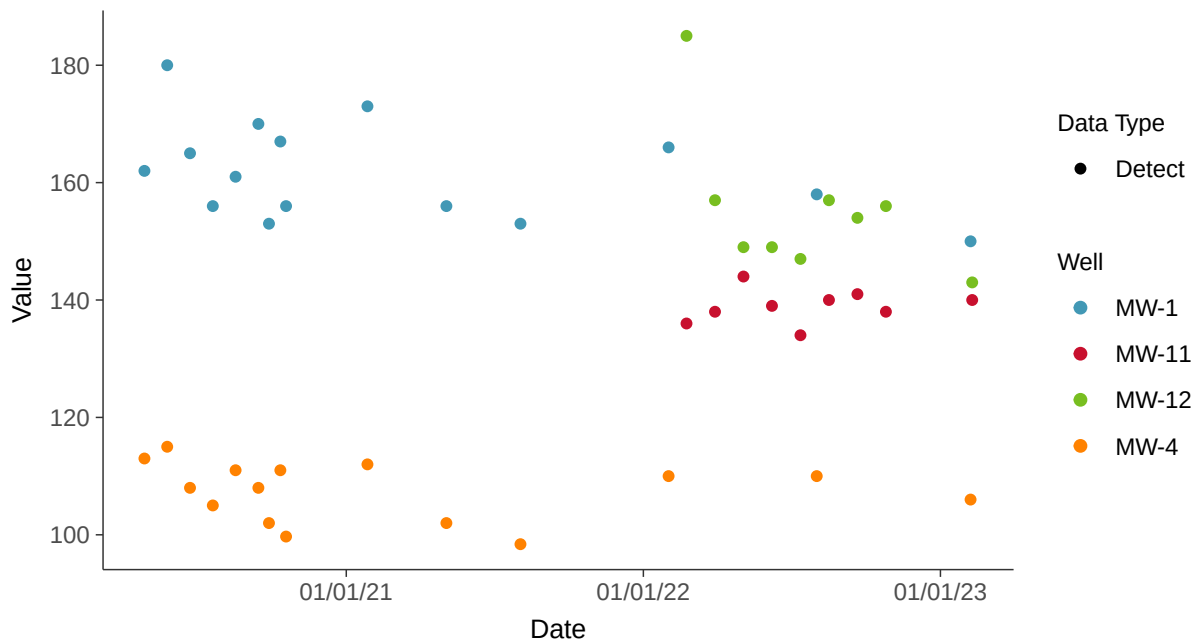
ID: 1\_02

**Scatter Plot**

Calcium, MW-1, MW-4, MW-11, MW-12 (mg/L)

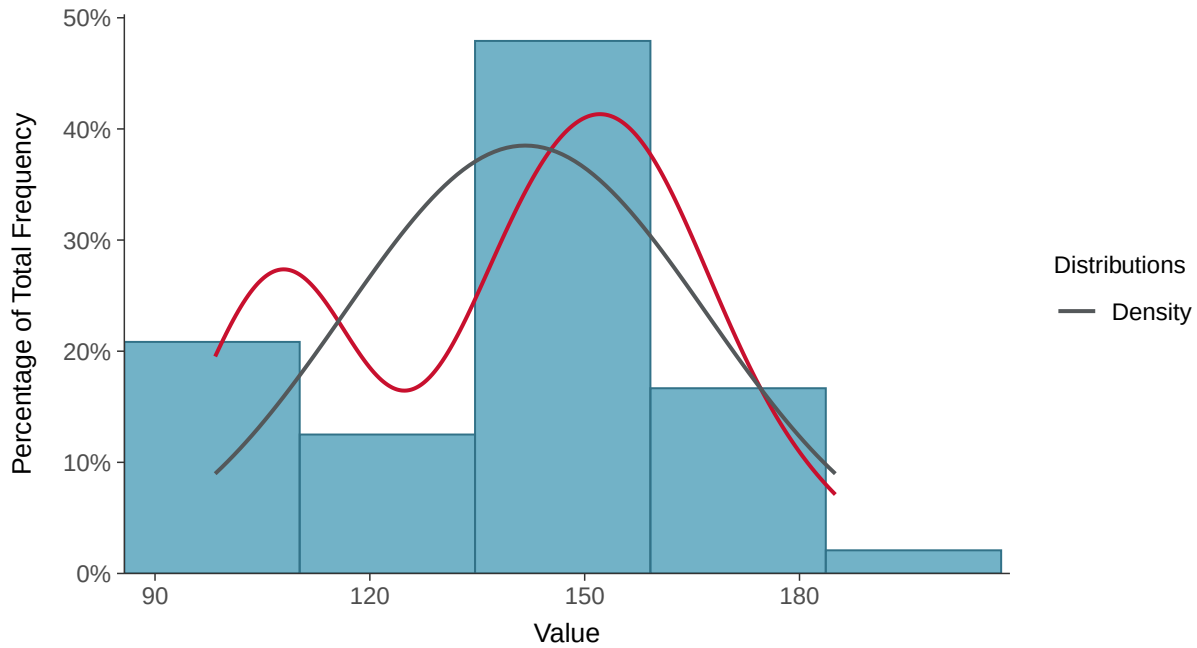
**Scatter Plot by Well**

Calcium, MW-1, MW-4, MW-11, MW-12 (mg/L)



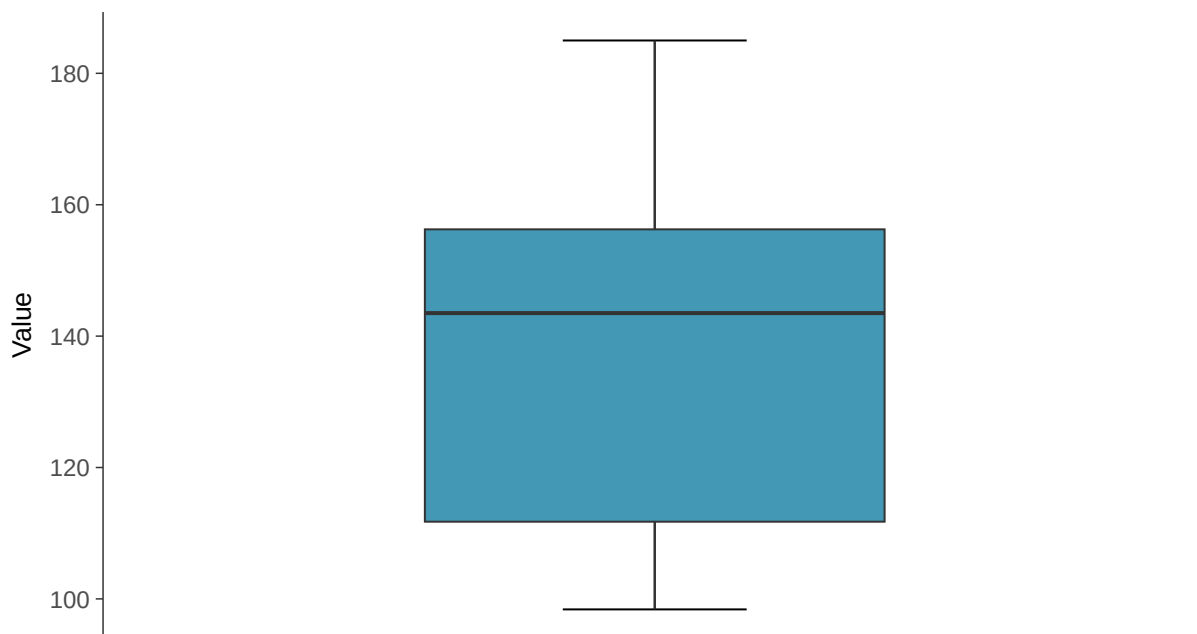
### Histogram

Calcium, MW-1, MW-4, MW-11, MW-12 (mg/L)



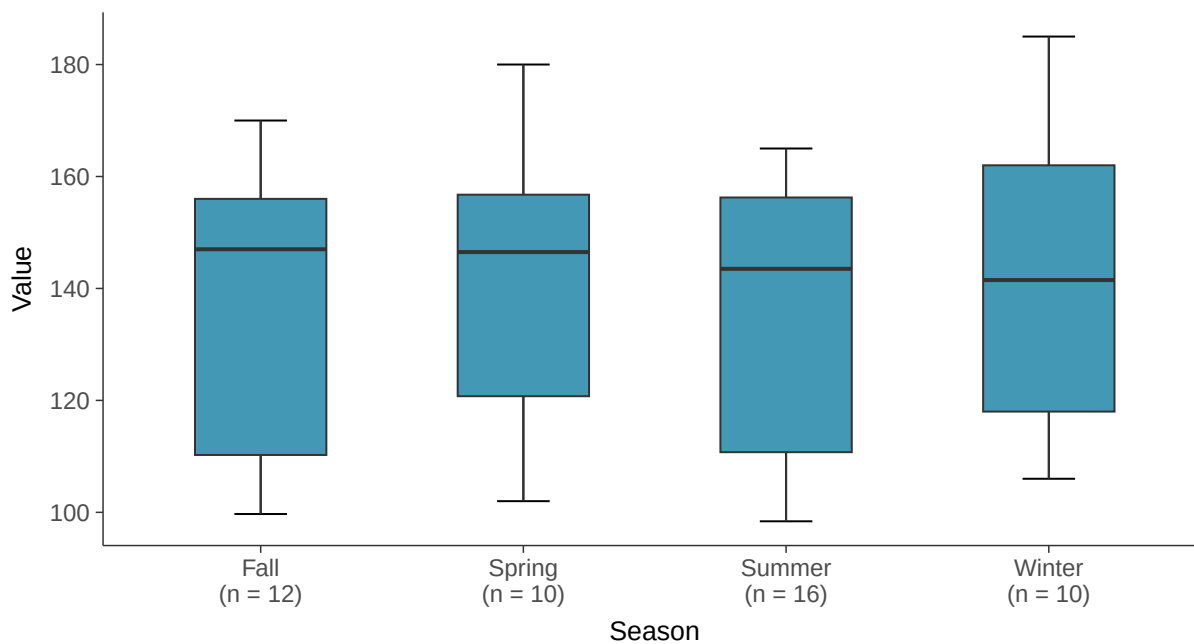
### Boxplot

Calcium, MW-1, MW-4, MW-11, MW-12 (mg/L)



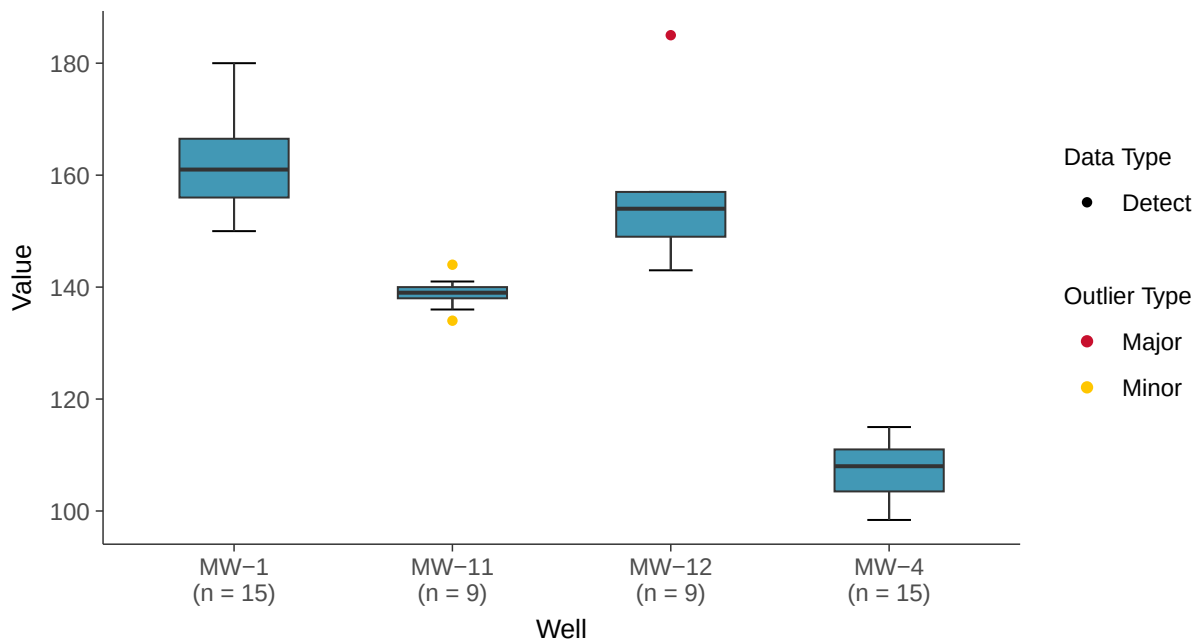
### Boxplot by Season

Calcium, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot by Well

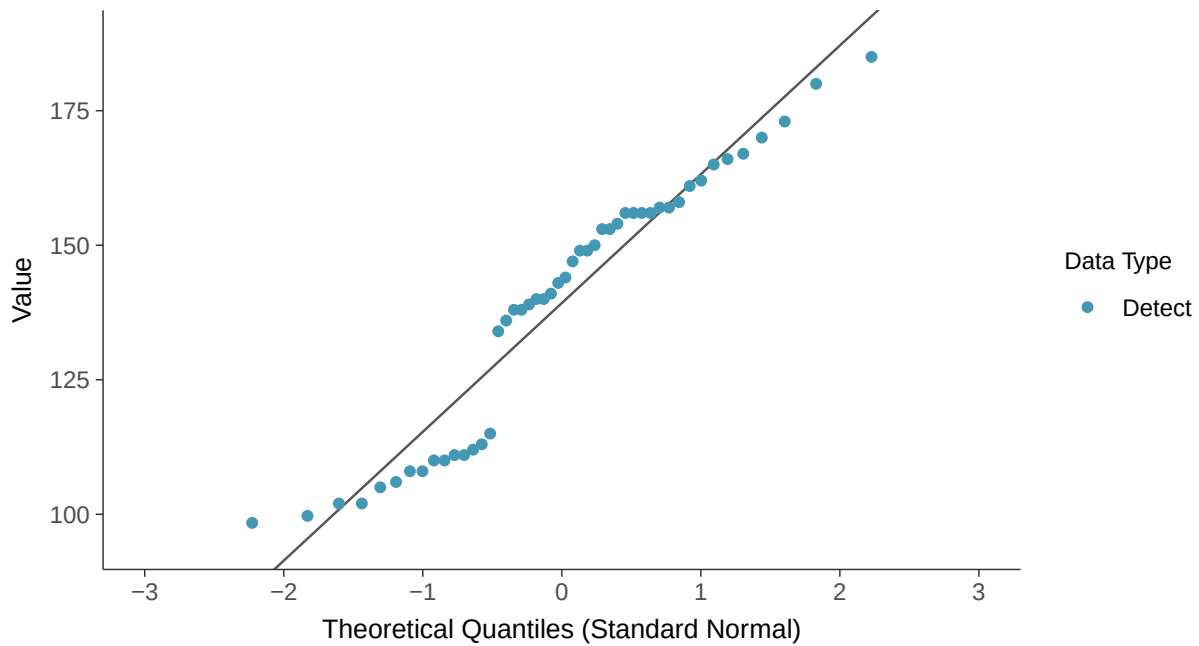
Calcium, MW-1, MW-4, MW-11, MW-12 (mg/L)





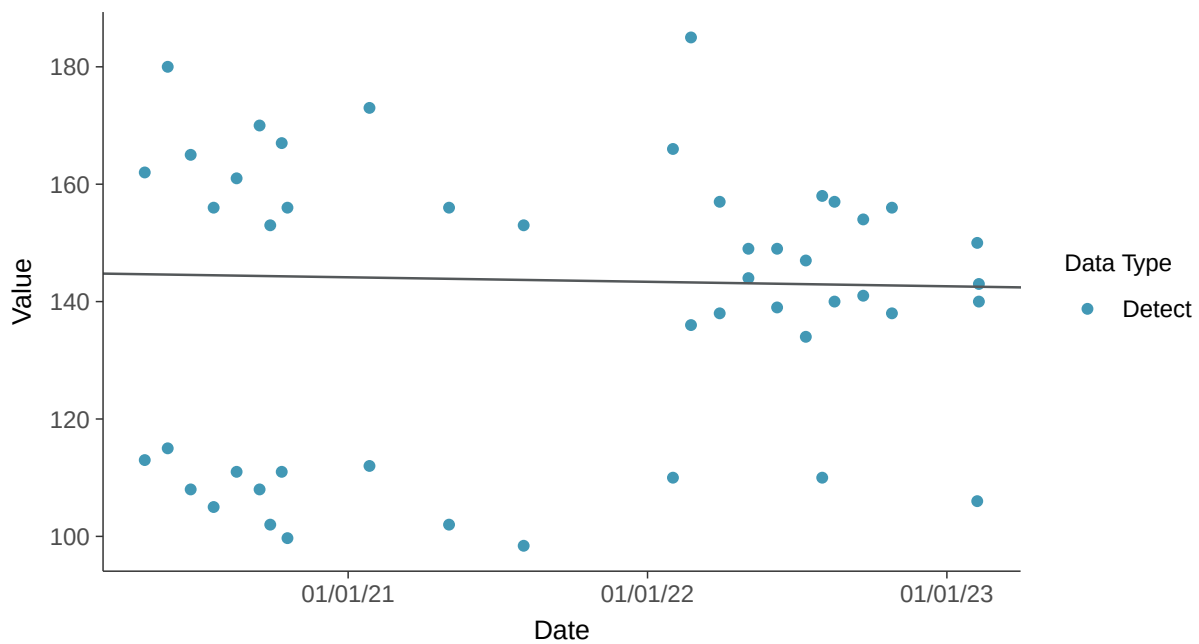
### Normal Q-Q plot

Calcium, MW-1, MW-4, MW-11, MW-12 (mg/L)



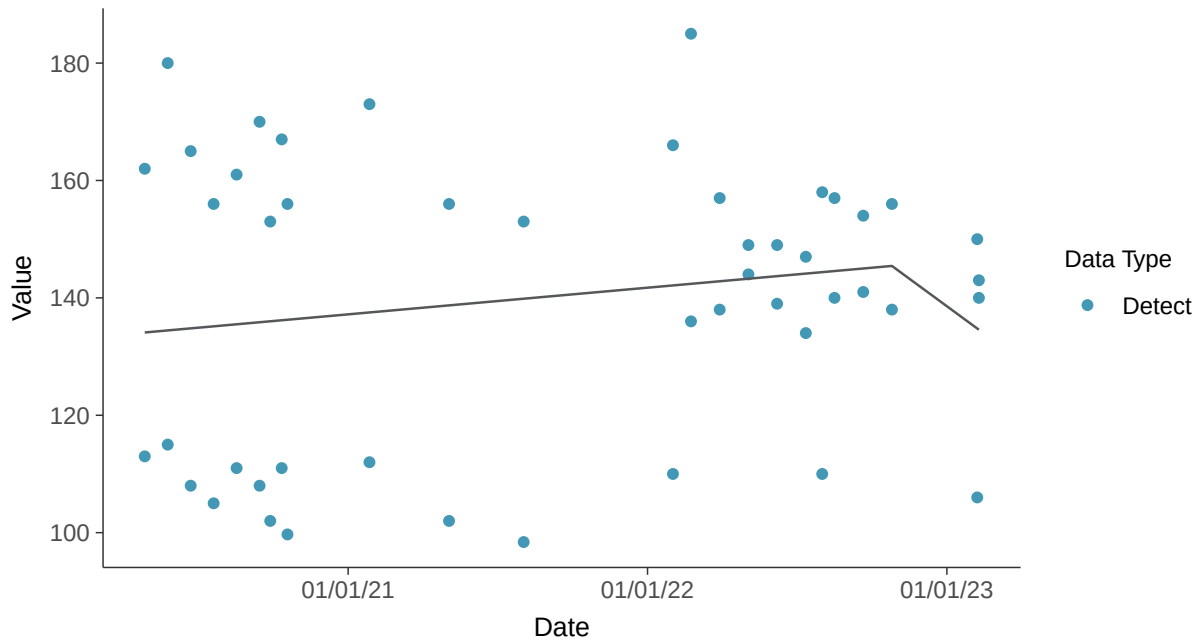
### Trend Regression: Mann-Kendall/Theil-Sen Estimate

Calcium, MW-1, MW-4, MW-11, MW-12 (mg/L)



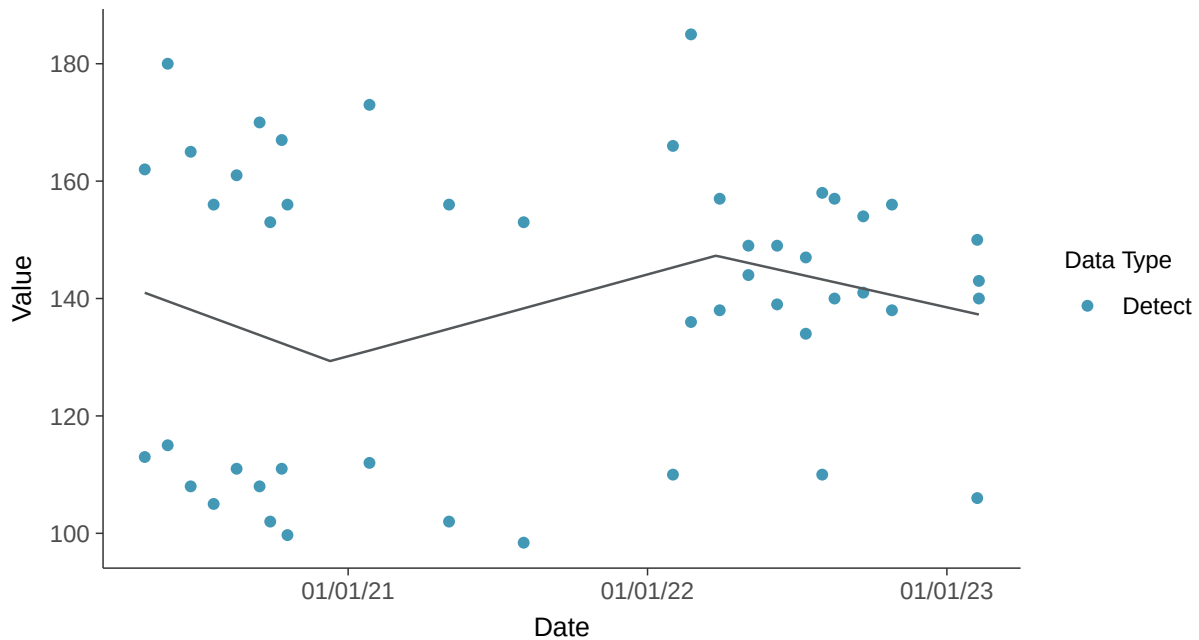
### Trend Regression: Piecewise Linear-Linear

Calcium, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Trend Regression: Piecewise Linear-Linear-Linear

Calcium, MW-1, MW-4, MW-11, MW-12 (mg/L)

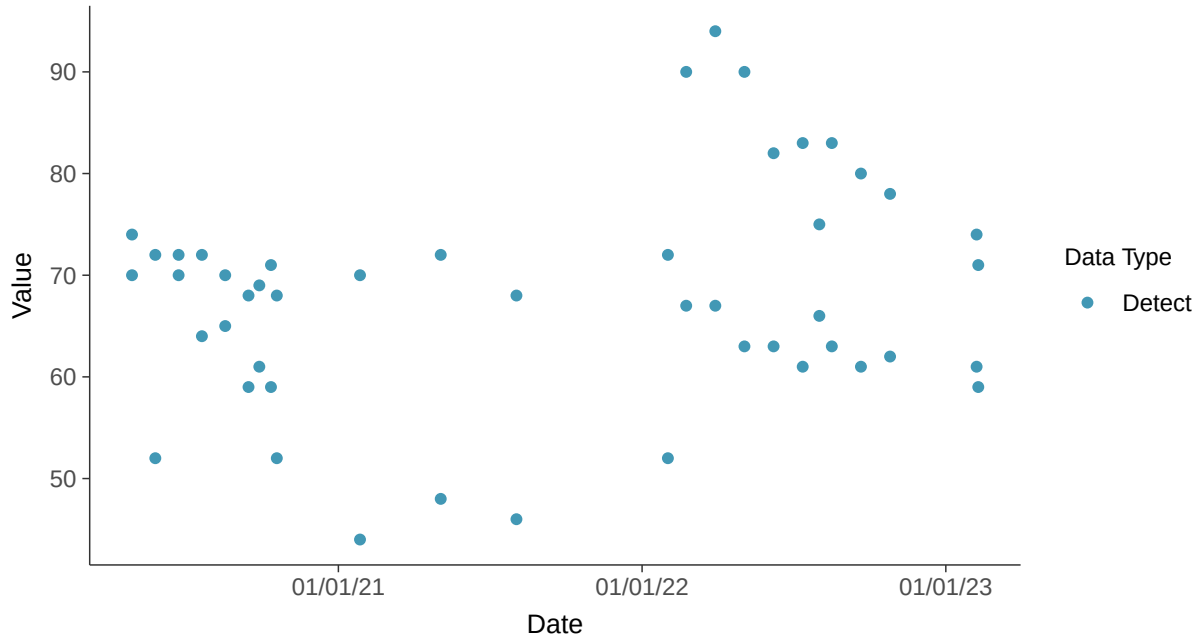


**Appendix III: Chloride, MW-1, MW-4, MW-11, MW-12**

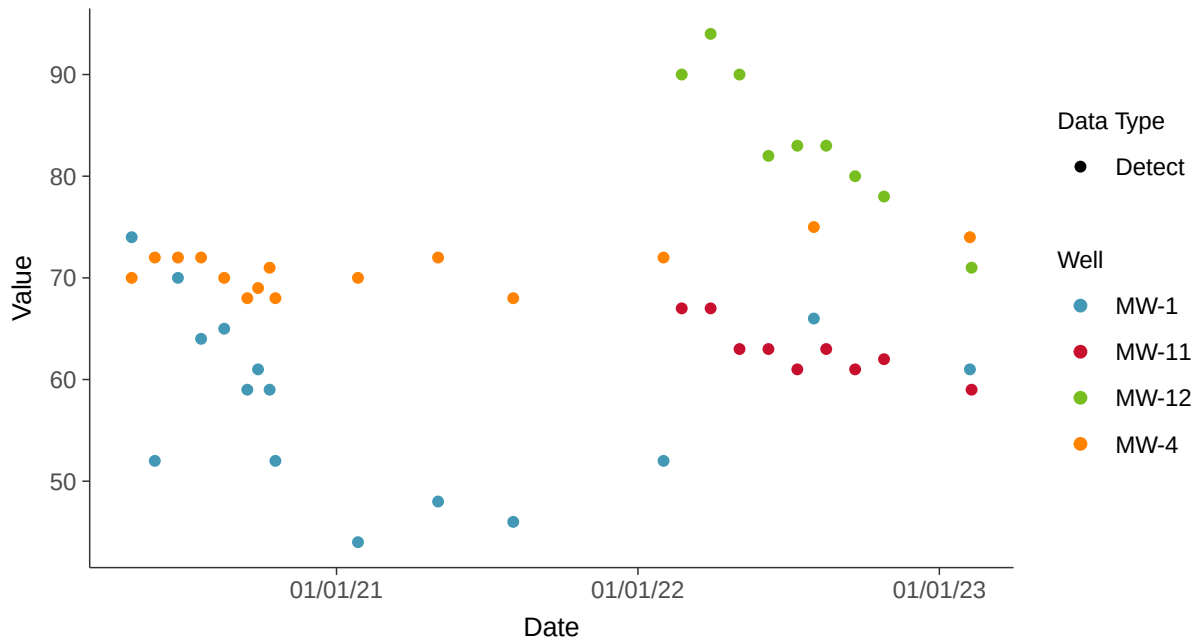
ID: 1\_03

**Scatter Plot**

Chloride, MW-1, MW-4, MW-11, MW-12 (mg/L)

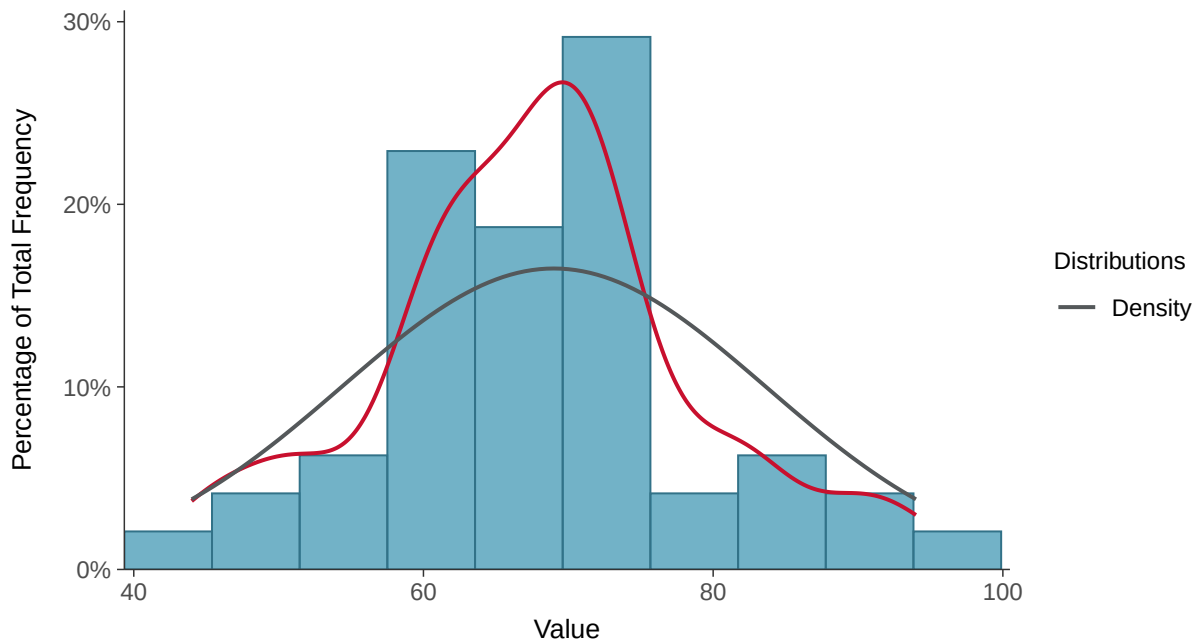
**Scatter Plot by Well**

Chloride, MW-1, MW-4, MW-11, MW-12 (mg/L)



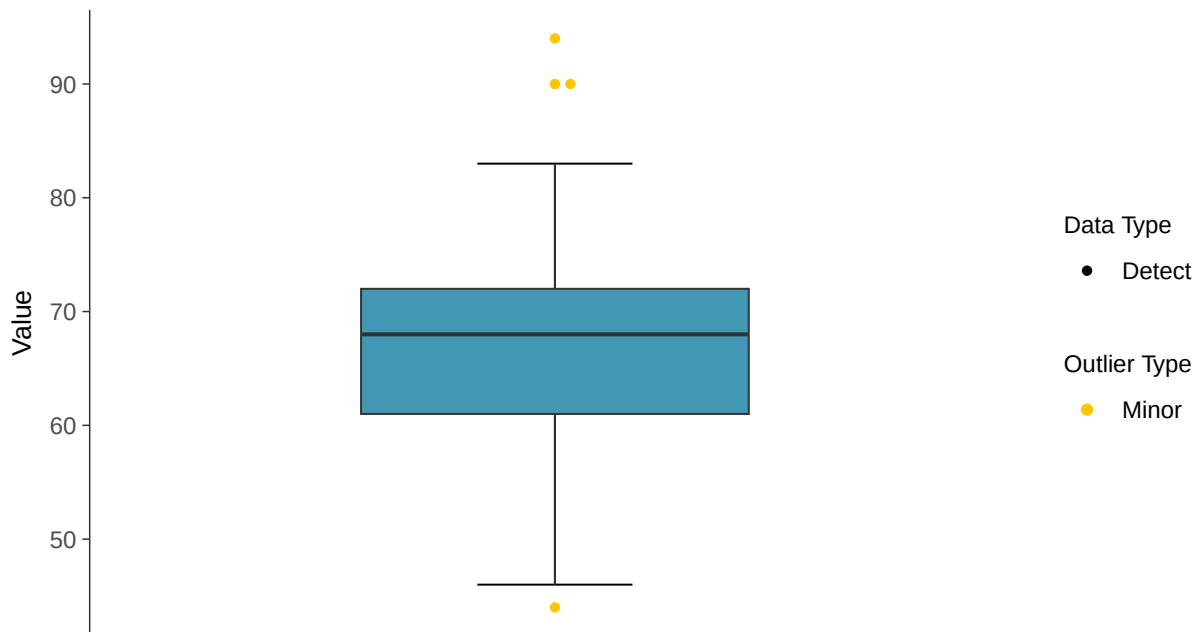
### Histogram

Chloride, MW-1, MW-4, MW-11, MW-12 (mg/L)



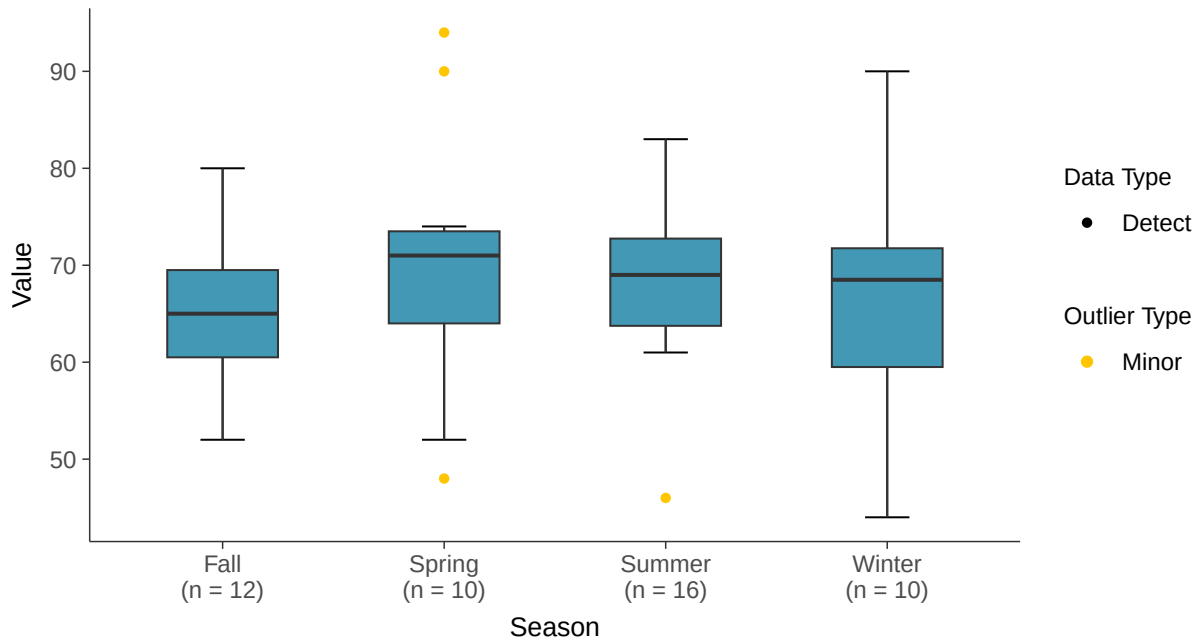
### Boxplot

Chloride, MW-1, MW-4, MW-11, MW-12 (mg/L)



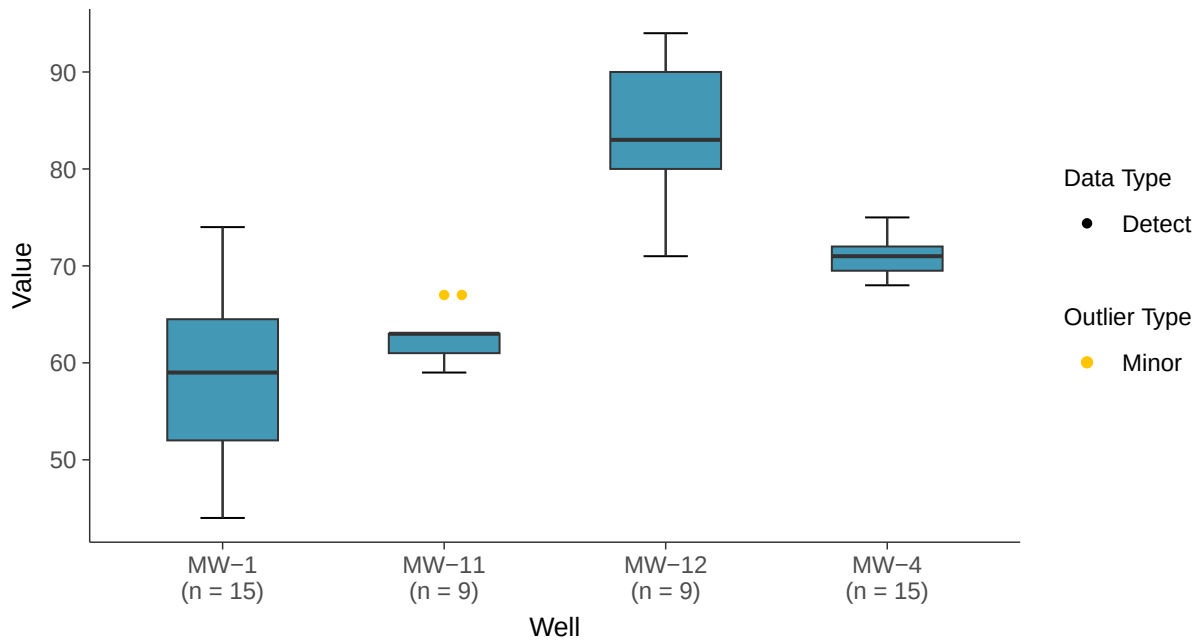
### Boxplot by Season

Chloride, MW-1, MW-4, MW-11, MW-12 (mg/L)



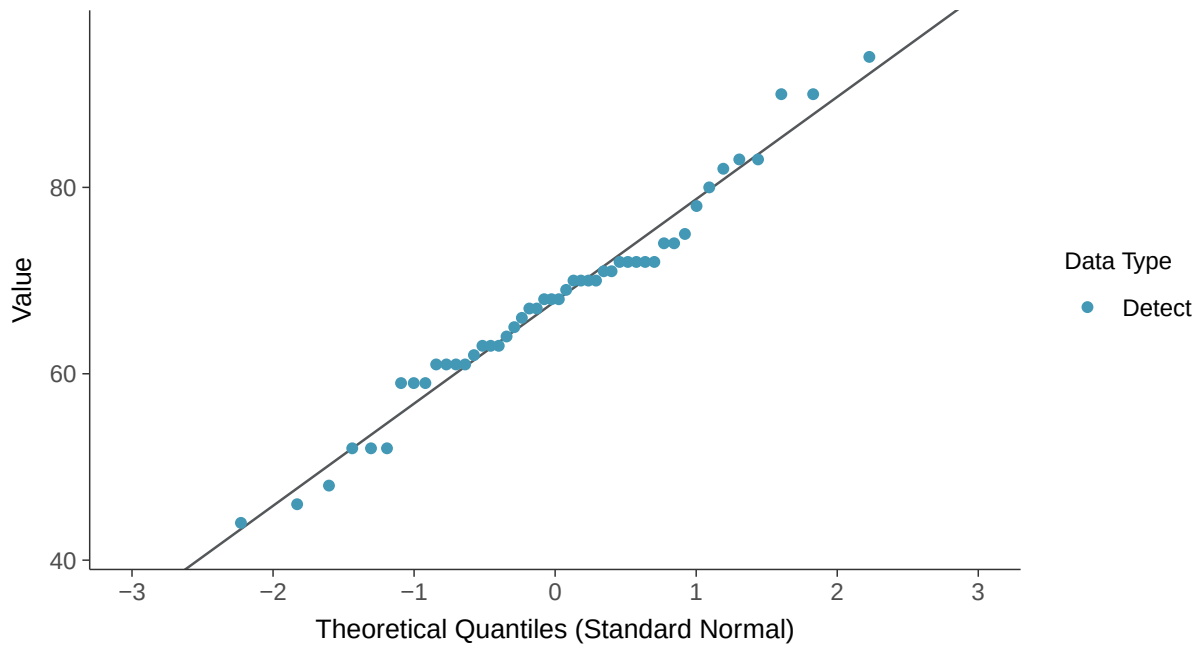
### Boxplot by Well

Chloride, MW-1, MW-4, MW-11, MW-12 (mg/L)



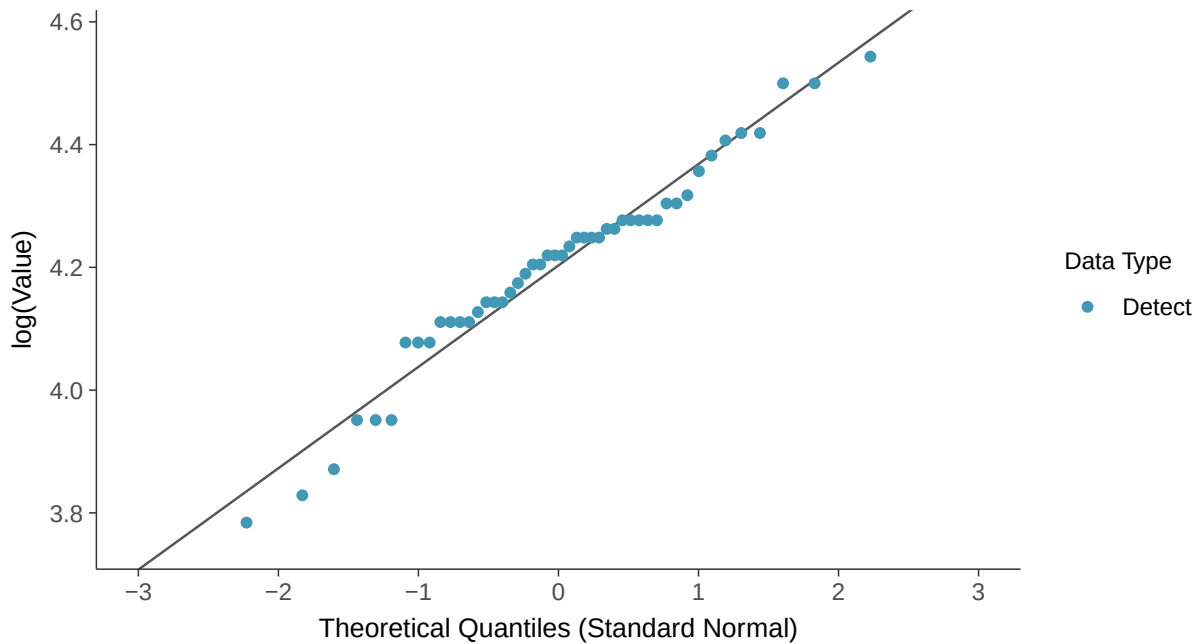
### Normal Q-Q plot

Chloride, MW-1, MW-4, MW-11, MW-12 (mg/L)



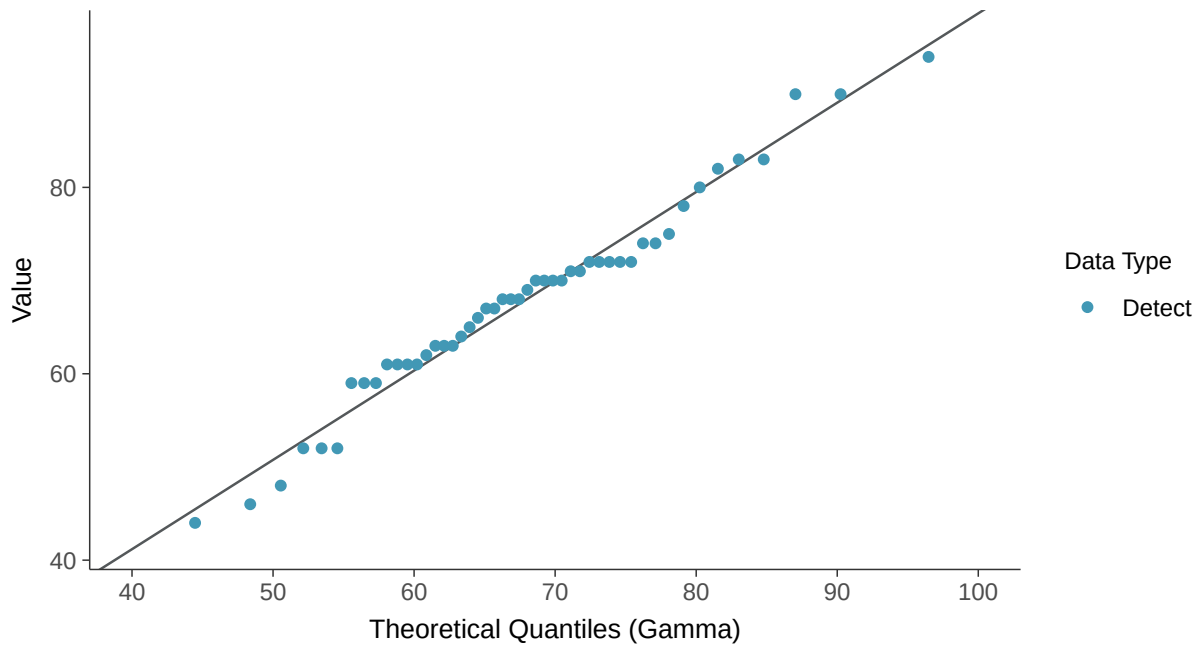
### Lognormal Q-Q plot

Chloride, MW-1, MW-4, MW-11, MW-12 (mg/L)



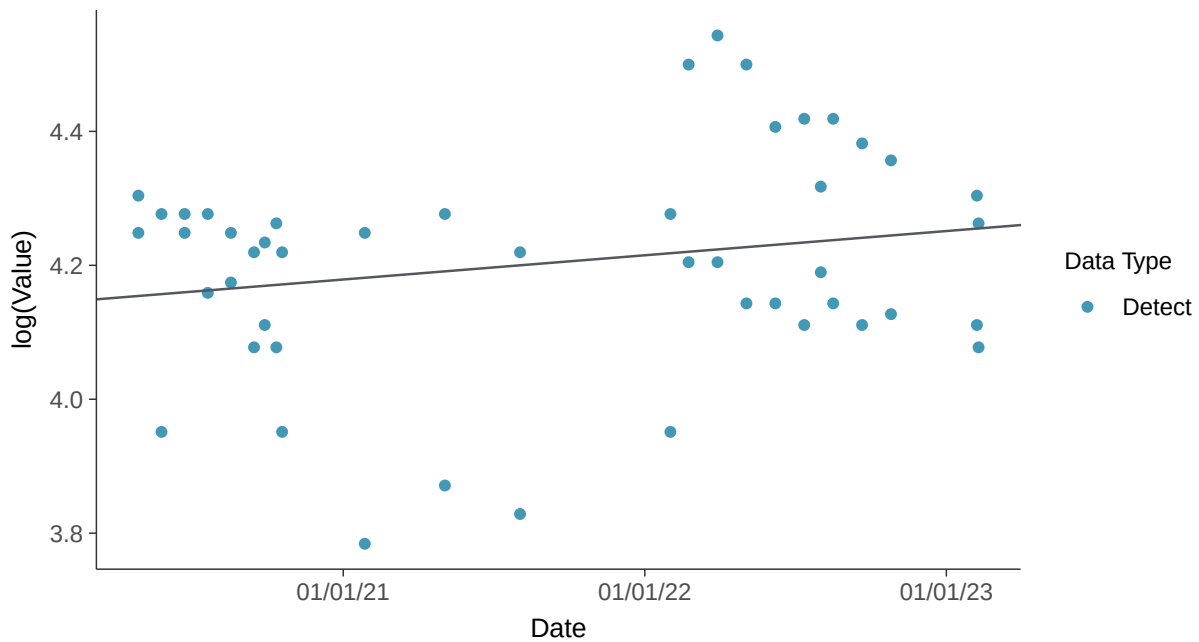
### Gamma Q-Q plot

Chloride, MW-1, MW-4, MW-11, MW-12 (mg/L)



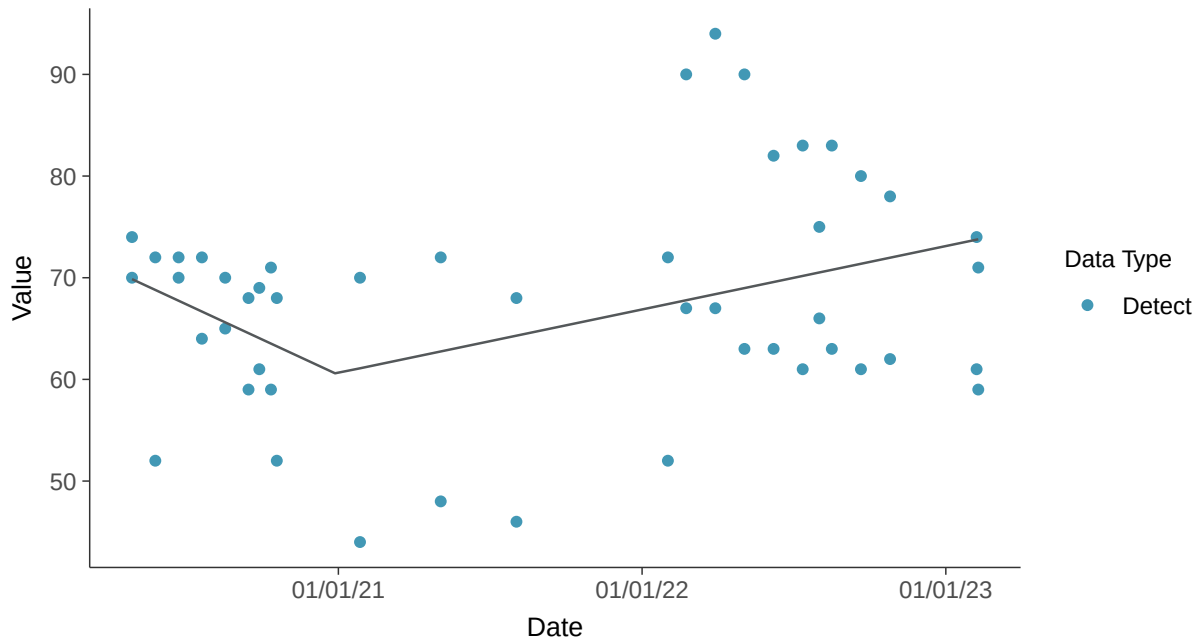
### Trend Regression: Lognormal MLE

Chloride, MW-1, MW-4, MW-11, MW-12 (mg/L)



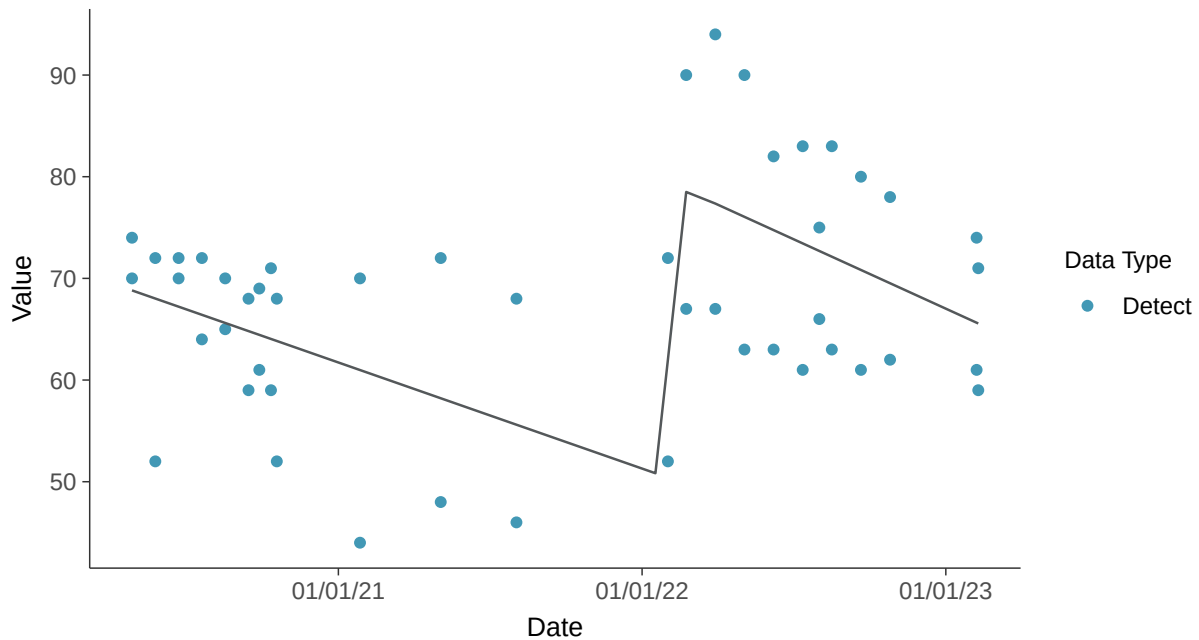
### Trend Regression: Piecewise Linear-Linear

Chloride, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Trend Regression: Piecewise Linear-Linear-Linear

Chloride, MW-1, MW-4, MW-11, MW-12 (mg/L)



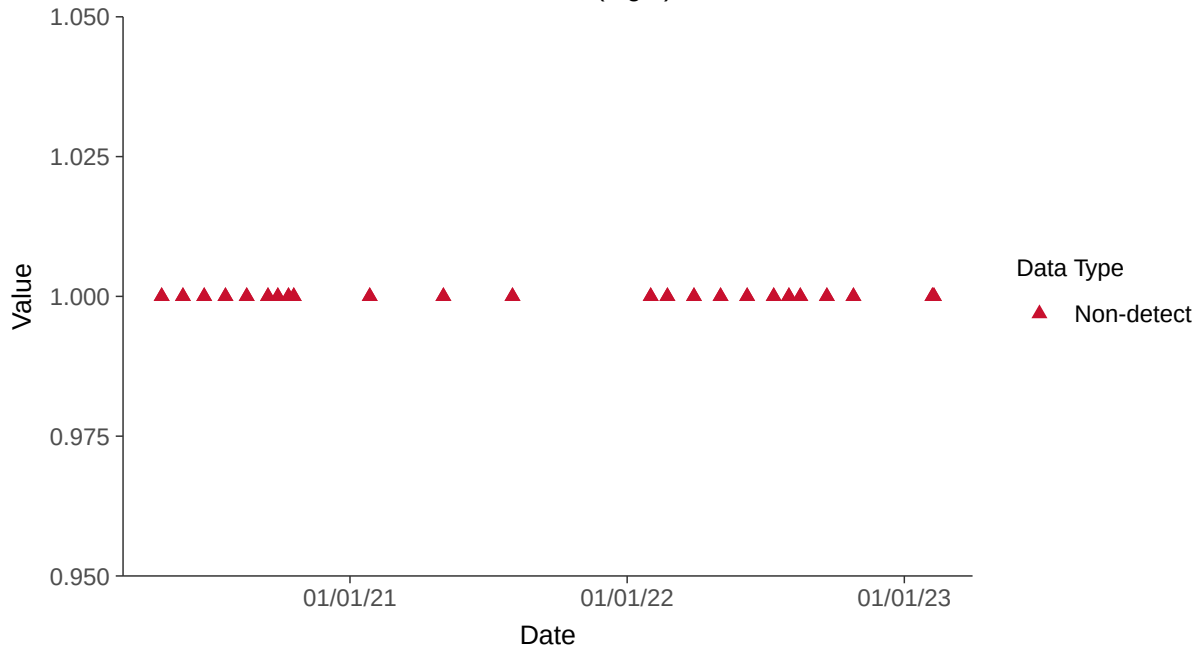


**Appendix III: Fluoride, MW-1, MW-4, MW-11, MW-12**

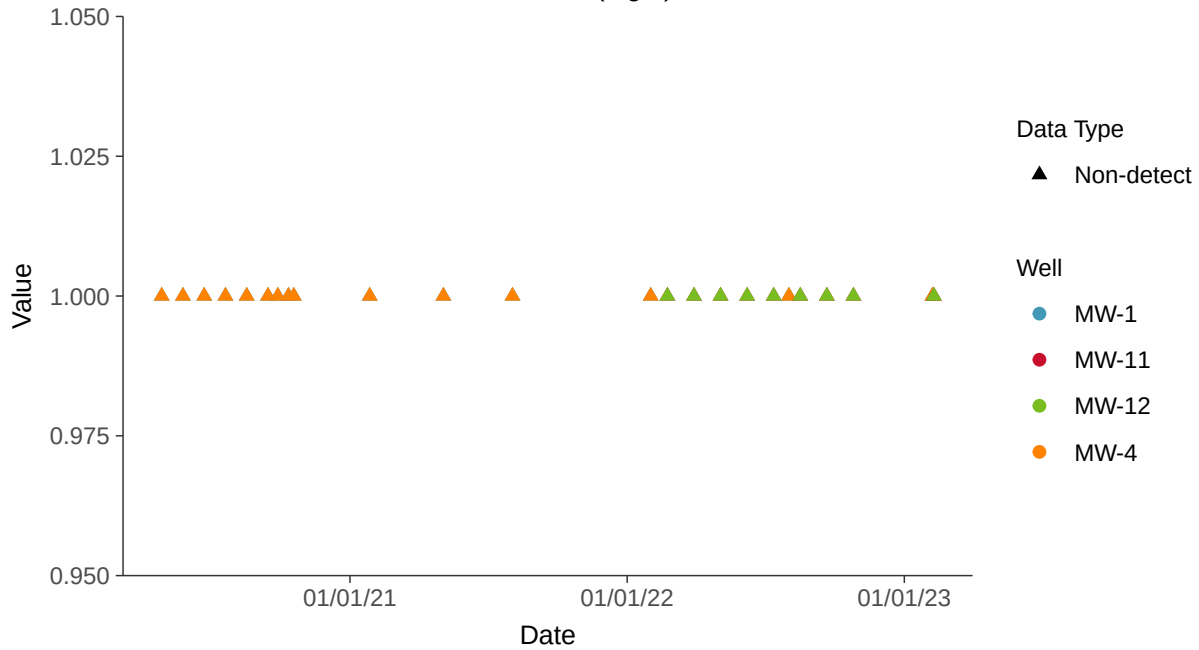
ID: 1\_04

**Scatter Plot**

Fluoride, MW-1, MW-4, MW-11, MW-12 (mg/L)

**Scatter Plot by Well**

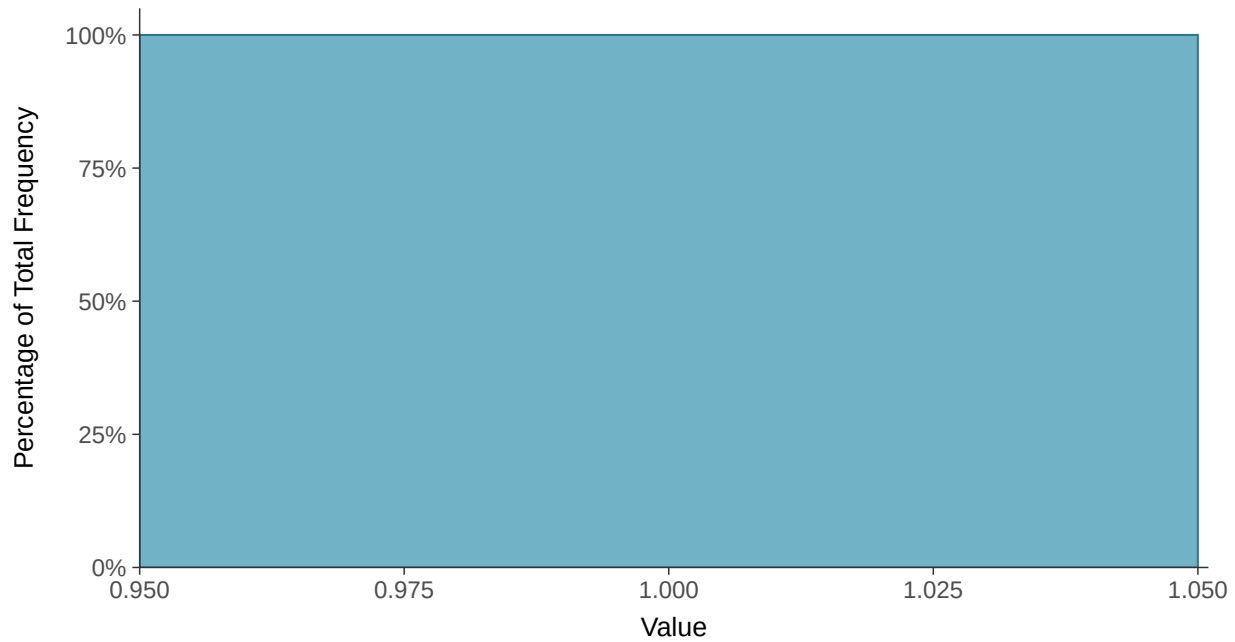
Fluoride, MW-1, MW-4, MW-11, MW-12 (mg/L)





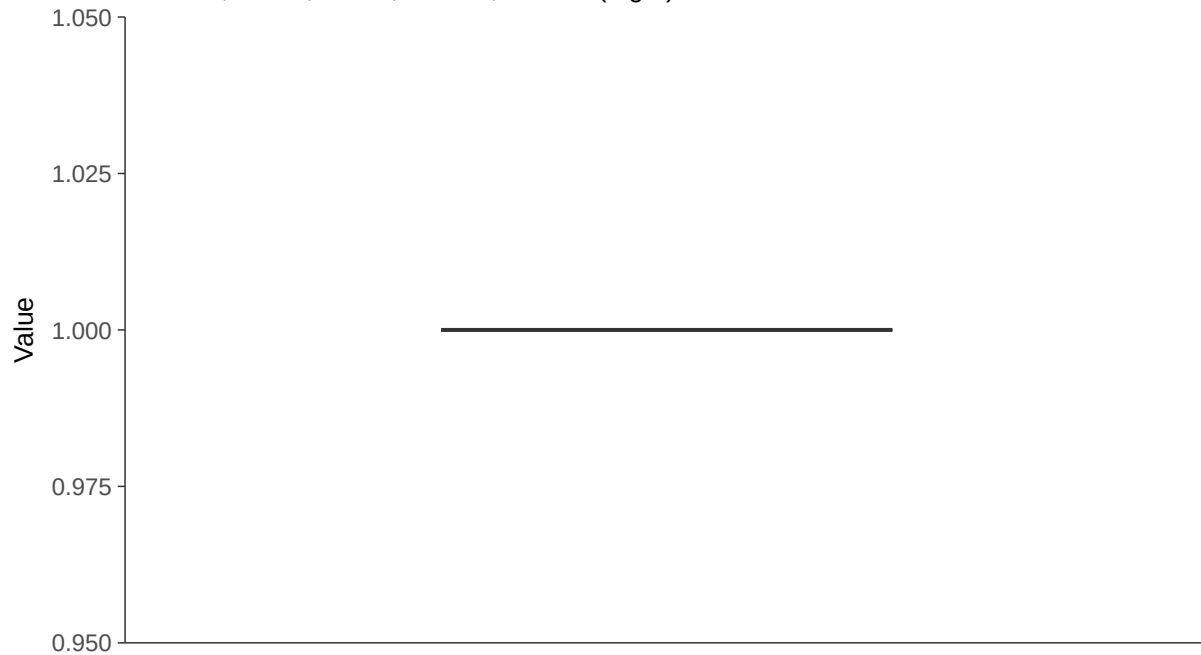
### Histogram

Fluoride, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot

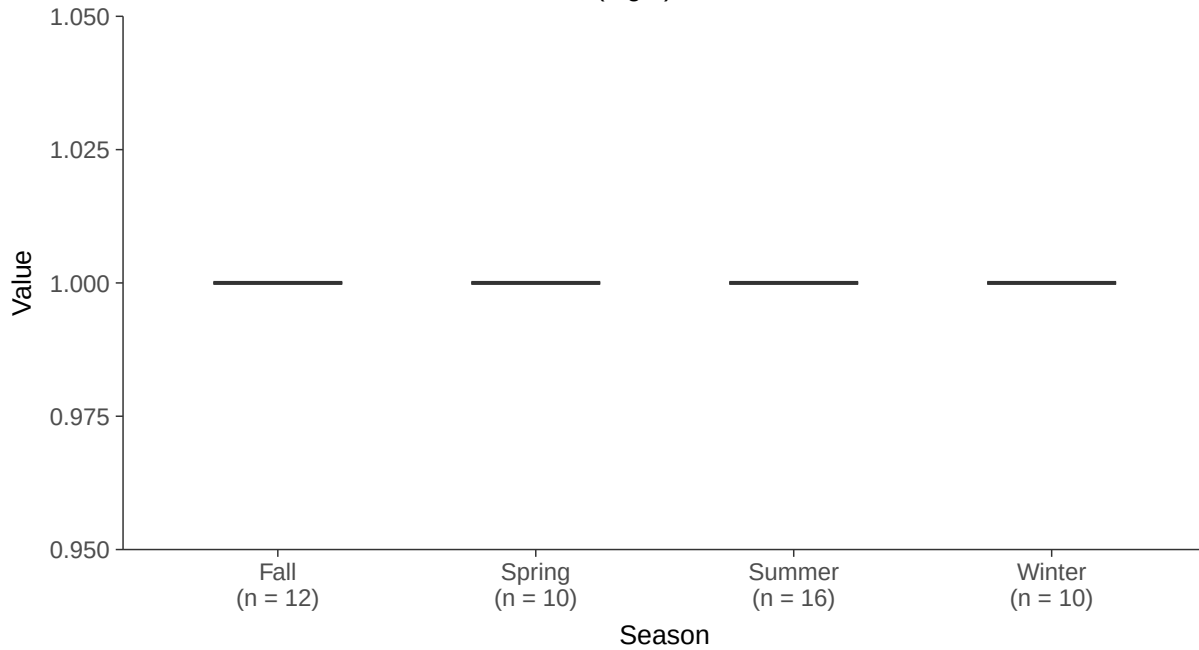
Fluoride, MW-1, MW-4, MW-11, MW-12 (mg/L)





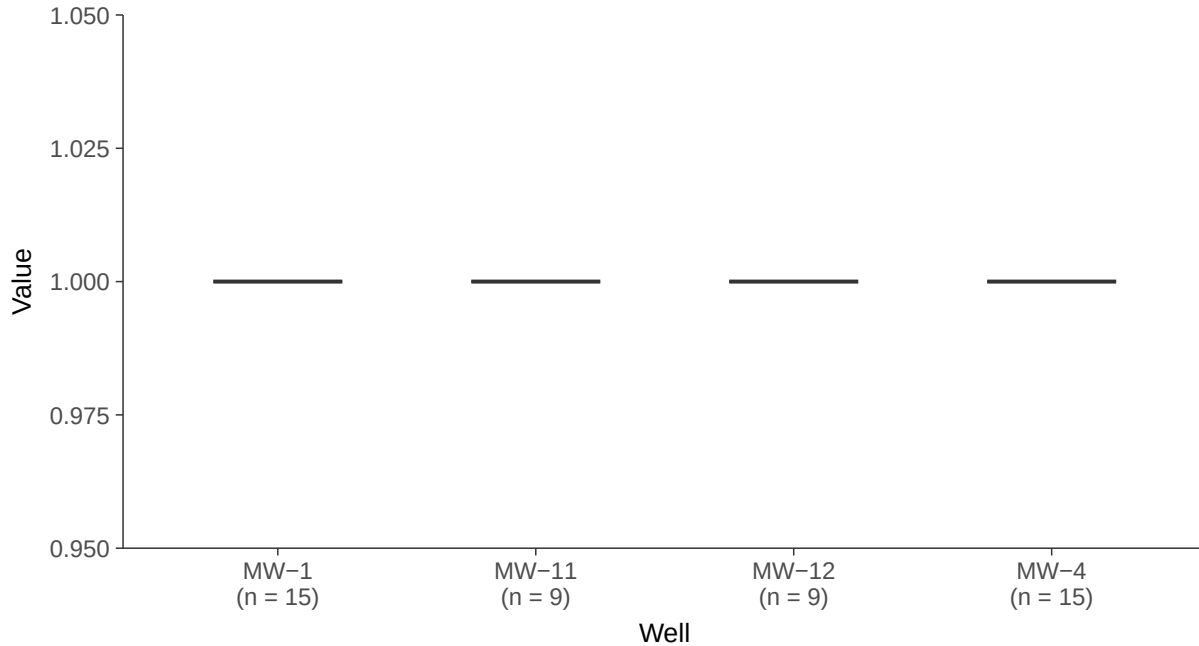
### Boxplot by Season

Fluoride, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot by Well

Fluoride, MW-1, MW-4, MW-11, MW-12 (mg/L)

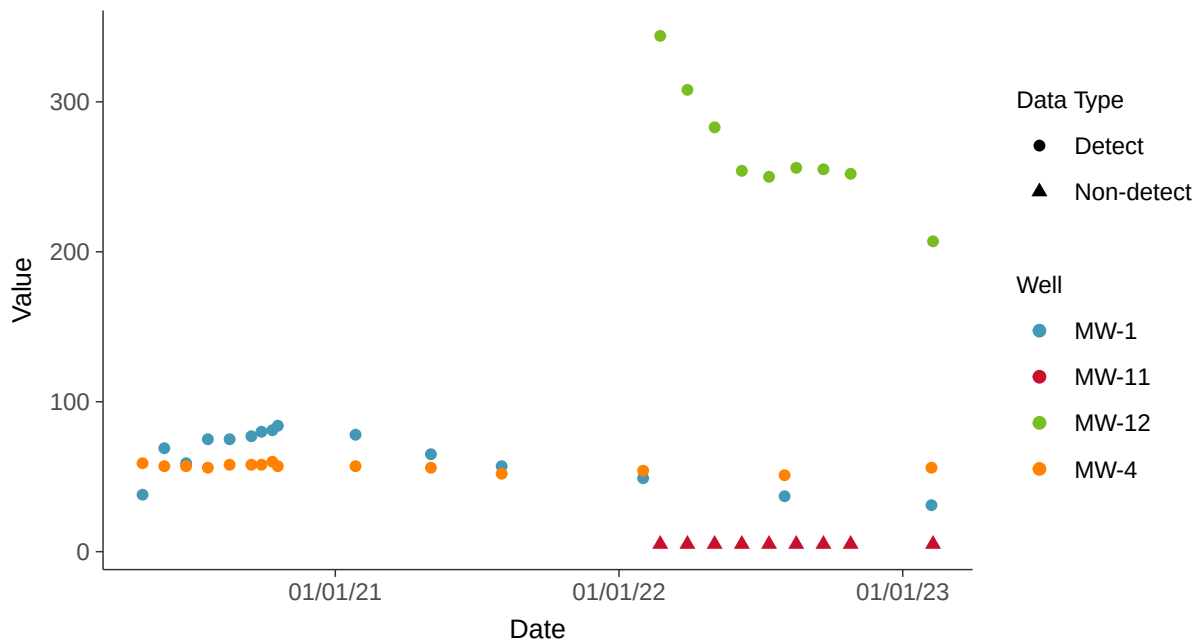


## Scatter Plot

A scatter plot showing 'Value' on the y-axis (0 to 300+) and 'Date' on the x-axis (from early 2020 to early 2023). The legend indicates two data types: 'Detect' (blue circles) and 'Non-detect' (red triangles). 'Detect' data points are scattered between 0 and 350, with a notable peak in early 2022. 'Non-detect' data points are clustered near the zero value line across the entire time period.

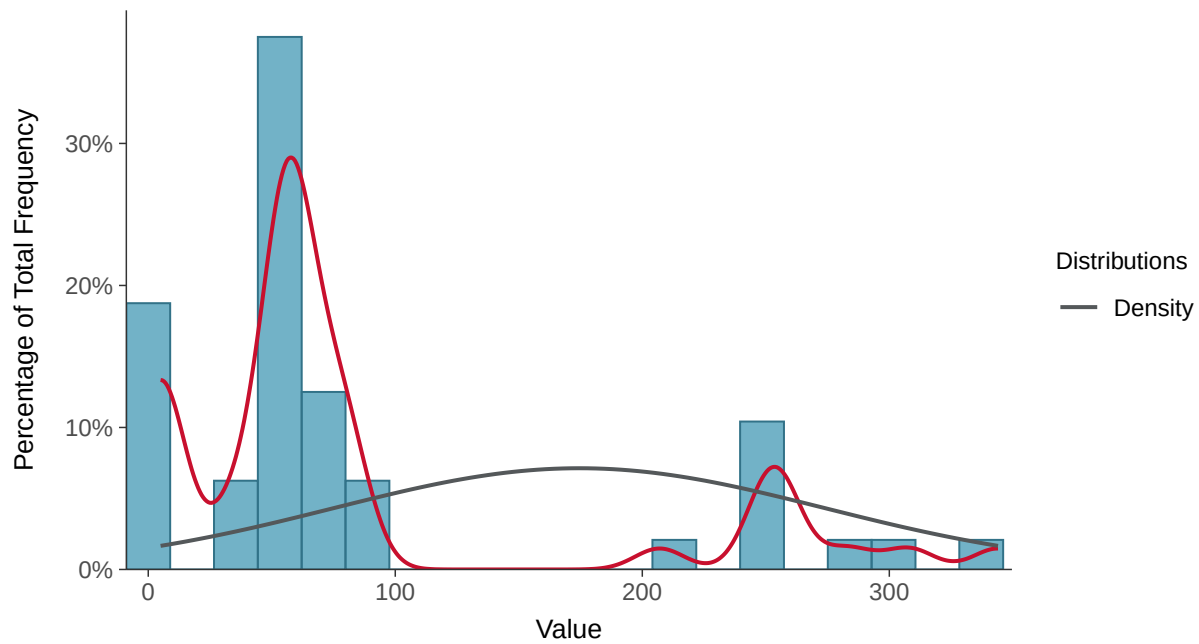
| Date       | Detect Value | Non-detect Value |
|------------|--------------|------------------|
| 2020-03-01 | 40           | 0                |
| 2020-04-01 | 60           | 0                |
| 2020-05-01 | 70           | 0                |
| 2020-06-01 | 60           | 0                |
| 2020-07-01 | 75           | 0                |
| 2020-08-01 | 60           | 0                |
| 2020-09-01 | 75           | 0                |
| 2020-10-01 | 60           | 0                |
| 2020-11-01 | 75           | 0                |
| 2020-12-01 | 80           | 0                |
| 2021-01-01 | 85           | 0                |
| 2021-02-01 | 60           | 0                |
| 2021-03-01 | 80           | 0                |
| 2021-04-01 | 60           | 0                |
| 2021-05-01 | 55           | 0                |
| 2021-06-01 | 55           | 0                |
| 2021-07-01 | 50           | 0                |
| 2021-08-01 | 50           | 0                |
| 2021-09-01 | 50           | 0                |
| 2021-10-01 | 50           | 0                |
| 2021-11-01 | 50           | 0                |
| 2021-12-01 | 50           | 0                |
| 2022-01-01 | 50           | 0                |
| 2022-02-01 | 50           | 0                |
| 2022-03-01 | 50           | 0                |
| 2022-04-01 | 50           | 0                |
| 2022-05-01 | 50           | 0                |
| 2022-06-01 | 50           | 0                |
| 2022-07-01 | 50           | 0                |
| 2022-08-01 | 50           | 0                |
| 2022-09-01 | 50           | 0                |
| 2022-10-01 | 50           | 0                |
| 2022-11-01 | 50           | 0                |
| 2022-12-01 | 50           | 0                |
| 2023-01-01 | 50           | 0                |
| 2023-02-01 | 50           | 0                |
| 2023-03-01 | 50           | 0                |
| 2023-04-01 | 50           | 0                |
| 2023-05-01 | 50           | 0                |
| 2023-06-01 | 50           | 0                |
| 2023-07-01 | 50           | 0                |
| 2023-08-01 | 50           | 0                |
| 2023-09-01 | 50           | 0                |
| 2023-10-01 | 50           | 0                |
| 2023-11-01 | 50           | 0                |
| 2023-12-01 | 50           | 0                |
| 2024-01-01 | 50           | 0                |
| 2024-02-01 | 50           | 0                |
| 2024-03-01 | 50           | 0                |
| 2024-04-01 | 50           | 0                |
| 2024-05-01 | 50           | 0                |
| 2024-06-01 | 50           | 0                |
| 2024-07-01 | 50           | 0                |
| 2024-08-01 | 50           | 0                |
| 2024-09-01 | 50           | 0                |
| 2024-10-01 | 50           | 0                |
| 2024-11-01 | 50           | 0                |
| 2024-12-01 | 50           | 0                |
| 2025-01-01 | 50           | 0                |
| 2025-02-01 | 50           | 0                |
| 2025-03-01 | 50           | 0                |
| 2025-04-01 | 50           | 0                |
| 2025-05-01 | 50           | 0                |
| 2025-06-01 | 50           | 0                |
| 2025-07-01 | 50           | 0                |
| 2025-08-01 | 50           | 0                |
| 2025-09-01 | 50           | 0                |
| 2025-10-01 | 50           | 0                |
| 2025-11-01 | 50           | 0                |
| 2025-12-01 | 50           | 0                |
| 2026-01-01 | 50           | 0                |
| 2026-02-01 | 50           | 0                |
| 2026-03-01 | 50           | 0                |
| 2026-04-01 | 50           | 0                |
| 2026-05-01 | 50           | 0                |
| 2026-06-01 | 50           | 0                |
| 2026-07-01 | 50           | 0                |
| 2026-08-01 | 50           | 0                |
| 2026-09-01 | 50           | 0                |
| 2026-10-01 | 50           | 0                |
| 2026-11-01 | 50           | 0                |
| 2026-12-01 | 50           | 0                |
| 2027-01-01 | 50           | 0                |
| 2027-02-01 | 50           | 0                |
| 2027-03-01 | 50           | 0                |
| 2027-04-01 | 50           | 0                |
| 2027-05-01 | 50           | 0                |
| 2027-06-01 | 50           | 0                |
| 2027-07-01 | 50           | 0                |
| 2027-08-01 | 50           | 0                |
| 2027-09-01 | 50           | 0                |
| 2027-10-01 | 50           | 0                |
| 2027-11-01 | 50           | 0                |
| 2027-12-01 | 50           | 0                |
| 2028-01-01 | 50           | 0                |
| 2028-02-01 | 50           | 0                |
| 2028-03-01 | 50           | 0                |
| 2028-04-01 | 50           | 0                |
| 2028-05-01 | 50           | 0                |
| 2028-06-01 | 50           | 0                |
| 2028-07-01 | 50           | 0                |
| 2028-08-01 | 50           | 0                |
| 2028-09-01 | 50           | 0                |
| 2028-10-01 | 50           | 0                |
| 2028-11-01 | 50           | 0                |
| 2028-12-01 | 50           | 0                |
| 2029-01-01 | 50           | 0                |
| 2029-02-01 | 50           | 0                |
| 2029-03-01 | 50           | 0                |
| 2029-04-01 | 50           | 0                |
| 2029-05-01 | 50           | 0                |
| 2029-06-01 | 50           | 0                |
| 2029-07-01 | 50           | 0                |
| 2029-08-01 | 50           | 0                |
| 2029-09-01 | 50           | 0                |
| 2029-10-01 | 50           | 0                |
| 2029-11-01 | 50           | 0                |
| 2029-12-01 | 50           | 0                |
| 2030-01-01 | 50           | 0                |
| 2030-02-01 | 50           | 0                |
| 2030-03-01 | 50           | 0                |
| 2030-04-01 | 50           | 0                |
| 2030-05-01 |              |                  |

## Sulfate, MW-1, MW-4, MW-11, MW-12 (mg/L)



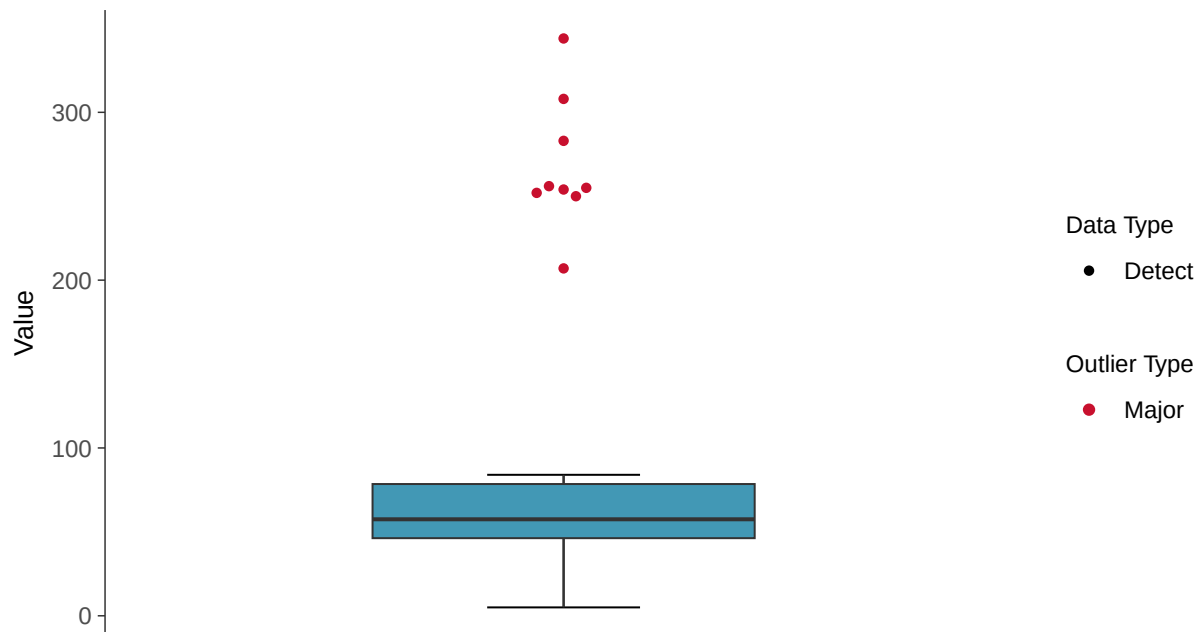
## Histogram

Sulfate, MW-1, MW-4, MW-11, MW-12 (mg/L)



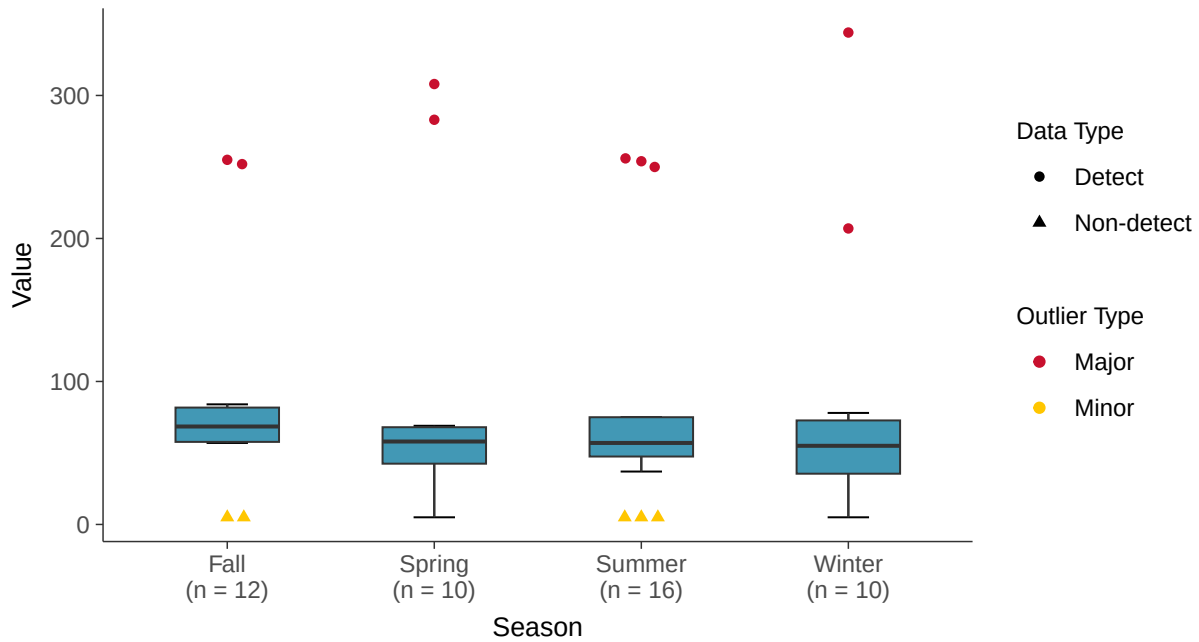
## Boxplot

Sulfate, MW-1, MW-4, MW-11, MW-12 (mg/L)



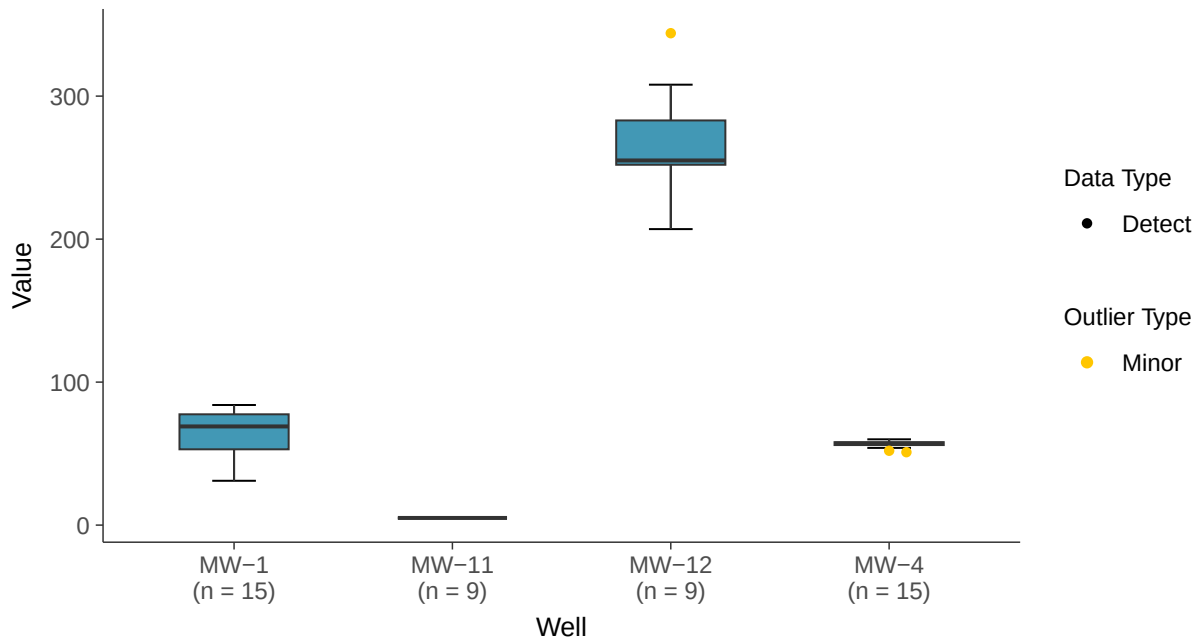
### Boxplot by Season

Sulfate, MW-1, MW-4, MW-11, MW-12 (mg/L)



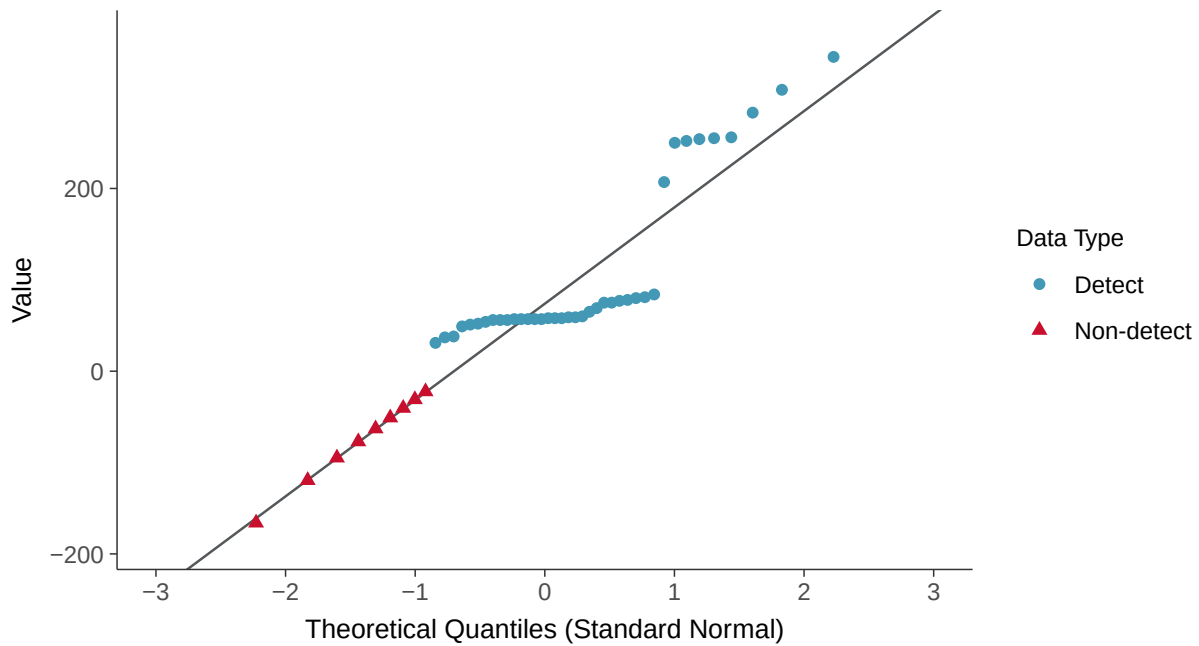
### Boxplot by Well

Sulfate, MW-1, MW-4, MW-11, MW-12 (mg/L)



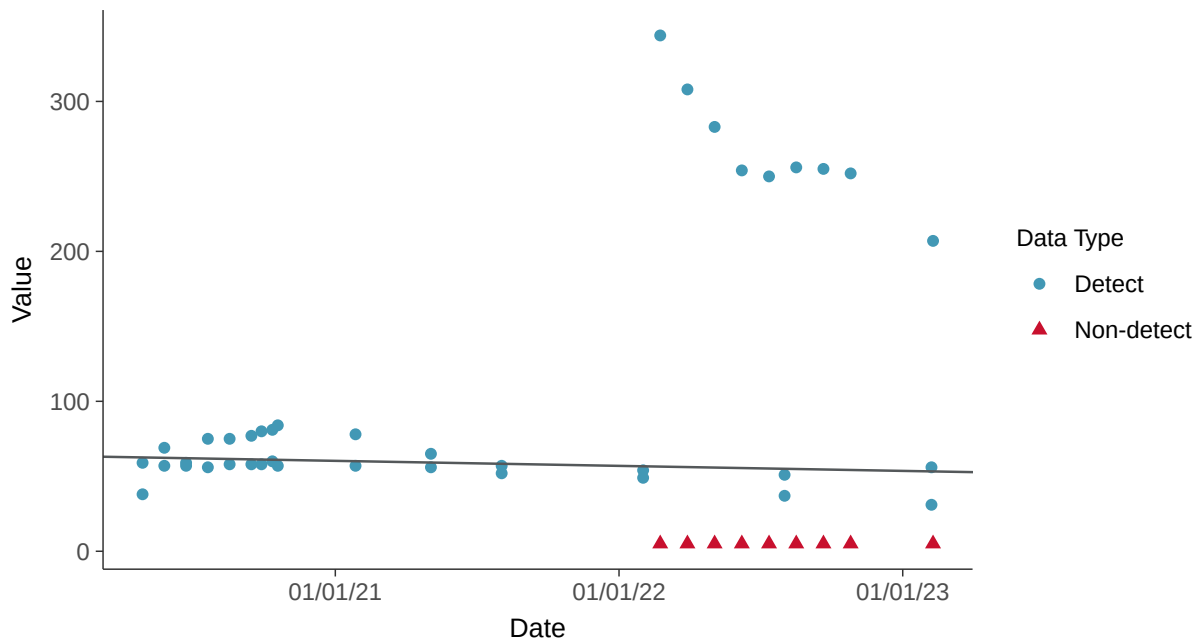
### Normal Q-Q plot using ROS Imputed Estimates

Sulfate, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Trend Regression: Mann-Kendall/Theil-Sen Estimate

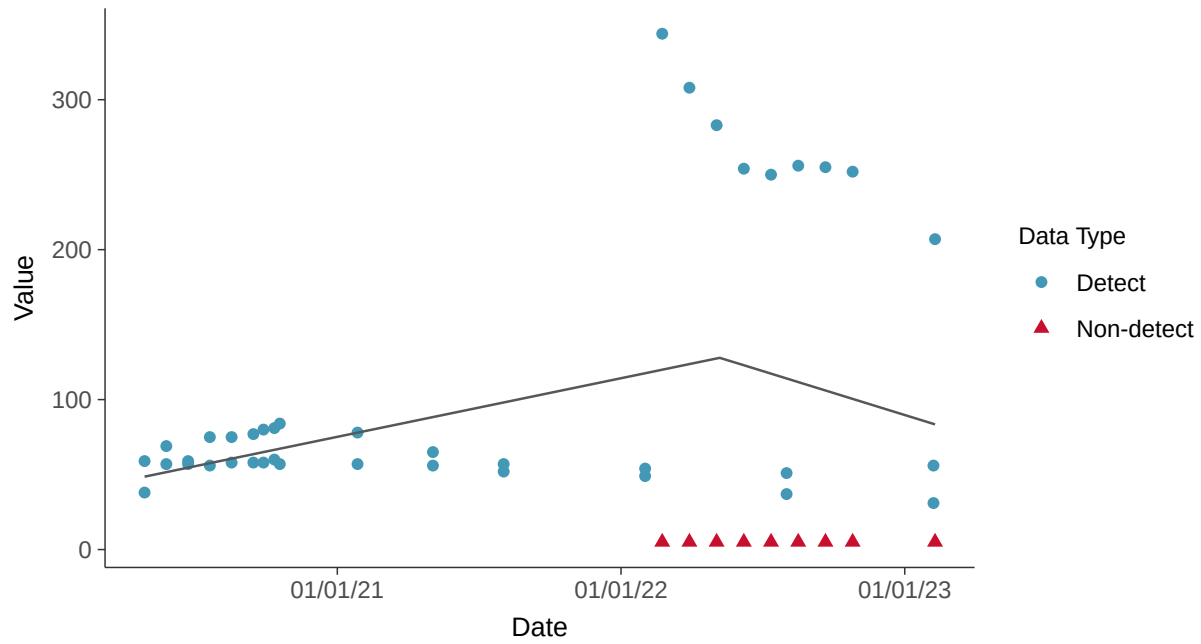
Sulfate, MW-1, MW-4, MW-11, MW-12 (mg/L)





### Trend Regression: Piecewise Linear-Linear

Sulfate, MW-1, MW-4, MW-11, MW-12 (mg/L)



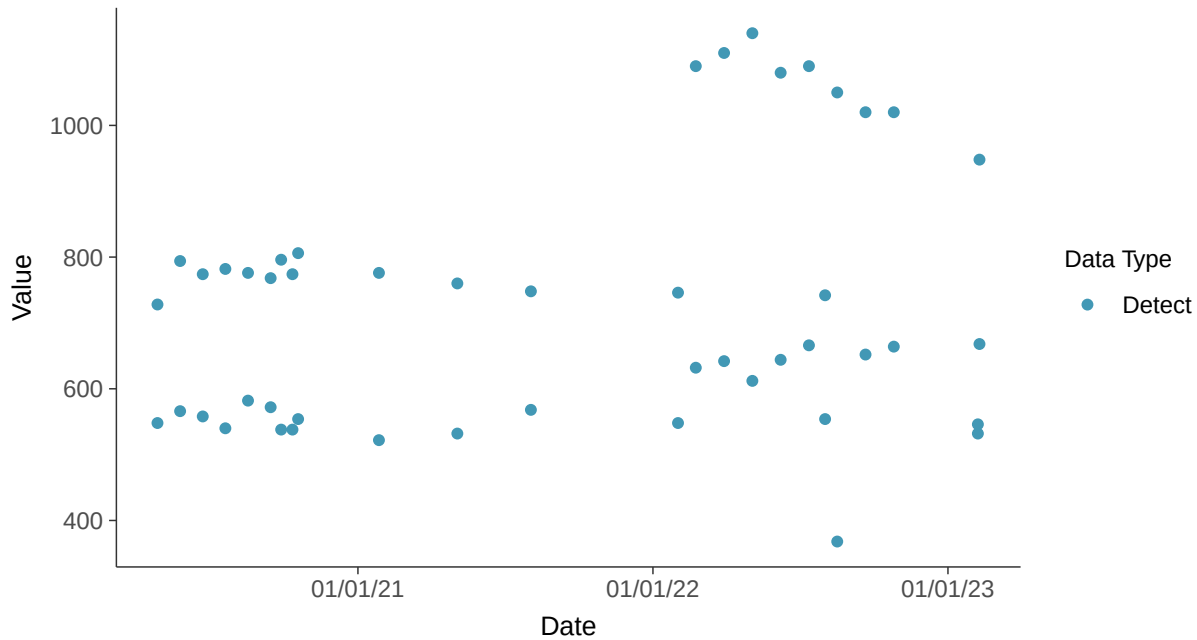


**Appendix III: Total Dissolved Solids, MW-1, MW-4, MW-11, MW-12**

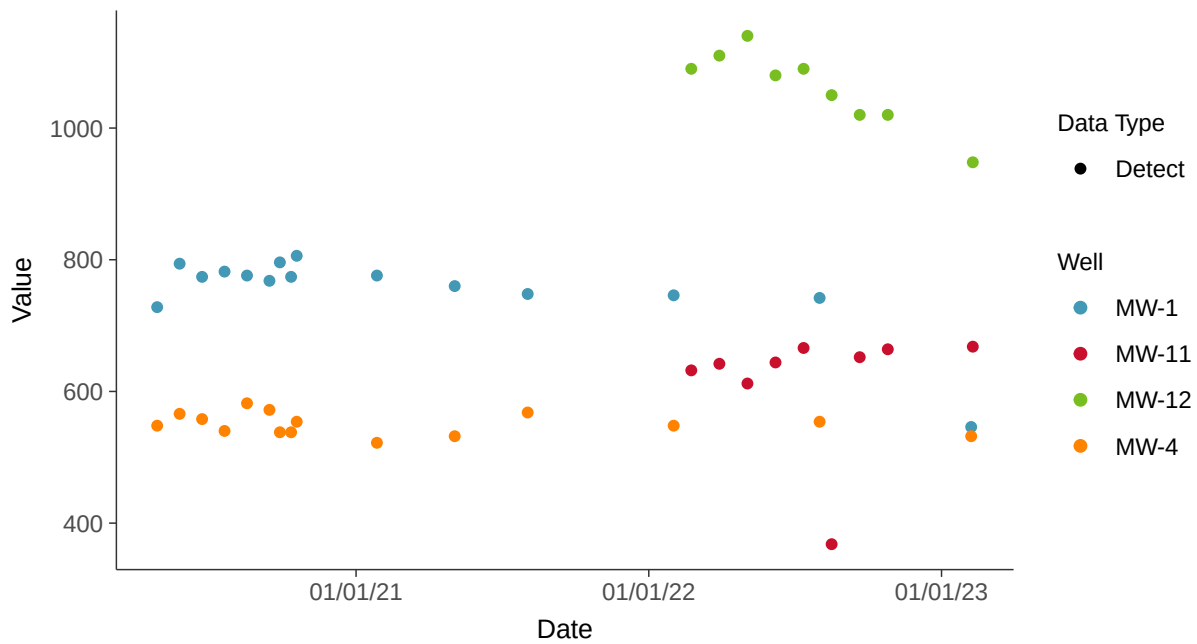
ID: 1\_06

**Scatter Plot**

Total Dissolved Solids, MW-1, MW-4, MW-11, MW-12 (mg/L)

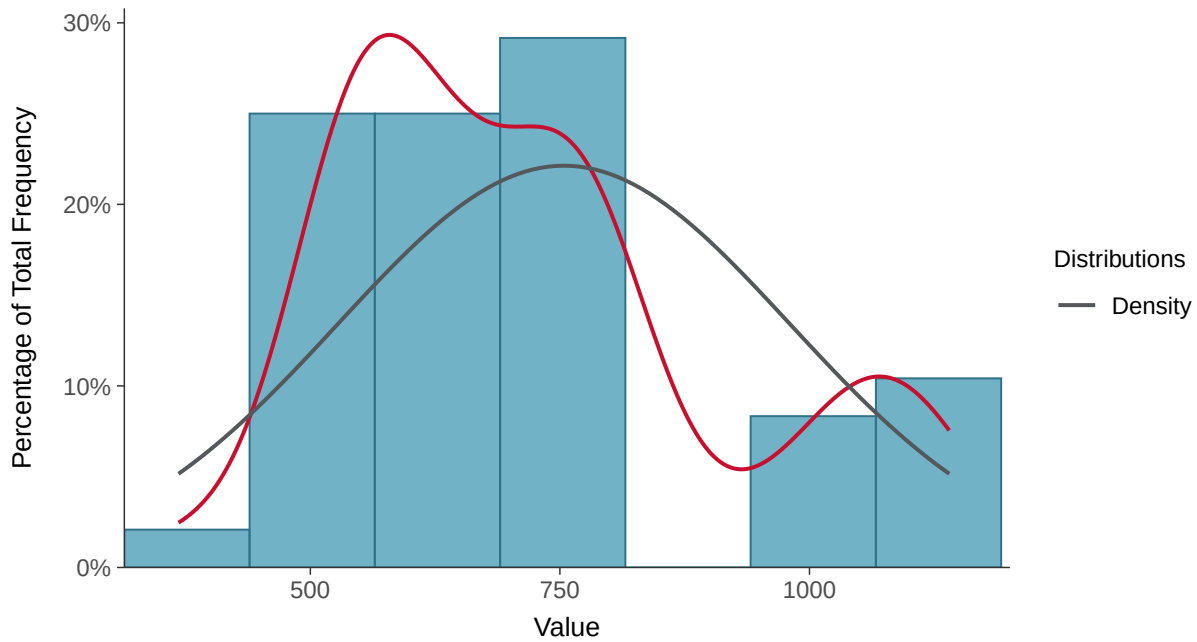
**Scatter Plot by Well**

Total Dissolved Solids, MW-1, MW-4, MW-11, MW-12 (mg/L)



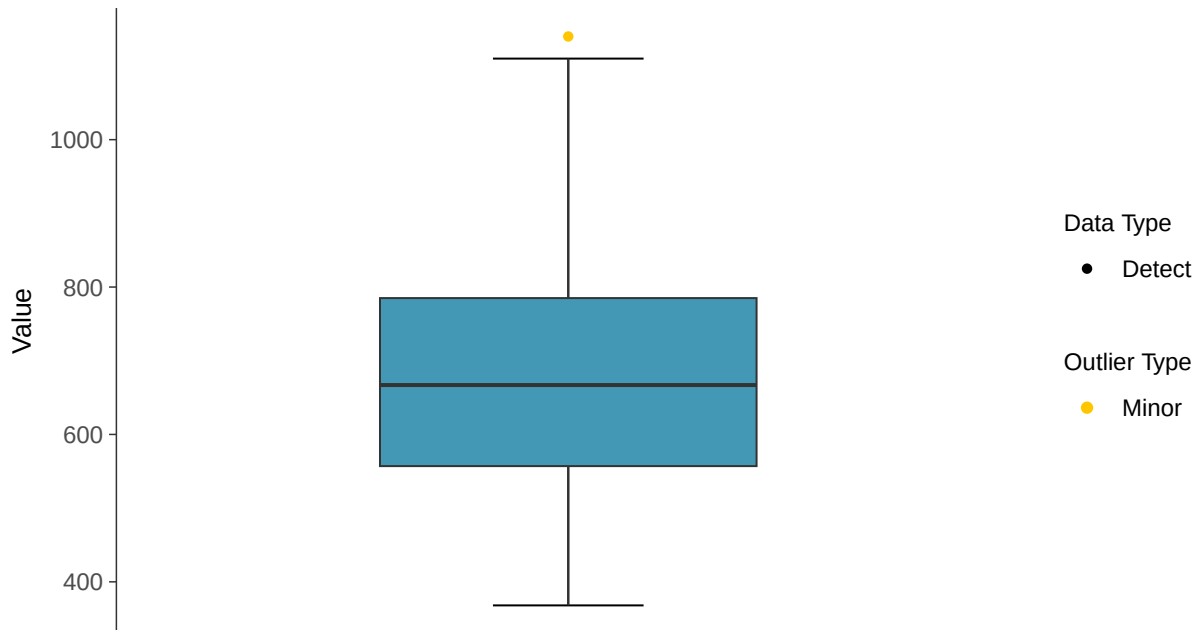
### Histogram

Total Dissolved Solids, MW-1, MW-4, MW-11, MW-12 (mg/L)



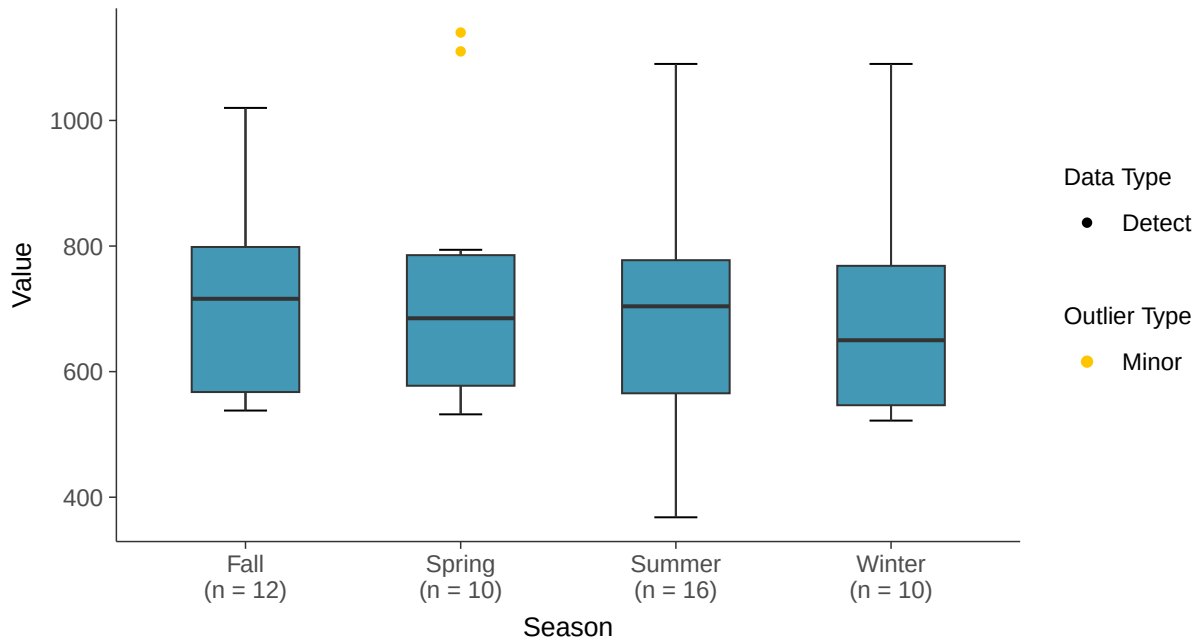
### Boxplot

Total Dissolved Solids, MW-1, MW-4, MW-11, MW-12 (mg/L)



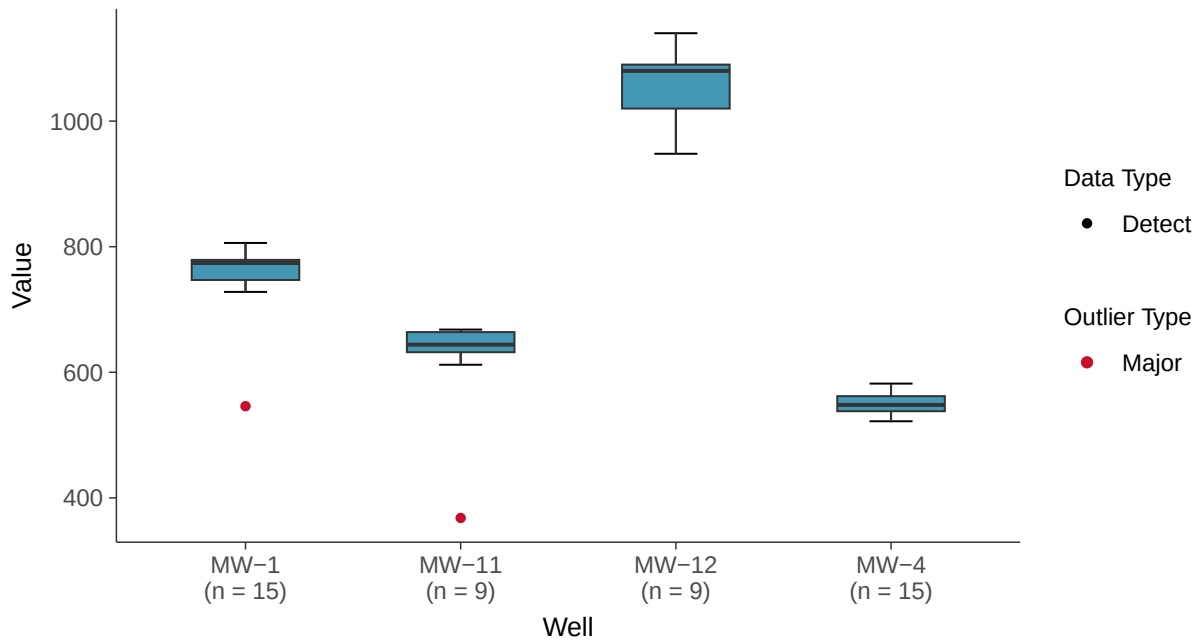
### Boxplot by Season

Total Dissolved Solids, MW-1, MW-4, MW-11, MW-12 (mg/L)



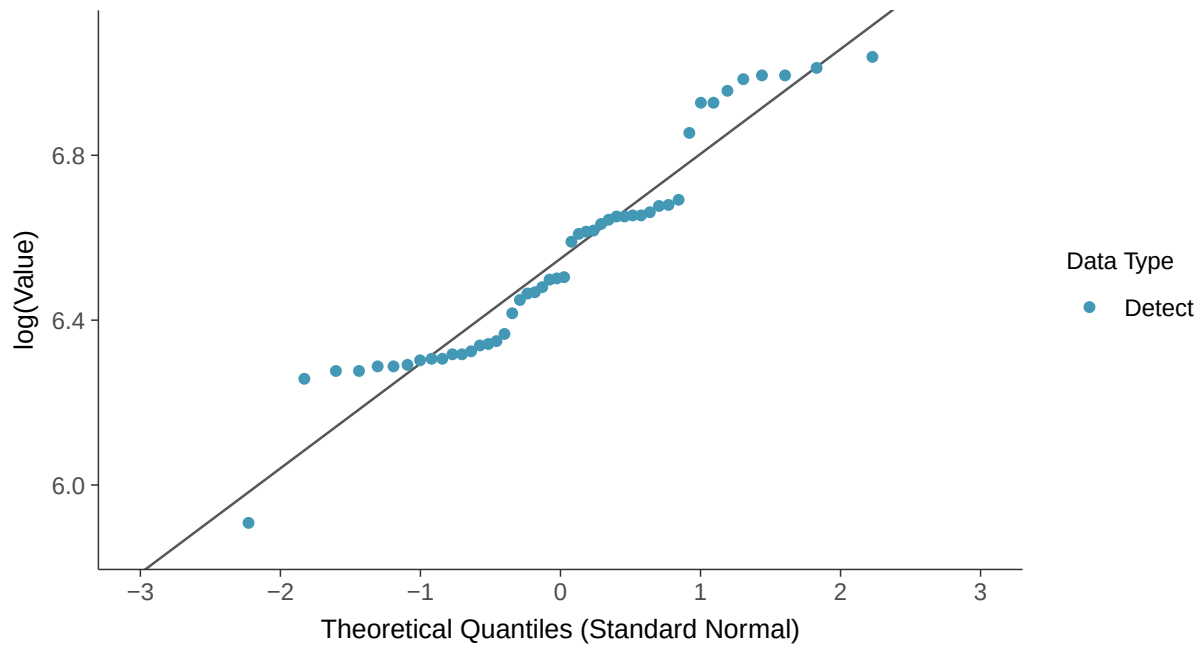
### Boxplot by Well

Total Dissolved Solids, MW-1, MW-4, MW-11, MW-12 (mg/L)



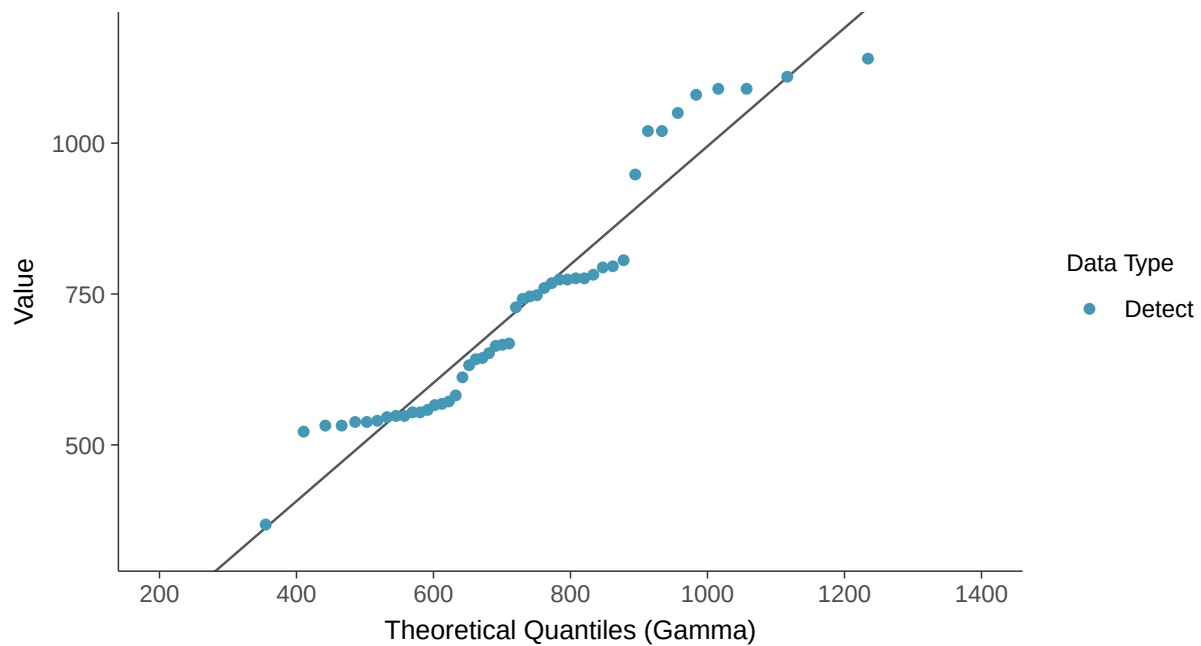
### Lognormal Q-Q plot

Total Dissolved Solids, MW-1, MW-4, MW-11, MW-12 (mg/L)



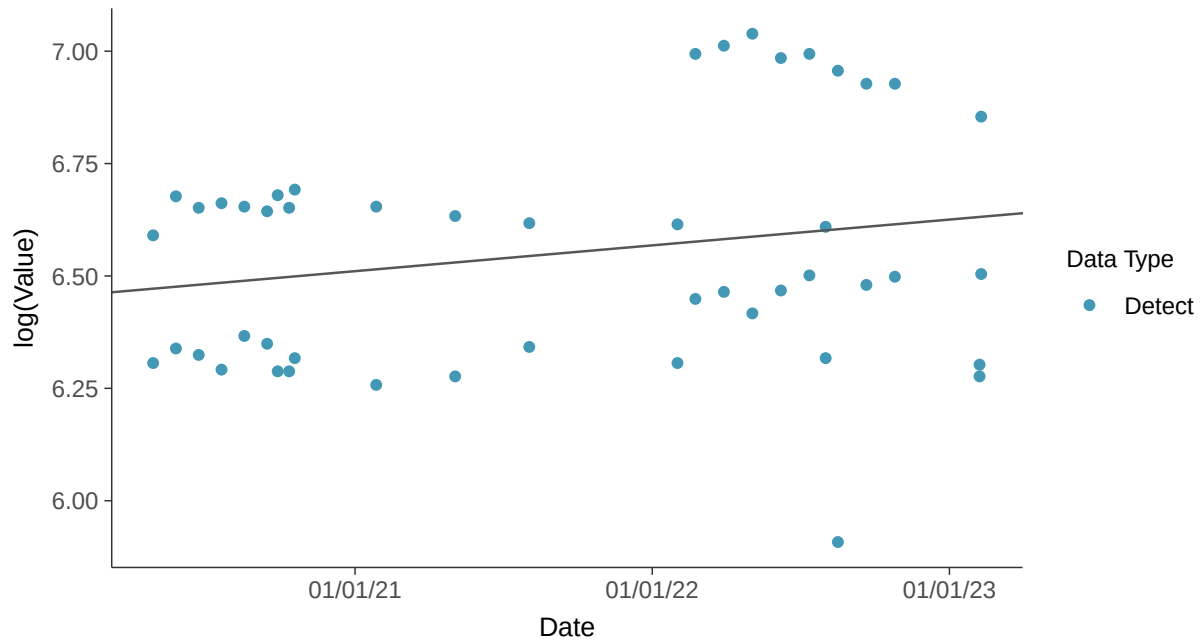
### Gamma Q-Q plot

Total Dissolved Solids, MW-1, MW-4, MW-11, MW-12 (mg/L)



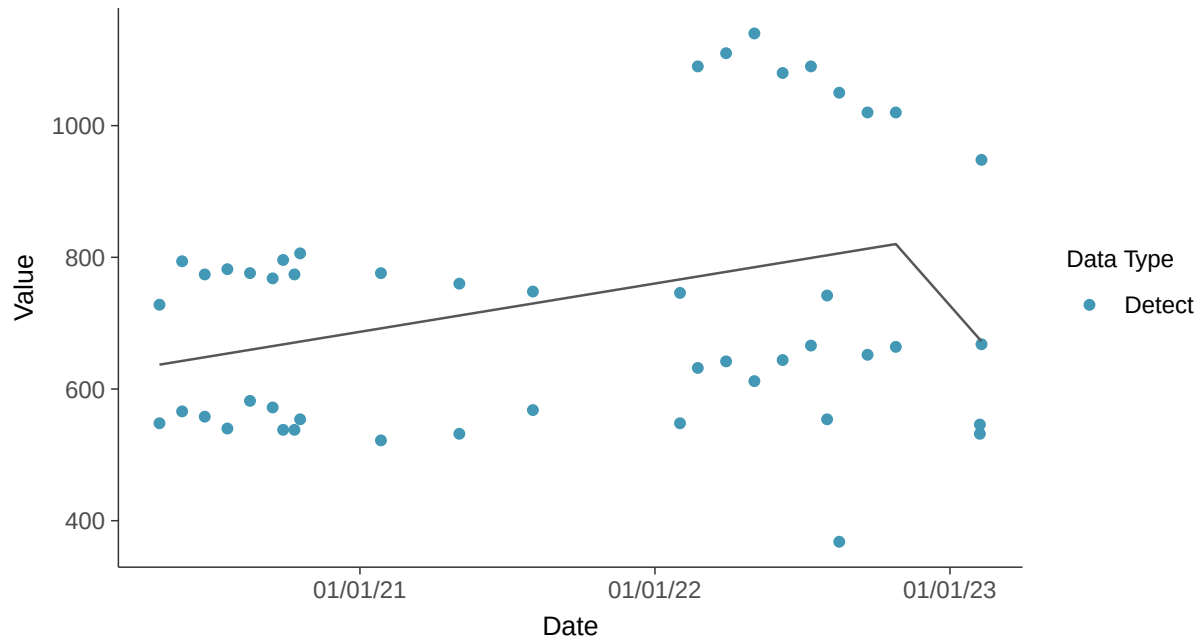
### Trend Regression: Lognormal MLE

Total Dissolved Solids, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Trend Regression: Piecewise Linear-Linear

Total Dissolved Solids, MW-1, MW-4, MW-11, MW-12 (mg/L)

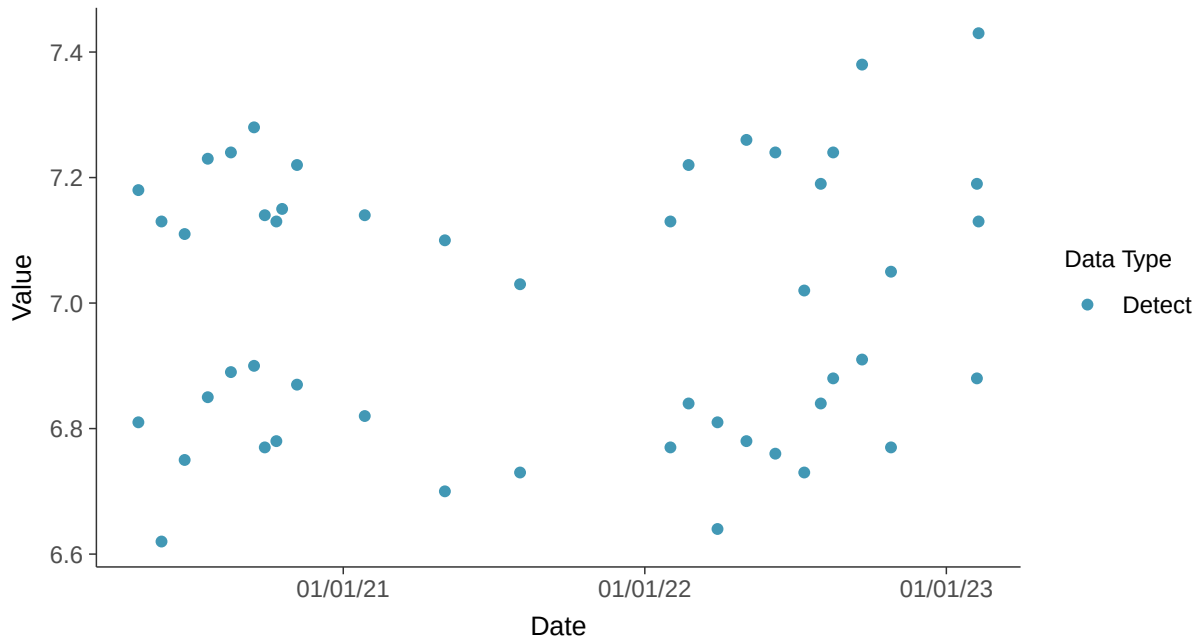


**Appendix III: pH, Field, MW-1, MW-4, MW-11, MW-12**

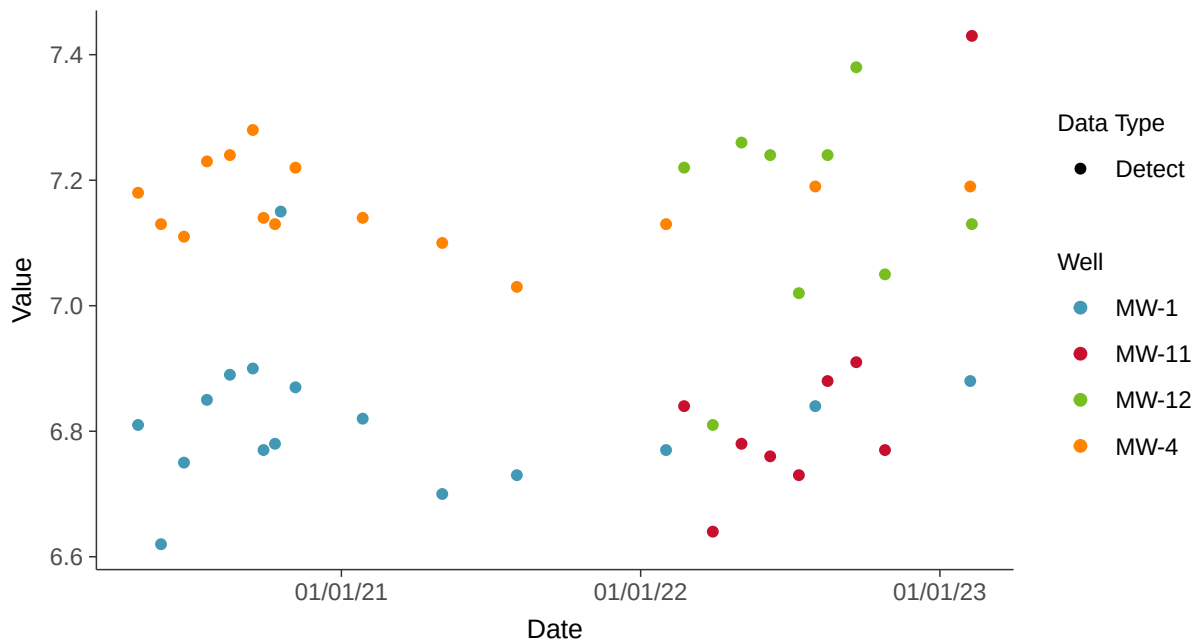
ID: 1\_07

**Scatter Plot**

pH, Field, MW-1, MW-4, MW-11, MW-12 (su)

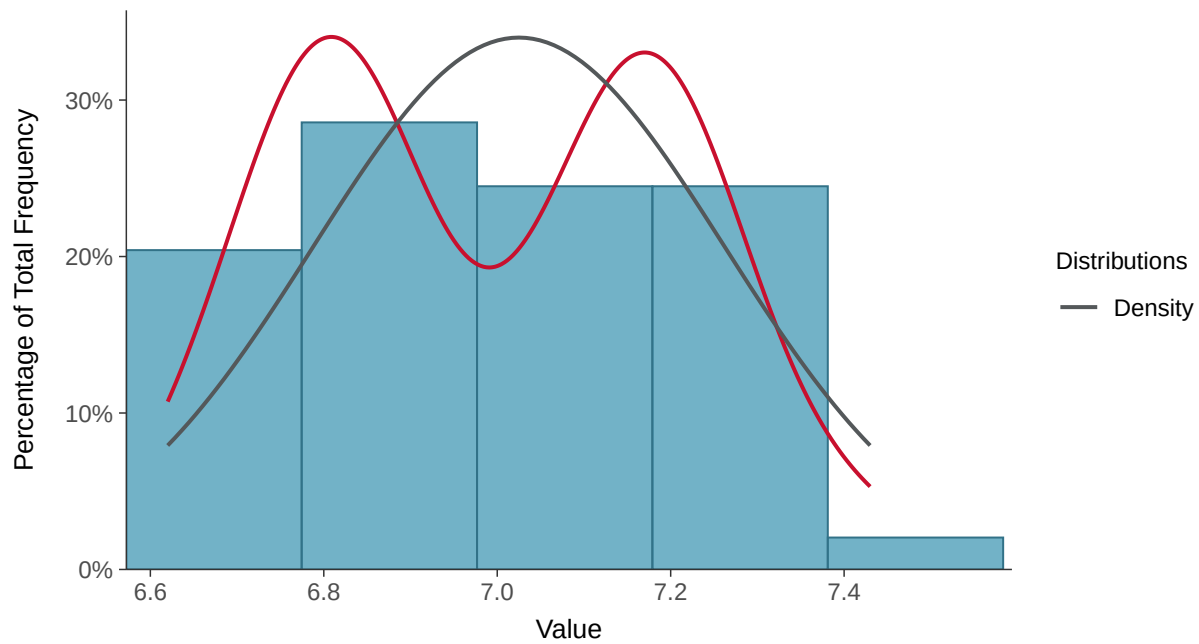
**Scatter Plot by Well**

pH, Field, MW-1, MW-4, MW-11, MW-12 (su)



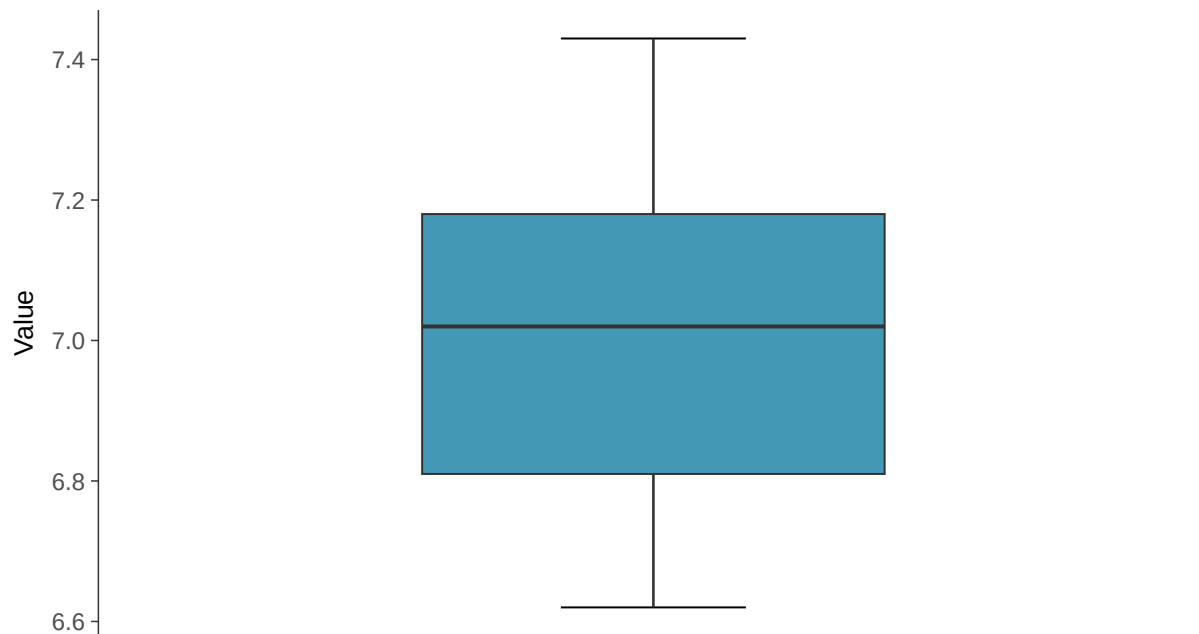
### Histogram

pH, Field, MW-1, MW-4, MW-11, MW-12 (su)



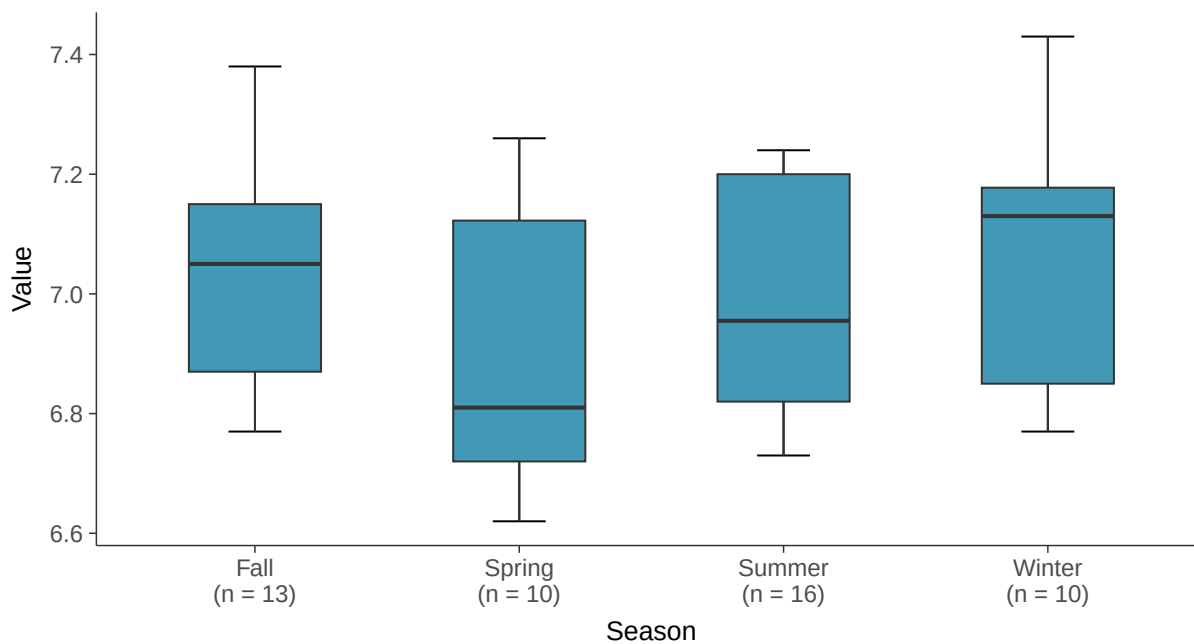
### Boxplot

pH, Field, MW-1, MW-4, MW-11, MW-12 (su)



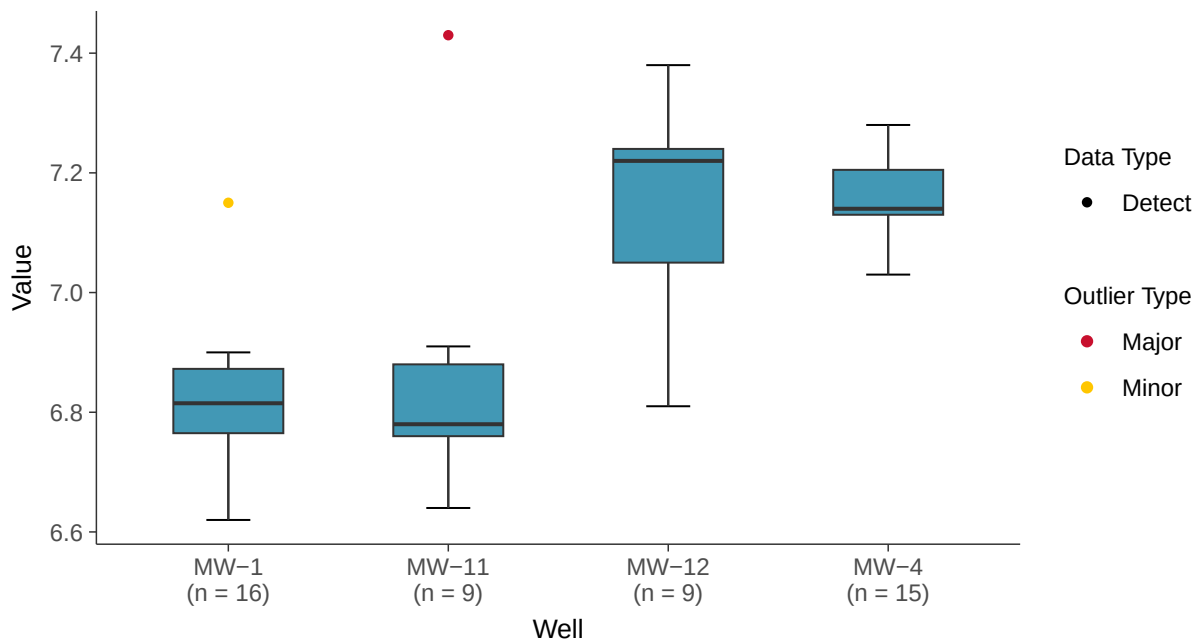
### Boxplot by Season

pH, Field, MW-1, MW-4, MW-11, MW-12 (su)



### Boxplot by Well

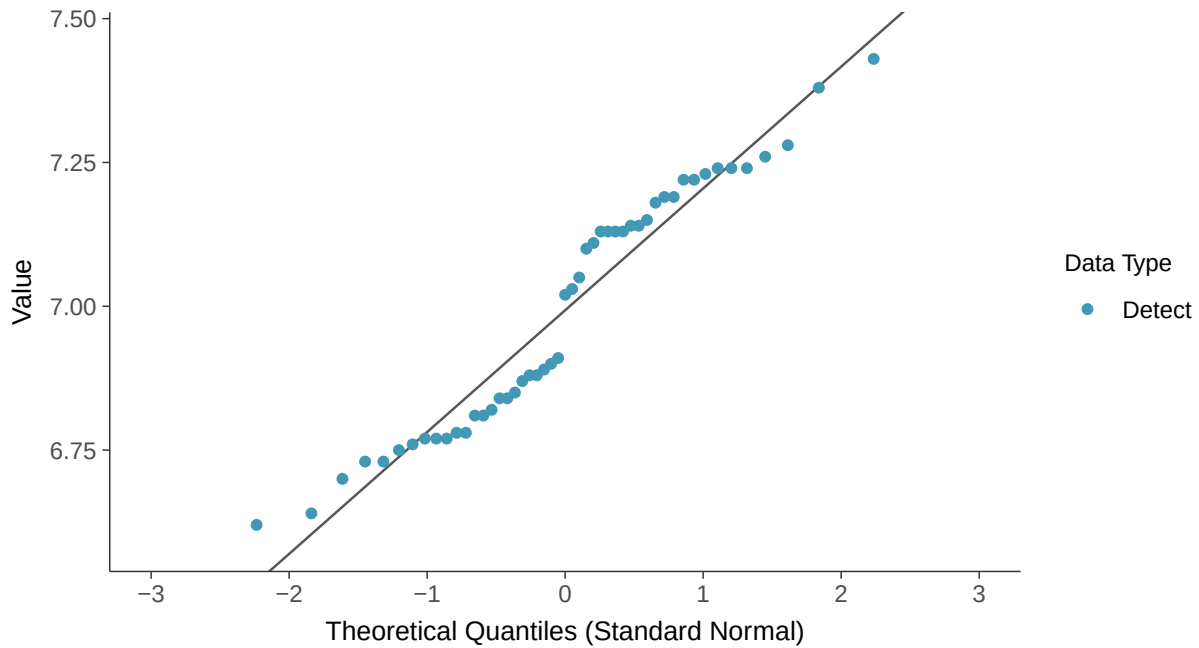
pH, Field, MW-1, MW-4, MW-11, MW-12 (su)





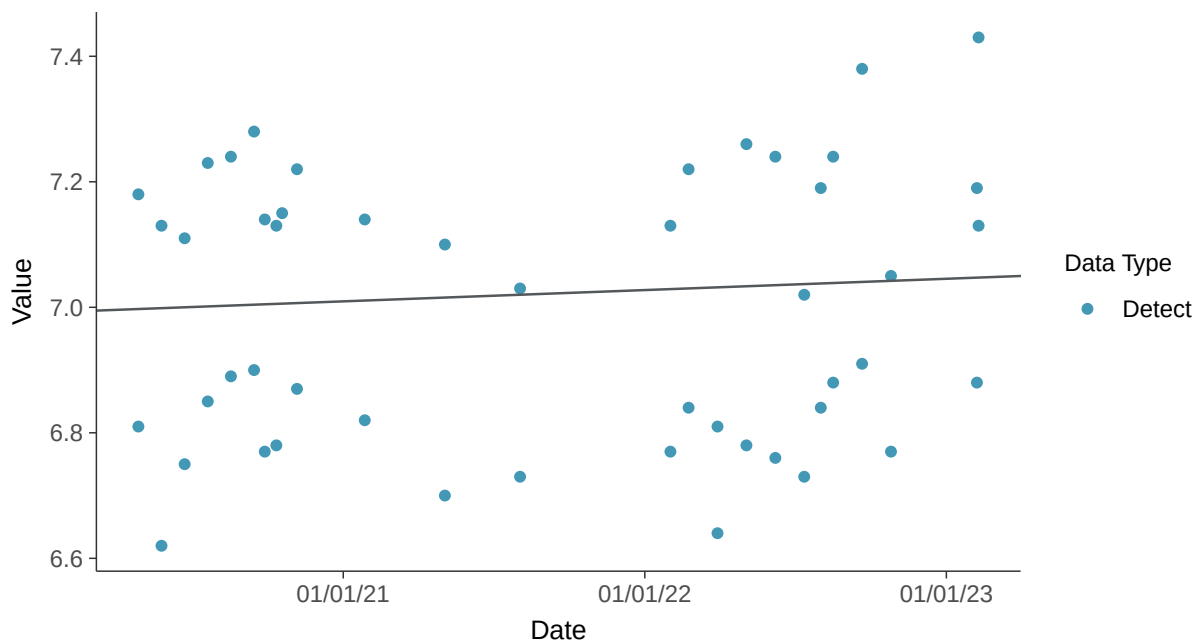
### Normal Q-Q plot

pH, Field, MW-1, MW-4, MW-11, MW-12 (su)



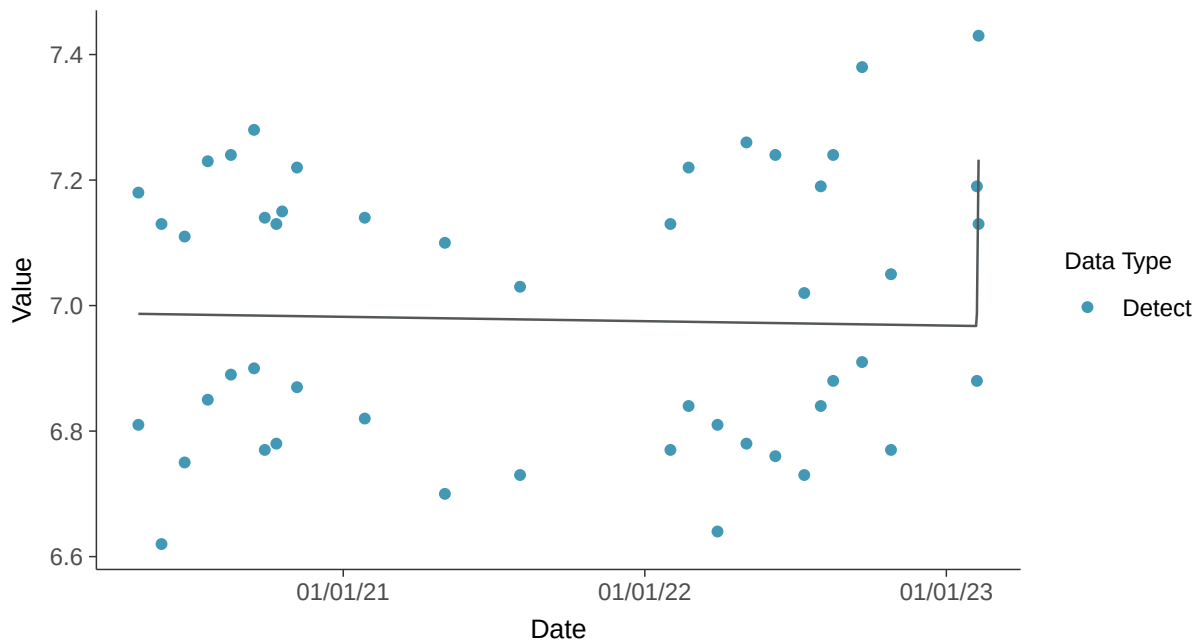
### Trend Regression: Mann-Kendall/Theil-Sen Estimate

pH, Field, MW-1, MW-4, MW-11, MW-12 (su)



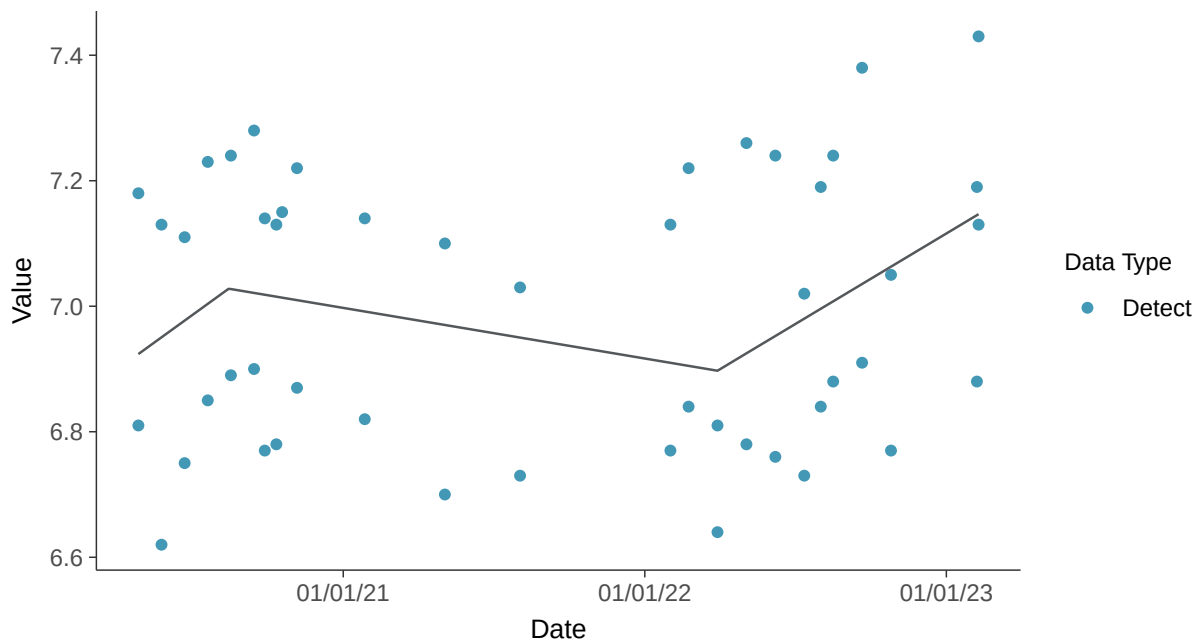
### Trend Regression: Piecewise Linear-Linear

pH, Field, MW-1, MW-4, MW-11, MW-12 (su)



### Trend Regression: Piecewise Linear-Linear-Linear

pH, Field, MW-1, MW-4, MW-11, MW-12 (su)

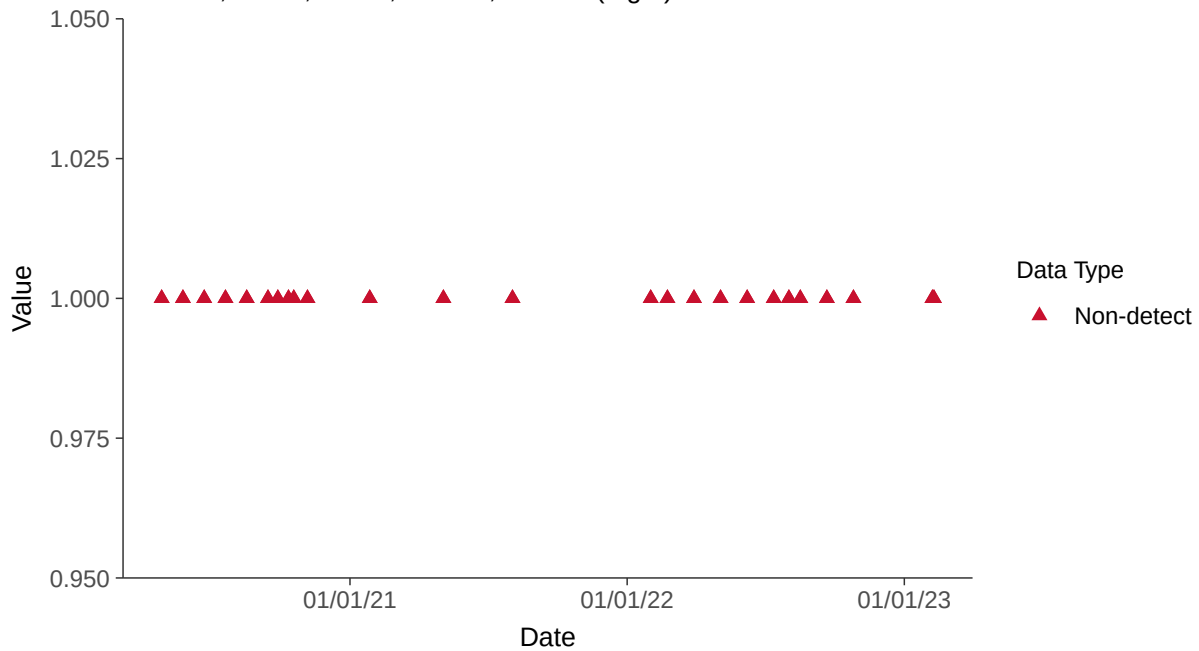


**Appendix IV: Fluoride, MW-1, MW-4, MW-11, MW-12**

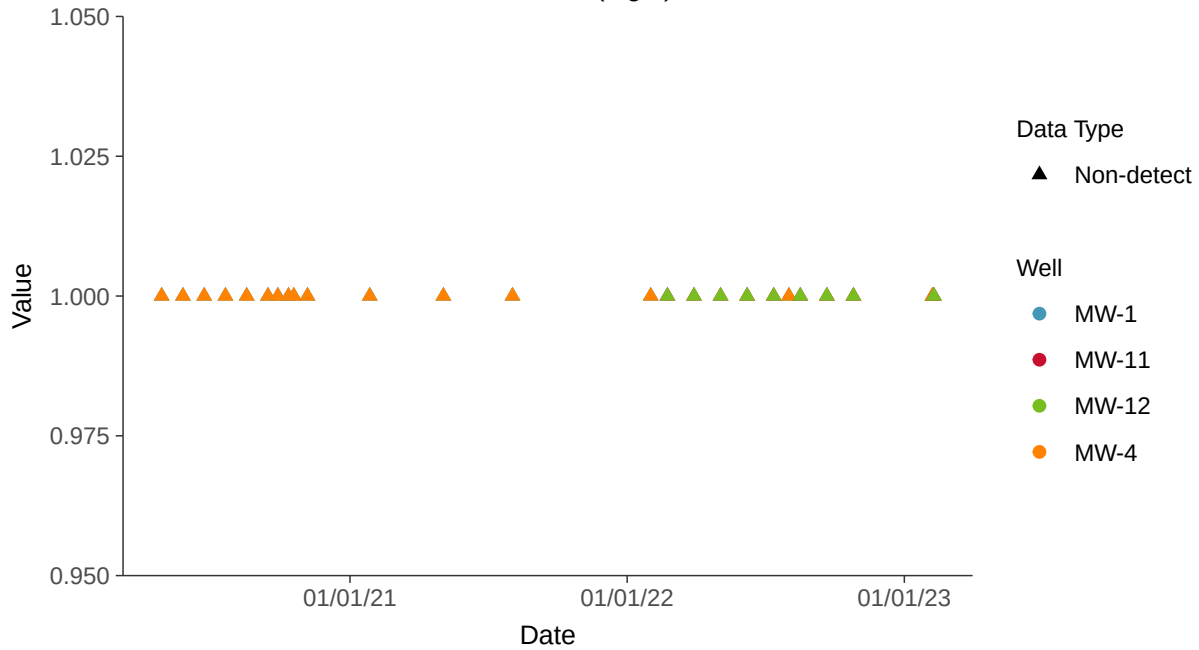
ID: 2\_04

**Scatter Plot**

Fluoride, MW-1, MW-4, MW-11, MW-12 (mg/L)

**Scatter Plot by Well**

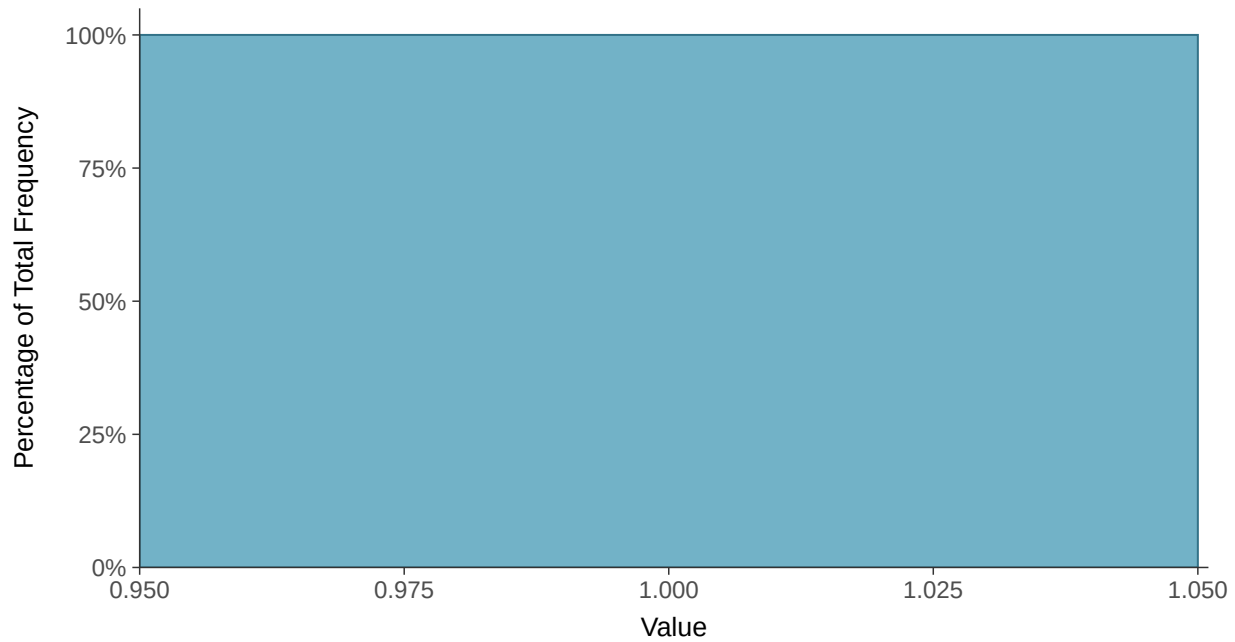
Fluoride, MW-1, MW-4, MW-11, MW-12 (mg/L)





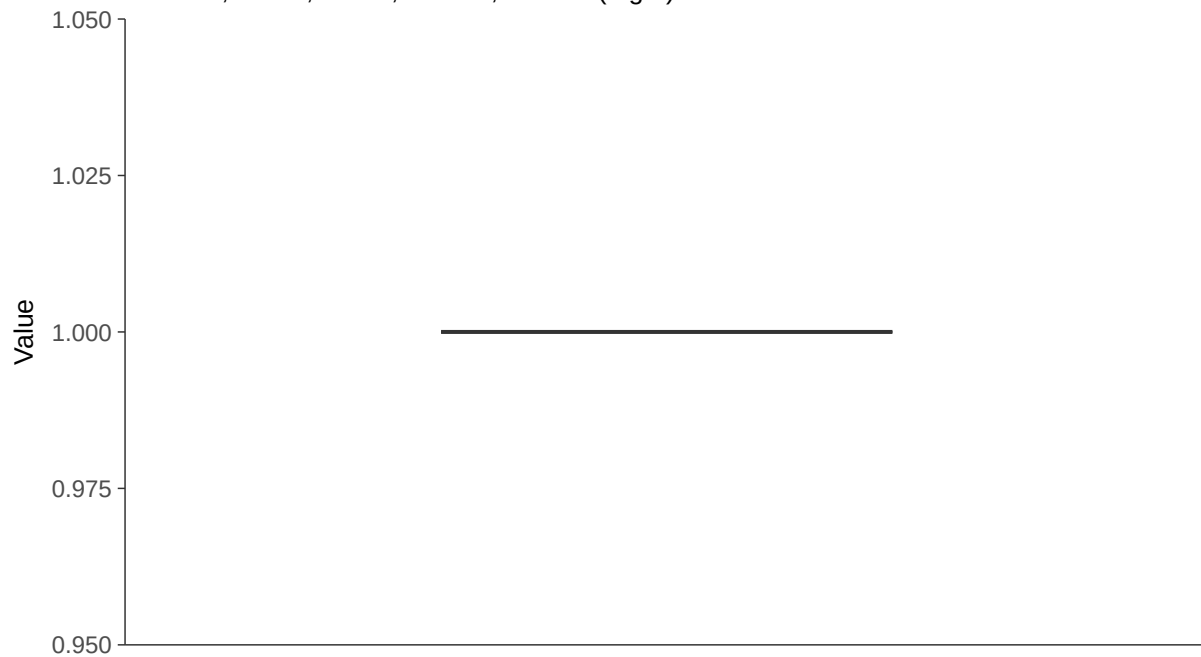
### Histogram

Fluoride, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot

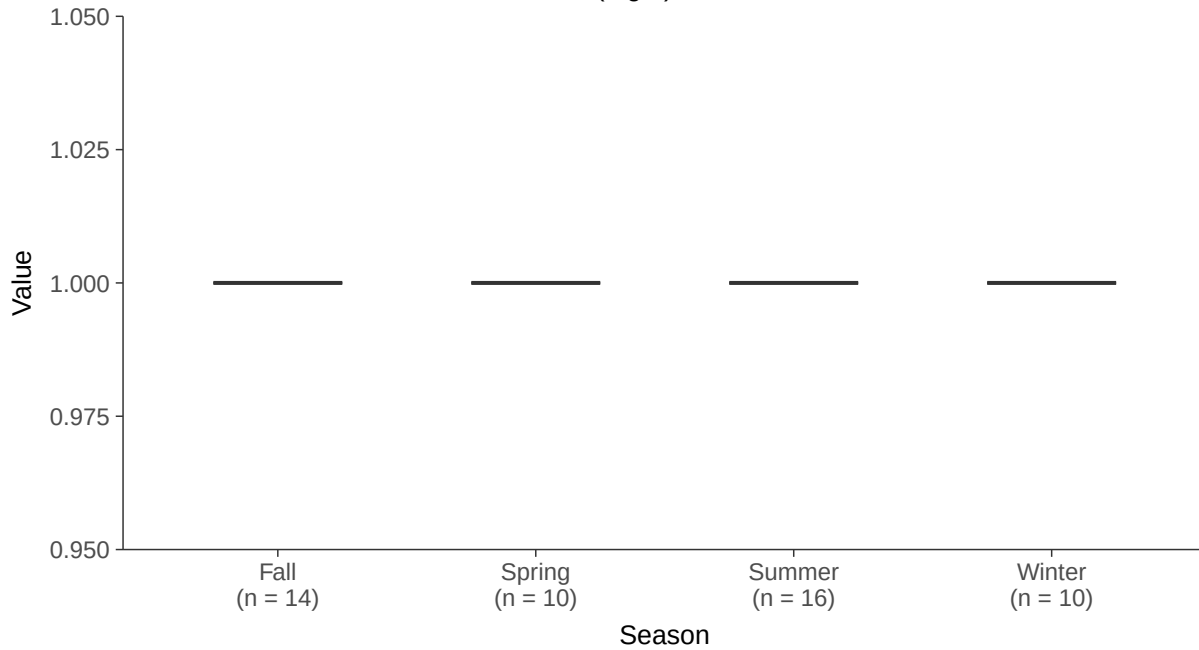
Fluoride, MW-1, MW-4, MW-11, MW-12 (mg/L)





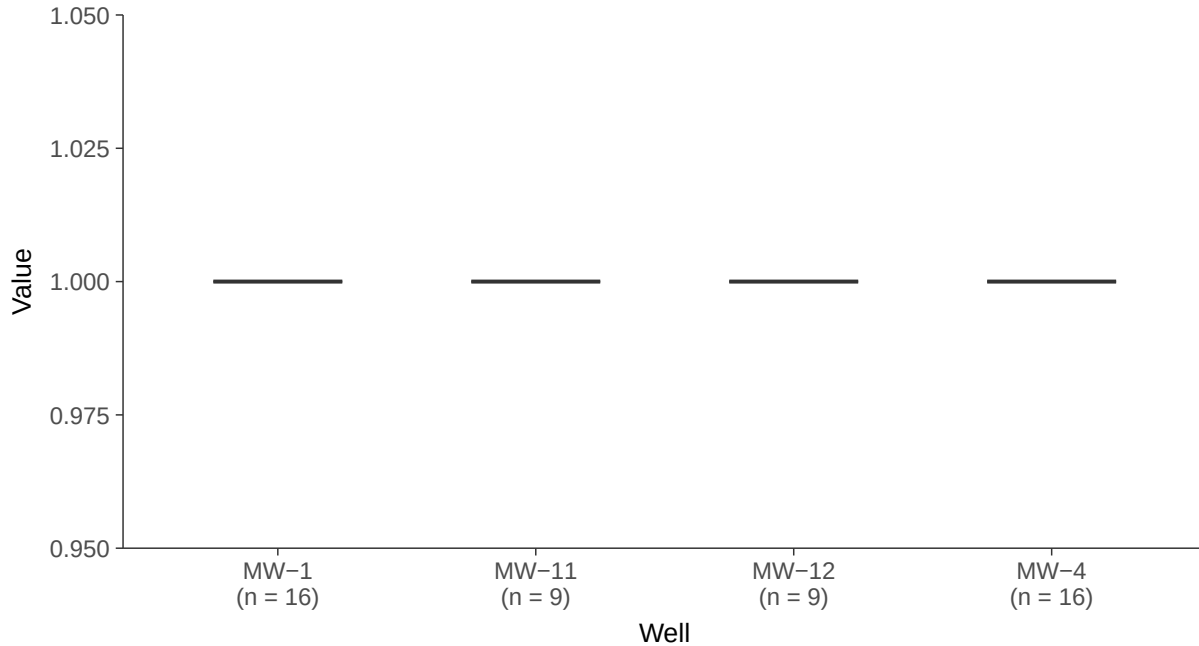
### Boxplot by Season

Fluoride, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot by Well

Fluoride, MW-1, MW-4, MW-11, MW-12 (mg/L)

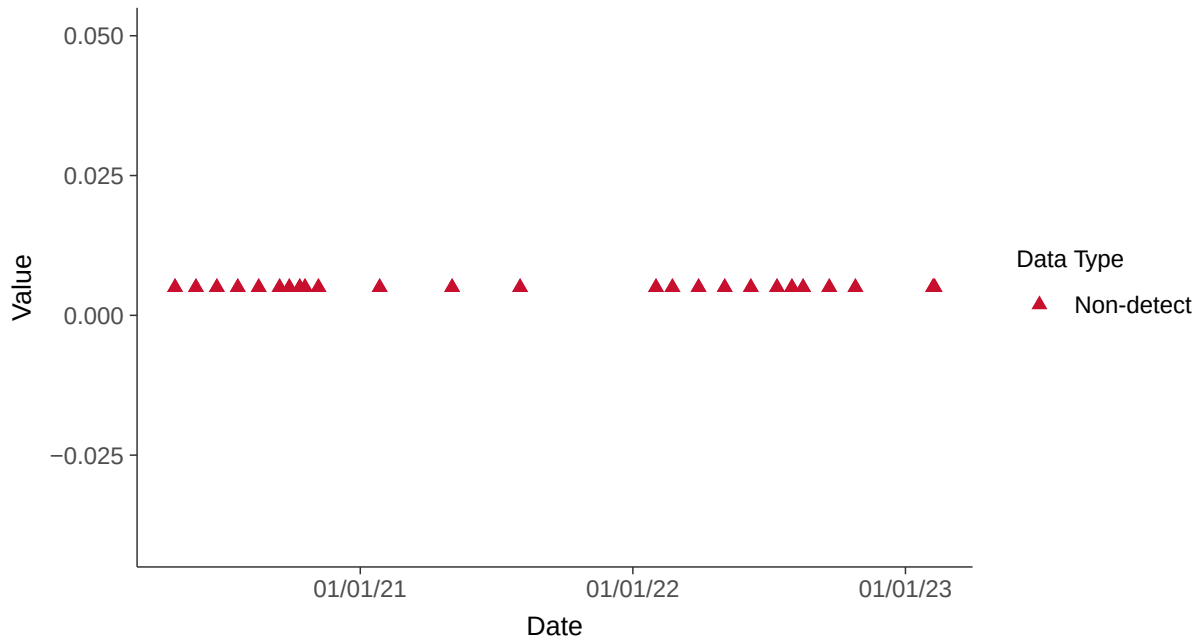


## Appendix IV: Antimony, MW-1, MW-4, MW-11, MW-12

ID: 2\_08

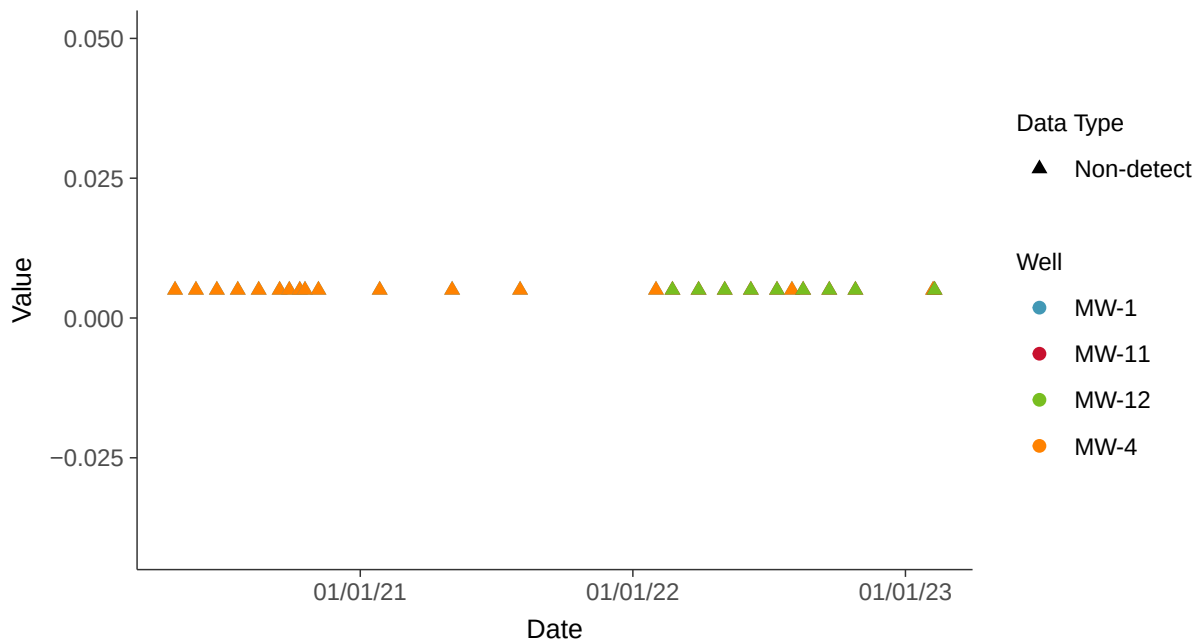
### Scatter Plot

Antimony, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Scatter Plot by Well

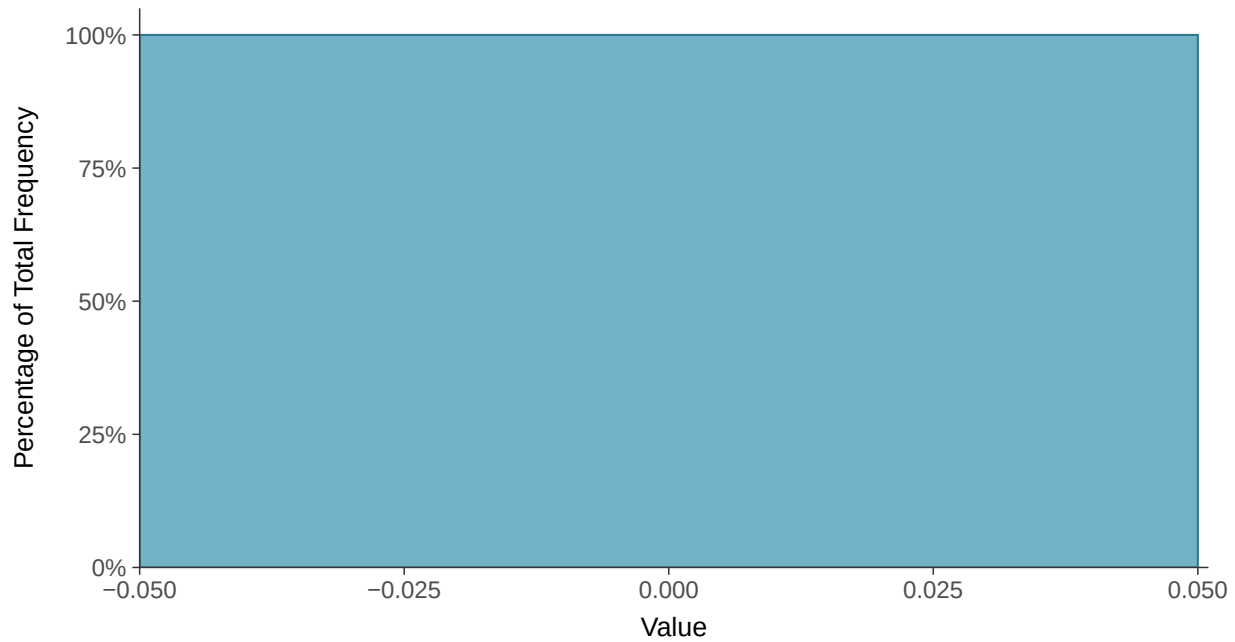
Antimony, MW-1, MW-4, MW-11, MW-12 (mg/L)





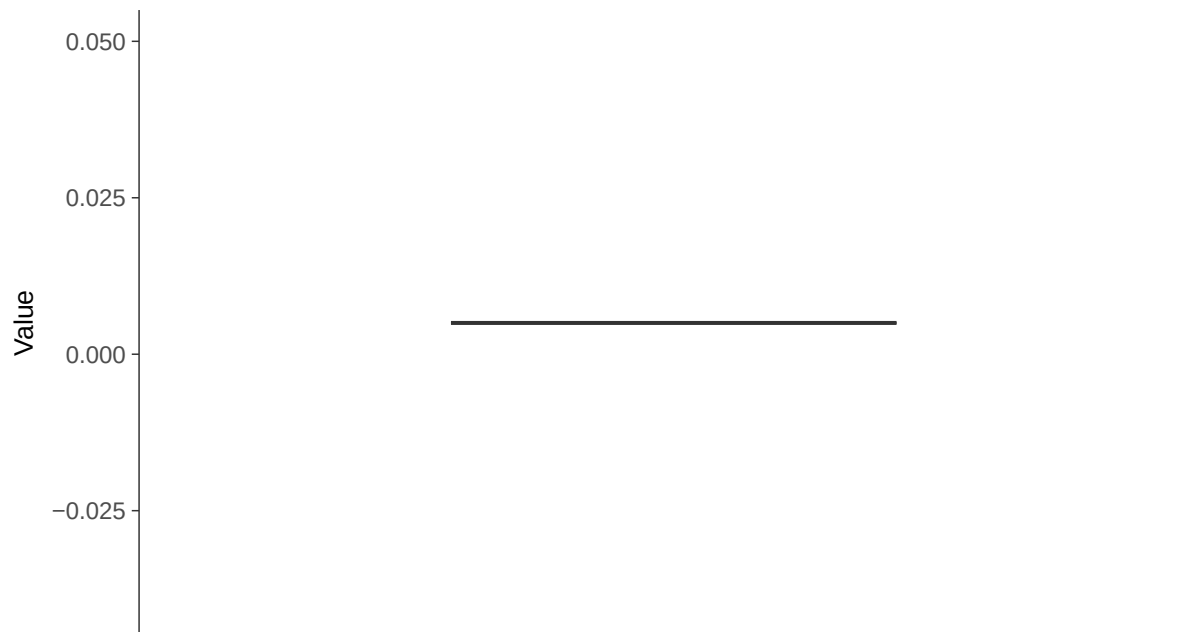
### Histogram

Antimony, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot

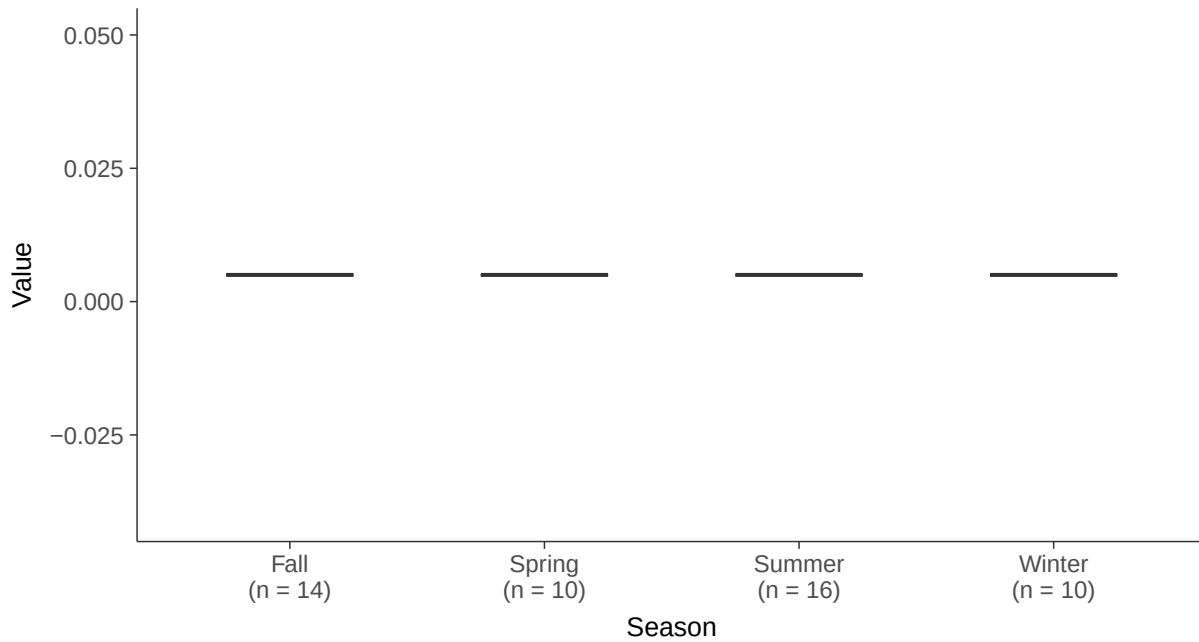
Antimony, MW-1, MW-4, MW-11, MW-12 (mg/L)





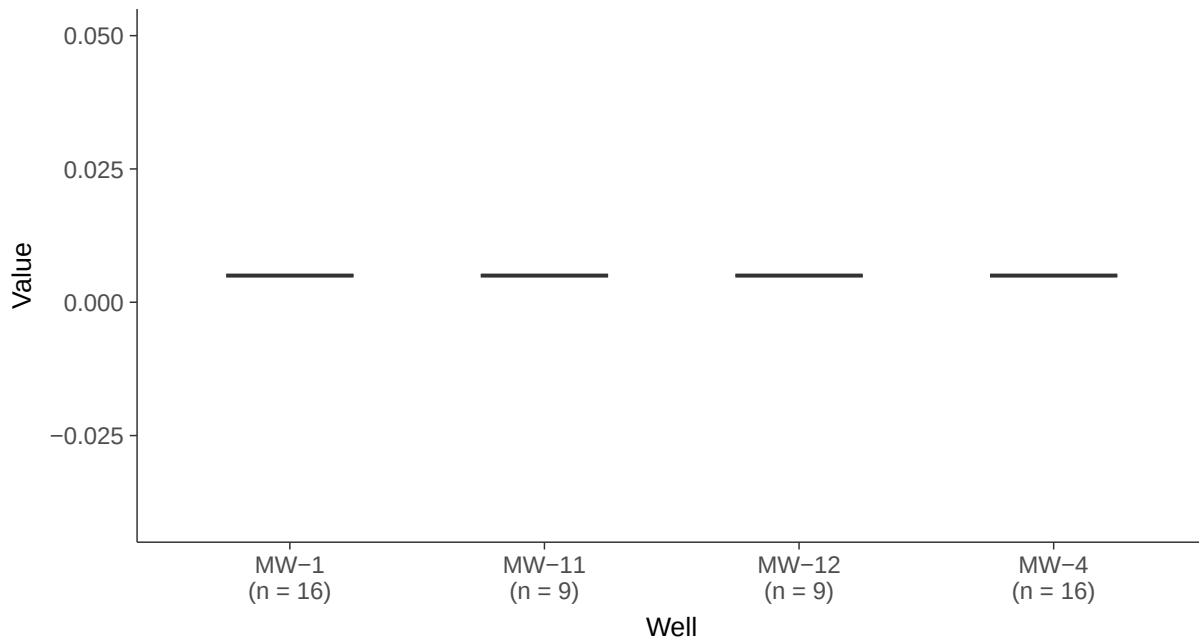
### Boxplot by Season

Antimony, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot by Well

Antimony, MW-1, MW-4, MW-11, MW-12 (mg/L)



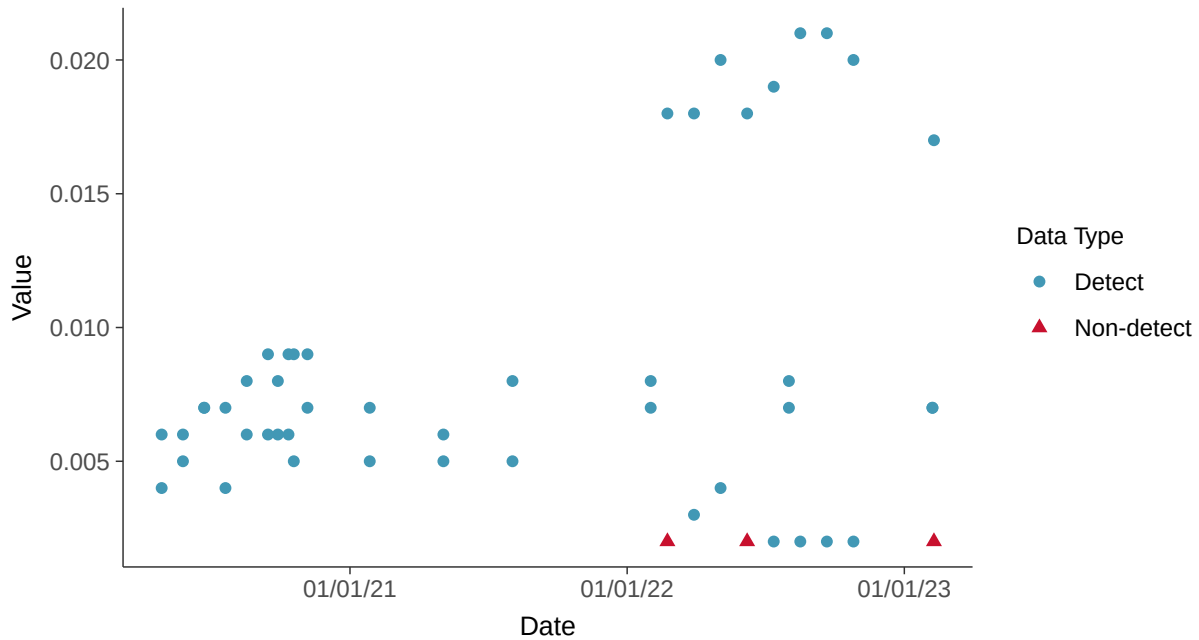


**Appendix IV: Arsenic, MW-1, MW-4, MW-11, MW-12**

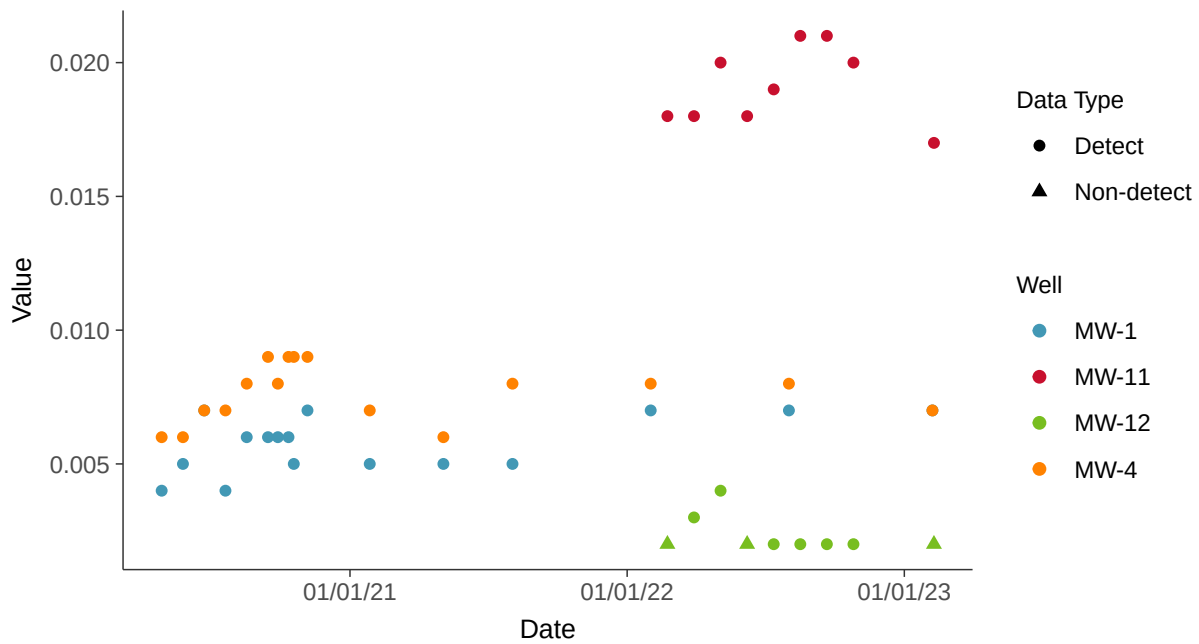
ID: 2\_09

**Scatter Plot**

Arsenic, MW-1, MW-4, MW-11, MW-12 (mg/L)

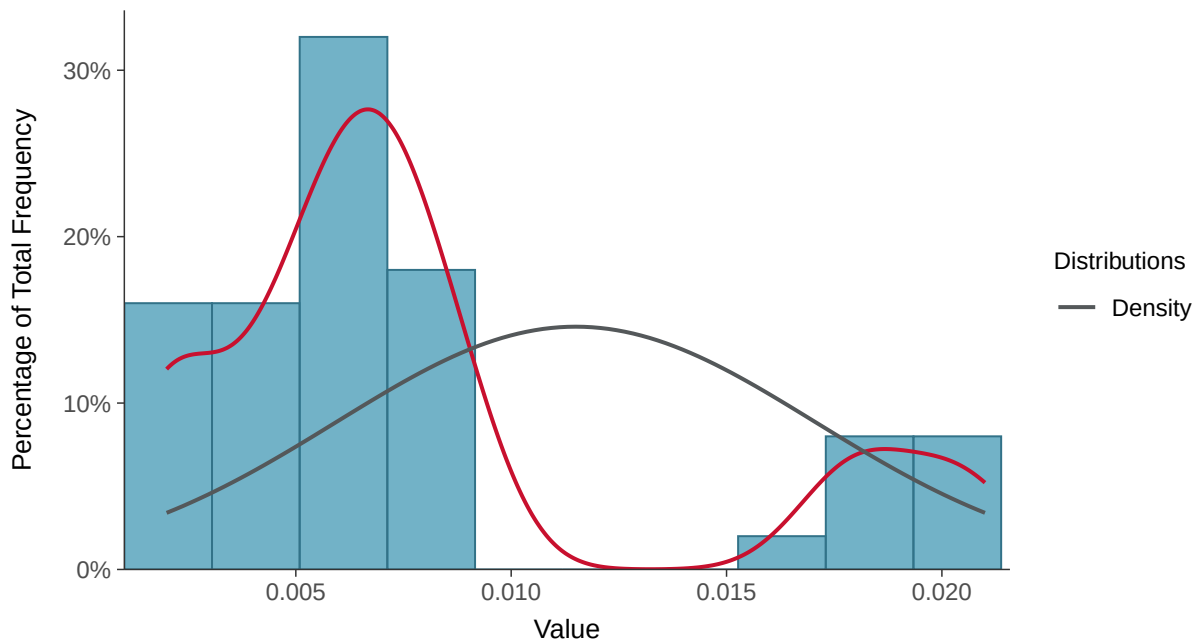
**Scatter Plot by Well**

Arsenic, MW-1, MW-4, MW-11, MW-12 (mg/L)



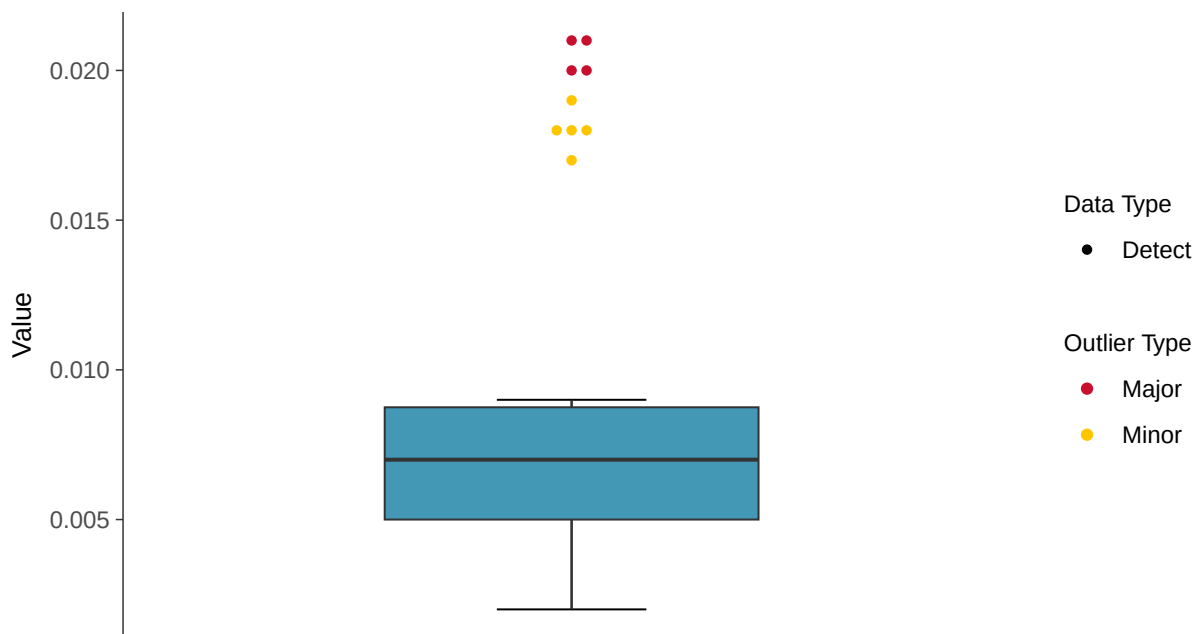
### Histogram

Arsenic, MW-1, MW-4, MW-11, MW-12 (mg/L)



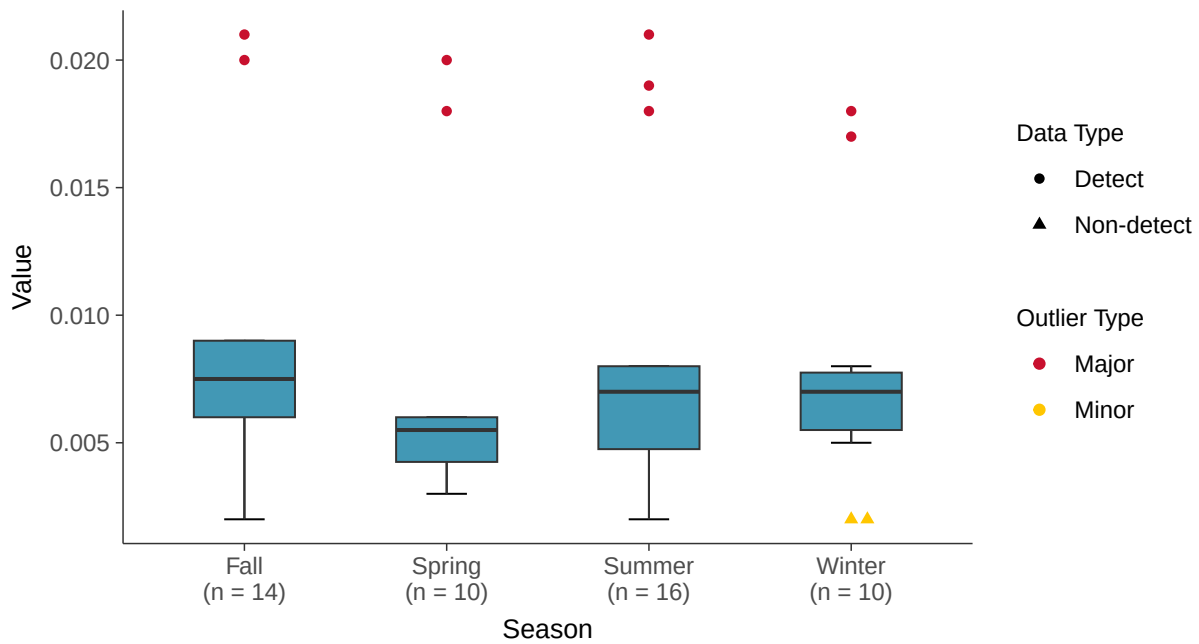
### Boxplot

Arsenic, MW-1, MW-4, MW-11, MW-12 (mg/L)



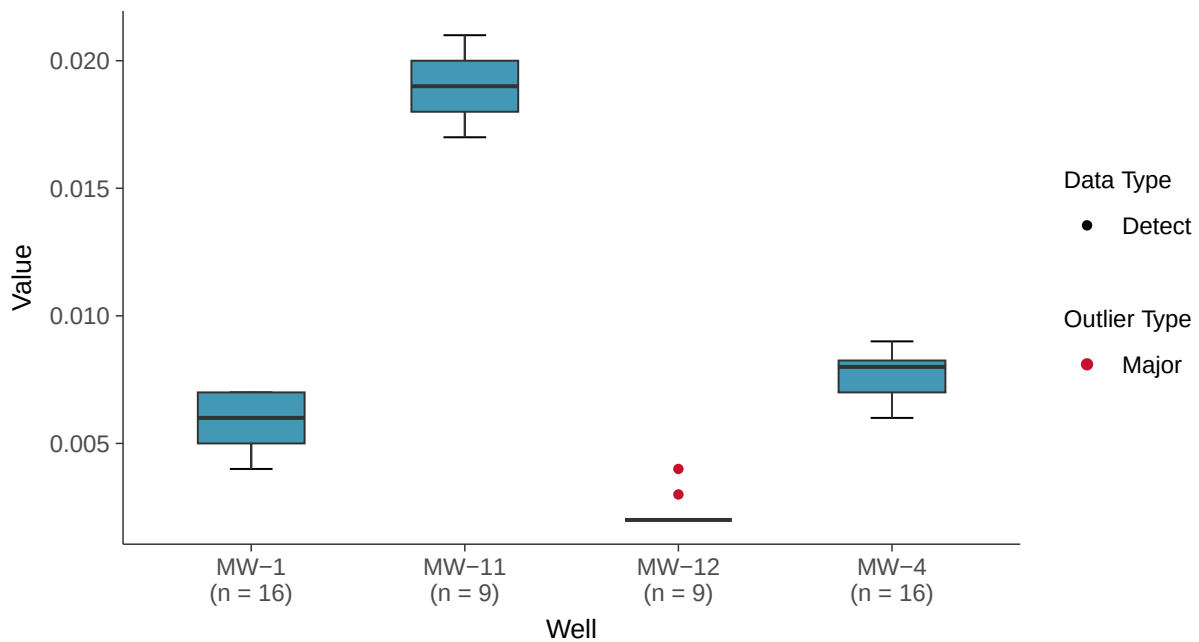
### Boxplot by Season

Arsenic, MW-1, MW-4, MW-11, MW-12 (mg/L)



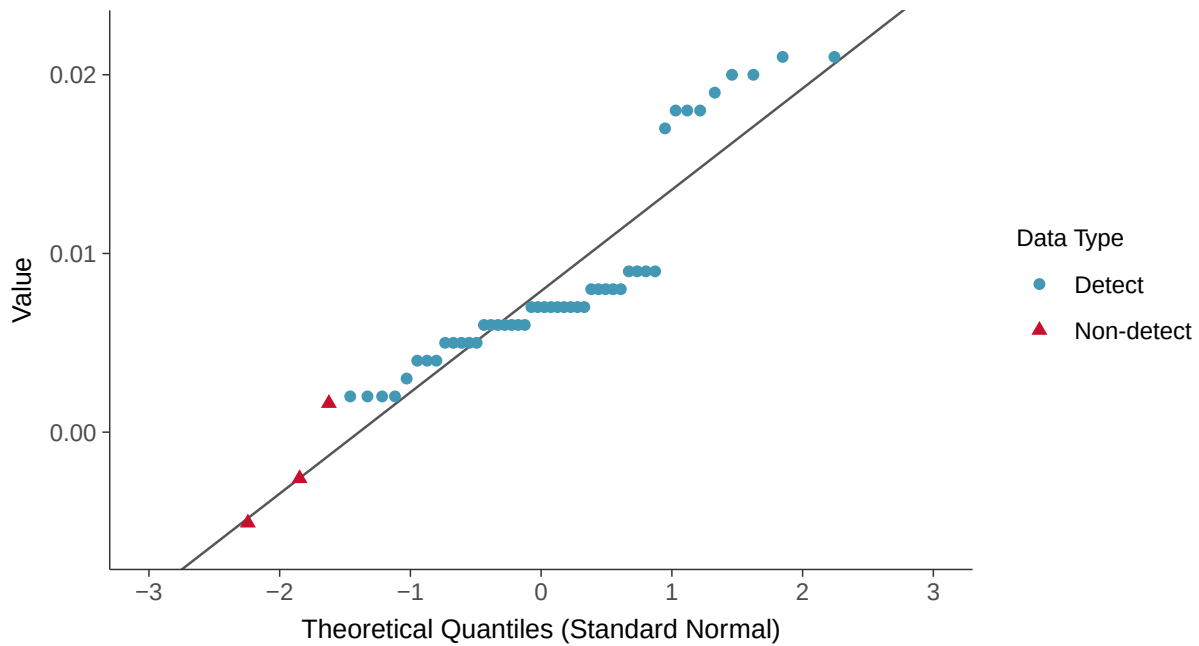
### Boxplot by Well

Arsenic, MW-1, MW-4, MW-11, MW-12 (mg/L)



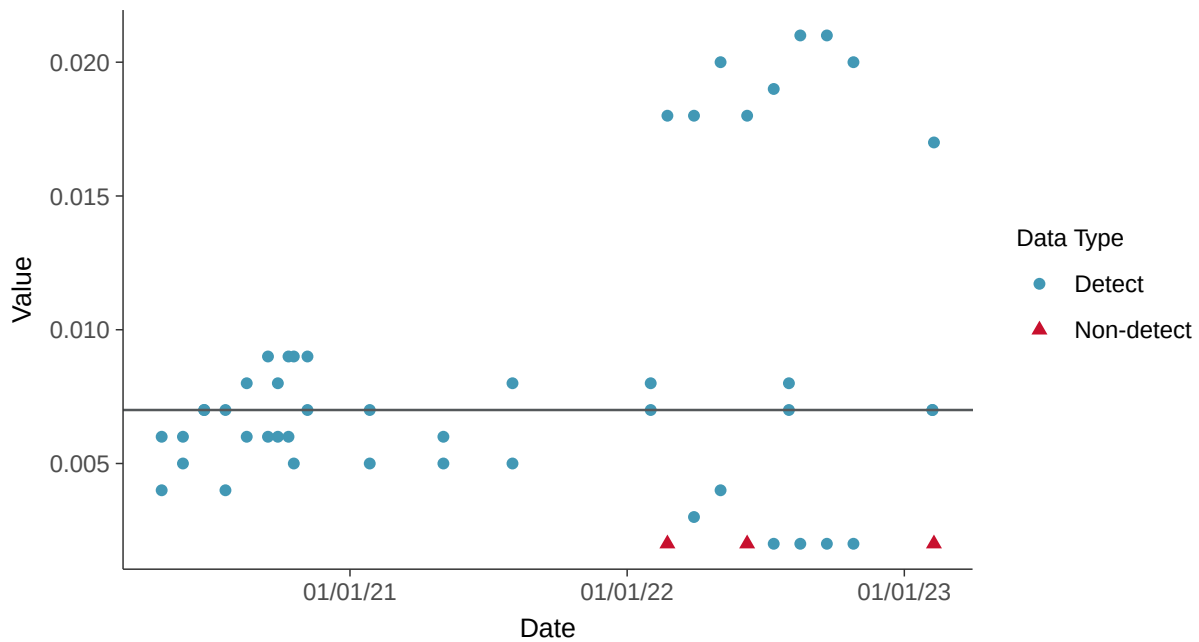
### Normal Q-Q plot using ROS Imputed Estimates

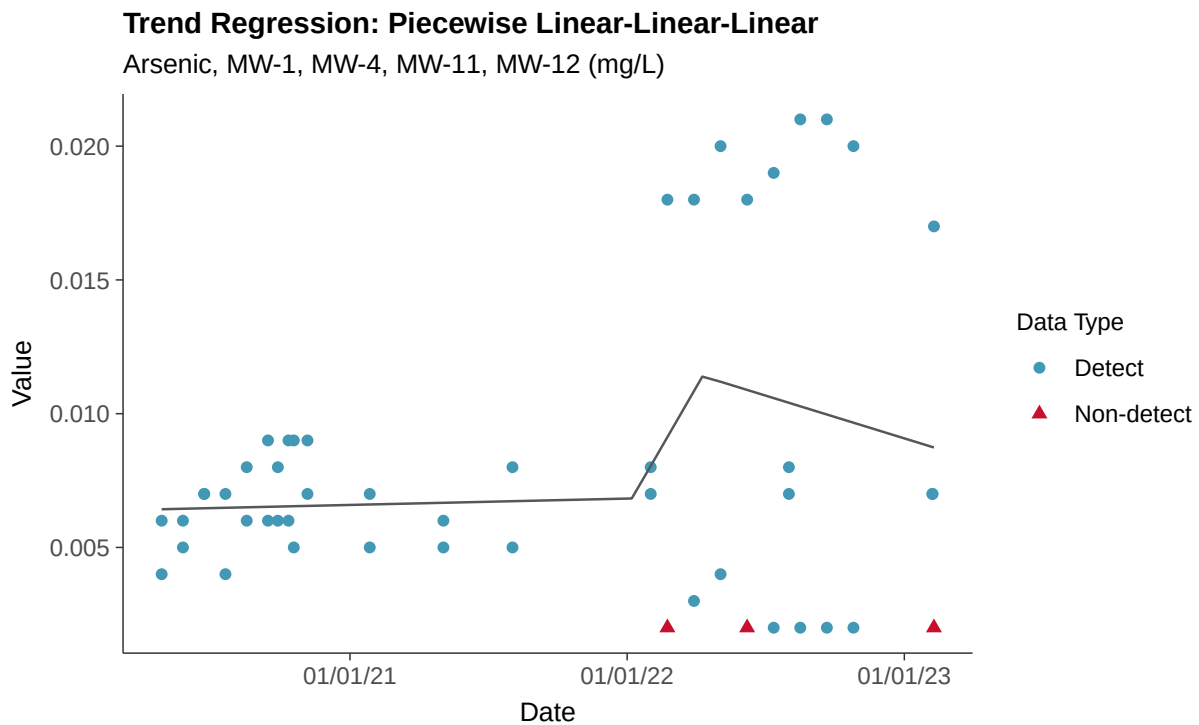
Arsenic, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Trend Regression: Mann-Kendall/Theil-Sen Estimate

Arsenic, MW-1, MW-4, MW-11, MW-12 (mg/L)





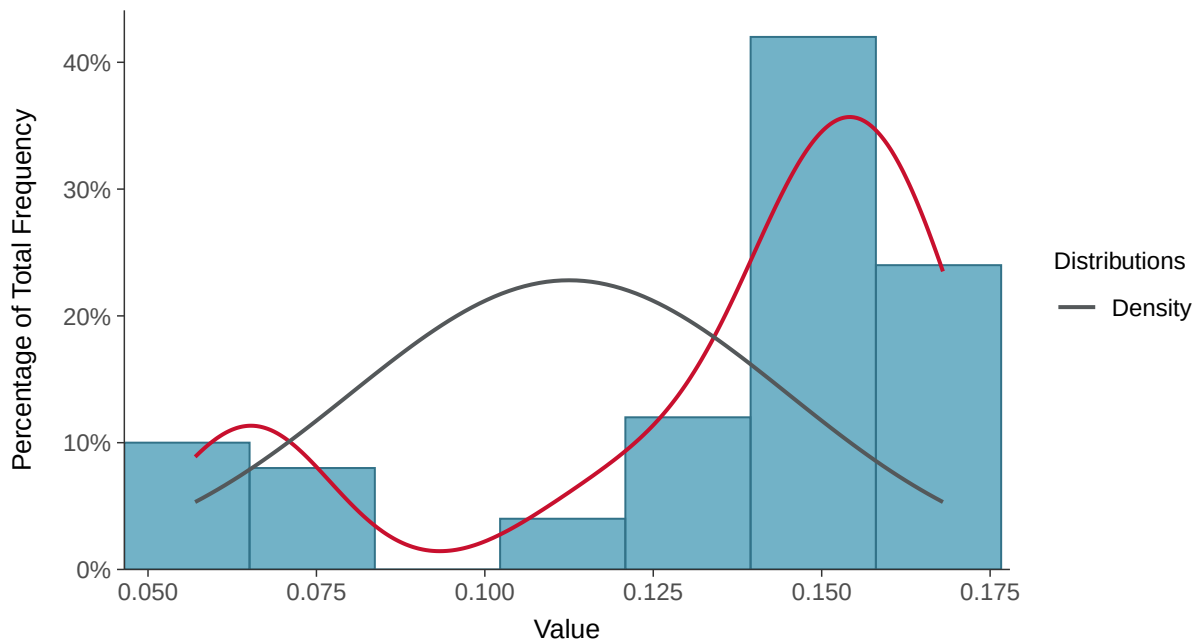
## H2R

H2R



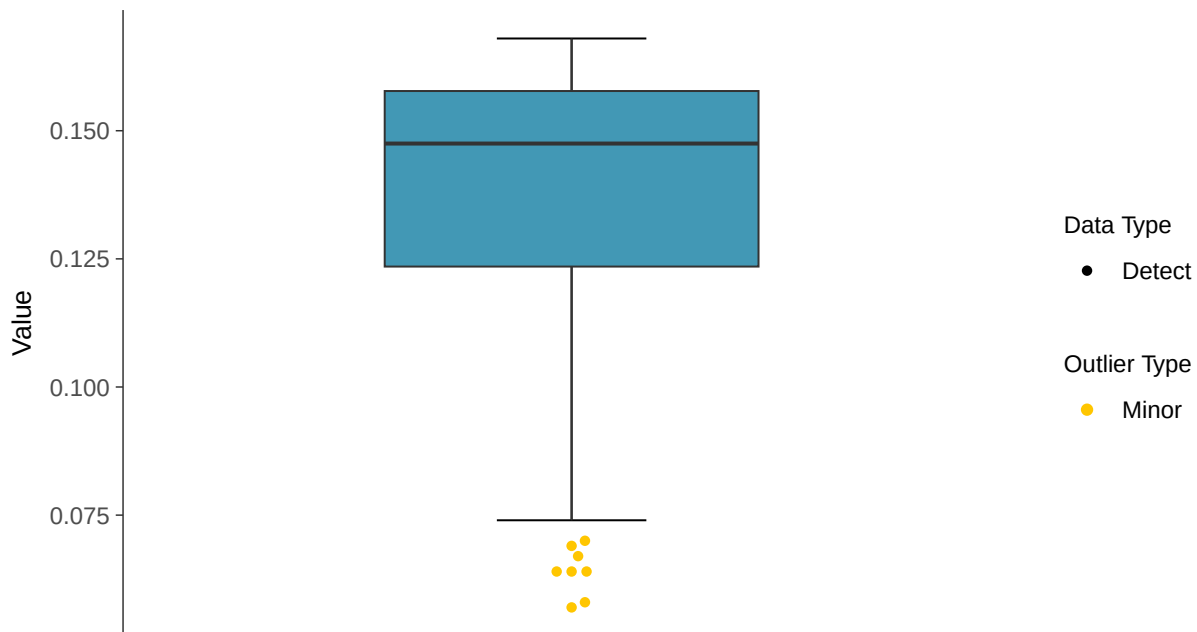
### Histogram

Barium, MW-1, MW-4, MW-11, MW-12 (mg/L)



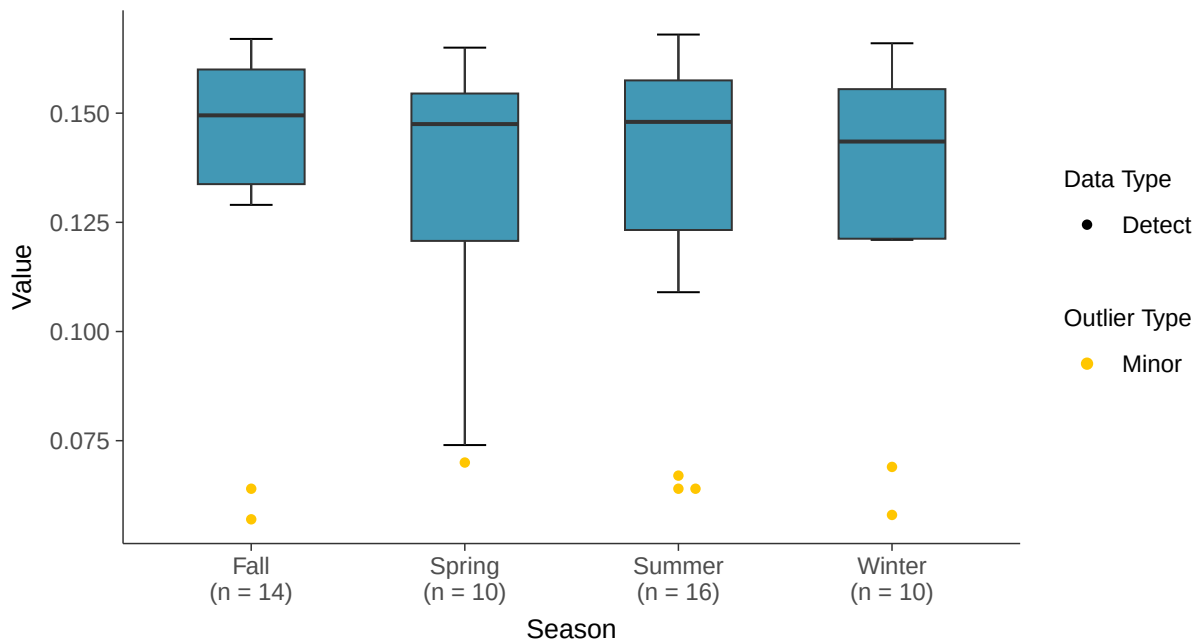
### Boxplot

Barium, MW-1, MW-4, MW-11, MW-12 (mg/L)



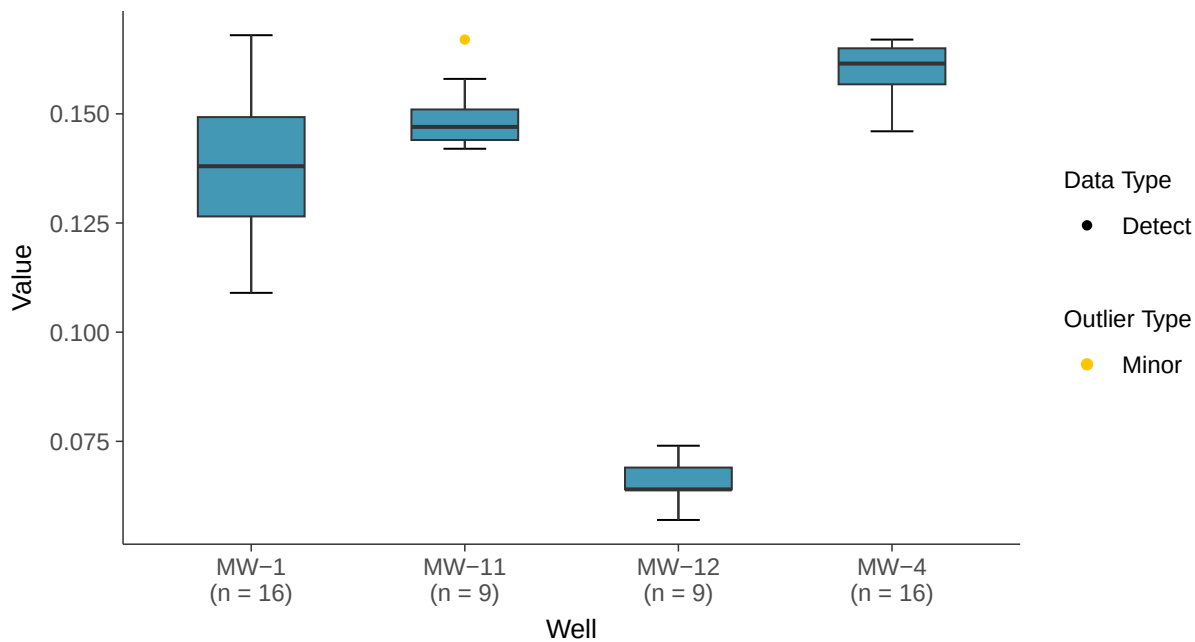
### Boxplot by Season

Barium, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot by Well

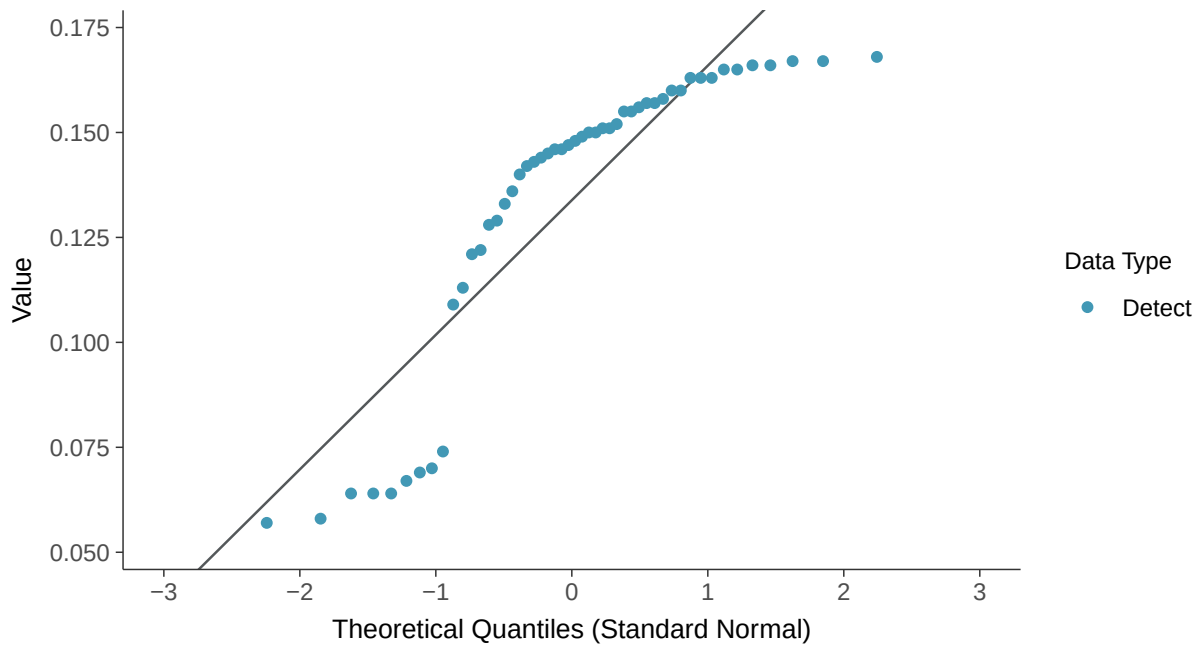
Barium, MW-1, MW-4, MW-11, MW-12 (mg/L)





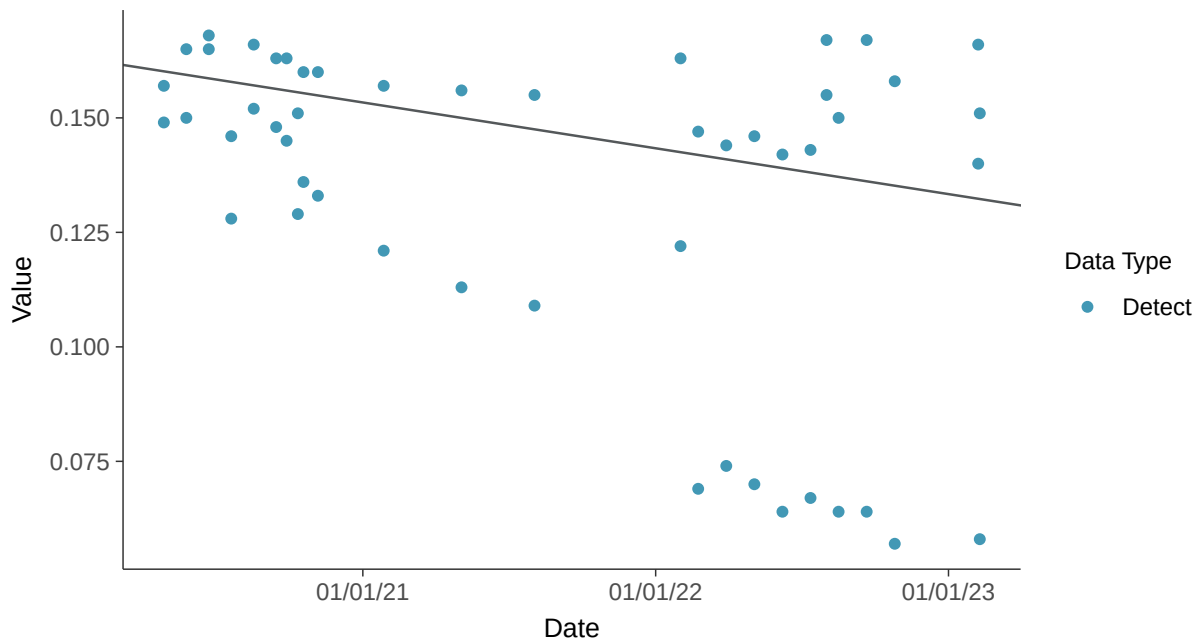
### Normal Q-Q plot

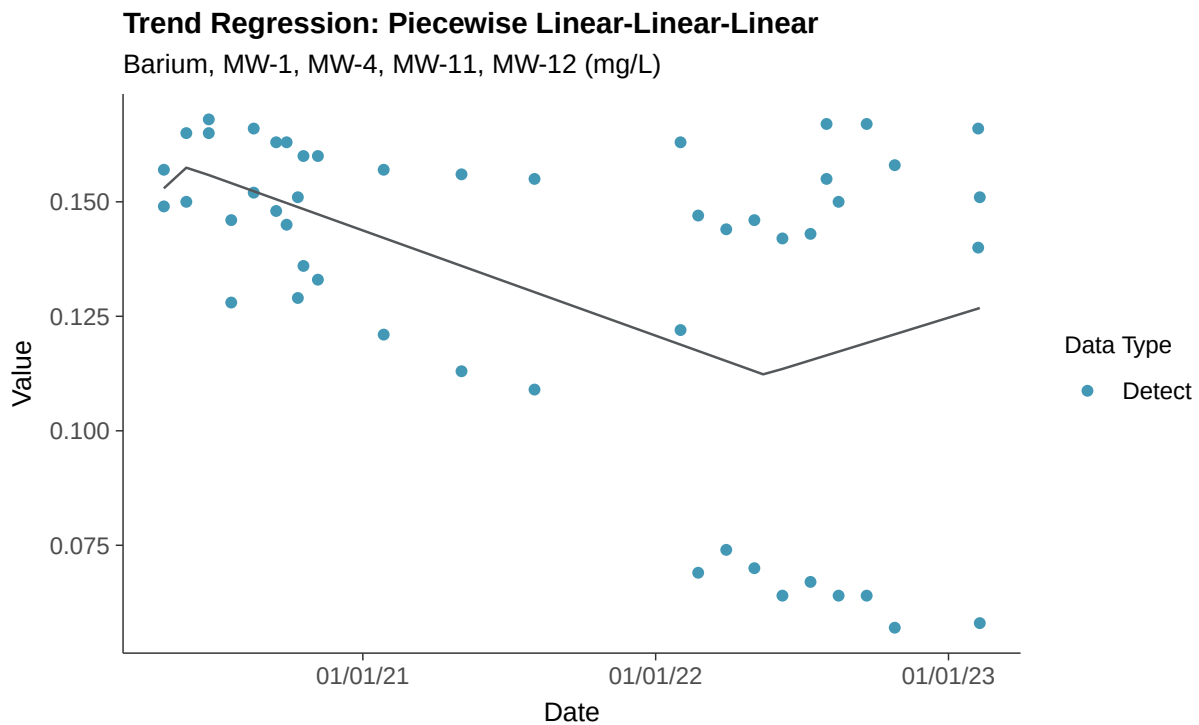
Barium, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Trend Regression: Mann-Kendall/Theil-Sen Estimate

Barium, MW-1, MW-4, MW-11, MW-12 (mg/L)



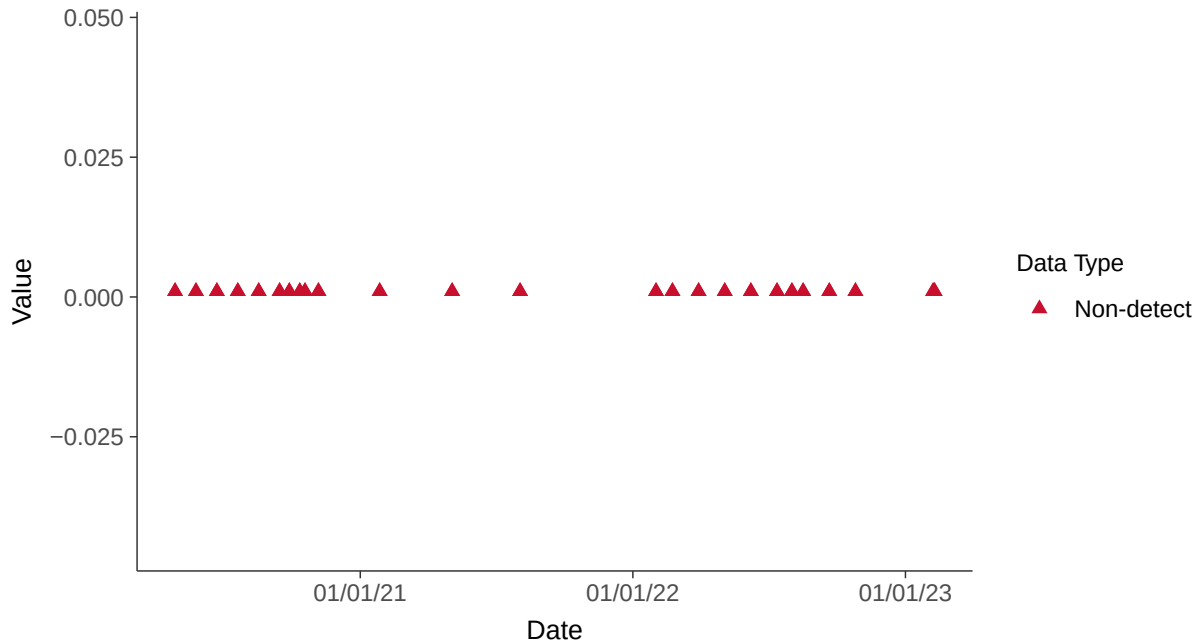


**Appendix IV: Beryllium, MW-1, MW-4, MW-11, MW-12**

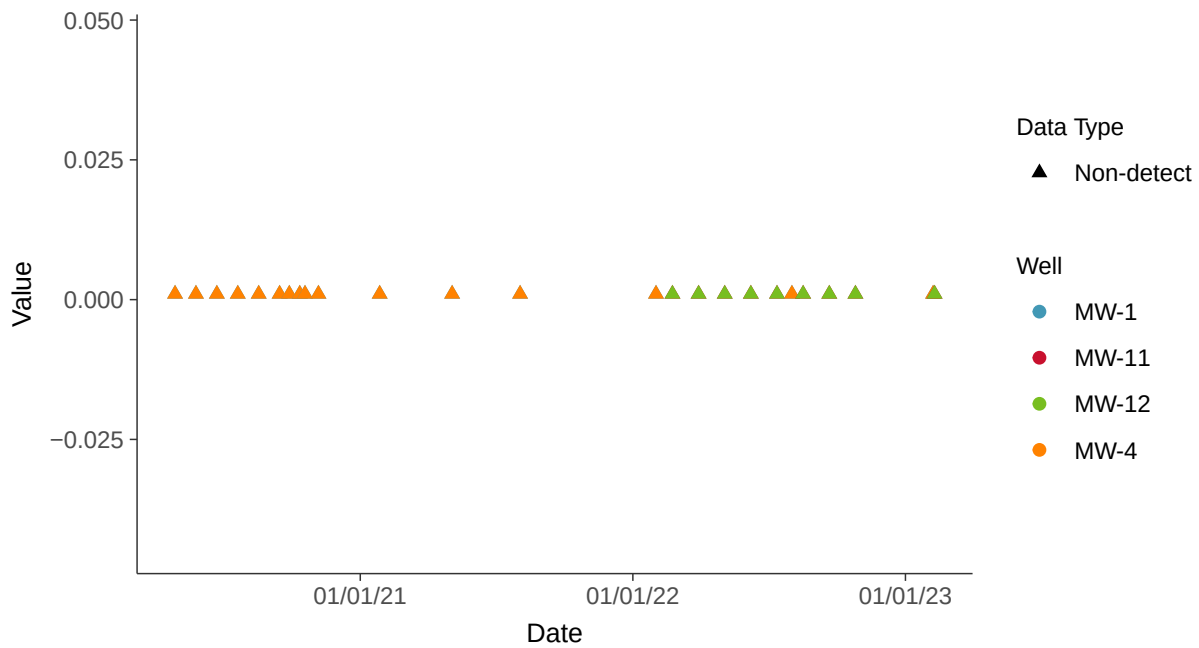
ID: 2\_11

**Scatter Plot**

Beryllium, MW-1, MW-4, MW-11, MW-12 (mg/L)

**Scatter Plot by Well**

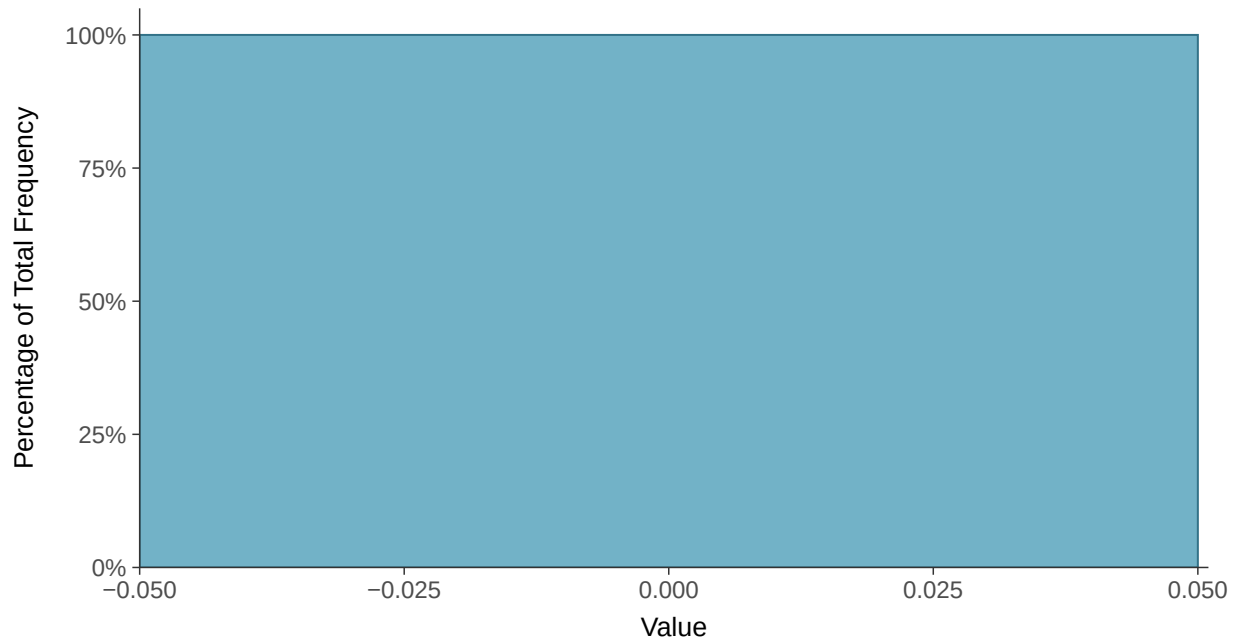
Beryllium, MW-1, MW-4, MW-11, MW-12 (mg/L)





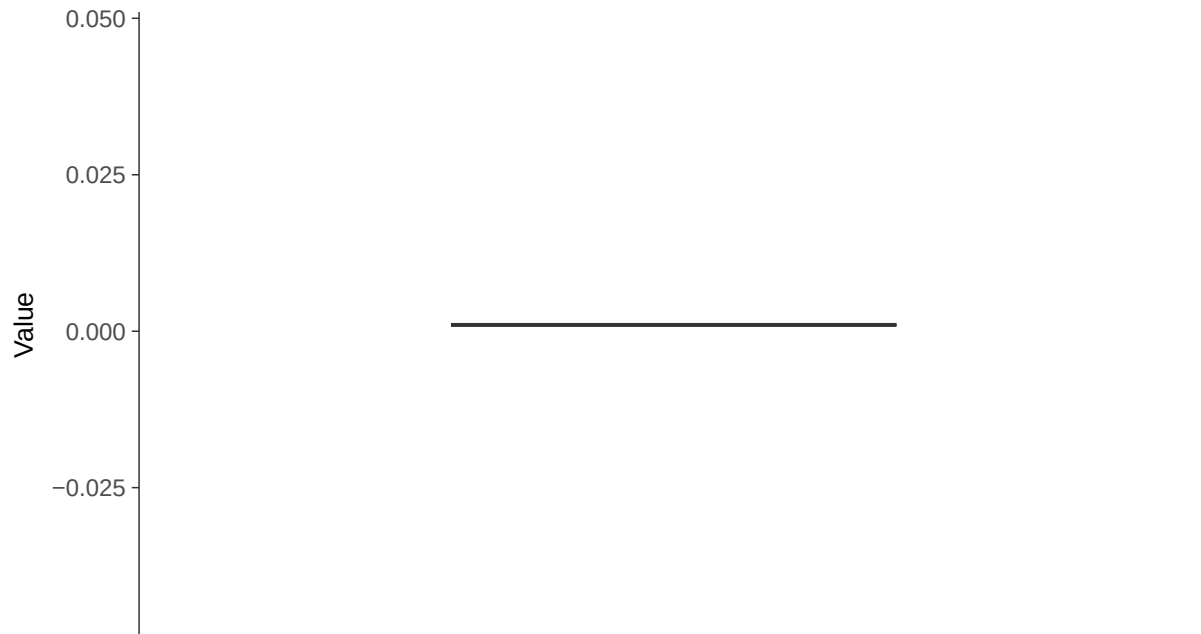
### Histogram

Beryllium, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot

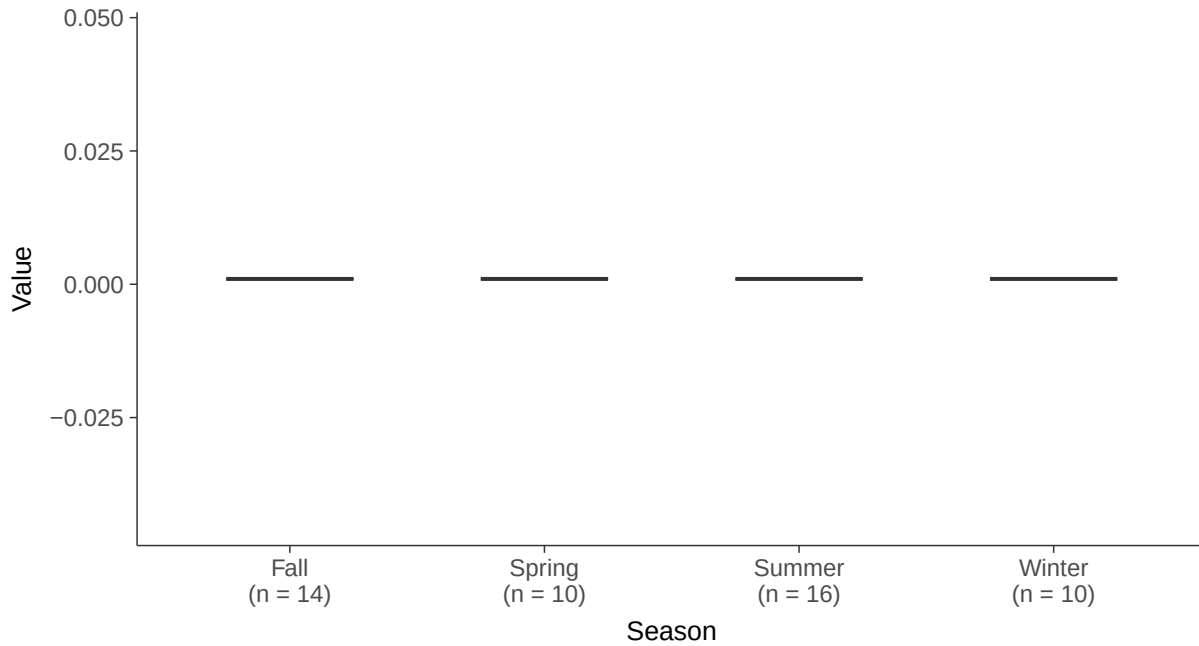
Beryllium, MW-1, MW-4, MW-11, MW-12 (mg/L)





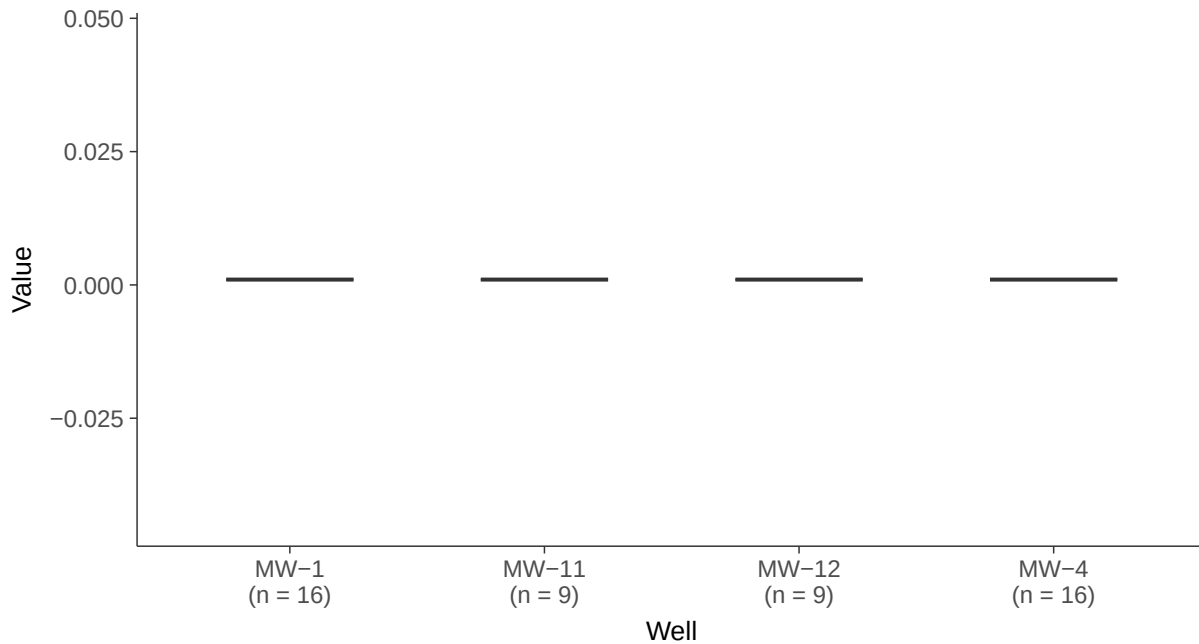
### Boxplot by Season

Beryllium, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot by Well

Beryllium, MW-1, MW-4, MW-11, MW-12 (mg/L)



## Scatter Plot

A scatter plot showing 'Value' on the y-axis (ranging from 0.000 to 0.005) and 'Date' on the x-axis (ranging from 01/01/21 to 01/01/23). The data points are red triangles, all labeled as 'Non-detect' in the legend. Most points are clustered near the bottom of the y-axis (around 0.0005), with one notable outlier at approximately 0.005 in early 2023.

| Date       | Value  | Data Type  |
|------------|--------|------------|
| 2020-03-01 | 0.0005 | Non-detect |
| 2020-04-01 | 0.0005 | Non-detect |
| 2020-05-01 | 0.0005 | Non-detect |
| 2020-06-01 | 0.0005 | Non-detect |
| 2020-07-01 | 0.0005 | Non-detect |
| 2020-08-01 | 0.0005 | Non-detect |
| 2020-09-01 | 0.0005 | Non-detect |
| 2020-10-01 | 0.0005 | Non-detect |
| 2020-11-01 | 0.0005 | Non-detect |
| 2020-12-01 | 0.0005 | Non-detect |
| 2021-01-01 | 0.0005 | Non-detect |
| 2021-03-01 | 0.0005 | Non-detect |
| 2021-06-01 | 0.0005 | Non-detect |
| 2021-09-01 | 0.0005 | Non-detect |
| 2022-01-01 | 0.0005 | Non-detect |
| 2022-03-01 | 0.0005 | Non-detect |
| 2022-04-01 | 0.0005 | Non-detect |
| 2022-05-01 | 0.0005 | Non-detect |
| 2022-06-01 | 0.0005 | Non-detect |
| 2022-07-01 | 0.0005 | Non-detect |
| 2022-08-01 | 0.0005 | Non-detect |
| 2022-09-01 | 0.0005 | Non-detect |
| 2022-10-01 | 0.0005 | Non-detect |
| 2022-11-01 | 0.0005 | Non-detect |
| 2022-12-01 | 0.0005 | Non-detect |
| 2023-01-01 | 0.0005 | Non-detect |
| 2023-02-01 | 0.0050 | Non-detect |

### Scatter Plot by Well

Value

0.005

0.004

0.003

0.002

0.001

0

01/01/21

01/01/22

01/01/23

Date

Data Type

▲ Non-detect

Well

MW-1

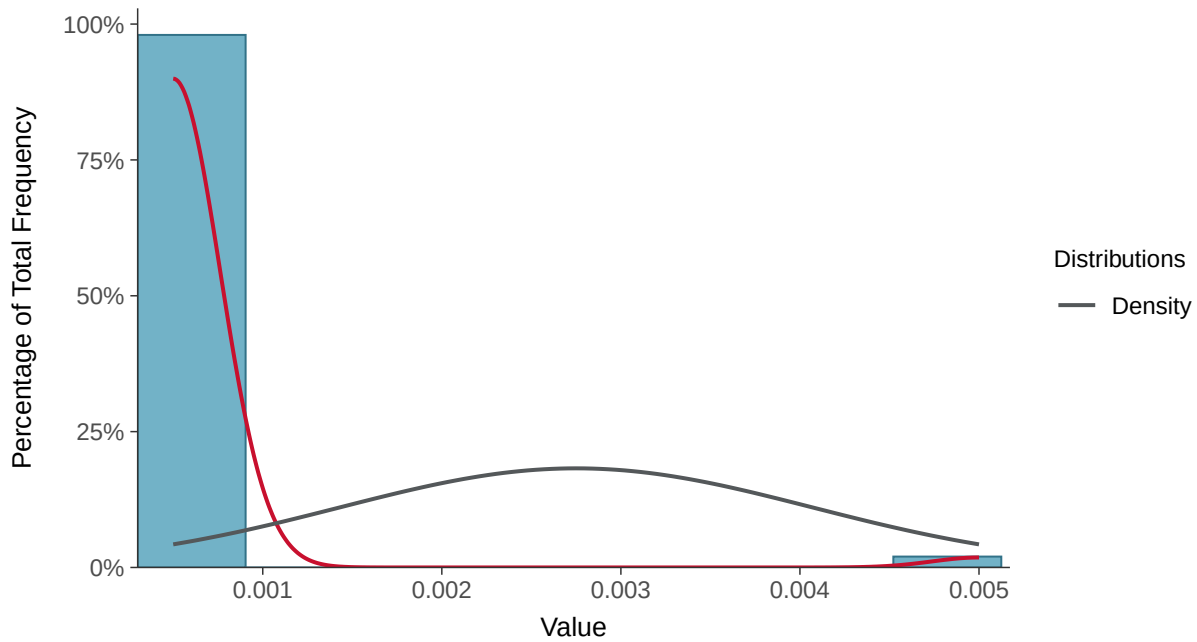
MW-11

MW-12

MW-4

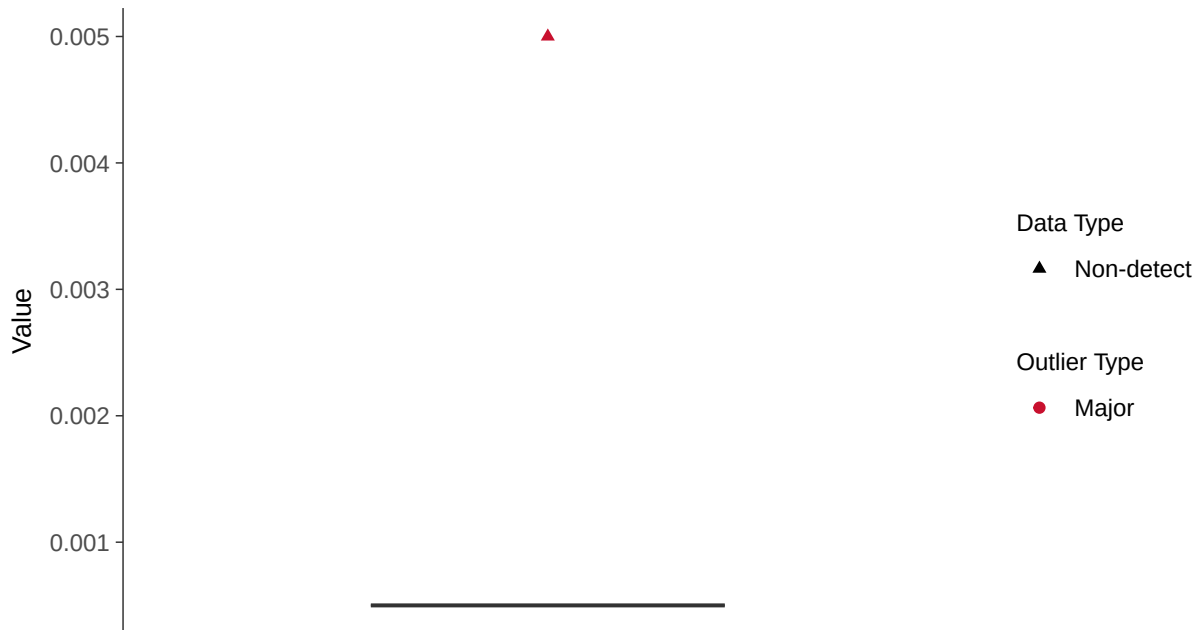
### Histogram

Cadmium, MW-1, MW-4, MW-11, MW-12 (mg/L)



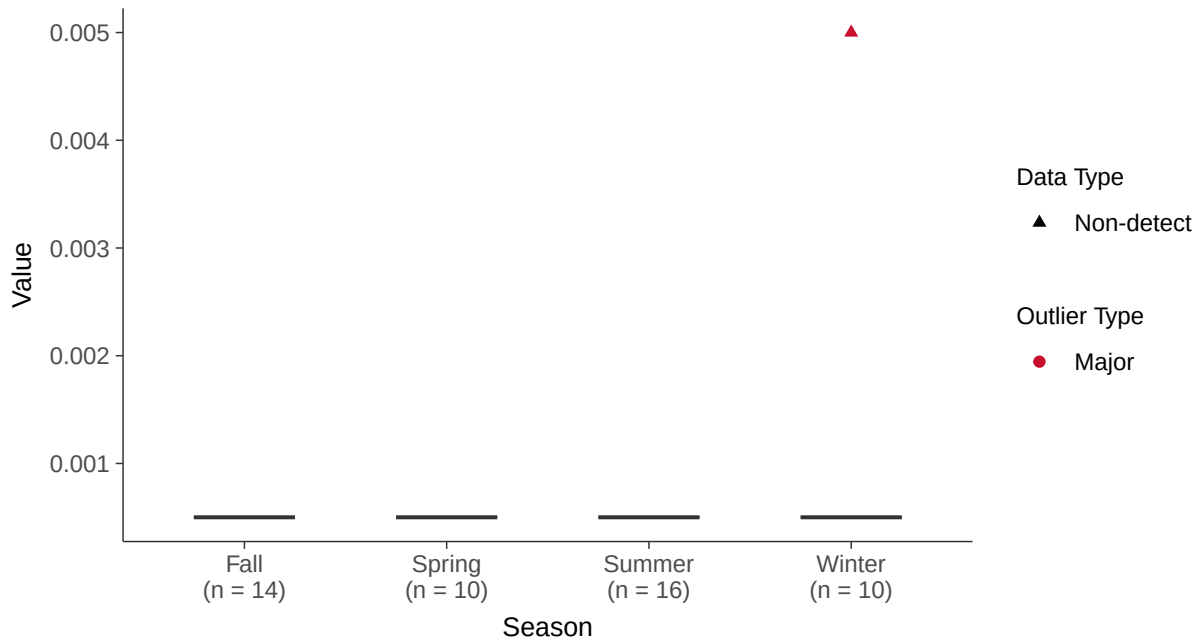
### Boxplot

Cadmium, MW-1, MW-4, MW-11, MW-12 (mg/L)



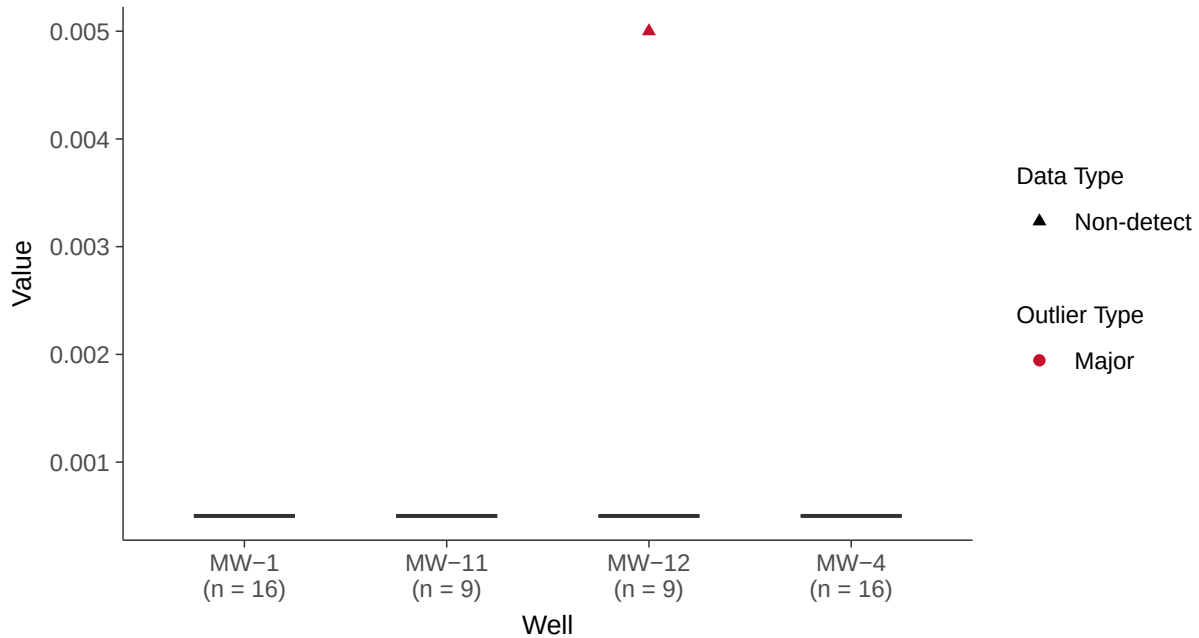
### Boxplot by Season

Cadmium, MW-1, MW-4, MW-11, MW-12 (mg/L)



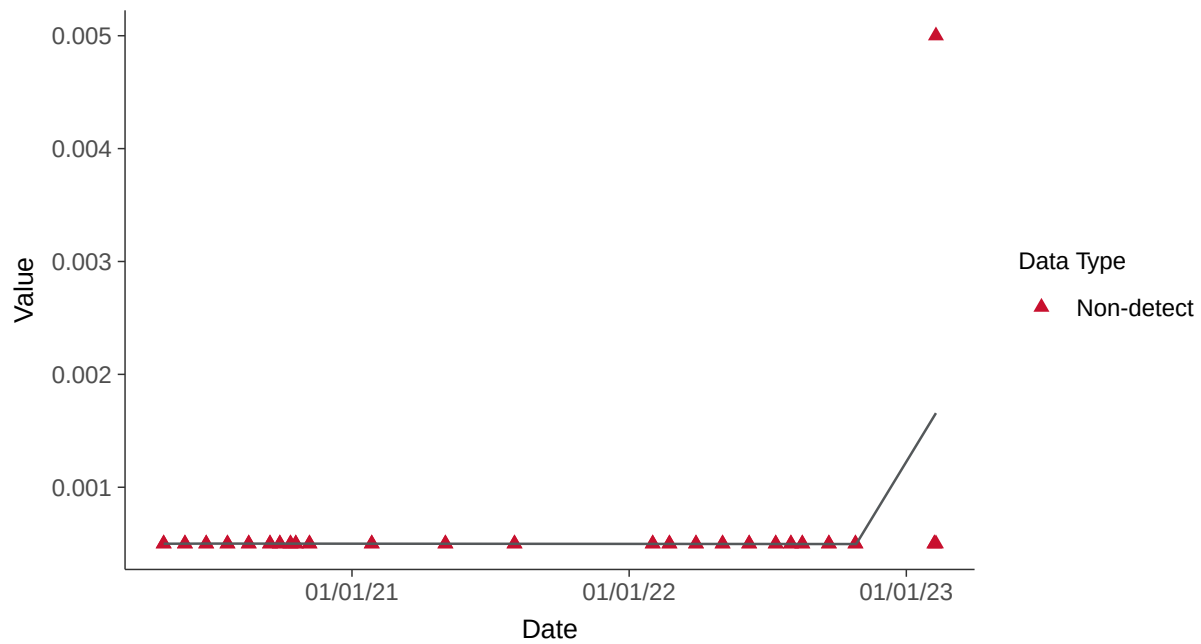
### Boxplot by Well

Cadmium, MW-1, MW-4, MW-11, MW-12 (mg/L)





## Cadmium, MW-1, MW-4, MW-11, MW-12 (mg/L)

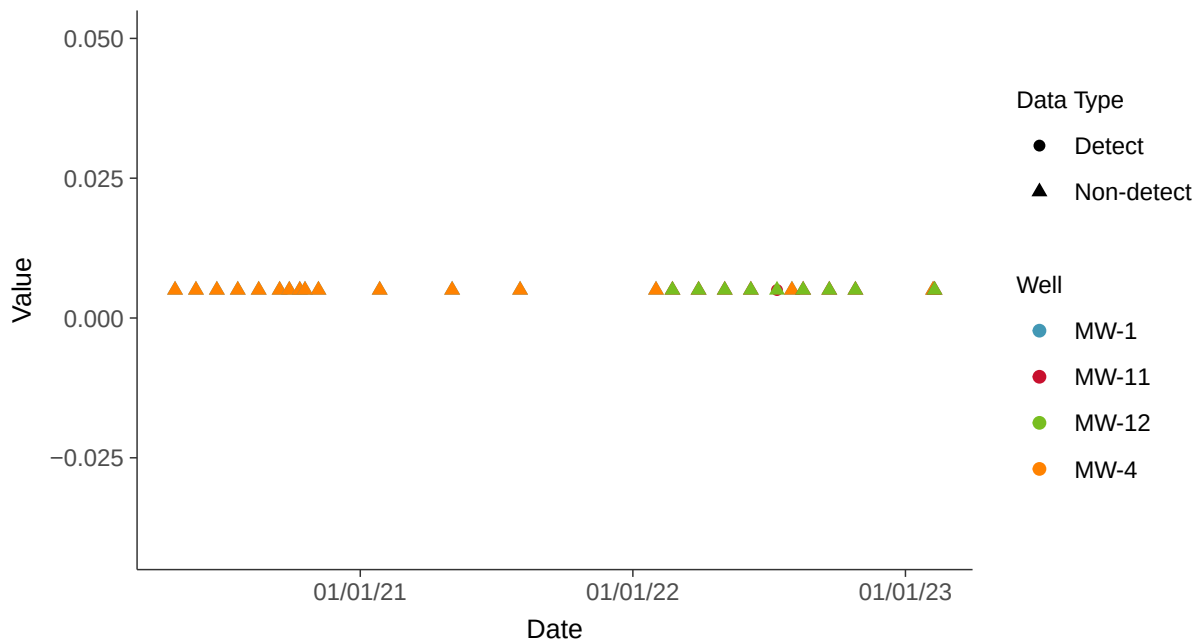


## Scatter Plot

A scatter plot showing 'Value' on the y-axis (ranging from -0.025 to 0.050) against 'Date' on the x-axis (spanning from early 2020 to early 2023). The legend indicates two data types: 'Detect' (blue circles) and 'Non-detect' (red triangles). The 'Detect' data points are clustered at a value of 0.050, while the 'Non-detect' data points are clustered at a value of 0.005. The 'Detect' data is concentrated in the first half of the timeline, while the 'Non-detect' data is spread across the entire period.

| Date       | Value | Data Type    |
|------------|-------|--------------|
| 2020-03-01 | 0.050 | Detect       |
| 2020-03-15 | 0.050 | Detect       |
| 2020-04-01 | 0.050 | Detect       |
| 2020-04-15 | 0.050 | Detect       |
| 2020-05-01 | 0.050 | Detect       |
| 2020-05-15 | 0.050 | Detect       |
| 2020-06-01 | 0.050 | Detect       |
| 2020-06-15 | 0.050 | Detect       |
| 2020-07-01 | 0.050 | Detect       |
| 2020-07-15 | 0.050 | Detect       |
| 2020-08-01 | 0.050 | Detect       |
| 2020-08-15 | 0.050 | Detect       |
| 2020-09-01 | 0.050 | Detect       |
| 2020-09-15 | 0.050 | Detect       |
| 2020-10-01 | 0.050 | Detect       |
| 2020-10-15 | 0.050 | Detect       |
| 2020-11-01 | 0.050 | Detect       |
| 2020-11-15 | 0.050 | Detect       |
| 2020-12-01 | 0.050 | Detect       |
| 2020-12-15 | 0.050 | Detect       |
| 2021-01-01 | 0.050 | Detect       |
| 2021-01-15 | 0.050 | Detect       |
| 2021-02-01 | 0.050 | Detect       |
| 2021-02-15 | 0.050 | Detect       |
| 2021-03-01 | 0.050 | Detect       |
| 2021-03-15 | 0.050 | Detect       |
| 2021-04-01 | 0.050 | Detect       |
| 2021-04-15 | 0.050 | Detect       |
| 2021-05-01 | 0.050 | Detect       |
| 2021-05-15 | 0.050 | Detect       |
| 2021-06-01 | 0.050 | Detect       |
| 2021-06-15 | 0.050 | Detect       |
| 2021-07-01 | 0.050 | Detect       |
| 2021-07-15 | 0.050 | Detect       |
| 2021-08-01 | 0.050 | Detect       |
| 2021-08-15 | 0.050 | Detect       |
| 2021-09-01 | 0.050 | Detect       |
| 2021-09-15 | 0.050 | Detect       |
| 2021-10-01 | 0.050 | Detect       |
| 2021-10-15 | 0.050 | Detect       |
| 2021-11-01 | 0.050 | Detect       |
| 2021-11-15 | 0.050 | Detect       |
| 2021-12-01 | 0.050 | Detect       |
| 2021-12-15 | 0.050 | Detect       |
| 2022-01-01 | 0.050 | Detect       |
| 2022-01-15 | 0.050 | Detect       |
| 2022-02-01 | 0.050 | Detect       |
| 2022-02-15 | 0.050 | Detect       |
| 2022-03-01 | 0.050 | Detect       |
| 2022-03-15 | 0.050 | Detect       |
| 2022-04-01 | 0.050 | Detect       |
| 2022-04-15 | 0.050 | Detect       |
| 2022-05-01 | 0.050 | Detect       |
| 2022-05-15 | 0.050 | Detect       |
| 2022-06-01 | 0.050 | Detect       |
| 2022-06-15 | 0.050 | Detect       |
| 2022-07-01 | 0.050 | Detect       |
| 2022-07-15 | 0.050 | Detect       |
| 2022-08-01 | 0.050 | Detect       |
| 2022-08-15 | 0.050 | Detect       |
| 2022-09-01 | 0.050 | Detect       |
| 2022-09-15 | 0.050 | Detect       |
| 2022-10-01 | 0.050 | Detect       |
| 2022-10-15 | 0.050 | Detect       |
| 2022-11-01 | 0.050 | Detect       |
| 2022-11-15 | 0.050 | Detect       |
| 2022-12-01 | 0.050 | Detect       |
| 2022-12-15 | 0.050 | Detect       |
| 2023-01-01 | 0.050 | Detect       |
| 2020-03-01 | 0.005 | Non-detect   |
| 2020-03-15 | 0.005 | Non-detect   |
| 2020-04-01 | 0.005 | Non-detect   |
| 2020-04-15 | 0.005 | Non-detect   |
| 2020-05-01 | 0.005 | Non-detect   |
| 2020-05-15 | 0.005 | Non-detect   |
| 2020-06-01 | 0.005 | Non-detect   |
| 2020-06-15 | 0.005 | Non-detect   |
| 2020-07-01 | 0.005 | Non-detect   |
| 2020-07-15 | 0.005 | Non-detect   |
| 2020-08-01 | 0.005 | Non-detect   |
| 2020-08-15 | 0.005 | Non-detect   |
| 2020-09-01 | 0.005 | Non-detect   |
| 2020-09-15 | 0.005 | Non-detect   |
| 2020-10-01 | 0.005 | Non-detect   |
| 2020-10-15 | 0.005 | Non-detect   |
| 2020-11-01 | 0.005 | Non-detect   |
| 2020-11-15 | 0.005 | Non-detect   |
| 2020-12-01 | 0.005 | Non-detect   |
| 2020-12-15 | 0.005 | Non-detect   |
| 2021-01-01 | 0.005 | Non-detect   |
| 2021-01-15 | 0.005 | Non-detect   |
| 2021-02-01 | 0.005 | Non-detect   |
| 2021-02-15 | 0.005 | Non-detect   |
| 2021-03-01 | 0.005 | Non-detect   |
| 2021-03-15 | 0.005 | Non-detect   |
| 2021-04-01 | 0.005 | Non-detect   |
| 2021-04-15 | 0.005 | Non-detect   |
| 2021-05-01 | 0.005 | Non-detect   |
| 2021-05-15 | 0.005 | Non-detect   |
| 2021-06-01 | 0.005 | Non-detect   |
| 2021-06-15 | 0.005 | Non-detect   |
| 2021-07-01 | 0.005 | Non-detect   |
| 2021-07-15 | 0.005 | Non-detect   |
| 2021-08-01 | 0.005 | Non-detect   |
| 2021-08-15 | 0.005 | Non-detect   |
| 2021-09-01 | 0.005 | Non-detect   |
| 2021-09-15 | 0.005 | Non-detect   |
| 2021-10-01 | 0.005 | Non-detect   |
| 2021-10-15 | 0.005 | Non-detect</ |

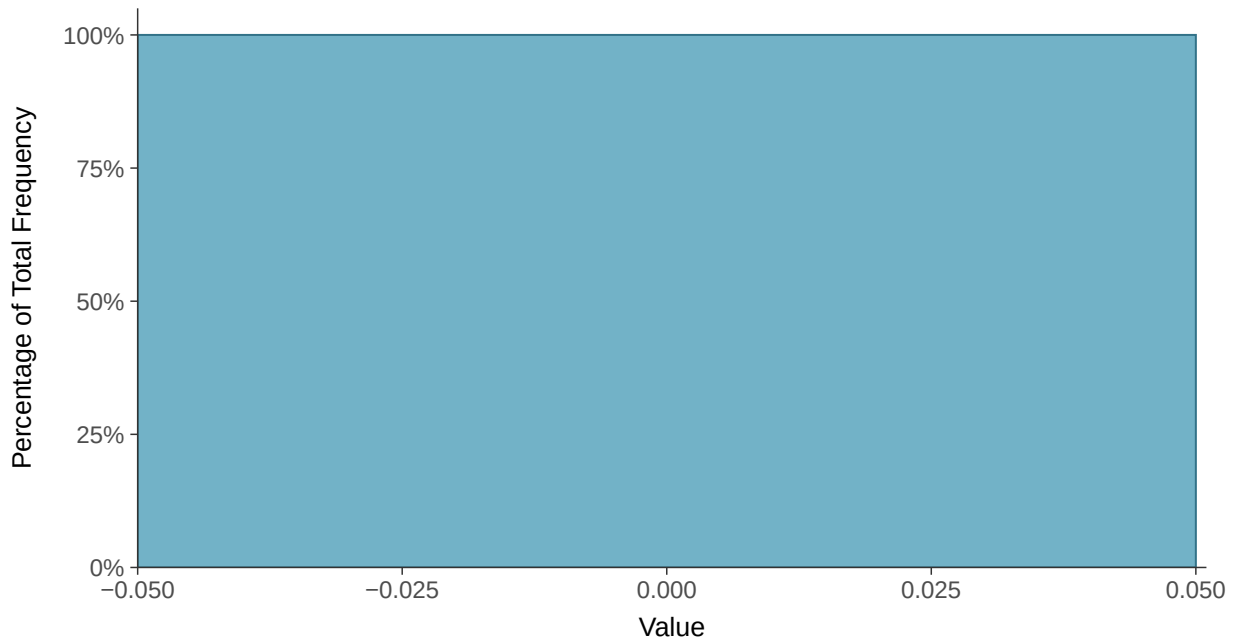
## Chromium, MW-1, MW-4, MW-11, MW-12 (mg/L)





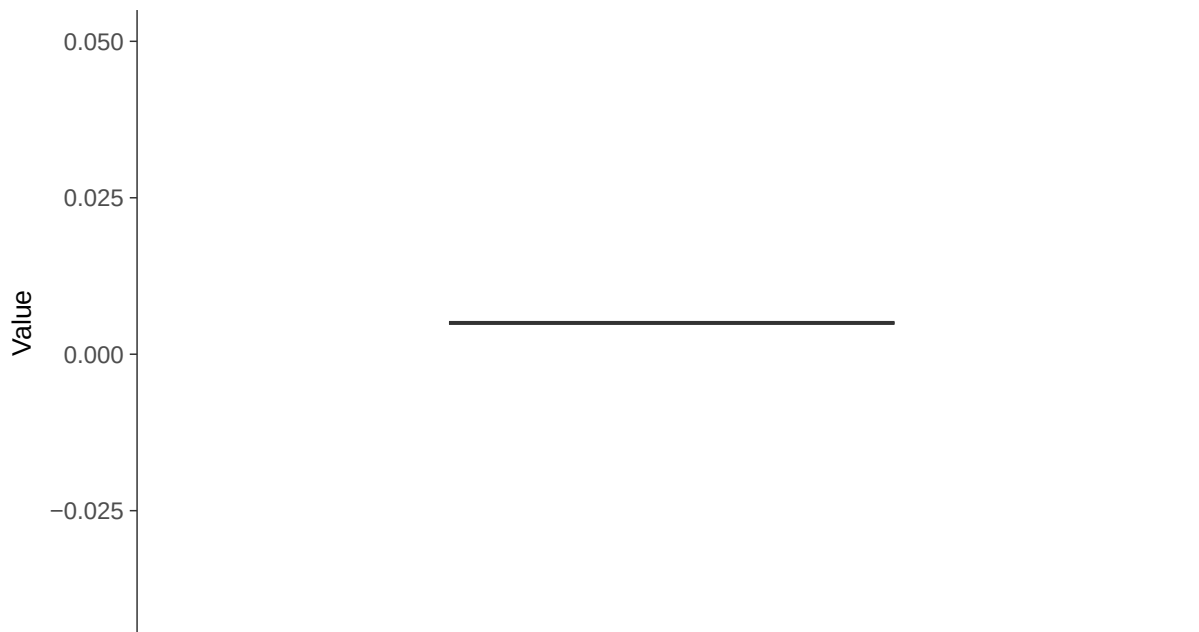
### Histogram

Chromium, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot

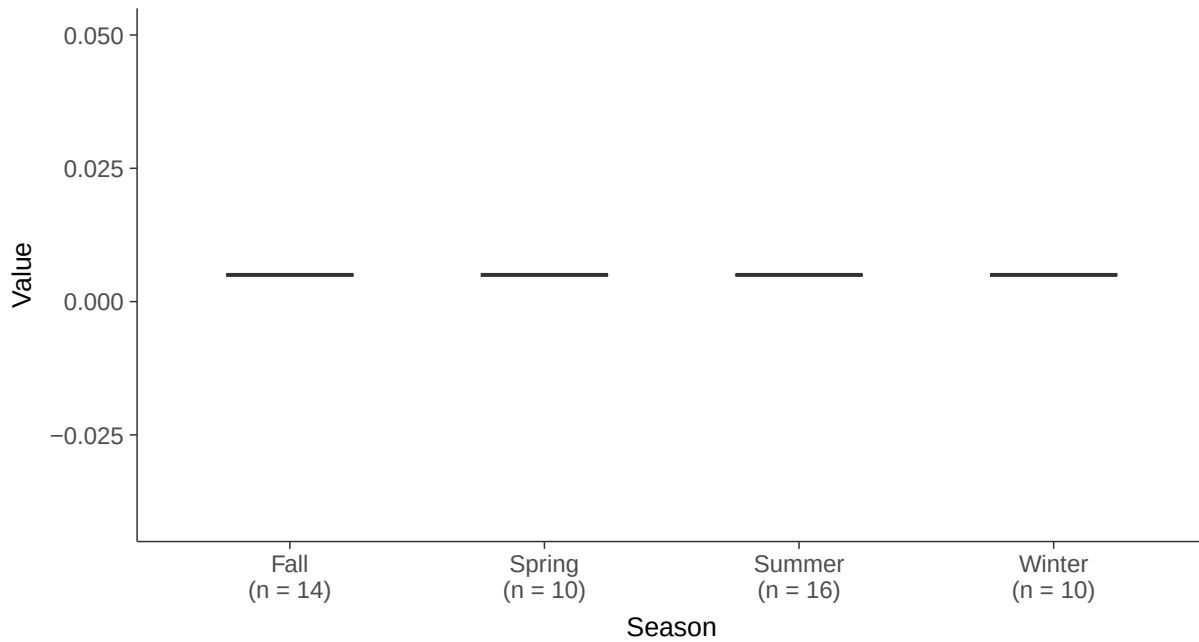
Chromium, MW-1, MW-4, MW-11, MW-12 (mg/L)





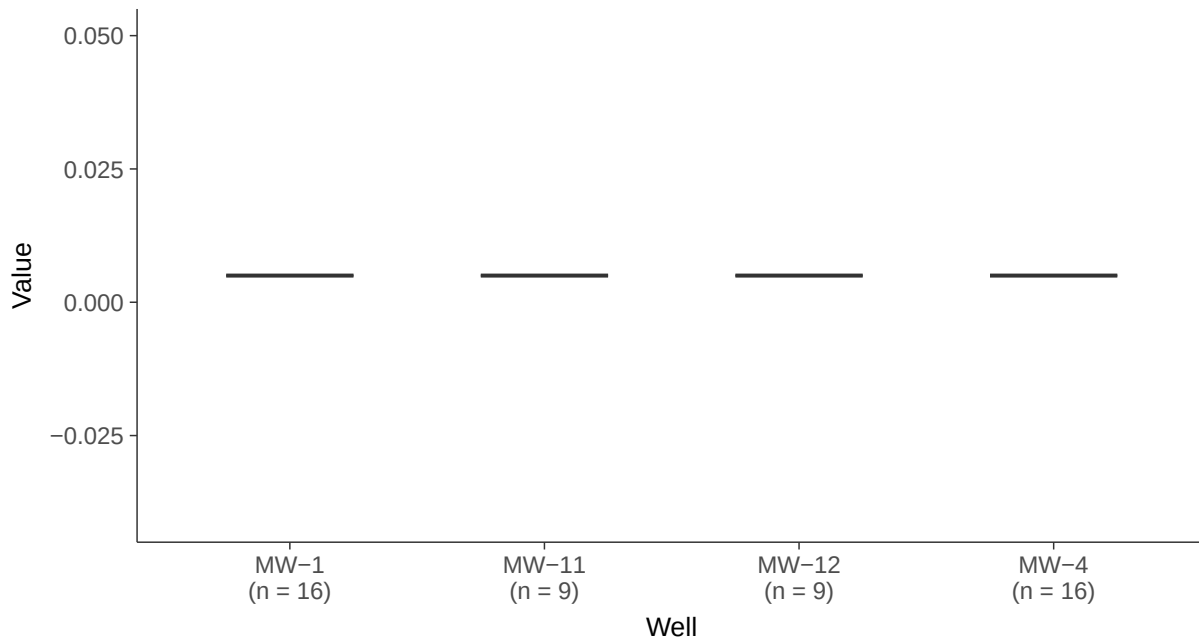
### Boxplot by Season

Chromium, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot by Well

Chromium, MW-1, MW-4, MW-11, MW-12 (mg/L)

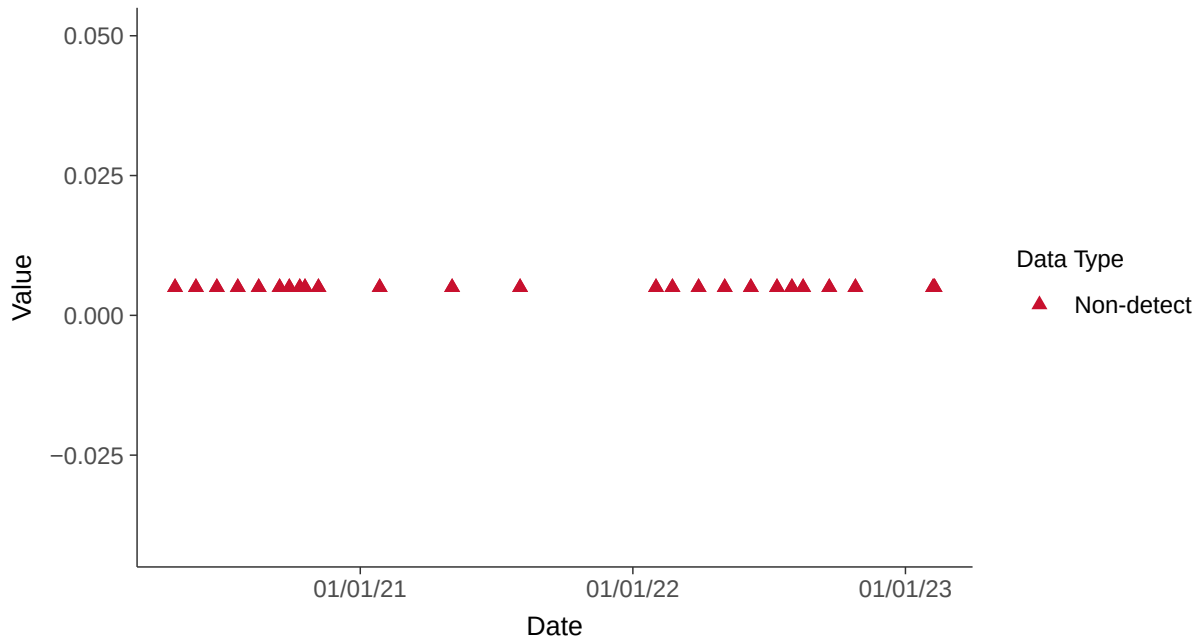


## Appendix IV: Cobalt, MW-1, MW-4, MW-11, MW-12

ID: 2\_16

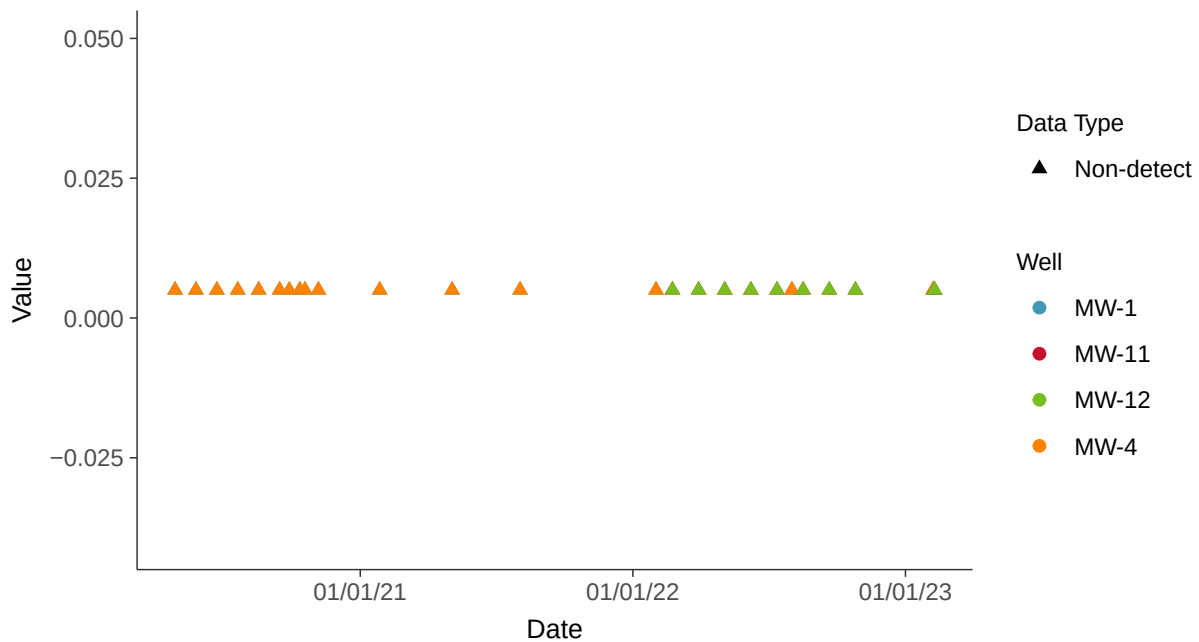
### Scatter Plot

Cobalt, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Scatter Plot by Well

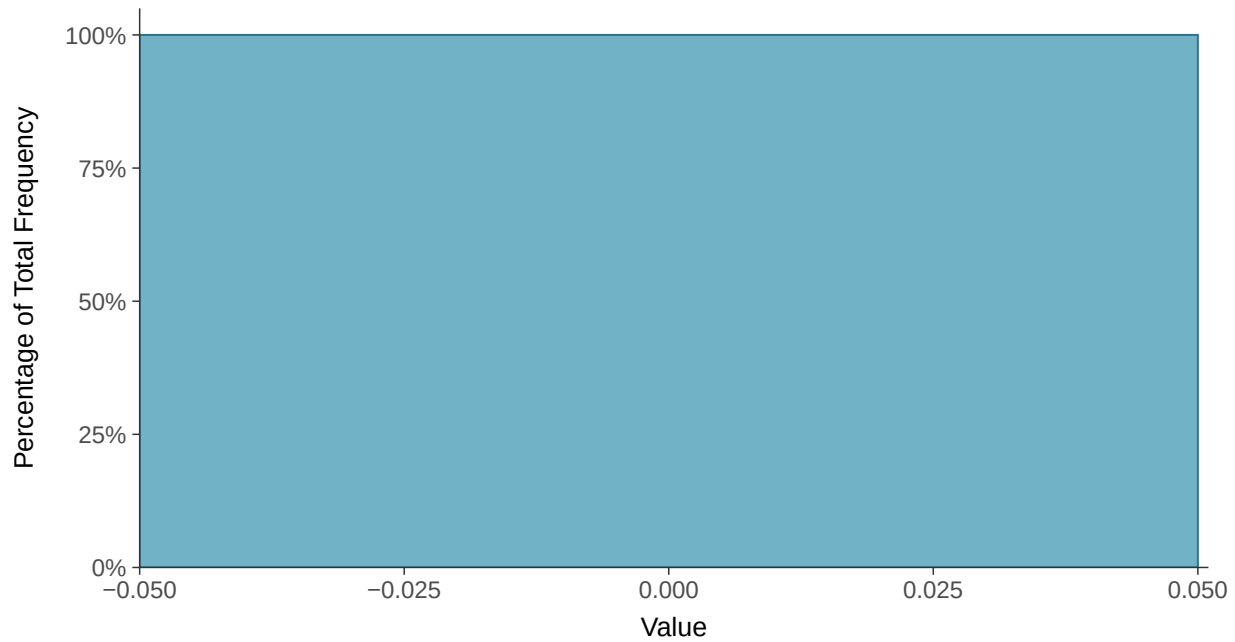
Cobalt, MW-1, MW-4, MW-11, MW-12 (mg/L)





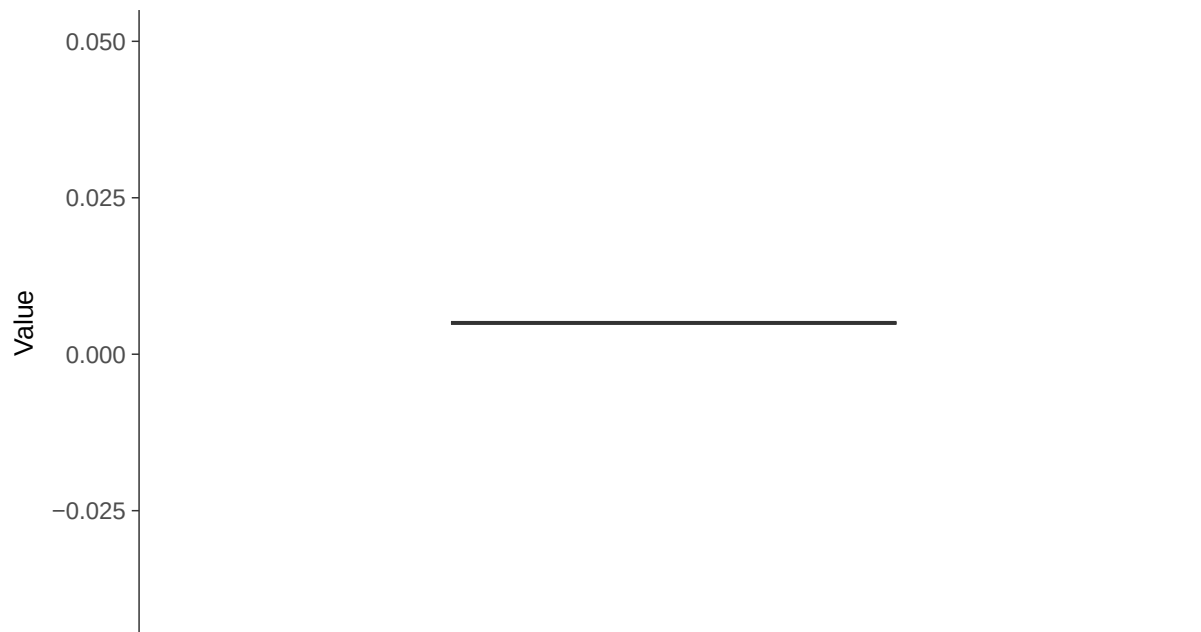
### Histogram

Cobalt, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot

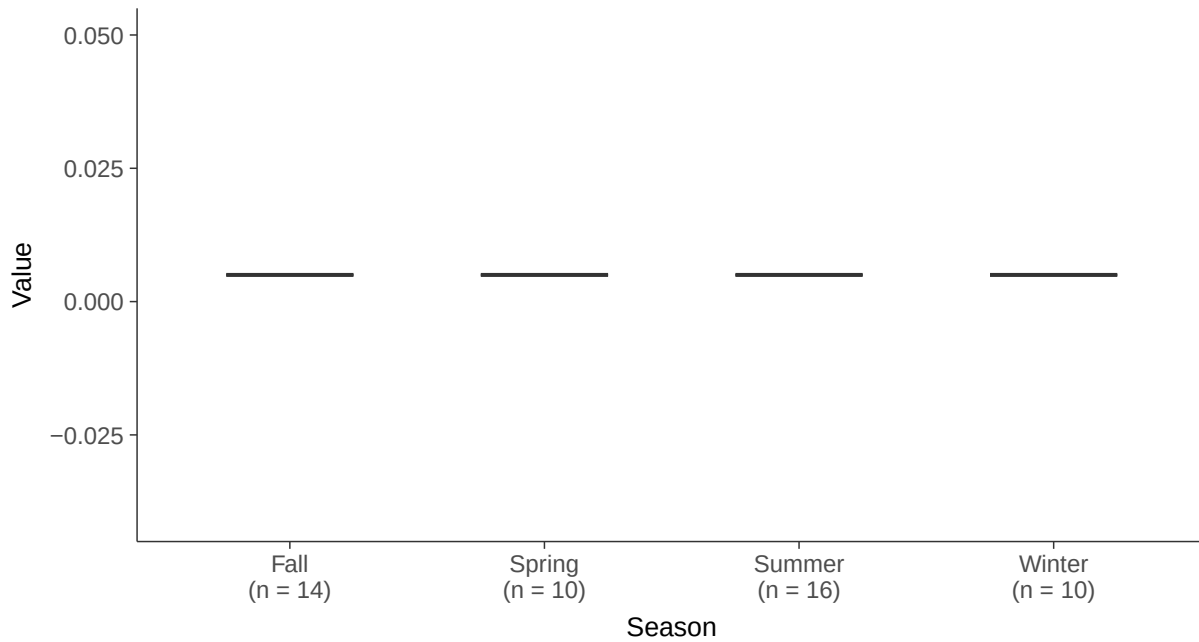
Cobalt, MW-1, MW-4, MW-11, MW-12 (mg/L)





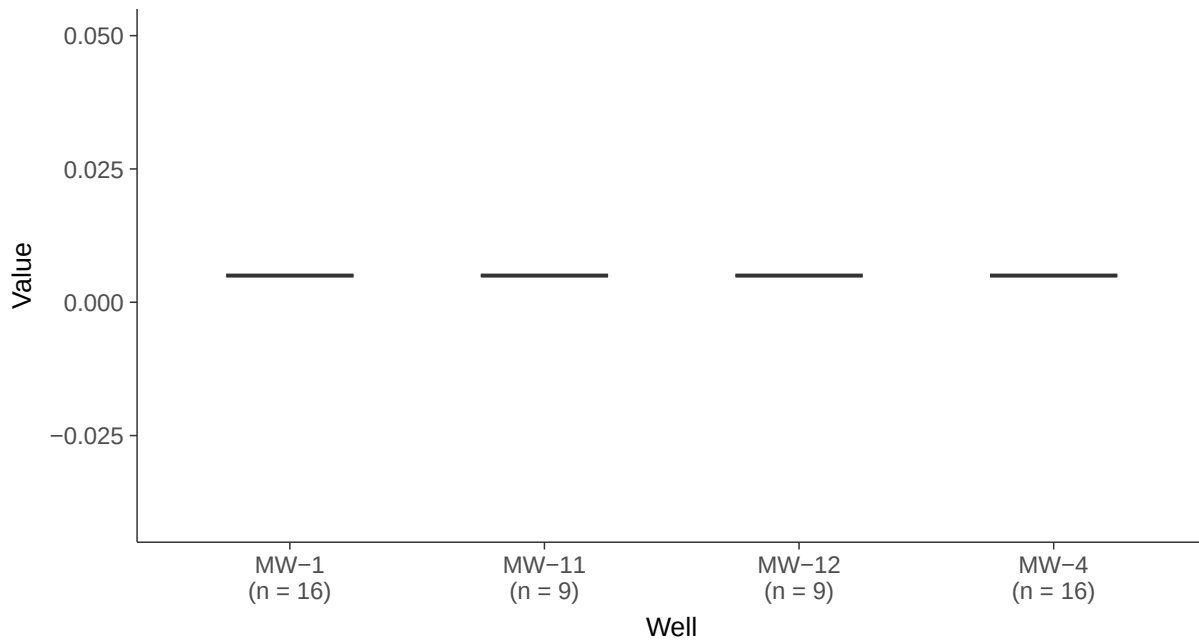
### Boxplot by Season

Cobalt, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot by Well

Cobalt, MW-1, MW-4, MW-11, MW-12 (mg/L)

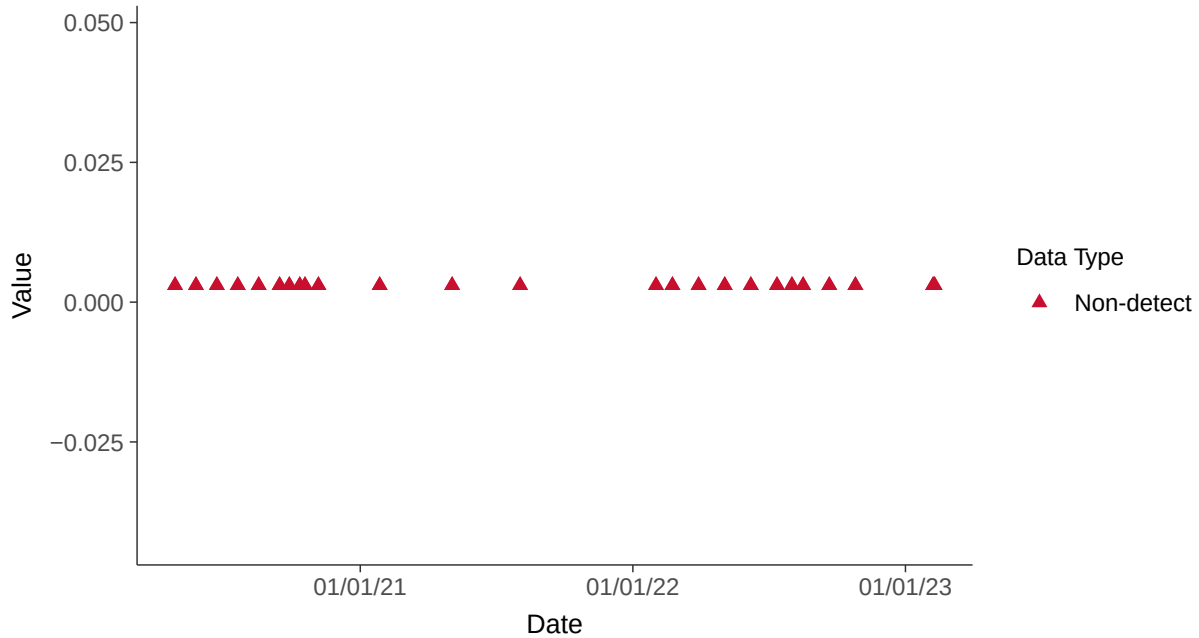


## Appendix IV: Lead, MW-1, MW-4, MW-11, MW-12

ID: 2\_18

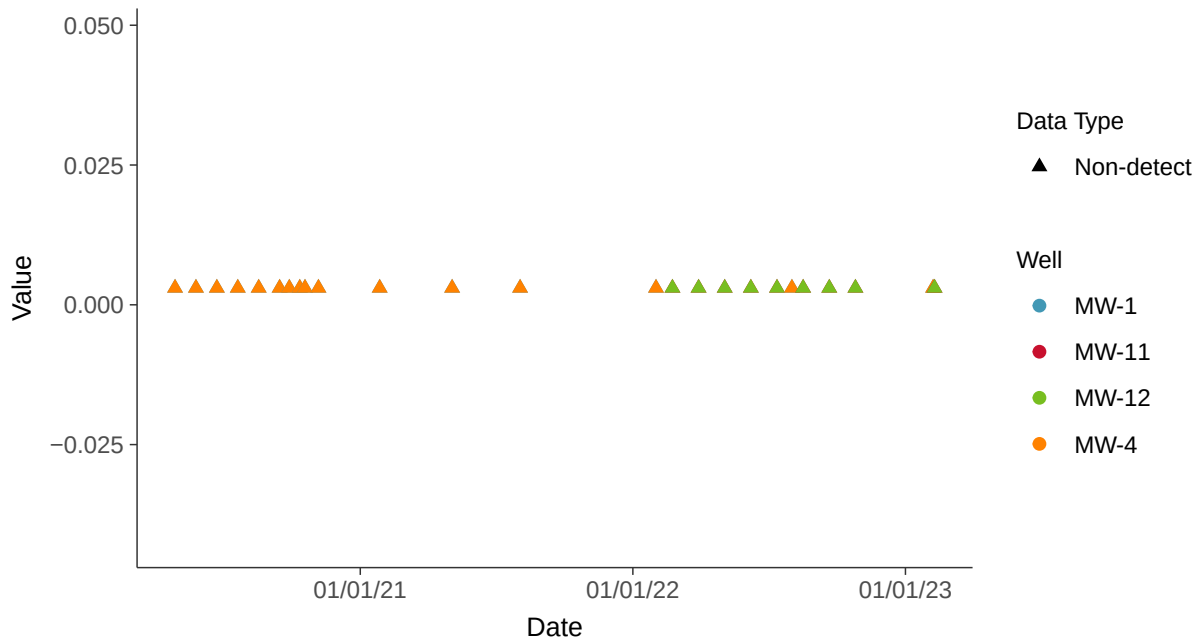
### Scatter Plot

Lead, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Scatter Plot by Well

Lead, MW-1, MW-4, MW-11, MW-12 (mg/L)

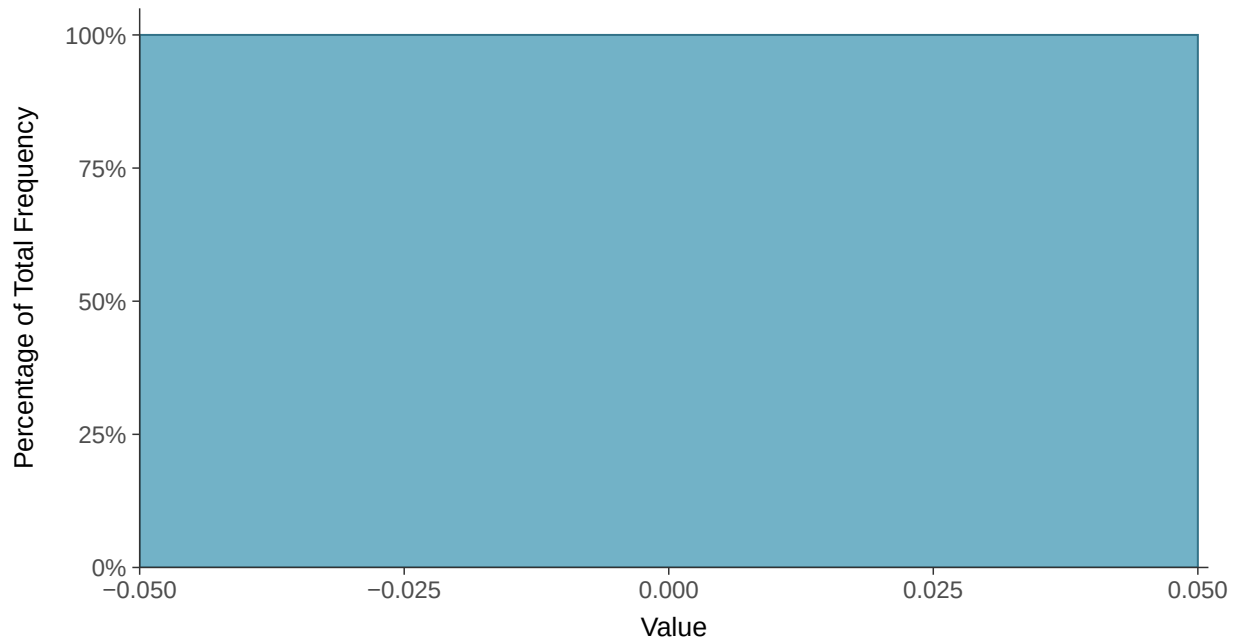






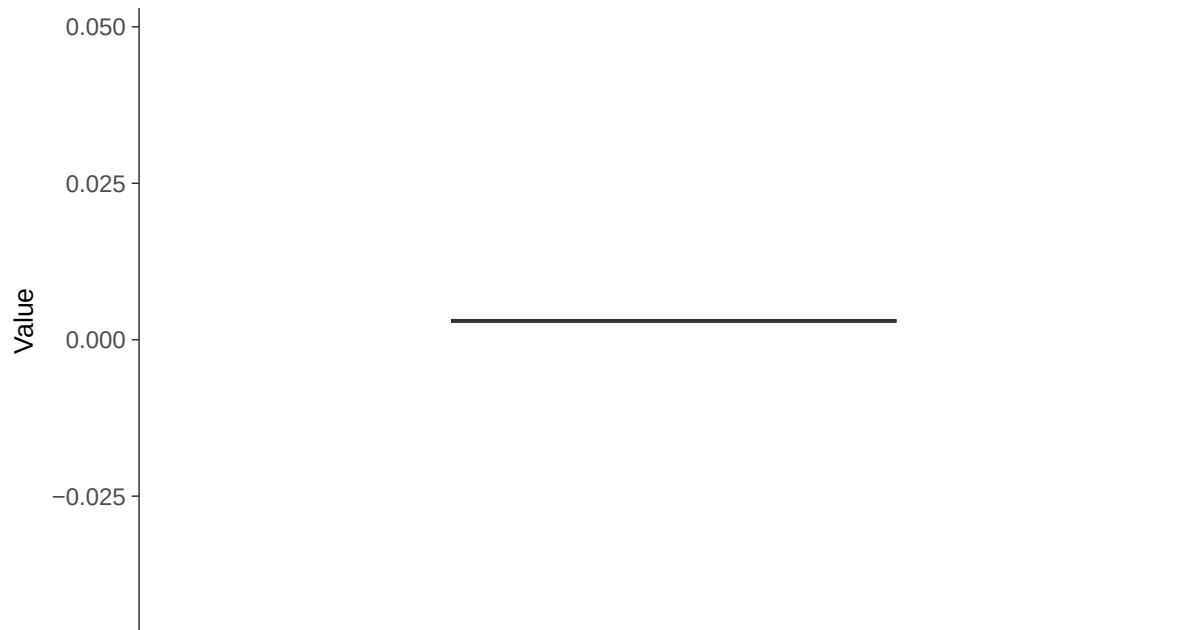
### Histogram

Lead, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot

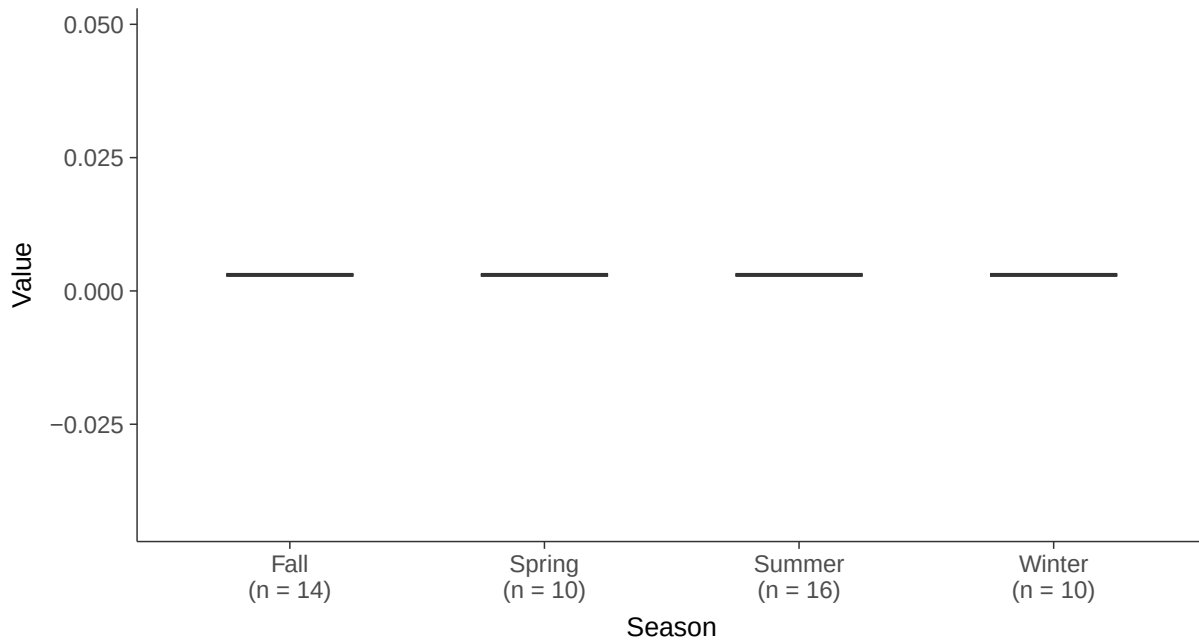
Lead, MW-1, MW-4, MW-11, MW-12 (mg/L)





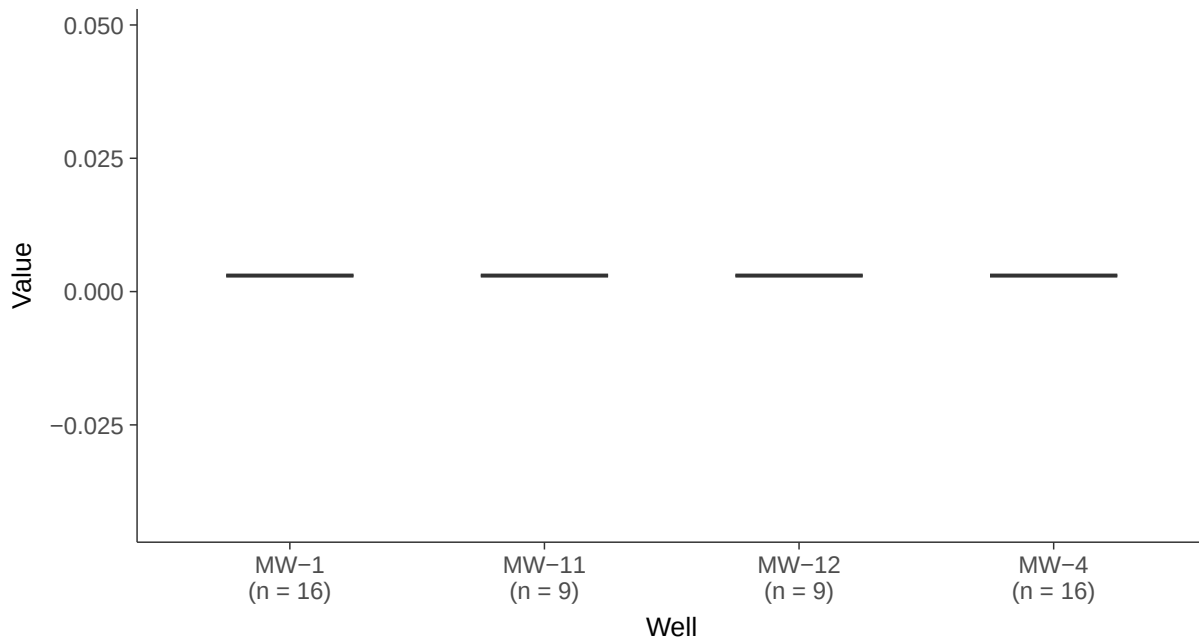
### Boxplot by Season

Lead, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot by Well

Lead, MW-1, MW-4, MW-11, MW-12 (mg/L)

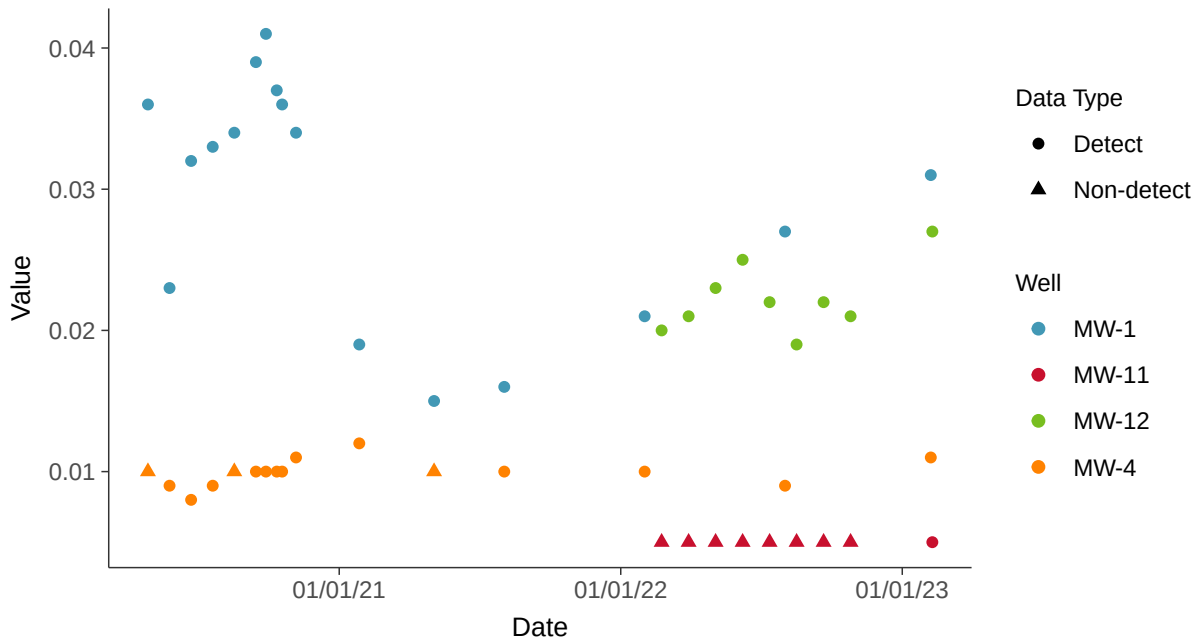


## Scatter Plot

A scatter plot showing 'Value' on the y-axis (ranging from 0.01 to 0.04) against 'Date' on the x-axis (spanning from early 2020 to early 2023). The plot displays two data series: 'Detect' (blue circles) and 'Non-detect' (red triangles). The 'Detect' series shows a peak in value around early 2021, followed by a decline and then a slight increase towards the end of the period. The 'Non-detect' series is mostly clustered at the bottom of the plot, indicating lower values compared to the 'Detect' series.

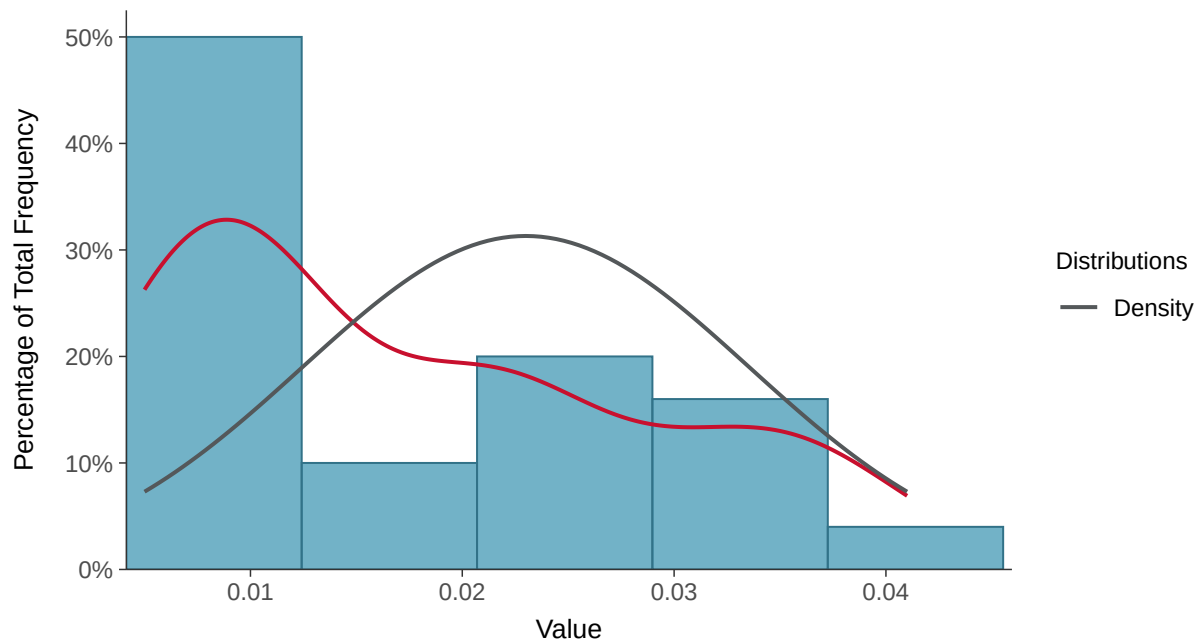
| Date       | Detect Value | Non-detect Value |
|------------|--------------|------------------|
| 2020-03-01 | 0.036        | 0.010            |
| 2020-04-01 | 0.023        | 0.009            |
| 2020-05-01 | 0.032        | 0.008            |
| 2020-06-01 | 0.033        | 0.009            |
| 2020-07-01 | 0.034        | 0.010            |
| 2020-08-01 | 0.041        | 0.010            |
| 2020-09-01 | 0.037        | 0.010            |
| 2020-10-01 | 0.036        | 0.010            |
| 2020-11-01 | 0.034        | 0.011            |
| 2020-12-01 | 0.019        | 0.012            |
| 2021-01-01 | 0.012        | 0.010            |
| 2021-02-01 | 0.015        | 0.010            |
| 2021-03-01 | 0.016        | 0.010            |
| 2021-04-01 | 0.010        | 0.010            |
| 2021-05-01 | 0.021        | 0.010            |
| 2021-06-01 | 0.020        | 0.005            |
| 2021-07-01 | 0.021        | 0.005            |
| 2021-08-01 | 0.023        | 0.005            |
| 2021-09-01 | 0.025        | 0.005            |
| 2021-10-01 | 0.022        | 0.005            |
| 2021-11-01 | 0.027        | 0.005            |
| 2021-12-01 | 0.019        | 0.005            |
| 2022-01-01 | 0.022        | 0.005            |
| 2022-02-01 | 0.021        | 0.005            |
| 2022-03-01 | 0.031        | 0.005            |
| 2022-04-01 | 0.027        | 0.005            |
| 2022-05-01 | 0.011        | 0.005            |
| 2022-06-01 | 0.005        | 0.005            |

Lithium, MW-1, MW-4, MW-11, MW-12 (mg/L)



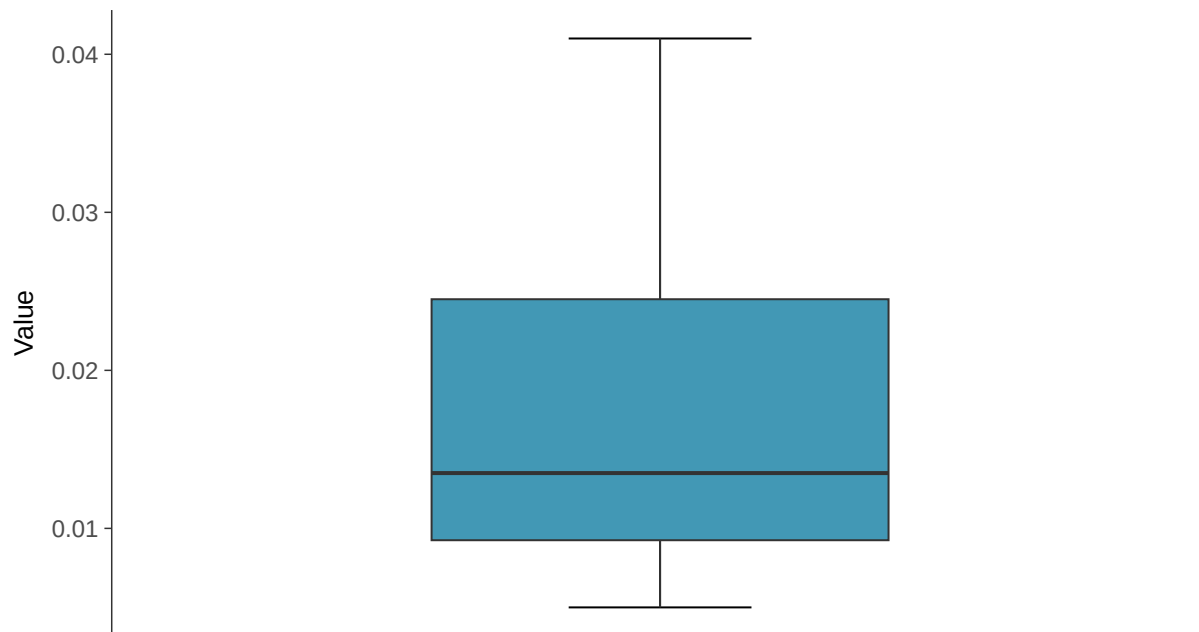
### Histogram

Lithium, MW-1, MW-4, MW-11, MW-12 (mg/L)



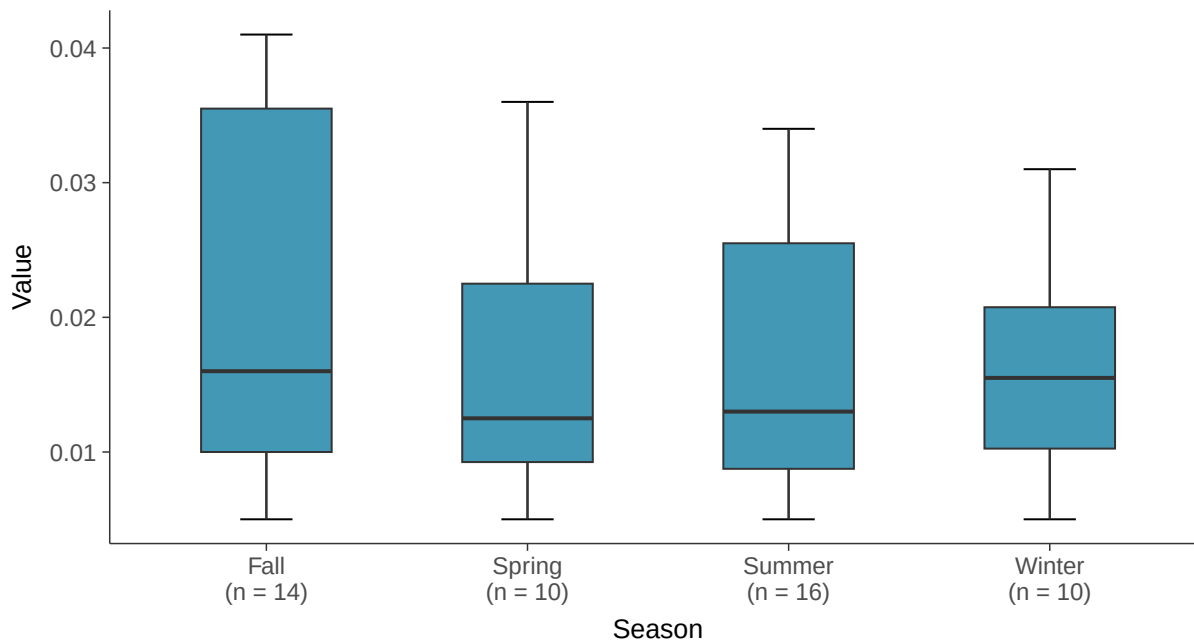
### Boxplot

Lithium, MW-1, MW-4, MW-11, MW-12 (mg/L)



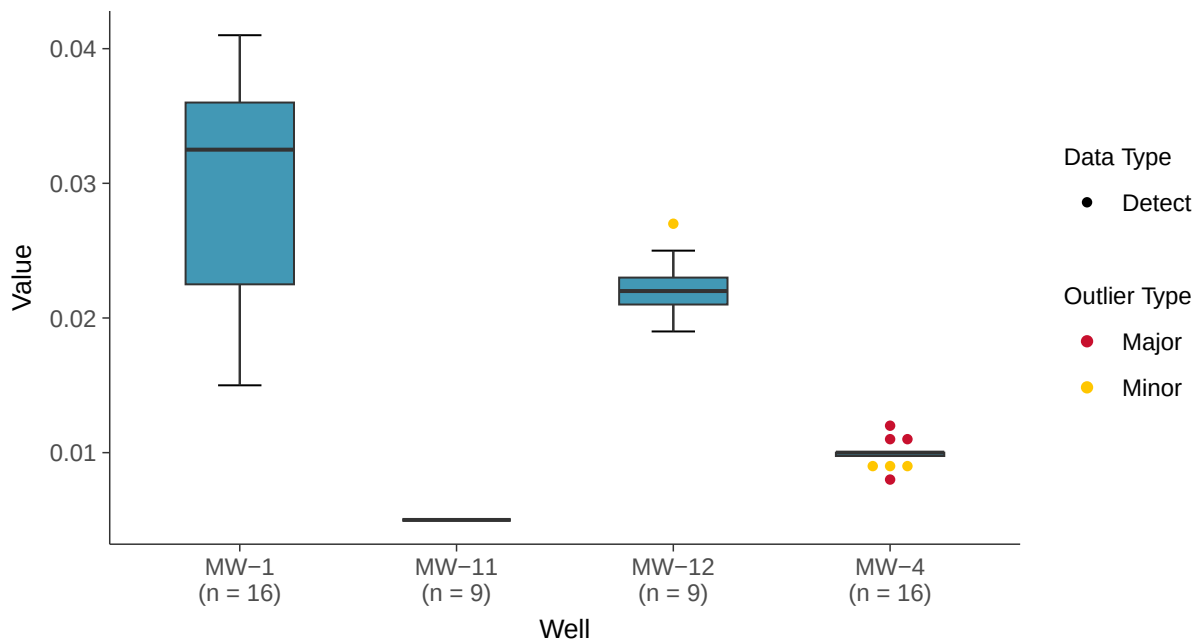
### Boxplot by Season

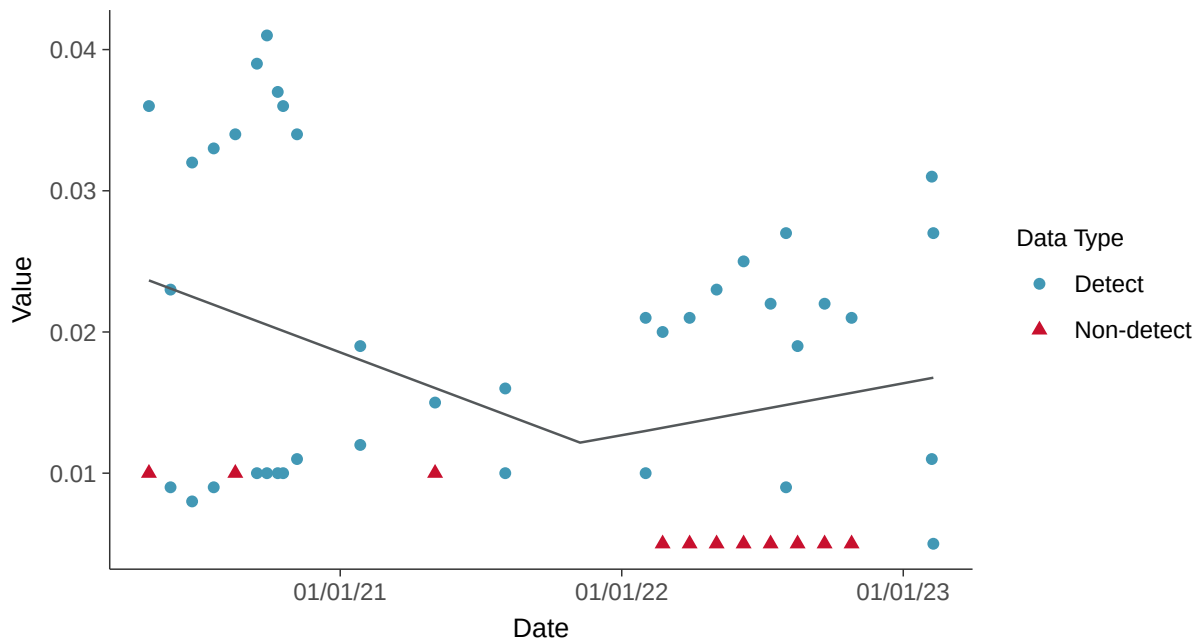
Lithium, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot by Well

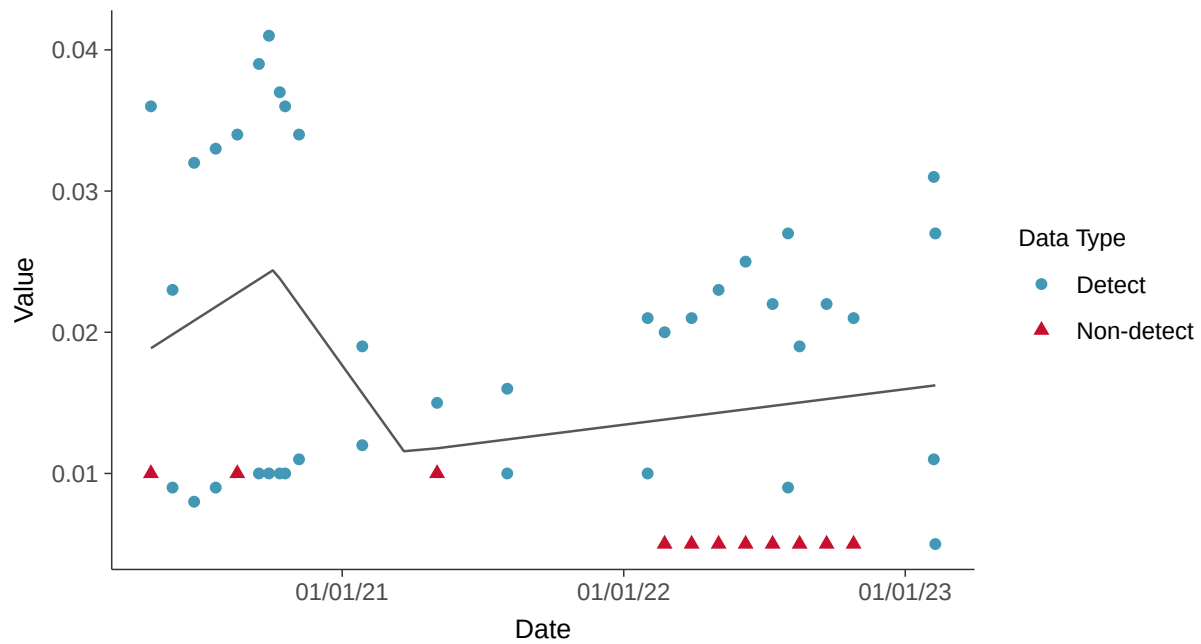
Lithium, MW-1, MW-4, MW-11, MW-12 (mg/L)





### Trend Regression: Piecewise Linear-Linear-Linear

Lithium, MW-1, MW-4, MW-11, MW-12 (mg/L)

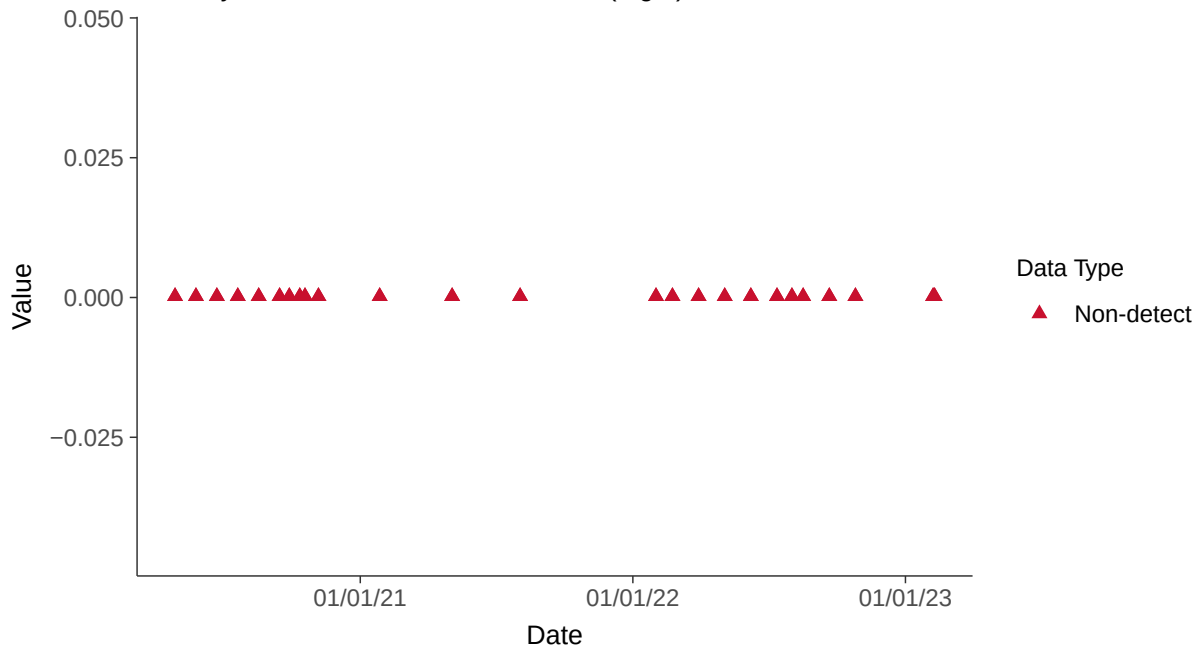


## Appendix IV: Mercury, MW-1, MW-4, MW-11, MW-12

ID: 2\_21

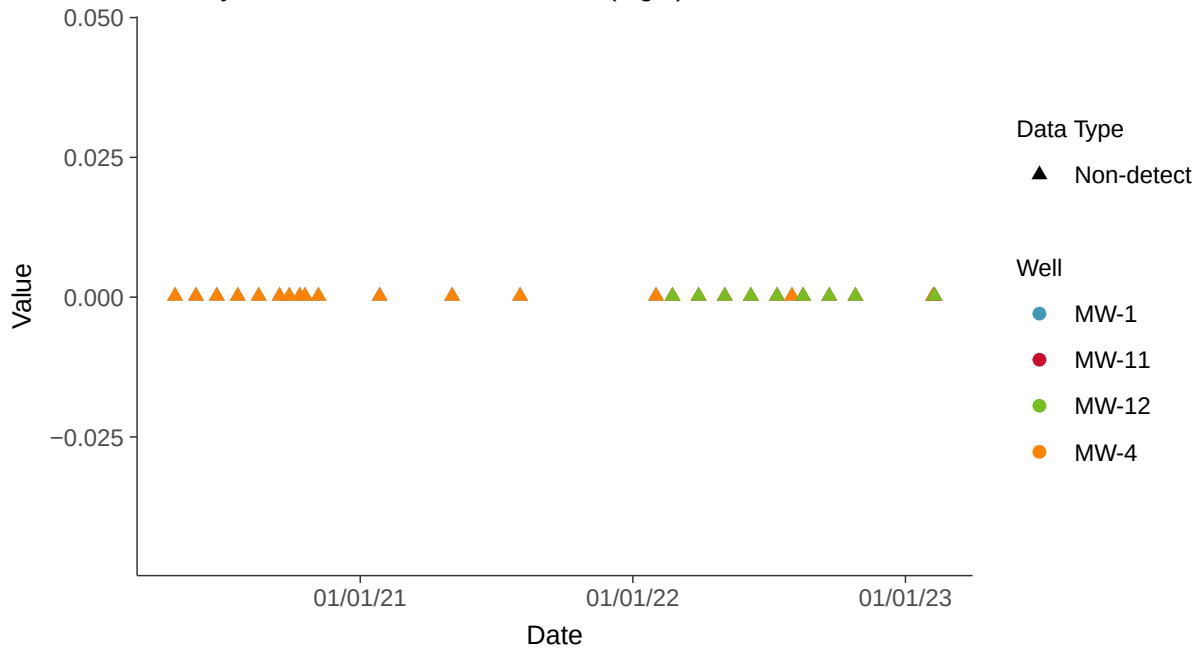
### Scatter Plot

Mercury, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Scatter Plot by Well

Mercury, MW-1, MW-4, MW-11, MW-12 (mg/L)

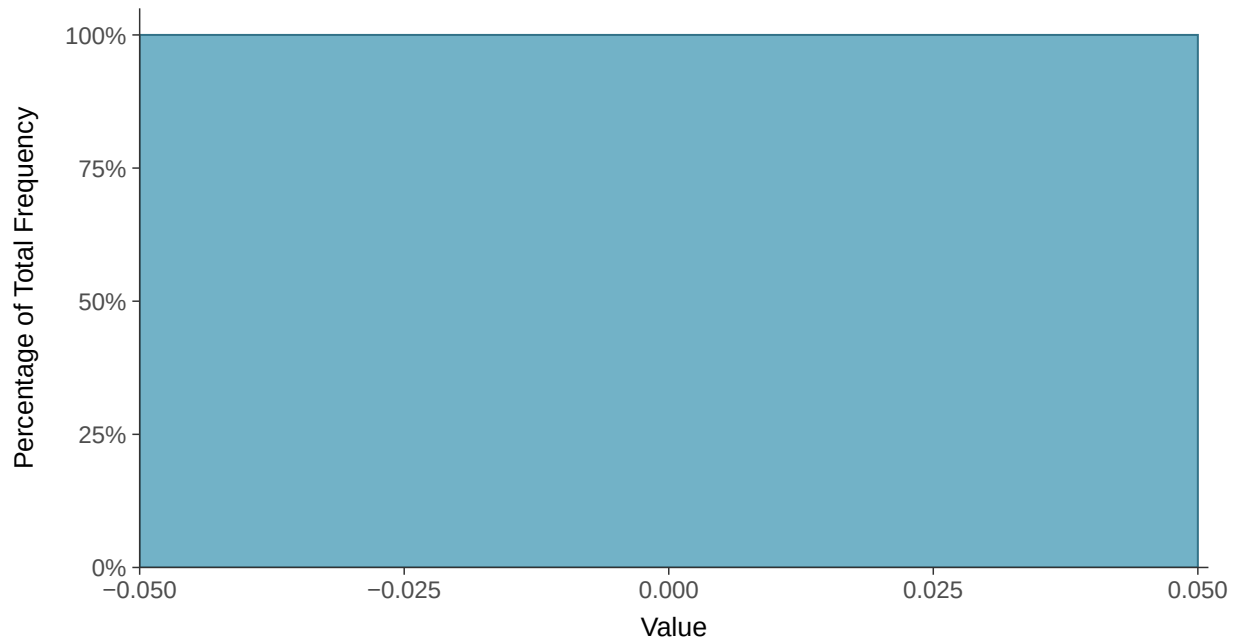






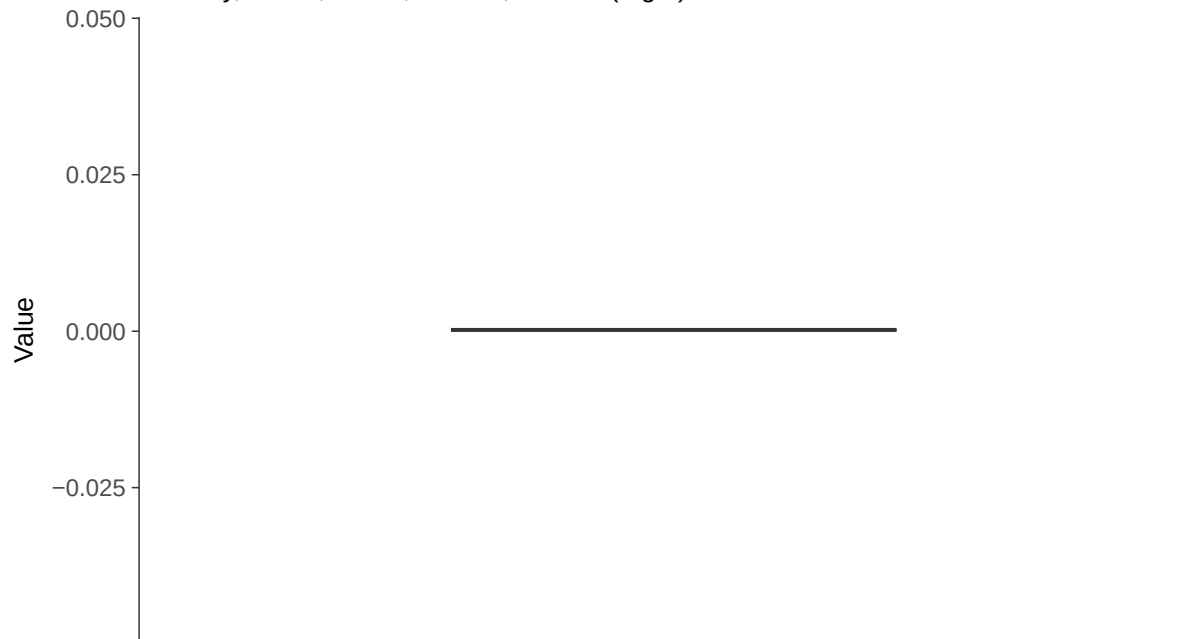
### Histogram

Mercury, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot

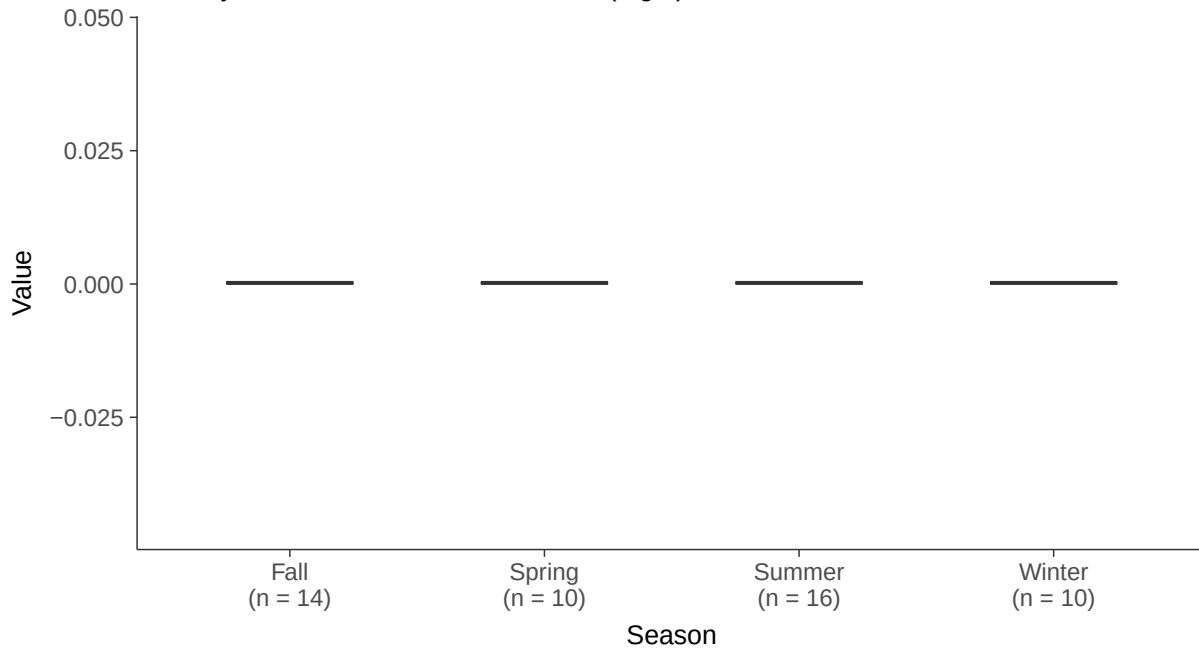
Mercury, MW-1, MW-4, MW-11, MW-12 (mg/L)





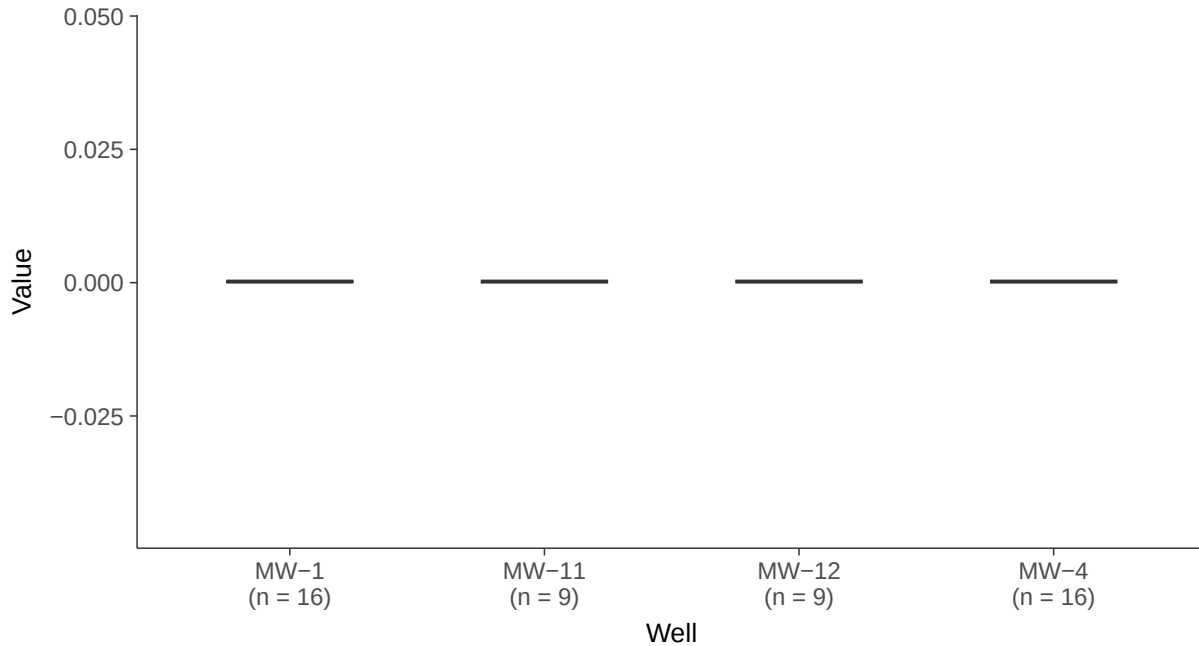
### Boxplot by Season

Mercury, MW-1, MW-4, MW-11, MW-12 (mg/L)



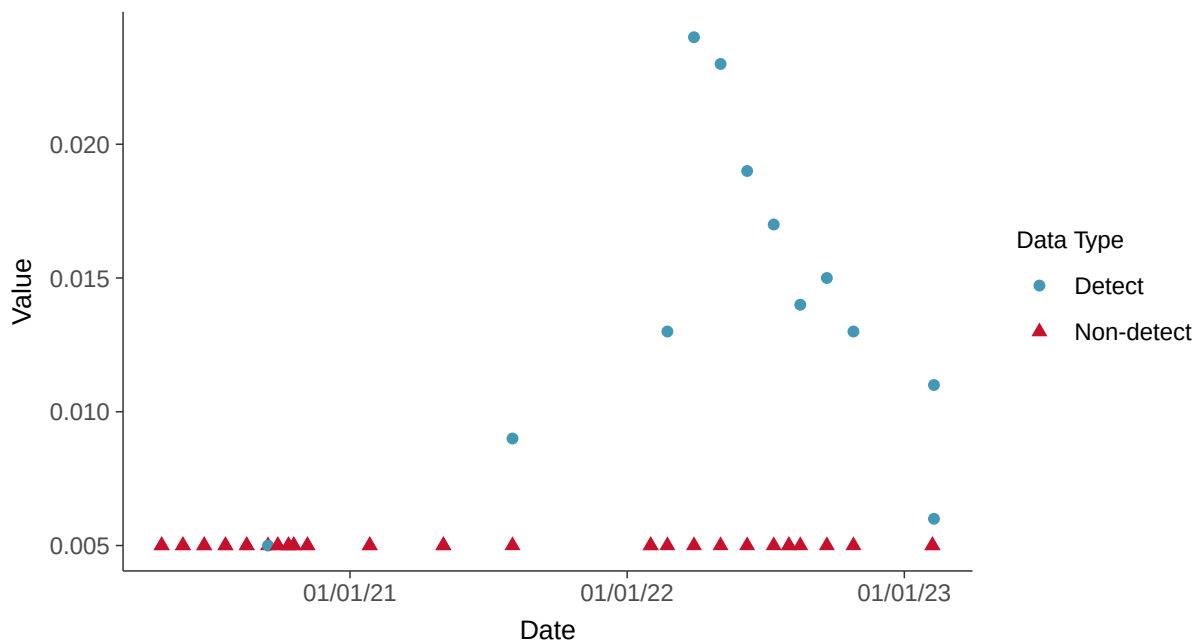
### Boxplot by Well

Mercury, MW-1, MW-4, MW-11, MW-12 (mg/L)

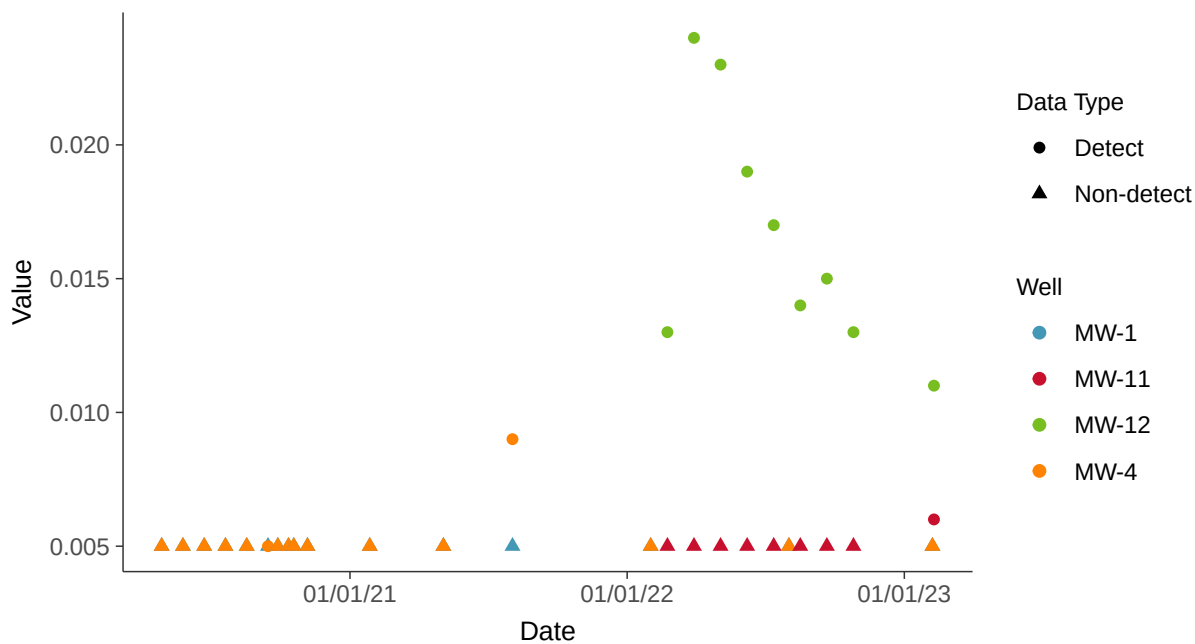


ID: 2\_22

Molybdenum, MW-1, MW-4, MW-11, MW-12 (mg/L)

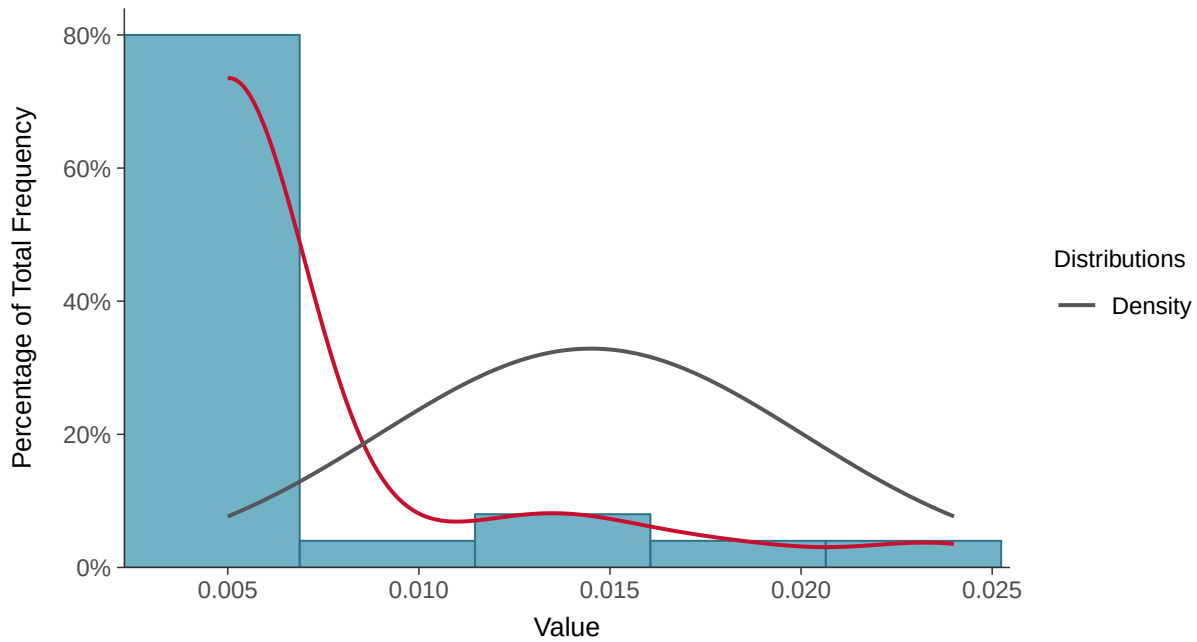


Molybdenum, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Histogram

Molybdenum, MW-1, MW-4, MW-11, MW-12 (mg/L)



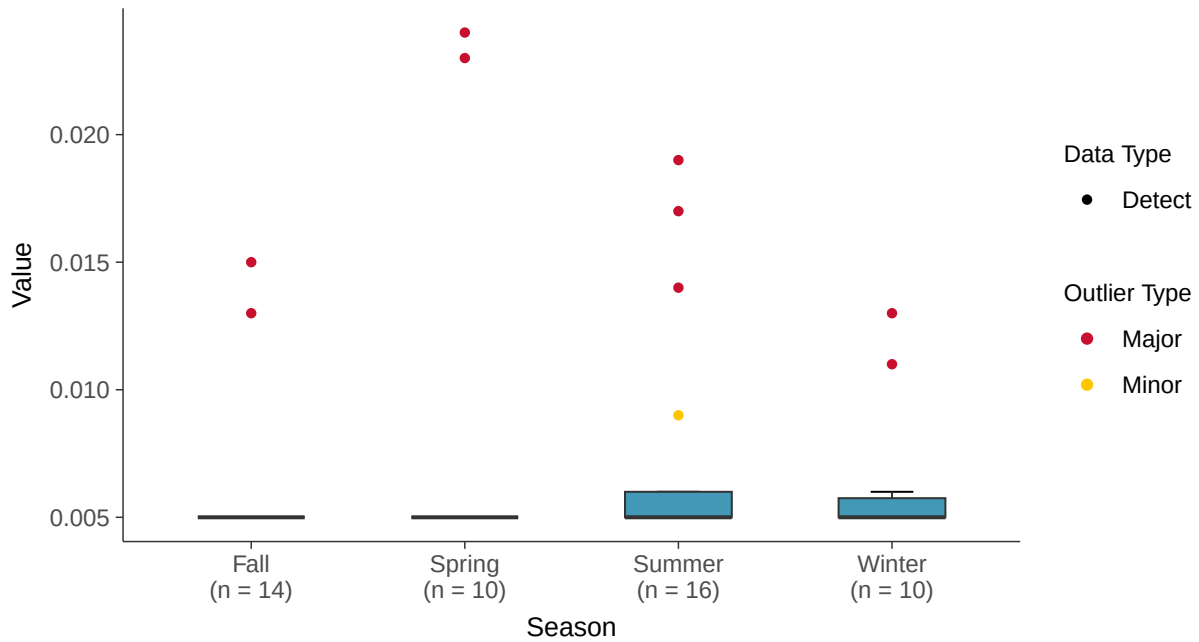
### Boxplot

Molybdenum, MW-1, MW-4, MW-11, MW-12 (mg/L)



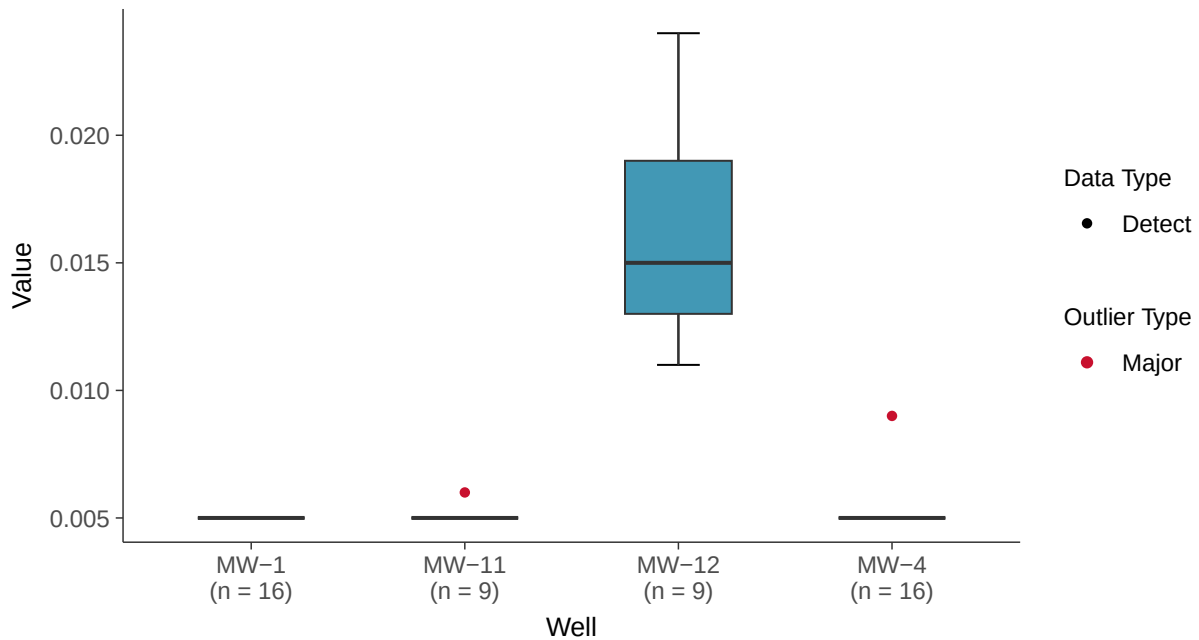
### Boxplot by Season

Molybdenum, MW-1, MW-4, MW-11, MW-12 (mg/L)



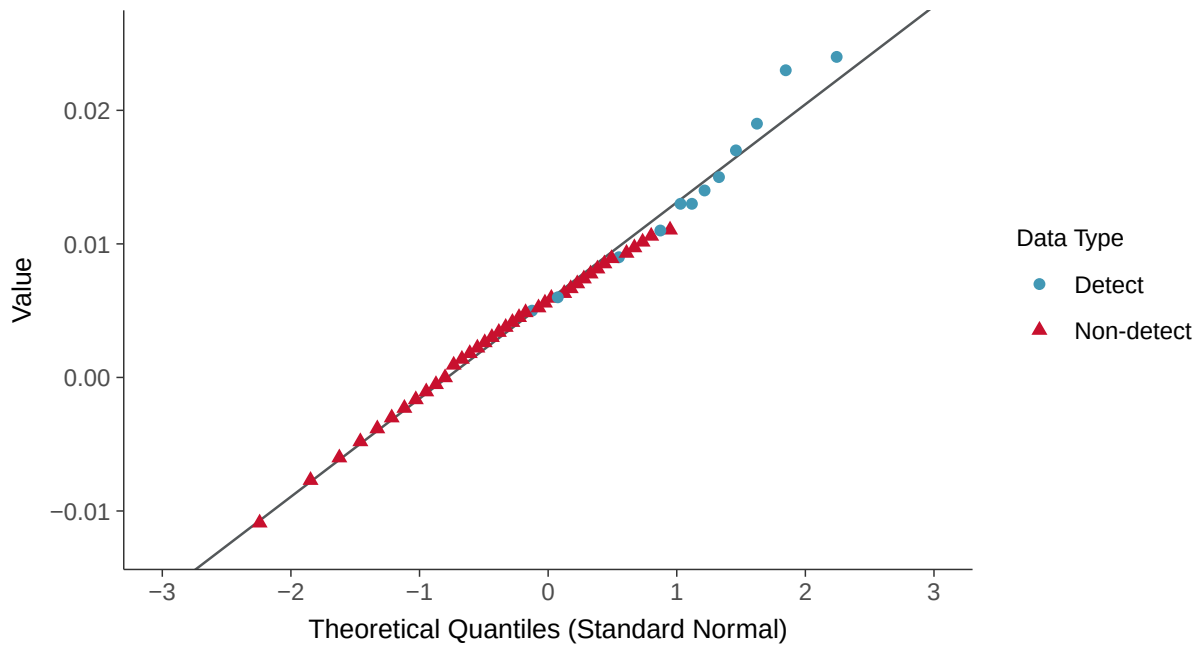
### Boxplot by Well

Molybdenum, MW-1, MW-4, MW-11, MW-12 (mg/L)



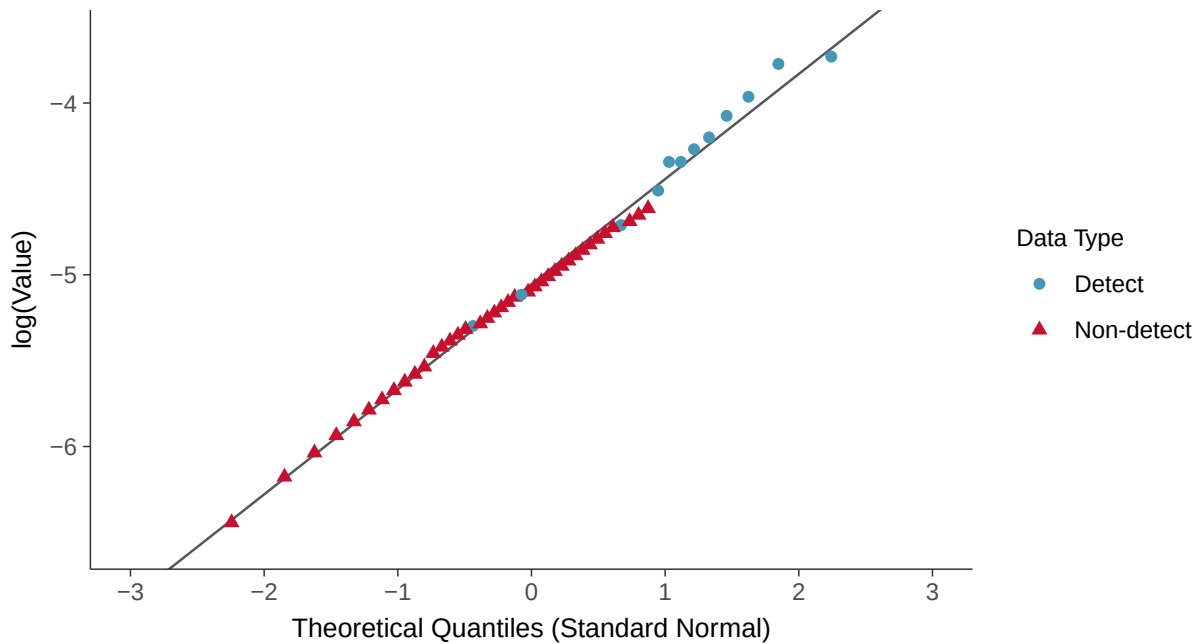
### Normal Q-Q plot using ROS Imputed Estimates

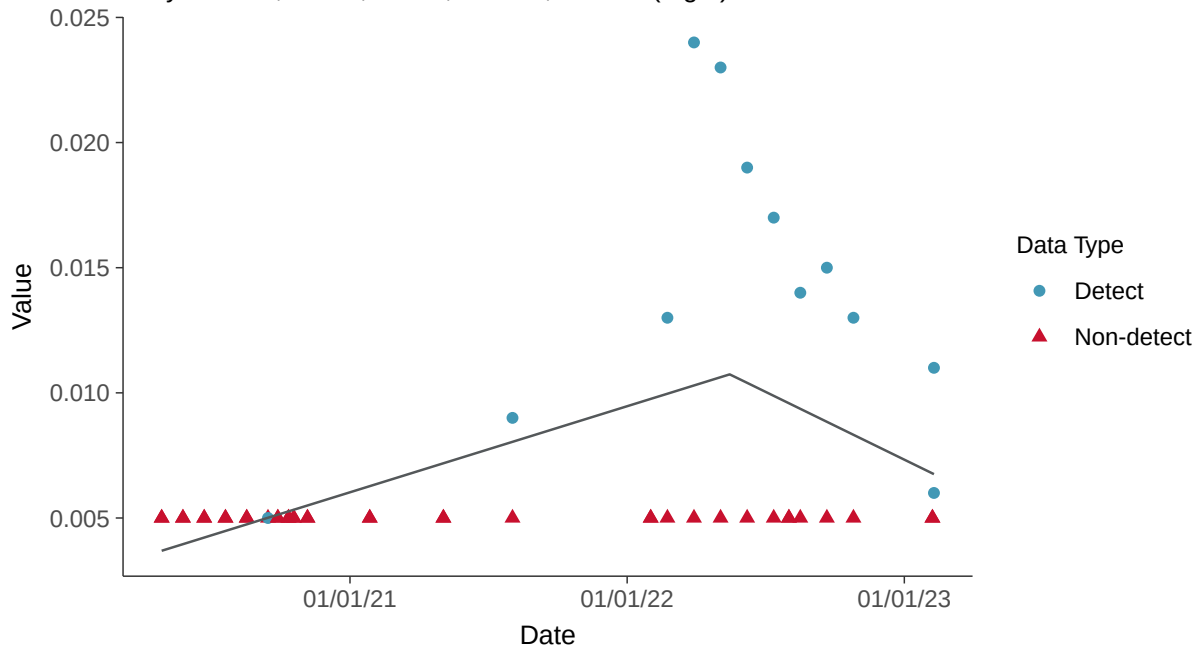
Molybdenum, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Lognormal Q-Q plot using ROS Imputed Estimates

Molybdenum, MW-1, MW-4, MW-11, MW-12 (mg/L)



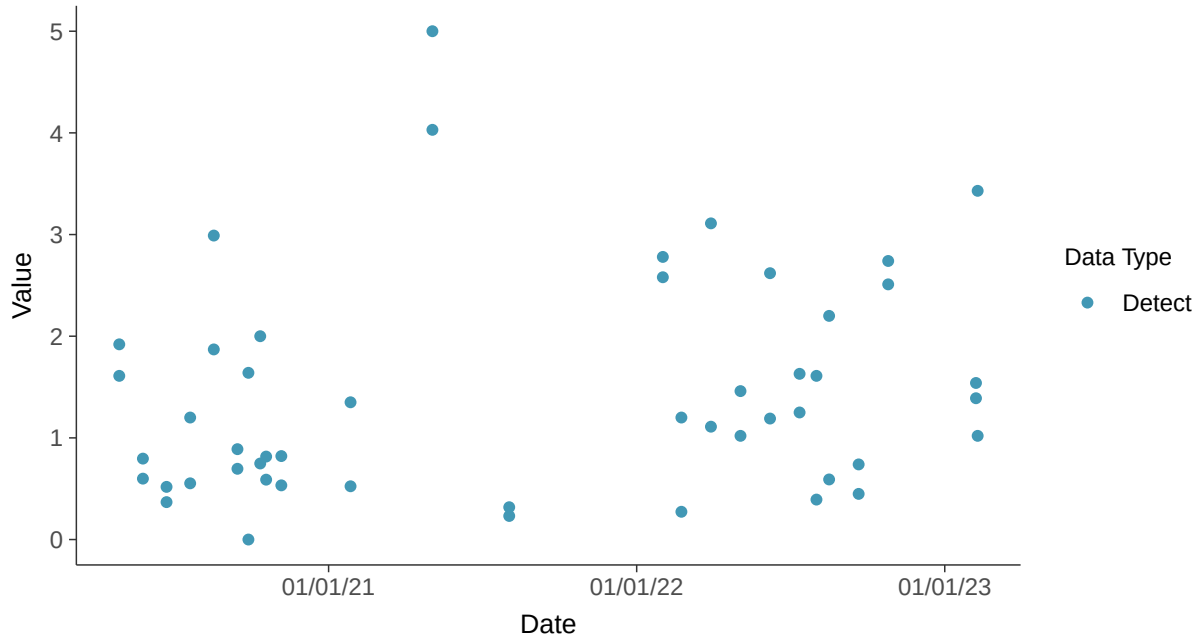


**Appendix IV: Radium-226/228, MW-1, MW-4, MW-11, MW-12**

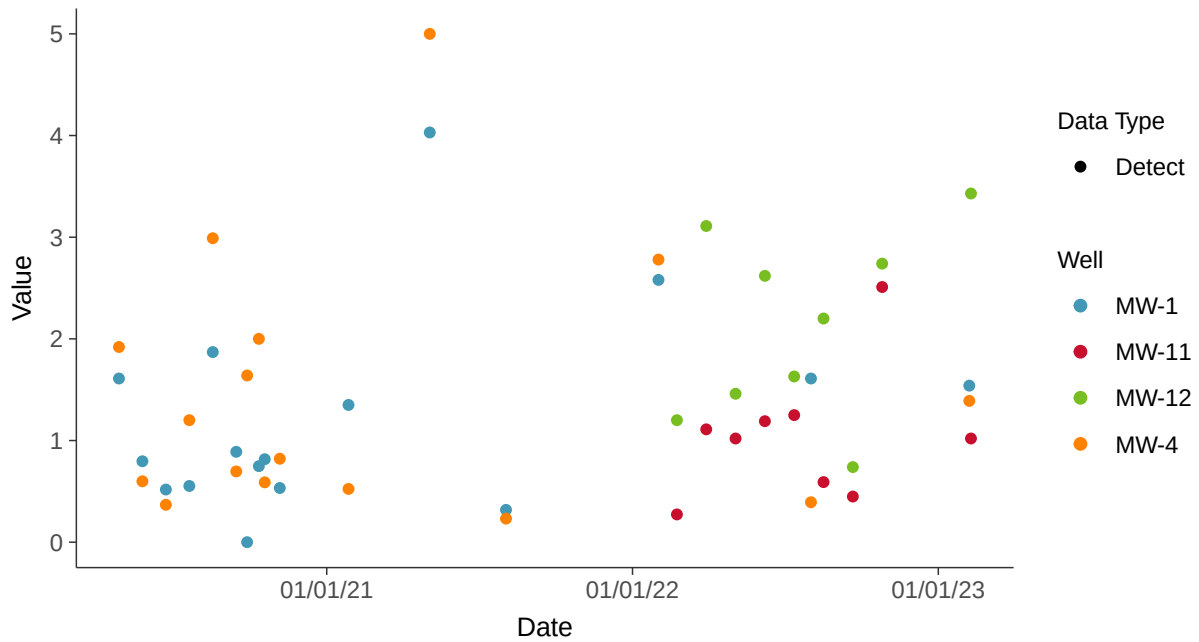
ID: 2\_25

**Scatter Plot**

Radium-226/228, MW-1, MW-4, MW-11, MW-12 (pCi/L)

**Scatter Plot by Well**

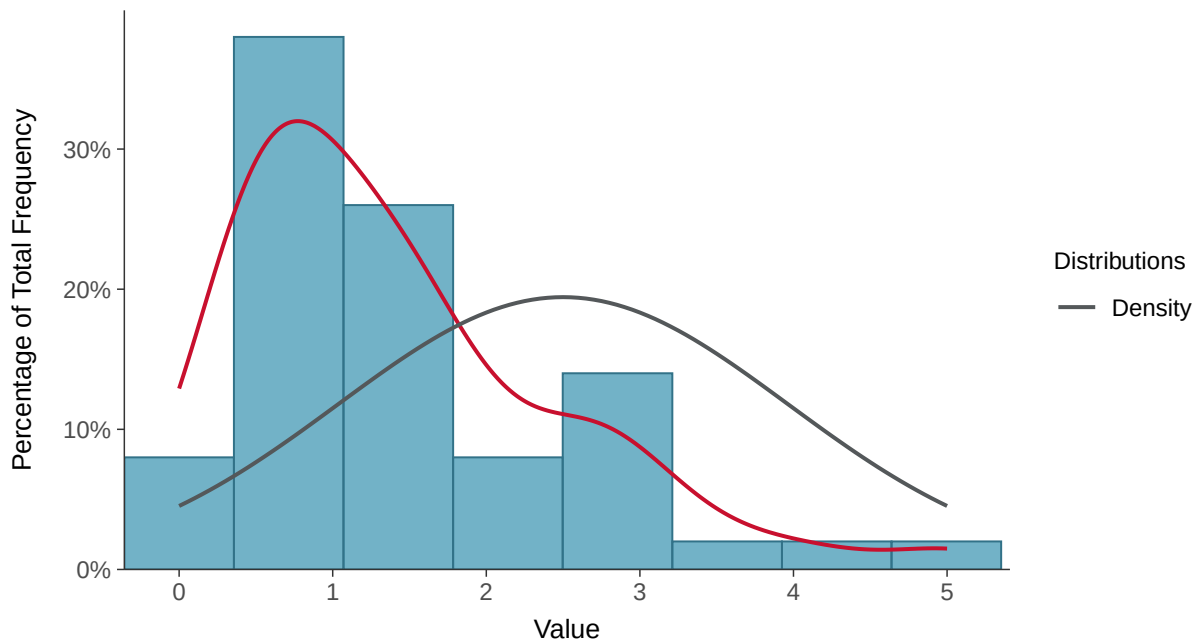
Radium-226/228, MW-1, MW-4, MW-11, MW-12 (pCi/L)





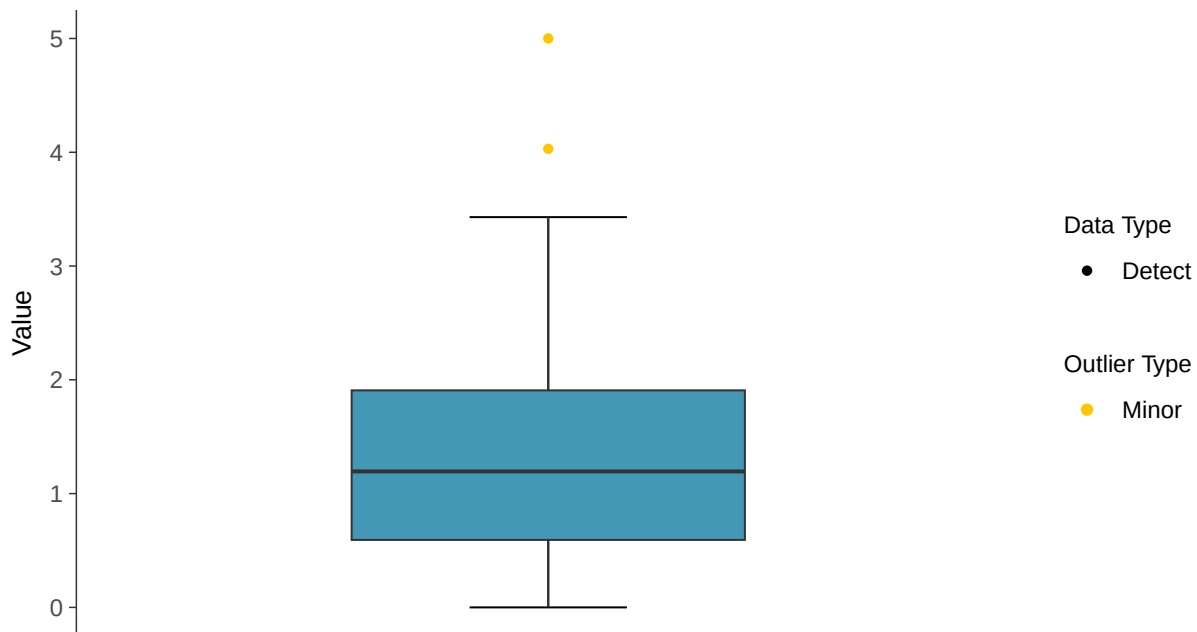
### Histogram

Radium-226/228, MW-1, MW-4, MW-11, MW-12 (pCi/L)



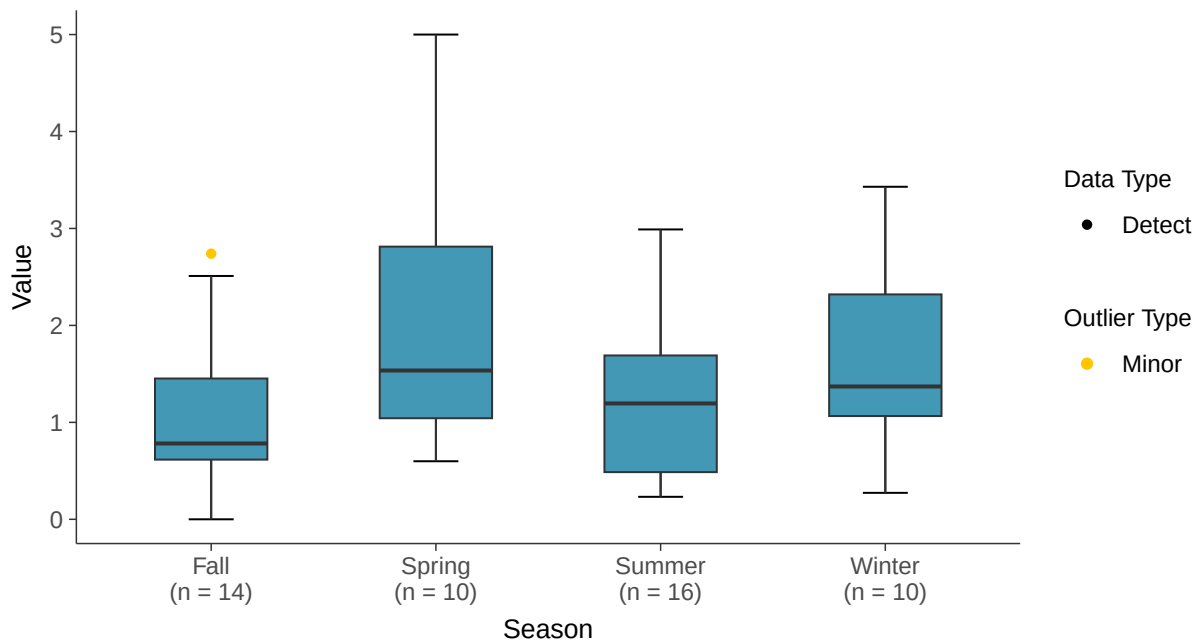
### Boxplot

Radium-226/228, MW-1, MW-4, MW-11, MW-12 (pCi/L)



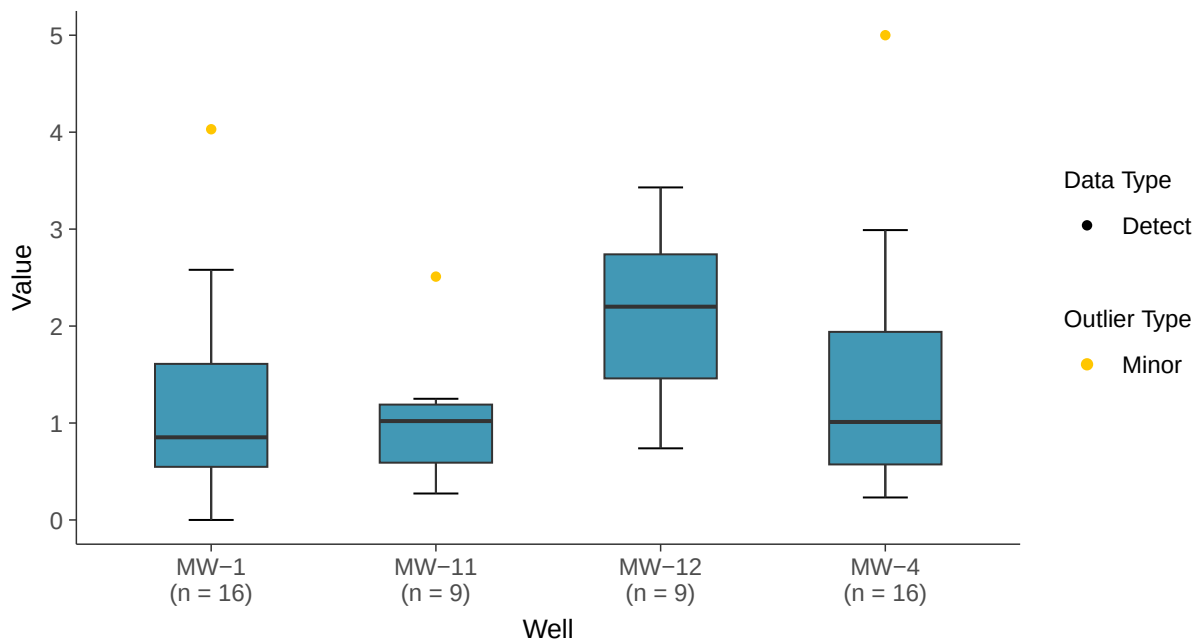
### Boxplot by Season

Radium-226/228, MW-1, MW-4, MW-11, MW-12 (pCi/L)



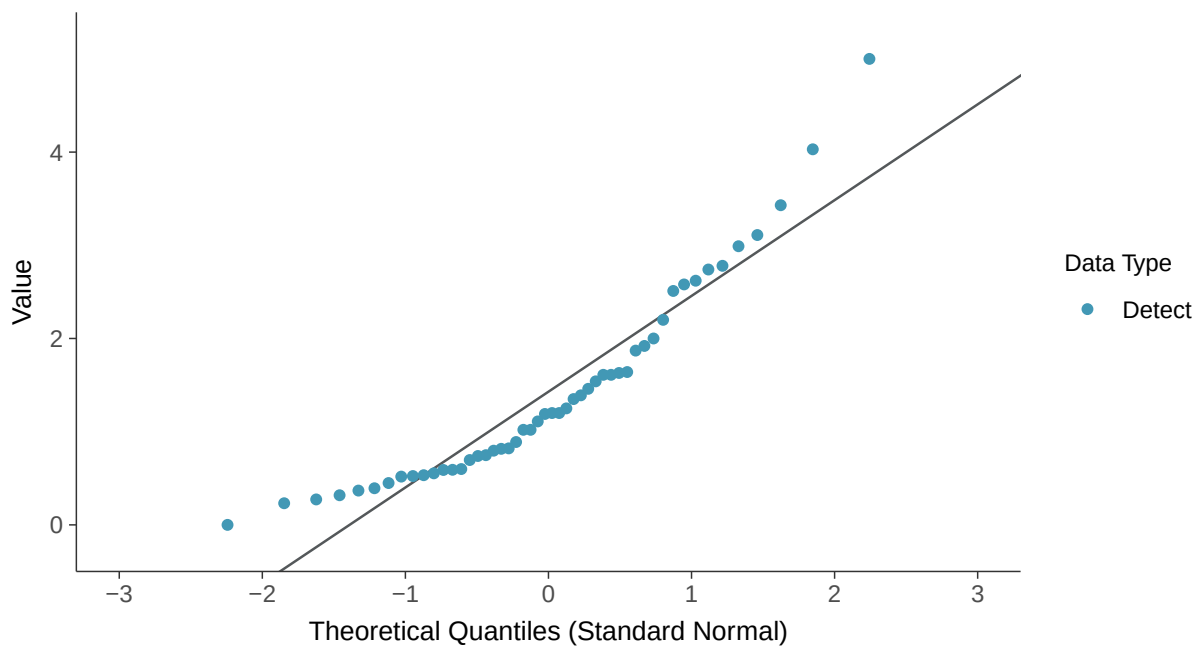
### Boxplot by Well

Radium-226/228, MW-1, MW-4, MW-11, MW-12 (pCi/L)



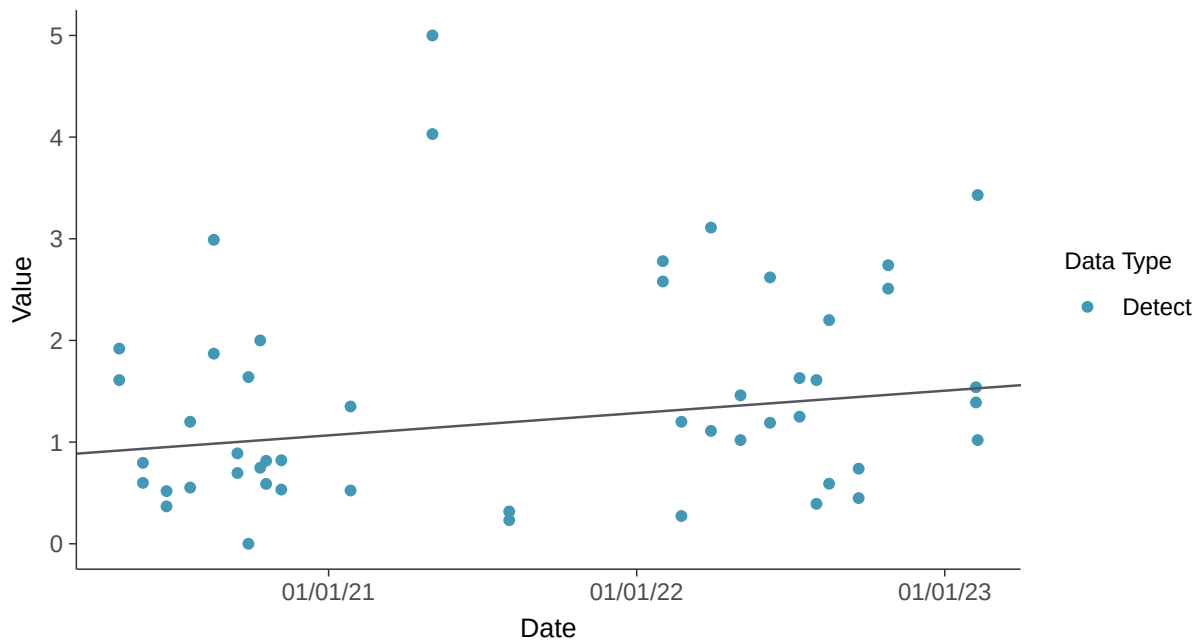
### Normal Q-Q plot

Radium-226/228, MW-1, MW-4, MW-11, MW-12 (pCi/L)



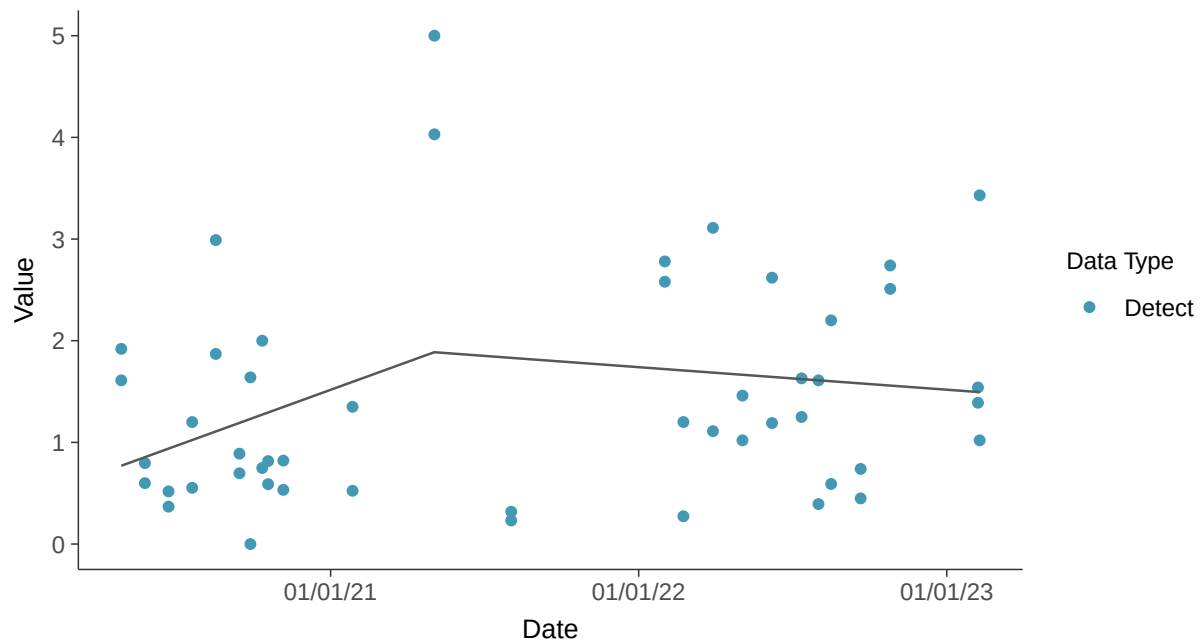
### Trend Regression: Mann-Kendall/Theil-Sen Estimate

Radium-226/228, MW-1, MW-4, MW-11, MW-12 (pCi/L)



### Trend Regression: Piecewise Linear-Linear

Radium-226/228, MW-1, MW-4, MW-11, MW-12 (pCi/L)

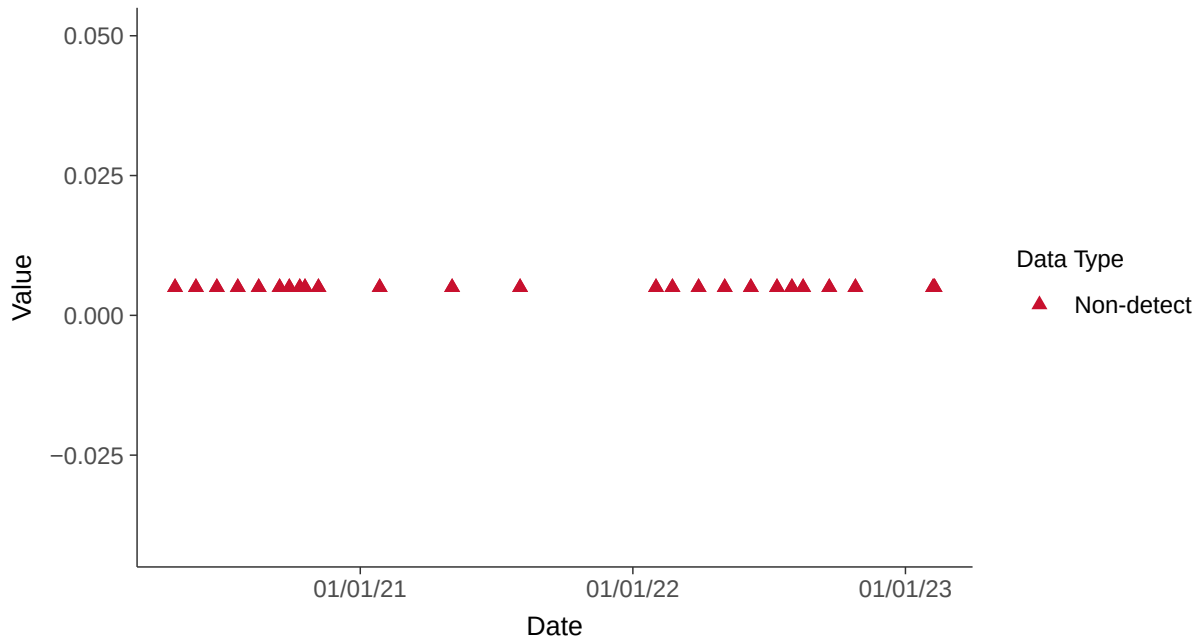


## Appendix IV: Selenium, MW-1, MW-4, MW-11, MW-12

ID: 2\_27

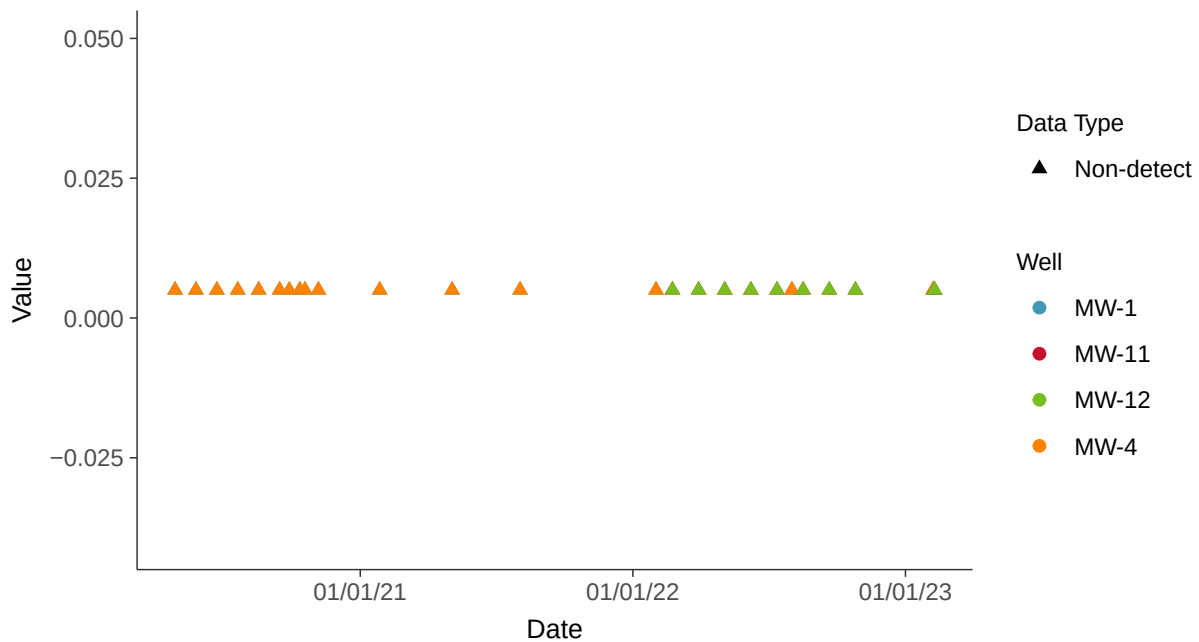
### Scatter Plot

Selenium, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Scatter Plot by Well

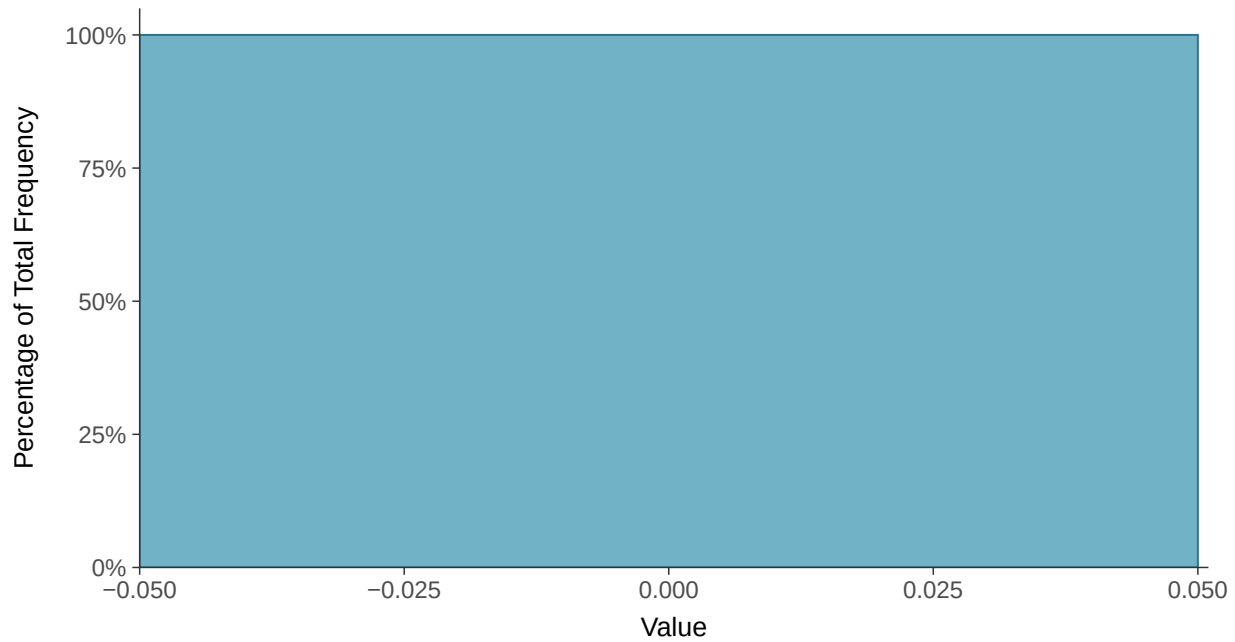
Selenium, MW-1, MW-4, MW-11, MW-12 (mg/L)





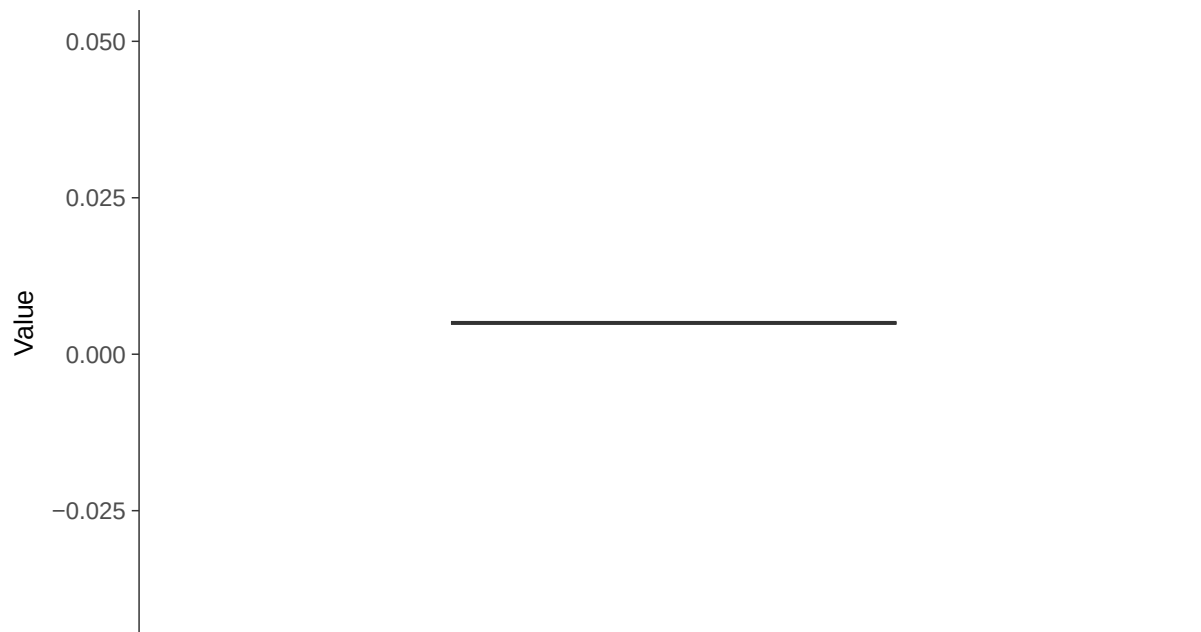
### Histogram

Selenium, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot

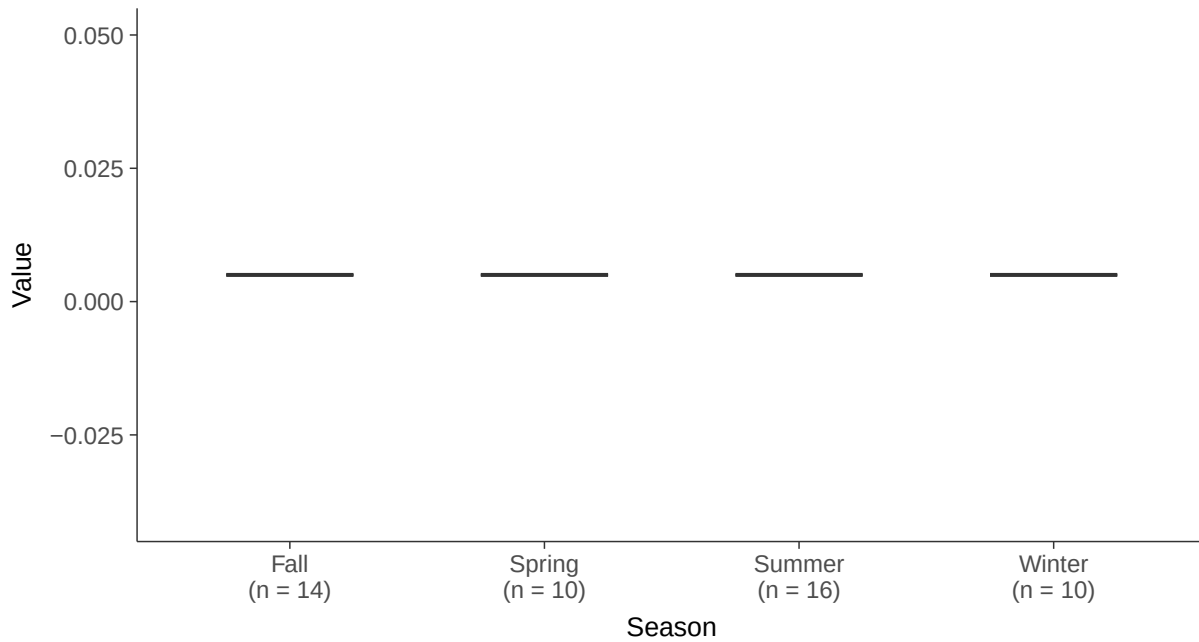
Selenium, MW-1, MW-4, MW-11, MW-12 (mg/L)





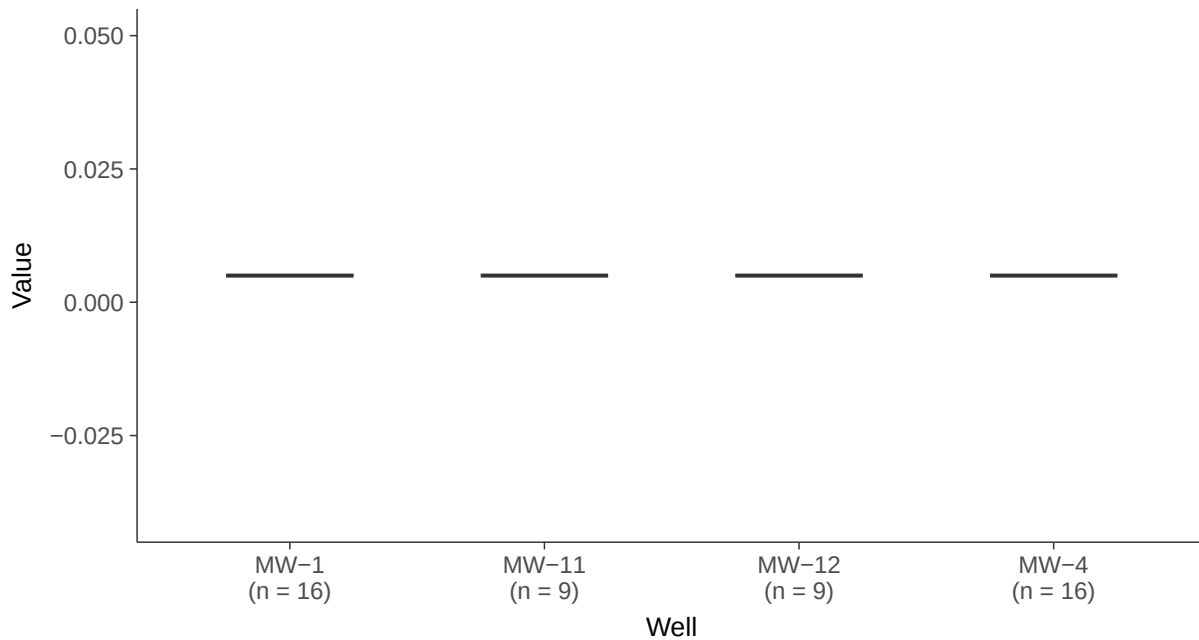
### Boxplot by Season

Selenium, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot by Well

Selenium, MW-1, MW-4, MW-11, MW-12 (mg/L)

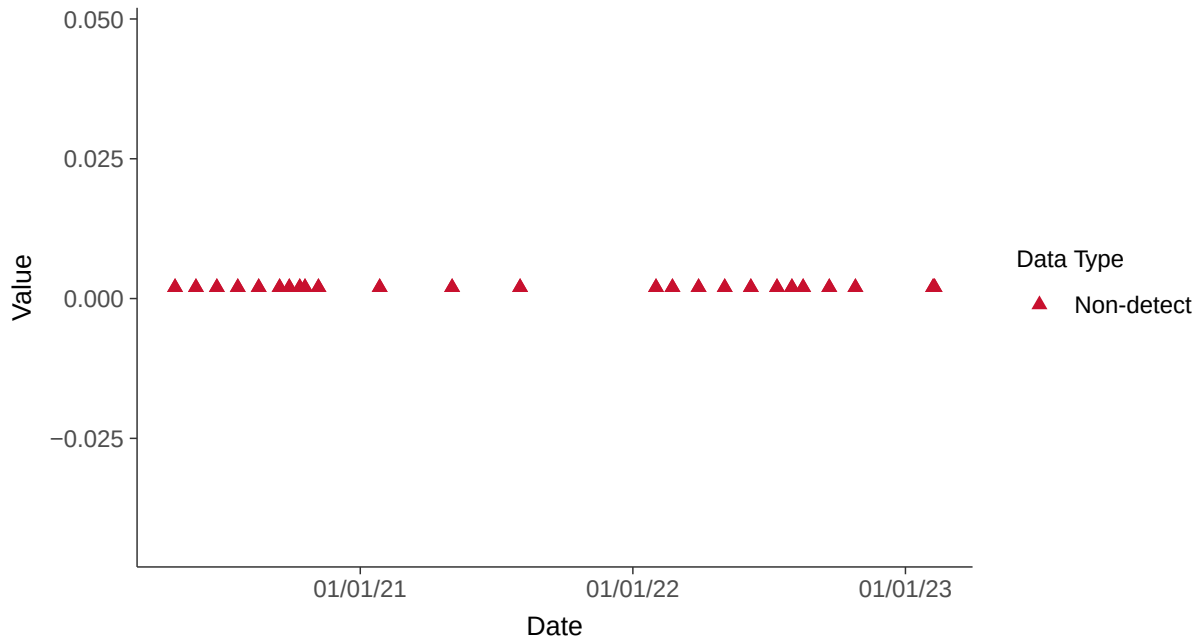


**Appendix IV: Thallium, MW-1, MW-4, MW-11, MW-12**

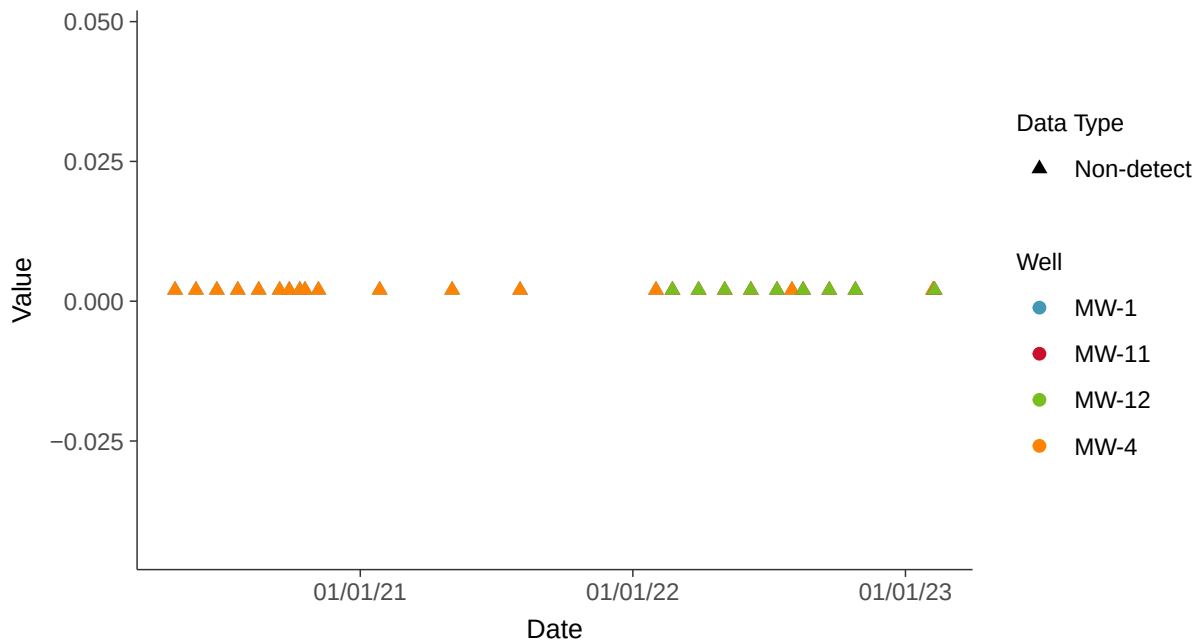
ID: 2\_29

**Scatter Plot**

Thallium, MW-1, MW-4, MW-11, MW-12 (mg/L)

**Scatter Plot by Well**

Thallium, MW-1, MW-4, MW-11, MW-12 (mg/L)

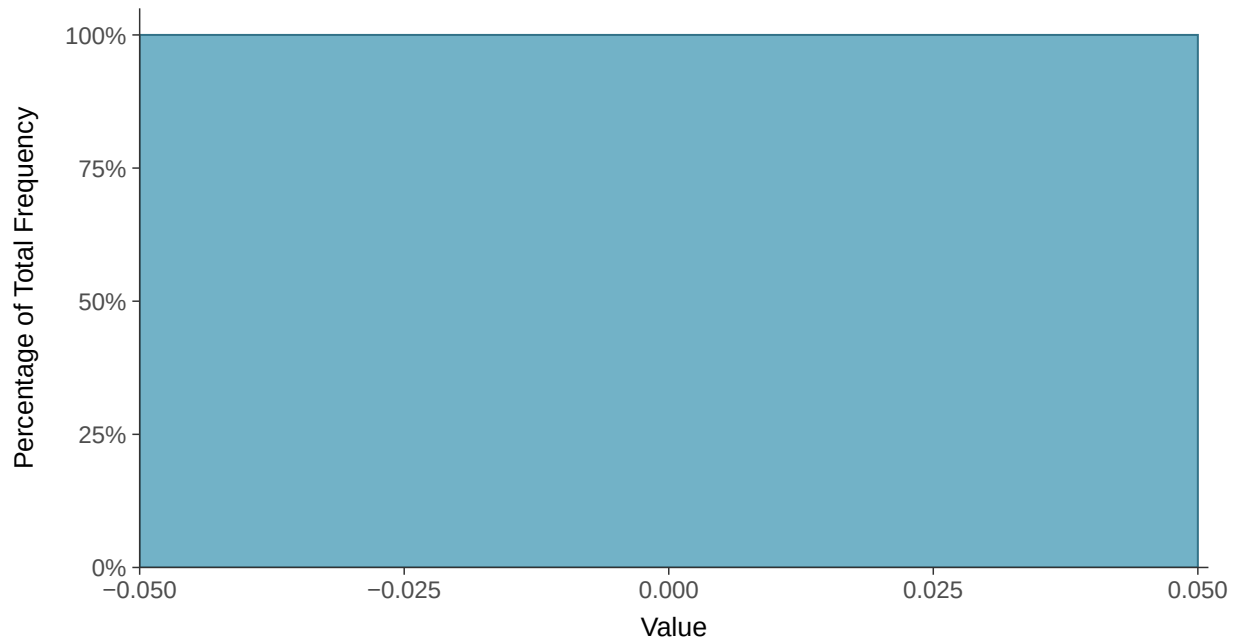






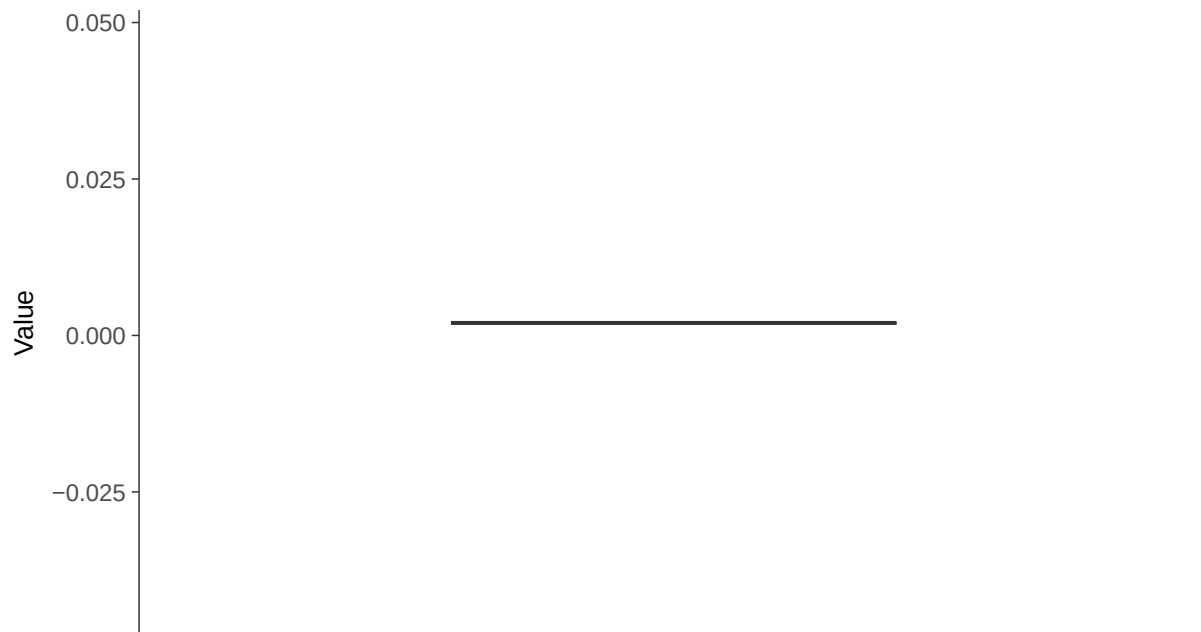
### Histogram

Thallium, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot

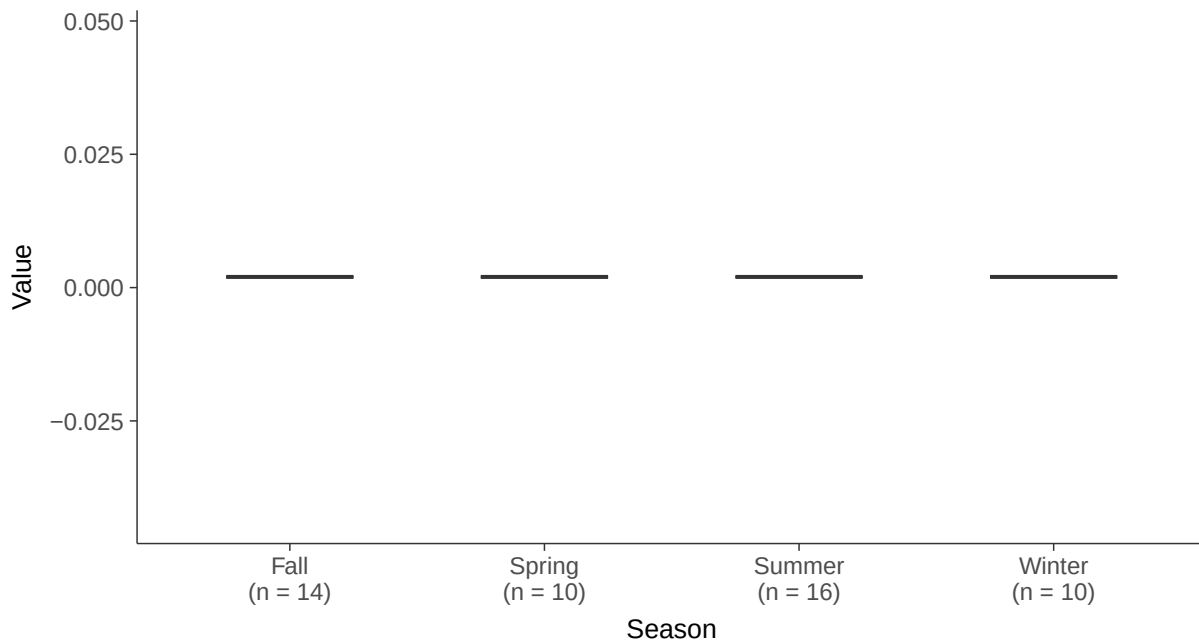
Thallium, MW-1, MW-4, MW-11, MW-12 (mg/L)





### Boxplot by Season

Thallium, MW-1, MW-4, MW-11, MW-12 (mg/L)



### Boxplot by Well

Thallium, MW-1, MW-4, MW-11, MW-12 (mg/L)

